THE COMBINED EFFECTS OF
INTERPERSONAL ATTRACTION AND
GOAL-PATH CLARITY ON
THE COHESIVENESS OF
TASK-ORIENTED GROUPS

Thesis for the Degree of M. A.
MICHIGAN STATE UNIVERSITY
ALONZO B. ANDERSON
1972

ABSTRACT

THE COMBINED EFFECTS OF INTERPERSONAL
ATTRACTION AND GOAL-PATH CLARITY ON THE
COHESIVENESS OF TASK-ORIENTED GROUPS

By

Alonzo B. Anderson

The present study investigated the combined
effects of interpersonal attraction and goal-path clar-
ity on the cohesiveness of small task-oriented groups.
Using the Allport-Vernon-Lindzy Study of Values 120
undergraduate females were selected based on their
scores on theoretical, social and religious values,
then assigned to 40, 3-person experimental groups.
This procedure yielded 20 groups that were high in
value similarity and 20 groups that were low in value
similarity.

The plan of the study involved two experimental
sessions. The first session was designed to create a
psychological group and to manipulate interpersonal
attraction. This was accomplished through intensive

1

discussion of meaningful topics. As anticipated, groups high in value similarity were higher in interpersonal attraction than those low in value similarity.

With the manipulation of interpersonal attraction accomplished in the first session, the second session presented the experimental task situation and the manipulation of the second independent variable, that of goal-path clarity, operationally defined as the extent to which there exists, among all members, only one possible sequence of actions available for the group to reach a desired outcome. The method used in this study to manipulate goal-path clarity is based on a research paradigm developed by Hammond (1965).

Two types of dependent measures were employed to test the effects of value similarity and goal-path clarity on the functioning of the group: 1) a behavioral measure of cohesiveness; 2) a questionnaire designed to examine subjects' perceptions of various dimensions of group functioning.

The results indicated that the level of cohesiveness of the task-oriented groups examined was a function of goal-path clarity, and that level of

interpersonal attraction did not differentially affect

group cohesiveness. The importance of the extent of

goal-orientation in determining the variables that

affect group cohesiveness was discussed.

Approved: _____

Date: _____

Thesis Committee:

     Joel Aronoff, Chairman

     Lawrence A. Messé

     Andrew Barklay

THE COMBINED EFFECTS OF INTERPERSONAL

ATTRACTION AND GOAL-PATH CLARITY ON

THE COHESIVENESS OF TASK-ORIENTED GROUPS

By

Alonzo B. Anderson

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Psychology

1972

To my wife and my parents

ACKNOWLEDGMENTS

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

LIST OF TABLES

Chapter I

INTRODUCTION

Social psychology does and must continually strive to bring theory and human behavior into closer agreement. That this activity exists can easily be seen through the examination of the volumes of meaningful literature on human social behavior and attitudes. However, the time has come for social psychologists to become even more socially relevant and address themselves more vigorously to the needs of the general society. Very often social psychologists have been willing to wait, particularly since there are many pressing problems in other parts of the field. As a result, this community of scholars has not consistently exhibited an awareness of issues such as the need for social change, the need for an increase in society's ability to change, and the need for understanding the motives underlying individual involvement in social-change oriented groups. However, given the acceleration in the number and complexity of social problems, it is necessary for more social

1

psychologists to view involvement in social action and
other society-related issues as the subject matter of the
discipline. For them the field will no longer look quite
the same as it has. Part of its different appearance
will result simply from the new fixation point of scien-
tific scrutiny. An even more important source of change
will be the nature of solutions offered to the numerous
social problems that the concerted attention of the field
will make available.

Assuming that society can be affected substan-
tially, for better or worse, by the particular kinds of
organizations or movements involved in social action,
there exists a need to understand this phenomenon more
clearly. In response to this need, it is suggested that
basic to the understanding of any type of larger organi-
zation or movement as it relates to social action, is the
understanding of small group dynamics.

It is apparent that this subject matter is di-
verse, for groups display a great variety of properties.
They differ in size, duration, objectives, activities,
degree of formalization, internal structure, importance
to their members, and in many other respects. However,
perhaps the most important distinction between groups is

their primary purpose for developing and existing. Re-
searchers in group dynamics (e.g., Bales, 1950; Hommans,
1950; Jennings, 1950) suggest that there are two major
purposes, and groups can be distinguished by the extent
to which one or the other is of primary concern. One
type of group has been variously referred to as friend-
ship groups, psyche groups, or socio-emotional groups.
By whatever name these groups are called, the reference
is clearly to groups whose members belong to them for the
emotional satisfaction they derive from participation,
i.e. support of one's self conception, consensual vali-
dation about the world, etc. The other type of group is
the task-oriented group. These groups exist to accom-
plish some sort of task and its primary purpose is to
manipulate the environment. However, it is necessary to
point out that neither dimension is mutually exclusive,
that is, both dimensions are present in groups, but one
is dominant depending on the purpose for the group's
existence. The present research examined groups that
were primarily task-oriented; its focus was possible
determinants of cohesiveness in these types of groups.

It can be observed that in some groups there is
high and regular participation around one particular

condition, while the opposite typifies other groups. It can also be observed that there is much hostility and conflict in one group and apparent harmony and effectiveness in another. So the questions arise: What motivates people to remain in a group? Why do some groups have a greater feeling of "oneness" than others? Why do groups stay together?

The Concept of Group Cohesiveness

Indeed, this area of research is not at all foreign to the field of social psychology. The questions raised above have been approached variously through research in group cohesiveness. Most researchers in the area have employed the definition advanced by Festinger, Schachter, and Back (1950), who state that group cohesiveness is "the resultant of all forces acting on members to remain in the group." This definition requires a conceptualization of crucial factors that will affect the magnitude of the "force field." Two classes of forces are distinguished by Festinger et al.; they are (1) the attractiveness of the group for its members, and

(2) the extent to which the group mediates goals for its members. These forces, acting in conjunction, are postulated to be the immediate determinants of cohesiveness. The first class of forces has reference to the needs of the person for affiliation, recognition, security, and other individual variables which can be satisfied by some facet of group participation. The second class of forces has reference to such properties of the group as its goals, programs, size, type of organization, and position in the community.

Lott (1961), however, conceptualizes cohesiveness somewhat differently from Festinger. She defines cohesiveness as "that group property which is inferred from the number and strength of mutual positive attitudes among the members of a group [p. 279]." While this definition at first glance seems to be inconsistent with that of Festinger, they are actually quite compatible. Lott's definition is really one of interpersonal attractiveness based on similarity, a position that is very consistent with part of Festinger's definition. Clearly interpersonal attraction is a member of Festinger's first class of factors that affect the magnitude of the force field. Perhaps the best summary of current perspectives

on cohesiveness is presented by Back (1951), who states,
"Individuals may want to belong to a group because they
like other members, because being a member of a group may
be attractive in itself (for example it may be an honor
to belong to it), or because the group may mediate goals
which are important for the members [p. 9]."

While it may be said, with justification, that
Lott's definition merely focuses on one of several compo-
nents of cohesiveness, there is some reason to assume
that interpersonal attraction, liking, or positive atti-
tudes among group members is central to the cohesiveness
of small groups, while other factors are seen as less
central to the understanding of this phenomenon. Even
though it is true that most researchers in the area have
indicated support for the position introduced by Fes-
tinger et al. (1950), it is also true that most investi-
gators have focused on one force, intermember attraction.
When investigators have desired to manipulate the cohe-
siveness of groups, regardless of their nominal defini-
tion of the concept, the operations performed have typ-
ically involved telling the members of some groups that
they would probably like each other, be congenial, etc.,
while telling others just the opposite. Further, in

measuring the cohesiveness of experimental or naturally existing groups, some sociometric device is generally utilized to determine how much each member likes or is attracted to the other members. For the most part the other forces which are postulated to determine, or be reflected by, the cohesiveness of a group have received less attention.

Some investigators, however, have manipulated variables other than interpersonal attraction in varying the degree of cohesiveness experienced by a group. Some of these variables were anxiety level (Schachter, 1959), need satisfaction (Ross and Zander, 1957), competition/ cooperation (Grossack, 1954), clarity of goal and path (Raven and Rietsema, 1957), type of interdependence (Deutsch, 1959), styles of leadership (Lewin, Lippitt, and White, 1939), decision-making opportunity (Morse and Reimer, 1956), and communication structure (Bavelas, 1950). Also, some researchers have measured group cohesiveness along different dimensions. Two of these measures were a friendship index (Simock, 1941), and liking the group as a whole (Jackson, 1959; Bovard, 1951).

It is the purpose of this study to investigate the differential influence of interpersonal attraction

and goal-path clarity--here defined as the extent to which there exists, among all members, only one possible sequence of actions available for the group to reach a desired outcome--on cohesiveness in task-oriented groups. The definition of group cohesiveness used in this study is that of Festinger et al. (1950), which assumes that the resultant force acting on a member to remain in the group will usually be made up of component forces that have a variety of sources. By examining the effects of both interpersonal attraction and goal-path clarity on cohesiveness, the assumption is that the extent to which both variables, acting independently or in interaction, contribute to the magnitude of the force field can be successfully measured. Such an examination permits exploration of the relative strengths with which these two classes combine into a single resultant force, cohesiveness. The study allows a determination of the degree to which intermember attraction, based on value similarity, is in fact central to the cohesiveness of small task-oriented groups.

As previously stated, Lott (1961) defines cohesiveness in terms of interpersonal attraction and other researchers have manipulated and measured it in these

same terms. Therefore, it is incumbent upon researchers in the field to determine whether interpersonal attraction is central to the cohesiveness of all groups, socio-emotional and task-oriented, or if its effects are more situation specific. The procedure and results of this study permitted a direct examination of this issue. Based on the findings of previous research (e.g. Newcomb, 1956), the present study manipulated interpersonal attraction by constructing groups whose members were similar or dissimilar with respect to their values. It was hypothesized, however, that for task-oriented groups, goal-path clarity would be a more important determinant of group cohesiveness than interpersonal attraction. Given that interpersonal attraction based on value similarity is the same in two groups, the question then is, will one have more attraction if in addition one has a clear goal-path?

In the context of exchange theory (Thibaut and Kelley, 1959) it was assumed that the primary basis for a member's comparison level in a task-oriented group would be the extent to which the group efficiently performed its task, a factor that should be affected by goal-path clarity; in this type of situation,

interpersonal attraction should be less relevant. Further, it seemed reasonable to hypothesize that in a task-oriented group in which goal-path clarity is high, the expected outcomes of the group will fall above any member's comparison level for alternatives (i.e., the group would be highly cohesive) no matter the level of interpersonal attraction.

It is the purpose of the literature reviewed below to examine the crucial areas relevant to this position and to present the theoretical basis from which the specific hypotheses tested were developed. This review presents the relationship between value similarity and interpersonal attraction and the use of interpersonal attraction in past research as a basis for manipulating group cohesiveness. These two, in conjunction, provided a basis for examining interpersonal attraction, as manipulated by value similarity, as an antecedent of group cohesiveness. Finally, this review considers goal-path clarity and its relationship to group cohesiveness.

Interpersonal Attraction as an
Antecedent of Group Cohesiveness

Interpersonal attraction has been shown to be an

antecedent of group cohesiveness in a number of studies.

This section examines some of the more important studies

which are illustrative of many experiments in which

interpersonal attraction was explicitly manipulated

through instructions or some other operation, and its

consequences for some dependent variable were subse-

quently ascertained.

Pepitone and Reichling (1955) used instructions

to create high and low-cohesive groups. Instruction in-

formed members of the former that they would make "an

exceptional team" since they were well matched, compatible,

and would get along well; opposite expectations were pre-

sented to members of the low-cohesive groups. Following

provocation by a rude and insulting assistant, high-

cohesive pairs were found to express greater hostility

than low-cohesive pairs. In a study by Exline (1957),

subjects who had been told that they were in groups with

well-matched, congenial others expressed greater satis-

faction with their group's progress and were more accurate

in perceiving the task-oriented behavior of their fellow

members than were subjects given the opposite orientation
regarding their fellow group members. Similarly, Libo
(1953) had shown earlier that volunteer subjects who were
told they were to work with congenial group members dif-
fered significantly from subjects given the opposite in-
structions in the degree to which they expressed a desire
to stay with the group. Libo (1957) has also reported a
significant relationship between the attraction of pa-
tients to their therapist, following their first inter-
action, and whether or not the patients returned for a
second visit one week later.

Two studies by Berkowitz (1956, 1957) provide
additional relevant data. In the first investigation,
high liking within effective air crews were found to
correlate positively with members' perception of high
motivation in one another. In the second investigation,
utilizing simulated groups, high liking between partners
(manipulated by means of instructions with regard to
probable congeniality of one's fellow members) was
accompanied by high regard for one another's opinion.

A study by Back (1951) is often cited in support
of the hypothesis that pressures toward uniformity are
greater in high than in low cohesive task-oriented

groups, although Back's data provide only minimal support. Pairs of individuals worked on a story-writing task under different instructions with regard to personal attraction, task direction, and group prestige (all hypothesized by Back to be determinants of cohesiveness). However, the extent to which the attempted manipulations of cohesiveness were successful is not clear. When both partners were taken into account, no significant differences were obtained between the high and low-cohesive pairs on a measure of change following influence attempts, although in high-cohesive groups there was reliably more change on the part of one partner. In the same study, Back compared high and low-cohesive pairs with respect to communication patterns in discussion of the story derived from pictures and found significantly more "withdrawal" patterns among the latter. However, it should be noted that the statistical analysis employed by Back is open to question because he did not test to determine if the effects of dyads nested in conditions was significant. Also, probably of most relevance to the present research, Back did not measure directly the degree to which his manipulation of interpersonal attraction affected cohesiveness in his task-oriented groups.

The technique of manipulating group cohesiveness by telling subjects that they will probably like (find congenial) or not like one another has been used in a large number of investigations of the attraction-uniformity hypothesis. Festinger et al. (1952) told members of some groups that they would find each other compatible, congenial, and interesting, and would most likely get along very well. Such groups were found to exert greater pressures for uniformity of member opinion with regard to a particular issue under discussion than groups given the opposite orientation. In another investigation Berkowitz (1954) related intermember liking with persistence of group productivity standards for an experimental task similar to one utilized by Schachter, Ellerton, McBride, and Gregory (1951). This latter study found that persons in high-cohesive groups followed presumed member suggestions for low productivity to a significantly greater extent than did members of low-cohesive groups, but when the pressure was for high production, cohesiveness made no difference. In sum these experiments tend to indicate that persons tend to respond favorably to situations in which liked others are present. Thus, interpersonal attraction may affect the development and maintenance of

norms (e.g. low productivity) that act in opposition to typical standards, but not norms (e.g. high productivity) that are congruent with such standards.

Similarity of Values as an Antecedent of Interpersonal Attraction

The Allport-Vernon Study of Values (or one of its revisions) has been employed in a number of investigations on friendship and interpersonal attraction. Newcomb (1956), for example, has reported a significant relationship between obtained similarity in Allport-Vernon scores and attraction. He also reported estimates between subjects' perception of how others would rank order the six values in the scale compared with their own rankings and liking (Newcomb, 1957). This latter relationship was greater after fourteen weeks of interaction among men in a dormitory than it was after two weeks. Smith (1957), concerned with the causal direction of this relationship, gave two partially completed Allport-Vernon booklets to each of his subjects; one booklet contained responses identical to those previously made by the subjects and the other contained dissimilar

responses. Subjects then rated each of the individuals, whose Allport-Vernon booklets they had presumably reviewed, on their desirability as social companions and as work partners. Acceptance on both measures was significantly greater for the hypothetical persons whose values were similar to those of the respondents. Reilly, Commens, and Stefic (1960) have reported a slight tendency in the direction of greater similarity in value scores between friends than between nonfriends. In still another investigation utilizing the Study of Values, Jones and Dougherty (1959) found that subjects with high political scores evaluated another politically-oriented person favorably, especially when competitive interaction with him was anticipated. When no interaction was anticipated, subjects with a high political value score chose as "liking best" a political rather than an aesthetic person.

No correlation between value homogeneity and the ratio of in-group to out-group choices made by members of natural college groups was reported by Eisemn (1959) and also by Ramuz-Nienhuis and van Bergen (1960), who replicated the Eisman study in Amsterdam. The later investigators noted, however, that an in-group to out-group

choice ratio may "not reflect personal attraction very accurately," since feelings about other persons outside the group will affect the choice ratio, while it has nothing to do with the feelings of personal attraction toward the group member.

Thibaut and Kelley (1959) have suggested that it is costly (in terms of effort and expense) to maintain friendships over a distance and that such relationships would therefore, "be expected to show relatively high value similarity." In support of this hypothesis, they cited data obtained by Williams and others to the effect that greater agreement was found between a sample of individuals and their friends residing outside their immediate community than between the same individual and their friends living close by.

Other research not directly concerned with value similarity may be considered relevant to the present discussion because it supports the findings reported above. Consider, for example, that in a study by Byrne and Wong (1962), White subjects were provided with both background information and the results of a 26-item attitude questionnaire (dealing with a range of issues from God to television) for either a White or Black stranger and

asked to indicate their feelings toward (i.e., liking of)

the stranger by checking one of several statements. Half

of the subjects were led to believe that the stranger's

attitudes were basically in agreement with their own,

while the other subjects were led to believe that the

stranger's attitudes were opposite to their's. Personal

feelings were found to be significantly influenced only

by attitude similarity and not by race of the stranger,

or by the subject's degree of prejudice. These data and

other findings reported by Rokeach (1960) indicate that

belief congruency may, under certain conditions, be more

important than race in determining interpersonal prefer-

ence.

Similarity in interest was found to be more

closely associated with clique membership than either

grade or neighborhood in a study of adolescents in a

California high school (Marks, 1959), although the in-

terests which were relatively homogeneous within cliques

differed with the sex of the group. From this study

it is not possible to determine clearly whether common

interests preceded clique formation or whether membership

in the same group gave rise to shared interests. In some

other investigations, however, there is less ambiguity

regarding the independent and dependent variables. Broxton (1962), for example, found that freshmen women who at the end of five weeks, did not desire to change roommates were more similar to their roommate in certain attitudes, for example, toward drinking and smoking, than were women who did want to change.

A considerable amount of relevant data has been reported by Newcomb (1958, 1961) from a large-scale study of university men, initially strangers, who were housed together in a dormitory. Measures of attitudes toward 100 objects as diverse as President Eisenhower, house rules, and classical music, were obtained prior to the boys' acquaintance with one another. For the first of two groups of seventeen students, "it turned out that clusters of most closely agreeing individuals, before acquaintance, were those most likely later to constitute cohesive cliques [Newcomb, 1958, p. 250]." The pre-acquaintance indices of actual agreement did not predict early sociometric choices, but they were related to choices made after the first two or three weeks, presumably after the men had a chance to learn one another's orientations to various issues. The attitudes of the men remained, in general, relatively stable, while their

"high attraction preferences tended to change in favor of individuals with whom they were more closely in agreement [Newcomb, 1961, p. 254]." During the early weeks, judgments made by the men about each other's attitudes were related to their feelings of attraction, but their judgments tended not to be very accurate. "With the acquisition of new information about each other, estimates of other's orientations tended to become more accurate, and the preponderance of changes in attraction were thus influenced by considerations of reality [p. 255]."

In a theoretical paper, Festinger (1954) presents data from a study by Festinger, Gerard, Hymovitch, Kelley, and Raven (1952) which had been omitted from the original research report. Groups of subjects studied a labor dispute and then evaluated the unions' behavior. After the experiment, the subjects were asked how well they liked the other persons in their group. Festinger (1954) reports, "In each of the eight experimental conditions those who thought that the others held divergent opinions were less attracted to the group [p. 163]."

In a study of Air Force personnel, Gross (1954) found interpersonal attraction was associated with common satisfaction with the Air Force, or agreement with

respect to personal commitment to Air Force goals. For other men, attraction was associated with shared dissatisfaction with the air site and with their jobs.

In Hilltown, one of the housing communities discussed by Lazarsfeld and Marton (1954), White residents tended to overselect as friends those with the same "racial attitudes." Newcomb (1953) similarly has reported that in two replications of a study in a small college community, students at each extreme with respect to political attitudes chose, as friends, those like themselves.

Altman and McGinnies (1960) have related similarity in ethnocentrism among group members to their attraction to one another. Six-man groups of varied composition with respect to the California E-Scale scores of the members, viewed and discussed a film dealing with ethnic minorities and prejudice. Low-ethnocentric (E) subjects were found to be more apt to choose other low-E subjects on an attraction question, while high-E subjects divided their choices about equally between highs and lows. High-E subjects, however, were not as accurate as low-E subjects in identifying the attitudes of the other group members.

Together, the weight of all of the evidence strongly indicates that individuals tend to prefer friendly associations with others who are similar to themselves in values or attitudes.

Goal-Path Clarity as an Antecedent of Group Cohesiveness

In the past research on group goals has primarily been concerned with such things as their motivational aspects, or some aspect of the relationship between individual goals and group goals. Very little research attention has been directed toward understanding the relationship between goal-path clarity and group cohesiveness. Therefore the literature on the effects of goal-path clarity on cohesiveness is neither as abundant nor as consistent as that on interpersonal attraction. However, before moving into an analysis of the literature on this topic it may be beneficial to state more specifically what the writer has reference to when employing the term goal-path clarity.

What is goal-path clarity? In order to give these rather abstract terms more concrete meaning, let

us first consider a statement from Cartwright and Zander
(1968, p. 401):

> The terms used in everyday language to describe
> the goal-directed behavior of groups suggests
> that a group can be said to have a location of
> some sort, that it may change its location from
> time to time, and that certain locations are
> preferred by all or some segment of the member-
> ship to others. As a first step, then, toward
> conceptualizing the phenomena related to group
> goals, we assume that a group may be conceived
> as an undifferentiated entity which at a given
> time has a particular location in its environ-
> ment. Whenever it is possible to assert that
> some location is relatively preferred for a
> group and that a sequence of efforts to change
> the groups location will terminate when it is
> reached, we will designate that location as
> the group's goal. If the group changes its
> location we will speak of group locomotion.
> For group locomotion to occur it is usually
> necessary for the group to perform a sequence
> of group actions; a sequence that leads to a
> preferred location may be thought of as a
> path through the group's environment to its
> goal.

As it will be employed in this study, the term
goal-path clarity refers to the existence, among all mem-
bers of a group, of only one possible sequence of group
actions available for the group to reach a desired out-
come. The assumption is also made that whenever a group
has a goal it also has a path or paths to that goal.
This leads to the conclusion that when speaking of group
locomotion or action the two should be considered together.

Further support for the above mentioned concept-
ualization comes from March and Simon (1958, p. 155).
They developed the concept of operational and non-
operational goals: "When a means of testing actions is
perceived to relate a particular goal or criterion with
possible courses of action, the criterion will be called
operational. Otherwise the criterion will be non-
operational [p. 155]." By their definition a goal is
only operational if it is accompanied by some plan of
action. It is one that allows for and is followed by
the designing of an appropriate path whose efficacy can
be tested empirically. In short, an operational goal
is one that is easily followed by purposive goal-directed
behavior.

Other researchers have placed more emphasis on
the description of the impact a clear or unclear goal-
path situation will have on a group. Korten (1962), in
developing the concept of "goal structure," distinguishes
between two types: high and low. In the high goal
structure situation, Korten places groups which have
rather specific goals that are important in the concensus
of group opinion. In this situation, the group is looked
upon as a means of carrying out tasks or operations which

will lead to these goals. It is not generally character-
ized by the desire to maintain the status quo, but rather
by the desire to work toward a new situation or to attain
something which the group has not presently attained.
Group goals assume considerable more importance than
individual goals; individuals see the attainment of the
group goal as prerequisite to the attainment of their
own goals.

On the other hand, Korten maintains that the
group in the low goal structure situation will have fewer
and/or much less important shared achievement goals. He
goes on to state that such goals as exist will more
likely relate to maintaining the status quo or making
slight readjustments in it. There will be less common-
ality of individual goals, and attraction to the group
might be considered more social in nature. In these
groups emphasis will tend to be on individual rather than
on group goals. To the extent that the person does
identify with the group, the identification is likely
to be based on personal attractiveness or on the means
which the group offers for the facilitation of personal
efforts to attain individual goals.

An essential feature of the conception of group goals used here is that they are an important factor in determining the direction of activities the group will adopt to move them toward certain desired outcomes. However, undesirable outcomes may result in task-oriented groups in which the goal itself is not clearly understood or the best procedure for reaching a goal is not clearly evident to all members. As Lewin (1959) points out, "An unstructured region has the same effect as an impassable obstacle. Being in unstructured surroundings leads to uncertainty of behavior because it is not clear whether a certain action will lead to or away from a goal [p. 255]."

Other researchers such as Zander (1971) have extended the same concept to include group behavior. Using the concept in this context it can be said that a group that has an unclear goal-path will find it difficult to establish a criterion for success. For group members this will result in a hazy comprehension of where the group is going and the extent to which it is getting there. This type of goal-path will also serve to inhibit the defining of the duties of participants, detract from a coordination of action, and inhibit the development of sensible procedures for work. In short, it can be stated

that it is necessary for a group to have a clear goal-path if it is to develop the qualities most favorable to its effective operation and survival.

Torrence (1954), who studied a group of 200 Air Force personnel downed over enemy territory during World War II or Korea, describes the results of situations where goal-path unclarity is not reduced. He found that in this stressful survival situation two types of structural unclarity were likely to be evident: a) unclear structure of paths to survival; and b) unstabilized relations among persons. He found that these were likely to lead to either random, trial-and-error behavior or to the development of a feeling of hopelessness which usually led to surrender to the enemy.

In this same study Torrence points out that survivor group behavior shows that relief and behavior of increased survival value results when the goal-path of a group becomes specific and clear. This was dramatically illustrated in the story of one survivor in Korea. He and other members of his group were suffering from injuries and other ailments and were feeling rather hopeless. One night he chanced to see a search light which

revealed the location of the front. He states they then started planning their escape and forgot their miseries.

Studies have found that in situations where goal-path clarity is not established, there will be a tendency to avoid the situation or to leave the group. French (1941) found that some members withdrew from participation when disagreement arose among members. He noted that withdrawal was most likely to occur when members were disagreeing over the method they should use in solving the problem. A study conducted by Gerard (1960, p. 397) lends support to this earlier finding. He reported that low-status subjects whose group goals were unclear tended to withdraw from their group, become dissatisfied with their roles, and devaluate their own effectiveness. Weits (1956) conducted a study of 474 life insurance salesmen. A detailed book describing the work to be done was given to 226 of them. The other 248 were not given the book. There was a considerably high rate of termination among those for whom the situation was not clearly defined.

Raven and Rietsema (1957) present one of the few studies that centered specifically on the problem of cohesiveness and goal-path clarity. By using tape

recordings they manipulated work-groups' perception of
the clarity of their goals and path. Their obtained data
indicate that the incentive value of a particular group
goal for a particular person will depend not only on its
content but also upon how explicitly the goal is formu-
lated and how clear the paths for goal attainment are.
Where goal-path clarity was minimal, disinterest in the
task and hostility were greater relative to high goal-
path clarity. In addition feelings of group belonging-
ness and sympathy for group emotions were greater in the
high clarity groups. However, it is important to note,
that given the manipulation used in this study, it is
not clear which condition caused the effect. That is,
there is no way to determine whether the condition of the
goal, or the condition of the path, generated the ob-
tained results.

Summary

American society today is at a critical stage of
its development. It is assumed that this society can be
importantly affected--for better or worse--by particular

kinds of organizations or movements. This state of affairs thus creates the need for a better understanding of large organizations and social movements. In response to this need it is hypothesized that basic to understanding any type of larger organization or movement as it relates to social action, is the understanding of small group dynamics, in particular, a central question here is why groups stay together.

These considerations lead to an investigation of two variables considered to be important in determining group cohesiveness, those of interpersonal attraction and goal-path clarity. From the literature, several issues become clear regarding the relationship between these two variables and cohesiveness in small groups. Interpersonal attraction has been successfully utilized in the manipulation of group cohesiveness in a number of situations. The literature on the effect of goal-path clarity on cohesiveness is neither as abundant nor as consistent as that on interpersonal attraction. However, it does indicate that when speaking of group locomotion or action that goal and path should be considered to-gether. The literature also indicates that inappropriate

structure and conditions detrimental to small group cohesiveness are likely to evolve from an unclear goal-path.

At least two very important questions remain which have not been approached directly by previous research. (1) Can the very important variable of interpersonal attraction, as it relates to group cohesiveness, be affected by the clarity of a group's goal-path? (2) Can the detrimental effects of an unclear goal-path be neutralized by high interpersonal attraction?

Hypotheses

The present research is concerned with the cohesiveness of task-oriented groups. Previous research seems to indicate that interpersonal attraction is central to the cohesiveness of all groups. However, the centrality of interpersonal attraction as a determinant of cohesiveness may not hold for task-oriented groups. The rationale for the foregoing assumption is based on exchange theory (Thibaut and Kelley, 1959) which asserts that in evaluating the expected outcomes of group membership, a person employs a standard, called the comparison

level, against which he compares the expected outcomes
of membership. This comparison level derives from his
previous experience in groups and indicates the level of
outcomes he aspires to receive from membership. A person
will be more attracted to the group the more the level
of expected outcomes exceeds his comparison level. In
a task-oriented group the level of outcomes a member
aspires to receive from membership would seem to relate
to successful task performance. In a situation such as
this the only salient variables are those which affect
task performance. Therefore, interpersonal attraction
should be less relevant and goal-path clarity should be
central to a member's decision to remain in or to leave
a particular group. The present research examines this
proposition. Within this framework two hypotheses were
derived:

1. Given that the groups examined were primarily
    task-oriented in purpose, it was expected that
    groups under clear goal-path conditions would
    experience significantly more cohesion than
    groups under unclear goal-path conditions.

2. Given that the groups examined were primarily
    task-oriented in purpose, it was expected that
    interpersonal attraction would have a minimal
    overall affect on level of cohesion. Further,
    given that goal-path clarity was predicted to
    be more salient to cohesion in task-oriented
    situations, it was expected that any effect of
    interpersonal attraction would occur under con-
    ditions of a clear goal-path. This hypothesis
    follows from the speculation that goal-path
    clarity is a primary prerequisite of cohesion
    in task-oriented groups, and other factors can
    be influential only in situations in which goal
    paths are clear.

Chapter II

METHOD

Selection of Subjects and Experimenters

The instrument employed to select the subjects

used in this project was the self-scoring, 45 item

Allport-Vernon-Lindzey (1960) Study of Values. This

instrument was chosen because previous research (e.g.,

Newcomb, 1956, 1958; Smith, 1957) has shown it to dis-

tinguish reliably between persons who are and are not

likely to be attracted to one another. The Study of

Values assesses the relative importance of six basic

interests: theoretical, economic, aesthetic, social,

political, and religious. The classifications are based

directly upon Eduard Spranger's Types of Men.

Given the need to view cohesiveness in the con-

text of a "real world" situation, three of the six values

were used as selection criteria. The three values used

were theoretical, social, and religious. Previous re-

search (e.g., Reiley et al., 1960; Jones et al., 1959;

Newcomb, 1956, 1958; Smith, 1957) has not used any

particular value or combination of values in those studies reported. The rationale for using these values in this study is based on these basic observations: In groups that come together, for the purpose of involving themselves in some form of social action, these values would be most prevalent in that they most likely characterize the dominant interests of a person inclined to be a member of this type of group. Also these values are relevant to the discussion task which is thought to be one which lends itself to the expression of a variety of opinions. This latter observation is a key one because it is central to this research that all group members have an opportunity to express their opinions during a group discussion.

Selection of Subjects

Female subjects were recruited through the use of sign-up sheets posted in introductory level psychology classrooms at the university. The sign-up sheets invited female undergraduates to participate in an intragroup communications research project and so earn extra credit in their psychology class. The sign-up sheet presented

a number of times and places where preliminary testing would take place. Female subjects were used because many other studies being conducted at the same time were using male subjects. Because this study required the services of so many subjects it was thought that a higher probability of approaching the number needed would result from employing the population of females. In response to the sign-up sheet, 386 female undergraduate students appeared for the preliminary testing.

The preliminary testing, which lasted for about an hour, involved the administration of the Allport-Vernon-Lindzey (1960) Study of Values. Every subject's total score on each of the three values was rated either high, medium, or low based on the national average of college females as reported in the Allport-Vernon-Lindzey (1960) Testing Manual (see Appendix A for criterion scores). Based on these scores, one hundred and twenty subjects were assigned to forty, 3-person experimental groups in order to obtain twenty groups in which there was high similarity among the three members and twenty groups in which there was low similarity among the three group members (see Appendix A for the specific composition of each group).

Selection of Experimenters

Five female experimenters were selected from advanced undergraduate social psychology courses at Michigan State University. Two sections of social psychology research methods classes were approached in an effort to recruit experimenters. It was explained that a research project was being undertaken which required female experimenters and allowed an opportunity for gaining first-hand research experience. In response ten students appeared to be interviewed by the project director. From the ten, five were selected based on the interviewer's perception of their maturity, interest in gaining research experience, and reliability. All experimenters were trained in the procedures necessary to conduct the experimental session prior to formal data collection.

Manipulation of Interpersonal Attraction and Goal-Path Clarity

The plan of the present study involved two experimental sessions, with the second session occurring no more than two weeks after the first.

The First Session

The first session was designed to create psycho-
logical groups here defined as a number of persons who
interact and influence each other, and who are recognized
in some special way because of the interaction. As has
been stated earlier, previous research, by manipulating
a subject's perceptions of the other group members, has
varied interpersonal attraction in laboratory situations.
However, given that this study sought to approximate a
real group as much as possible, this procedure was not
thought to be practical. In real groups there is rarely,
if ever, any public statement to the effect that the
members will probably like one another, or be congenial,
etc.

In response to the need to examine groups which
more closely approximate those of the real world, the
first experimental session was devoted to subjects get-
ting acquainted. This was accomplished through intensive
discussion of meaningful topics. The first session was
also planned to allow a determination of the effects of
assigning subjects to groups based on their value simi-
larity or dissimilarity. Analysis of variance was

performed to assess treatment effects on interpersonal liking. One measure of interpersonal liking was used, a subscale in the questionnaire discussed below.

However before assessing these results it is necessary to establish that groups differed only on value similarity and were otherwise statistically similar. To demonstrate this the means, standard deviation, and correlation coefficients for all four conditions were computed prior to the first experimental sessions. With cells 1 and 3 containing high similar groups and cells 2 and 4 containing low similar groups, the analysis revealed the means and standard deviations to be quite similar (cell 1 $\overline{X}$ = 39.79, σ = 9.75; cell 2 $\overline{X}$ = 40.70, σ = 9.13; cell 3 $\overline{X}$ = 40.76, σ = 9.85; cell 4 $\overline{X}$ = 40.80, σ = 8.89). However the correlation coefficients proved to be quite different between high similar (cell 1, r = .71; cell 3, r = .69) and low similar (cell 2, r = .10; cell 4, r = .12) groups.

In order to assess accurately the results of the attempted manipulation of interpersonal attraction, it was necessary first to determine the extent to which participation in a particular group made a significant difference in terms of subjects' expressed interpersonal

liking. This was necessary in order to determine the appropriate error term to use in subsequent analysis of the data. Therefore a preliminary test was performed to examine the effects of groups within conditions (a nested factor). The results of this test indicate that groups did yield a significant difference (p < .05) in the way subjects responded. Thus, it was not possible to use a pooled error term of subjects within conditions (df = 116) for subsequent tests, but rather the error term of groups within conditions (df = 36) was employed.

The analysis of variance on first session data revealed a significant difference ($F_{1,36}$ = 7.13; p < .025) between high similar groups ($\overline{X}$ = 37.87) and low similar groups (35.62) on the measure of interpersonal liking. It seems that people in the high similar groups like one another much more than those in the low similar groups. This result indicates that the pre-experimental assignments were valid as well as lending support to the notion that value similarity is an antecedent of interpersonal liking.

The Second Session

With the manipulation of interpersonal attraction accomplished in the first session, the second session presented the experimental task situation and the manipulation of the second independent variable, that of goal-path clarity.

In this study, goal-path clarity has been operationally defined as the existence, among all members of a group, of only one possible sequence of group actions available for the group to reach a desired outcome. The method used in this study to manipulate goal-path clarity is based on a research paradigm introduced by Hammond (1965). Although this paradigm was originated to study cognitive conflict and its resolution, in collaboration with Hammond it was quite easy to adapt it to meet the requirements of the present research.

This method was chosen because it represents the situation which is likely to be present in any social action group in its early stages. Three conditions can be seen as definitive of this type of group situation; shared fate, uncertainty, and individual differences in thinking. The tasks of a group of this type also lend

themselves to a continuation of these conditions. These types of groups will either analyze a problem and produce a document, plan a course of action in response to something, carry out a course of action, or all of these. Although the goal in all of these cases are relatively clear, the situations are uncertain enough to support different viewpoints. Members of a group under these conditions are likely to have varying prior experience which would lead them to suggest different paths to a desired outcome, giving a group several plausible alternative solutions to their problems. To create a situation such as this in the laboratory it was necessary to utilize a task that involved mutual aims or goals, equivocal information, and discrepant cognitive processes. Hammond's paradigm offers a means of doing this.

Hammond's method is a laboratory technique which involves two stages: 1) a training stage in which the subjects are trained in such a way that each learns to think differently about a common problem, and 2) a conflict stage in which the subjects are brought together and attempt to arrive at a joint decision concerning the problem. The training and conflict phases are discussed in turn.

Training Stage. The aim of the training stage is to develop different sets of cue dependency in subjects. To illustrate, Hammond (1965) reported a study concerning political decision-making. In the training task, which involved a training deck with 60 data cards, the subjects were required to learn to estimate the "level of democratic institutions" in a given nation on the basis of two cues: 1) the extent to which free elections existed in the nation, and 2) the extent to which state control was a factor in government. This was a two-cue probability task.

Each member of a pair of subjects received different training. Subject A was given a task in which the "state control" variable accounted for 98% of the variance in the "level of democratic institutions" (criterion) variable; furthermore the "state control" variable was related to the criterion variable in a nonlinear (one phase of a sine function) manner. Thus, both low and high degrees of state control indicated a low level of "democratic institutions" and in a moderate level of state control indicated a "high level of democratic institutions." For subject A, the second predictor variable (free elections) was randomly related to the criterion

variable. Subject A, then, built up a high degree of dependency on "state control" as an indicator of "level of democratic institutions."

Subject B was trained in the opposite way; for him "free elections" accounted for 98% of the variance in the criterion, and it was related to the criterion in a linear way. The "state control" variable, however, was randomly related to the criterion. Subject B, then, built up a high degree of dependency on "free elections" as an indicator of "level of democratic institutions."

Conflict Stage. At the completion of training the subjects are told that they have mastered the training task and that their next problem is to apply what they have learned; furthermore, they are to carry out the second part of the task with another subject, and they are required to make a joint decision.

The research paradigm produces the following situation. Three persons who attempt to solve a problem which concerns all of them, have mutual utilities (their gain-or-loss derives from their approximations to the solution of the problem), and receive different training in the solution of a problem involving uncertain inferences. These persons are then brought together and find

themselves dealing with a familiar problem for which their experience apparently prepared them but, find their answers differ, and that their own answer is not as good as it has been, although each answer is logically defensible. Finally, these persons provide a joint decision as to the correct solution, and, therefore, must adapt to one another as well as to the task if they are to solve their problem.

Hammond (1965) maintains that these features were chosen because they represent the situation in which men of good will find themselves when dealing with a problem for which they have less than adequate solutions because of limitations in their ability imposed by their past training, and for which they have different solutions because of cognitive differences imposed by their past training. The paradigm does not pretend to represent fully or adequately all the important features of such a problem situation, if for no other reason than that all relevant or important features are not yet known.

Previous research (e.g., Rappaport, 1964; Hammond et al., 1971) as well as pilot testing has shown this to be a reliable method for developing cognitive differences through different prior experience. It is also a

good method for developing equivalent cognitive orienta-

tions across subjects by giving them the same prior ex-

perience. In this study, then, goal-path clarity, as

previously defined, was developed within a group by

varying the similarity of the training given to members.

In the present study a three-cue probability task

was employed. The cues were: a) educational facilities,

b) recreational facilities, and c) residential facil-

ities, all for a living/learning dormitory. Subjects

were trained to become dependent upon one of these cues

by being required to learn to estimate the "level of de-

sirability" of a particular university's dormitories.

The cues were presented in a deck of 60 data cards in

bar graph form (see Appendix C). Each card presented

three bar graphs on the front, one for each cue, and a

rating on the back. One cue was highly correlated (.98)

with the correct answer presented on the back. In the

clear goal-path situations the valid cue was the same in

each deck. In the unclear goal-path situation the valid

cue was different in each of three decks. To illustrate,

subject #1 learned to depend heavily on cue A, less

heavily on cue B, and least on cue C. Subject #2 learned

the reverse system--to depend most heavily on cue C, less

on cue B, and least on cue A. Subject #3 learned to de-

pend most heavily on cue B, less on cue C, and least on

cue A. Cognitive differences were thus "built up" in

the three subjects in their separate and different train-

ing experiences.

Dependent Measures

Two types of dependent measures were employed in

this study to test the effects of interpersonal attrac-

tion and goal-path clarity on the functioning of the

group: 1) a behavioral measure of cohesiveness; 2) a

questionnaire designed to examine subject's perception

of various dimensions of group functioning.

Behavioral Measure

The first dependent measure was a two item Group

Transfer Form (see Appendix B) constructed by the author

and administered at the end of the second session. The

form explained that some subjects in other groups had

requested that they be changed to a group where they would

have a better chance of winning the prize offered. Then

it invited the reader to make a choice as to whether they wanted to change their group assignment or not. It also invited the subject to state a preference, if any, as to which other subject from their group they would like to work with in the next group. The subjects were under the impression, at the time of administration, that there was going to be at least one more session.

Questionnaire

The second measure was a 28 item Member Reaction Questionnaire constructed for this study. The questionnaire used a seven-point Likert-type response scale for each item. A factor analysis (described in Appendix B) indicated that the questionnaire contained six subscales. On the basis of the factor loadings, the factors were named "general cohesion," "interpersonal liking" (used to assess the validity of the manipulation of interpersonal attraction described above), "general group evaluation," "leadership/atmosphere evaluation," "task evaluation," and "interaction evaluation."

The first factor is believed to measure consequences of cohesiveness--amount of influence exerted and

received, involvement, unity and the desire to work with the same people. The second factor measures intrinsic liking--sociometric ratings, the degree to which group members were friendly, responsible, reliable, and sincere. The third factor, it is felt, measures general satisfaction with the group--the degree to which they were satisfied with being a member of the group, satisfied with the type of interaction and satisfied with their individual and group performance. The fourth factor measures general atmosphere and leadership satisfaction--the extent to which a leader was present or needed, the extent to which a feeling of anxiety or felt inhibition existed. The fifth factor is thought to measure task satisfaction--the extent to which a subject was satisfied with the groups' creativity, organization for the task, individual and group performance, and quality of the groups' solution. The sixth factor is thought to measure interaction satisfaction--opinion consideration and group imposed interaction standards (see Appendix B for Member Reaction Questionnaire and specific factor loadings). This instrument was employed after the first and second session. The measures of satisfaction were included because this writer believes

that various aspects of satisfaction are logical conse-
quences of group cohesion. The influsion of these mea-
sures allowed for an examination of this assumption.

Experimental Setting and Procedure

The research was carried out in three identical
rooms at Michigan State University. Each room, measuring
8-1/2' x 12-1/2', contained the following: a large rec-
tangular table placed in the center of the room; three
chairs, one placed at each end and one side of the table
(subjects were randomly assigned to seats before coming
to the experimental room); three desks placed in each
of three separate corners of the room (each desk was
facing away from the others so it was not possible to
see the other subjects while sitting there); and a tape
recorder, placed on a window ledge.

In this study subjects reported to the same room
for both sessions and sat in the same pre-assigned seat
during both sessions. A tape recorder was used in both
sessions because $\underline{S}$s believed the study to be one con-
cerned with intragroup communication.

Description of The First Session

As the subjects arrived the E, who was unaware

of the composition of the group, seated each S in their

pre-assigned seat and told them the session would begin

as soon as everyone arrived. When all Ss were seated

the E passed out instruction sheets and requested that

the Ss read the instructions to themselves as she read

them aloud. The E explained that she was doing this so

that all instructions would be the same for every group.

The instructions were as follows:

> The purpose of this part of the study is to
> find out how people communicate in a group
> of strangers. Please imagine that you are
> a panel of experts on the subject of Human
> Relations and that you are meeting today for
> the first time. Your agenda for today in-
> cludes comprehensive discussions of the fol-
> lowing issues: (1) Euthanasia (mercy kill-
> ing), (2) Capital punishment (pro or con),
> and (3) The morality of war (to include
> the question of whather the taking of an-
> other life under cricumstances of war, is
> murder or something else). Since you anti-
> cipate working with this group for several
> meetings you are interested in finding out
> the views and opinions of your fellow group
> members. So, your task in this session is
> to get to know your fellow group members
> and for them to get to know you. Remeber,
> this is a study fo communication styles so
> feel free to say whatever you please.

After the instructions were read the E asked for questions, turned on the tape recorder, then left the room. After 45 minutes had passed, the E returned to the room and asked the Ss to conclude their discussion. At this time the E collected the instruction sheets and told them that she would like for them to then complete a short questionnaire. After the questionnaires were completed, the E told the Ss that they would be debriefed when the study was completed and collected their extra credit cards. Before the E dismissed the Ss she reminded them of the time and place of the next session, and thanked them for coming.

Description of Second Session

As the Ss arrived the E, who was unaware of the hypotheses, again seated each person in their pre-assigned seats which were the same as in the first session, and told them the session would start as soon as everyone arrived. When all Ss were seated the E told them what they were going to do would probably be interesting and perhaps profitable. She told them that their group had a chance to win a $15.00 prize. After this introduction

she passed out the instruction sheet and asked them to read it to themselves as she read it aloud. Again she explained that the purpose for this was so that all instructions would be the same. The instructions informed the group that the purpose of that part of the study was to investigate decision-making communication patterns in small groups. They were told we were interested in learning how people put facts together, how they reach decisions on the basis of these facts, and the type of communication that goes on during the group decision making process. They were also told that they would first be given some background information to serve as a basis for their decision. Then they would be given an opportunity to put this information to work by making a group decision about a hypothetical situation. They were also told that we had summarized all the information they would need to know to make their decision in one deck of cards. They were told what the deck represented (see Appendix C).

They were instructed to view the three bar graphs on the front of the cards and predict the rating which appeared on the back and to record their prediction on the answer sheet provided them. Then they could turn to the back of the card so that they could see how accurate

their predictions were. Finally they were told that when they finished they would go into a group decision phase where their group could win $15.00 (for the complete instructions see Appendix C).

After the instructions were read the E demonstrated to the Ss the exact procedure for going through the training deck and recording their predictions. Then each S was given a training deck, a pencil, and an answer sheet. The Ss were then asked to move to one of the desks in the room. The E was present during the entire training session.

When all Ss completed the training deck, which took about 45 minutes, a second instruction sheet was passed out. Here the Ss were instructed that their task was then to plan and sketch a living/learning dormitory. They were told that it was important for them to decide and include in their plan, "the most important facility to hold at a moderate level as compared to the other facilities."[1] They were first to spend 5 minutes working

---

[1]This phrase and the use of "control" was intentionally made to be somewhat ambiguous and contradictory since it was assumed that the statement of a group's goal is rarely unequivocal, this owing to individual differences in the way people define and/or interpret words.

on their plan for the ideal living/learning dorm, then they would come together and work on a group plan. They were also instructed that it would be their group discussion and decision that would count toward the prize and that they must agree on the right facility to control.

After working five minutes on their individual plan the E asked them to please come back to the table and work on their group plan. The E then collected the training decks, turned on the tape recorder, advised the group she would return in 45 minutes for their decision, and left the room.

At the end of 45 minutes E returned, asked the group to conclude their discussion and turned off the tape recorder. The E then collected all materials, except pencils, and asked the Ss to move back to the desks. She then passed out the questionnaire to be completed. When the first person completed the questionnaire it was collected and the E announced that she would like each person to come out to the desk just outside the door to complete the last step for the day. The E then took each S into the hall one at a time and gave them a "Group Transfer Form" (see Appendix B), explaining

that the S should put a check on the appropriate line.
(See Appendix C for specific instructions given for the
Group Transfer Form.)

When the S completed the form she was told that
she had just completed the last session of the research
(each S previously thought there would be a 3rd session)
and advised of the time and place of the debriefing
session. Each S was then thanked for her participation
and excused. This procedure was followed for each indi-
vidual S (see Appendix C for specific operation).

Debriefing

A debriefing session was held two weeks after the
completion of the research. At the beginning of the
session subjects were asked if they knew what the research
was about (none did), and what they thought about it.
Questions were asked for and answered. A description of
the entire project was given along with the announcement
of the winners of the $15.00 prize (a team chosen at
random) and Ss were thanked again.

Chapter III

RESULTS

The Dependent Measures of Cohesiveness

As described above, two measures were used in
order to determine the effects of interpersonal attrac-
tion and goal-path clarity on small group cohesiveness.
The first measure was a behavioral test in which subjects
were given the choice of staying in their group or chang-
ing to another one. This was thought to be a direct test
of the cohesiveness of a group, in that, if cohesiveness
is the resultant of all forces working on members to re-
main in the group, then choosing not to remain would be
the most appropriate measure of the phenomenon. Thus,
the unit of analysis is the group, the behavioral test is
the number of groups disrupted by at least one person
choosing to leave the group. This measure was only used
after the second session and is seen as the major test
of the hypothesis of the conditions that contribute sig-
nificantly to the cohesiveness of task-oriented groups.
The second measure was a subjective perception test of

cohesiveness. This measure was contained as a subscale of the questionnaire and was utilized after both the first and second sessions. The analysis of these data used groups within conditions as the error term, since, as with the analysis of the interpersonal liking scores obtained after the first session, preliminary tests indicated that this nested factor was significant (p < .05) for each dependent measure.

Tests of Hypothesis 1

Hypothesis 1 predicted that groups under clear goal-path conditions would experience significantly more cohesion than groups under unclear goal-path conditions. Data which examined this prediction are presented below.

Behavioral Test

To test Hypothesis 1, the number of groups in each condition of goal-path clarity that were disrupted by at least one member expressing a desire to leave the group was examined. Table 1 presents these data, which were subjected to a Fisher Exact Test. This analysis

revealed a significant difference (p = .009) between the clear goal-path and the unclear goal-path conditions. As predicted from Hypothesis 1, the number of groups disrupted by at least one person choosing to leave the group was significantly higher in the unclear goal-path than in the clear goal-path conditions.

TABLE 1

SUMMARY OF FISHER EXACT TEST ON BEHAVIORAL
MEASURE OF COHESIVENESS

	Goal-Path Clarity	
	Clear	Unclear
Groups Disrupted	3	11
Groups Not Disrupted	17	9

p = .009.

Subjective Perception Test

Examination of the subscales derived from the questionnaire administered after the second session tended to support the results of the behavioral data. Table 2 presents the relevant cell means for each of the dependent variables, and Table 3 presents the F values

for the main effects of goal-path clarity derived from the analyses of variance that were performed on these data. Table 2 indicates that the means were in the predicted direction for all six dependent measures (p < .02; binomial test) and Table 3 shows that two of these differences--for interpersonal liking and general satisfaction--were of sufficient magnitude to yield marginally significant (p < .10) main effects. Thus, Hypothesis 1 received some support from both the behavioral and subjective perception dependent measures.

TABLE 2

MEAN QUESTIONNAIRE RESPONSES
RELEVANT TO HYPOTHESIS 1

Dependent Measure	Goal-Path Clarity	
	Clear	Unclear
Cohesion	5.28	4.92
Interpersonal Liking	6.26	5.88
Satisfaction		
General	6.12	5.16
Leadership/Atmosphere	5.74	5.71
Task Performance	5.80	5.41
Interaction	6.18	5.94

TABLE 3

SUMMARY OF ANALYSES OF VARIANCE
EFFECT (df = 1/36) RELEVANT TO
GOAL-PATH CLARITY

Dependent Measure	Goal-Path Clarity Main Effects F Values
Cohesiveness	2.78
Interpersonal Liking	2.88*
Satisfaction	
General	3.99**
Leadership/Atmosphere	.421
Task Performance	.579
Interaction Quality	1.32

*p < .10.
**p < .10.

Tests of Hypothesis 2

Hypothesis 2 predicted that in task-oriented groups, interpersonal attraction would have a minimal overall effect on level of cohesion and that any effect of interpersonal attraction would occur under conditions of a clear goal-path. Data which examined these predictions are presented below.

Behavioral Test

To test Hypothesis 2, the number of groups, in each condition, that were disrupted by at least one member expressing a desire to leave the group was examined. Table 4 presents these data, which also were subjected to a Fisher Exact Test. This analysis revealed no significant differences between the high and low interpersonal attraction conditions. Contrary to Hypothesis 2, however, the effect of interpersonal attraction on cohesiveness was not substantially stronger under the clear goal-path condtion than under the unclear condition.

TABLE 4

SUMMARY OF FISHER EXACT TEST ON
BEHAVIORAL MEASURE OF COHESIVENESS

| Interpersonal Attraction | Goal-Path Clarity | | | |
| | Clear | | Unclear | |
	Groups Disrupted	Groups Not Disrupted	Groups Disrupted	Groups Not Disrupted
High	2	8	5	5
Low	1	9	6	4

Subjective Perception Test

Examination of the subscales derived from the
questionnaire administered after the second session
tended to support the results of the behavioral data.
Table 5 presents the relevant cell means for each of the
dependent variables, and Table 6 presents the F values
for the main effects of interpersonal attraction and
goal-path clarity by interpersonal attraction interac-
tions derived from the analyses of variance that were
performed on these data. Table 5 indicates that under
clear goal-path conditions only one mean is slightly in
the predicted direction while all other means are the
same or in a direction opposite to that which would be
predicted from hypothesis 2. Under unclear goal-path
conditions, none of the means are in the predicted di-
rection. However, it can be noted that the means are
slightly higher under clear goal-path conditions.
Table 5 indicates that interpersonal attraction did not
affect the subjects' desire to leave the group, irre-
spective of the condition of goal-path clarity, nor did
it interact with goal-path clarity on any of the depen-
dent measures. Thus, the general premise that attraction

would be less influential than clarity in task-oriented

groups was supported, although the second part of hypoth-

esis 2 was not.

TABLE 5

QUESTIONNAIRE RESPONSE MEANS RELATED
TO HYPOTHESIS 2

Interpersonal Attraction	Goal-Path Clarity	
	Clear	Unclear
Cohesiveness		
High	5.28	4.80
Low	5.28	5.05
Liking		
High	6.26	6.26
Low	6.26	5.99
General Satisfaction		
High	6.11	5.30
Low	6.13	5.92
Leadership/Atmosphere Satisfaction		
High	5.75	5.58
Low	5.73	5.83
Task Performance Satisfaction		
High	5.74	5.07
Low	5.87	5.75
Quality Satisfaction		
High	6.11	5.75
Low	6.22	6.13

TABLE 6

SUMMARY OF ANALYSIS OF VARIANCE EFFECTS
(df = 1/36) RELEVANT TO
INTERPERSONAL ATTRACTION

Dependent Measure	Interpersonal Attractions Main Effects	Goal-Path Clarity X Interpersonal Attraction Interactions
Cohesiveness	.33	.33
Interpersonal Liking	.24	.27
Satisfaction		
General	1.54	1.39
Leadership/Atmosphere	.24	.21
Task Performance	.61	.28
Interaction Quality	1.23	.50

Chapter IV

DISCUSSION

The results of this study certainly lend support

to the conceptualization of group cohesiveness advanced

by Festinger et al. (1950). As they present the concept,

they distinguish two classes of forces working on an

individual to remain in a group, those of the individual

and those of the group. This research was designed to

allow a determination of the significance of goal-path

clarity to the concept of small group cohesiveness.

Hypothesis 2 proposed that the effects of interpersonal

attraction on group cohesiveness would be mediated by

the effects of goal-path clarity. This result would have

established the centrality of the group property goal-

path clarity, to the concept of cohesiveness in task-

oriented groups, irrespective of the presence and strength

of other relevant variables. However, the lack of any

statistically significant interactions between the two

independent variables examined in the present research

does indicate that the two classes of forces do in fact

effect group cohesiveness quite independently and that

goal-path clarity cannot be considered as a singular

determinant of group cohesiveness.

Although this investigator reasoned that goal-

path clarity exists in a linear relationship with group

cohesiveness, the inadequacy of this assumption is re-

flected in a position advanced by Libo (1953). Libo

maintains that

> cohesiveness is a concept specifying a phe-
> nomenon that exists if and only if the group
> exists. Yet a totalling of individual needs,
> preferences, or predispositions which derive
> from individual personality structure or
> from interaction with objects other than the
> group, and which are present regardless of
> the existence of the group, cannot define
> group cohesiveness. Nor can a descriptive
> statement about certain group properties,
> such as structure, goals, or activities
> define cohesiveness if it takes no account
> of the significance of these properties for
> the members.

Therefore, he maintains, that the cohesiveness phenomenon

involves a personally meaningful individual-object rela-

tionship. It cannot be defined in terms of one or the

other alone. It seems then that Libo is correct in

assuming that cohesiveness is a phenomenon which requires

a combining of both individual and group variables.

The results of this research does not refute the hypothesized existence of two independent classes of forces which act on the individual to remain in a group. These results, however, suggest that one class of forces, particularly, goal-path clarity, may be dominant in determining group cohesiveness in task-oriented groups.

The Dominance of Goal-Path Clarity In Determining Group Cohesiveness

The results of this study clearly indicate that the level of cohesiveness of a task-oriented group is a function of goal-path clarity. As predicted from Hypothesis 1, the number of groups disrupted by at least one person leaving, was significantly more for groups with an unclear goal-path than groups with a clear goal-path. These differences were consistent across conditions of interpersonal attraction. Furthermore, these results suggest that the effects of interpersonal attraction are less salient to group cohesiveness than are the effects of goal-path clarity in task-oriented groups. In a task group, the situation of not knowing precisely where the

group is going and how it is to get there is extremely
disruptive to the effective functioning and survival of
that group.

A possible explanation of this phenomenon could
be the amount of tension or anxiety experienced by group
members. For example, Horwitz (1953) showed that tension
of individual members of a group depended on the loca-
tion of the group relative to its goal. The further away
the group was from its goal, the more tension they exper-
ienced. When a group is not able to locomote toward its
goal, owing to disagreement as to the proper path to
that goal, tension in that group will be high.

The tension in a group caused by an ambiguous
goal-path situation can become a very serious threat to
that group's cohesion, because the ambiguity in the
procedure for solving the task can not be tolerated.
One of the primary antecedents in the intolerance of
ambiguity, according to most theoretical personality
formulations, is anxiety or threat. That this holds for
ambiguous task situations as well is supported in a
study by Smock (1955). He concluded, in brief, after
testing subjects under stressful and nonstressful task
conditions, that the individual under psychological

stress or anxiety is likely to be intolerant of ambi-
guity. Therefore, the tension must be reduced and only
two options are open to the individual. Classical drive
theory would maintain that an individual in a tension-
producing situation can only attack the source or remove
himself from the situation. In a group situation this
can lead to the same options; an expression of hostile
or aggressive behavior or withdrawal from the group.
When given the choice withdrawal was the obvious choice
in this study.

The indirect measure of cohesiveness (the sub-
jective perception test) does not completely support the
foregoing results and assumptions. However, a weak trend
was detected in the predicted direction. This is, pos-
sibly, a result of the lack of refinement of the instru-
ment used to measure cohesiveness. Given the small
sample size of this study and the possibly insensitive
nature of the questionnaire, these results could be
interpreted as relatively moderate support under these
conditions. Thus, it can be concluded that when several
courses of action exist that a task-oriented group may
follow to reach its goal, disruptive disagreement, ten-
sion, hostility, and withdrawal are all possible outcomes

of the situation. These conditions apparently outweigh any positive effects of interpersonal attraction in determining the degree of cohesiveness experienced by a task-oriented group.

Interpersonal Liking: A Function of Value Similarity and Goal-Path Clarity

Members of high similar groups liked one another significantly more than did members of low similar groups in the first session as the members were coming to know one another. However these effects of similarity on liking were not present after the second session, as no significant difference between high similar groups and low similar groups were found. Interpersonal liking is more clearly differentiated when viewed from a perspective of goal-path clarity. The results clearly indicate that a group will experience more interpersonal liking under conditions of a clear goal-path than under those of an unclear goal-path. If these findings are considered together they suggest that while value similarity can determine liking, its effects can be modified by the

conditions of the group's goal-path and the extent to which its purpose is task-oriented.

For reasons mentioned in the preceding section an unclear goal-path creates circumstances that are not conducive to an increase in interpersonal liking. If ambiguity and feelings of tension and hostility can be associated with interaction one has with the other group members, then certainly any positive regard initially experienced toward these people will diminish. However if these perceptions of ambiguity and feelings of tension and hostility are not present, further interaction with these same people should permit positive regard to increase.

The Effects of Interpersonal Attraction and Goal-Path Clarity on Various Measures of Satisfaction

Generally, the results obtained on the satisfaction measures only slightly supported the hypothesis that various aspects of satisfaction with group are logical consequences of group cohesiveness. Results indicate that interpersonal attraction does not differentially

affect any of the four measures of satisfaction with the group. Furthermore, satisfaction seems to be only marginally affected by goal-path clarity. Of the four measures taken, on only one, general satisfaction, was a near significant results obtained. This would indicate that there is a strong trend for members of task-oriented groups with a clear goal-path to have a higher amount of general satisfaction with the group than for members of unclear goal-path groups. Therefore, it can be concluded from these results that interpersonal attraction and goal-path clarity have very little to do with the amount of satisfaction experienced by the members of a task group as measured in this study.

It must be recognized in this context though that only limited aspects of satisfaction were examined. Inspection of the items contained in the factors indicate that such areas as perceived success or failure on the task and expressed satisfaction with the task or goal of the group were not included among the items. Therefore, the generalizability of the results are somewhat restricted.

Implications

Theoretical. As previously stated, Festinger

et al. have defined cohesiveness as the resultant of

forces acting on group members to keep them in the group.

These forces are said to stem from the sources of at-

traction within the group which are, primarily, the group

activities, and from the members themselves. Cohesive-

ness, therefore, is said to refer to the general degree

of attractiveness of a group to its members.

This definition has been widely accepted in the

body of research in the area of cohesiveness. Although

this definition is general, the operationalization and

measurement of group cohesiveness has been, for the most

part, quite focused. The assumptions underlying this

focus is well represented by Lott (1961). She maintains

that

> regardless of the unique group properties in
> terms of which groups may be described, a
> group is inescapably made up of individuals.
> It is suggested, therefore, that when we
> speak of a group as being attractive, we
> are refering actually to the attractiveness
> of the members of the group. The possibil-
> ity that individuals are attracted to a
> group's activities or aims, etc. is not
> denied but, since it is the members of a
> group who perform the activities, who ver-
> balize the aims, etc., it is possible that

a high positive correlation will exist be-
tween attraction to members and to activi-
ties, etc., and that attraction to members
is the most general factor in attraction
to, "or cohesiveness of" the group [p. 278].

Although the above view is seldom made explicit,
it is clearly implied by the fact that sociometric de-
vices, which measure attraction to individuals, are the
most frequently utilized measures of group cohesiveness.
Also, the most popular technique for manipulating group
cohesiveness, when it is treated as an independent var-
iable, is to assure individuals who are slated for high
cohesive groups that they will find their fellow group
members congenial, that they will like them, get along
with them, etc.

The results of this study, however, throws these
techniques and the assumption that interpersonal liking
is a primary determinant of cohesivenss into question.
Two results should be considered here. First, groups
that experienced a high amount of interpersonal liking
were identical to groups that experienced a low amount
of interpersonal liking in terms of the number of groups
disrupted by at least one person leaving. If this is
considered to be a valid measure of cohesiveness then
interpersonal liking has nothing to do with group

cohesiveness. Consider further that the introduction of
an unclear goal-path to groups high on interpersonal lik-
ing caused a decrease in the mean level of liking exper-
ienced in these groups. Second, consider that a very
strong trend existed for groups with a clear goal-path
to be consistently higher on cohesiveness, interpersonal
liking, and general satisfaction than groups with an
unclear goal-path.

These results, taken together, indicate that
goal-path clarity plays a very important role in the
determination of cohesiveness in task-oriented groups.
Although this conclusion, at first, may seem surprising
and contrary to a great deal of research in this research
area, it is not. The relationships derived from this
study were, in the past, difficult to see because most
researchers had restricted their examinations to groups
that were low on task-orientation. Most researchers
(e.g. Libo, 1953; Festinger, 1952; Berkowitz, 1956 and
1957) have been concerned with friendship groups and
those who were not (e.g. Schachter et al., 1951; Berko-
witz, 1954; Back, 1950; Exline, 1957) used no direct
measures of cohesiveness. (It should be noted that even
those concerned with friendship groups, with the

exception of Libo, used nondirect measure of cohesive-ness.) Therefore, the differential importance of inter-personal attraction and the group property of goal-path clarity on task-oriented groups was never examined di-rectly.

Certainly this is not to say interpersonal at-traction is not important to group cohesiveness. Inter-personal attraction has been demonstrated to be very important to the cohesiveness of friendship groups where people have come together for socio-emotional support and consensual validation of the world. However, as was previously assumed, the centrality of interpersonal attraction to group cohesiveness does not apply to all groups. When there is a task to be performed, only variables relevant to the successful completion of the task are relevant. Therefore, it can be assumed that the only reason researchers have found significance for interpersonal attraction in task-oriented groups is because there was little task-related tension in the group, this being a result of having a clear goal-path.

Unfortunately, the results of the present study are not clear on the question of how these two variables combine into a single resultant force. Given that both

variables or classes of variables, are important and independent the results reported here can only lead to a hypothesis of circular causation. That is, in concurrence with Libo, group cohesiveness can not be considered in the light of only one class of variables. It must be considered in recognition of both classes. It appears that one class may give rise to some aspect of the other class and that together they result in a very cohesive group. To illustrate, a group which has a clear goal-path from the outset may now be open to interact more freely and with fewer negative feeling toward one another. Under these circumstances positive feelings about other group members are permitted to develop thus improving the cohesiveness of the group. The opposite is also true, i.e., given positive feeling toward other group members, the establishment and locomotion toward a goal will occur with less friction giving rise to greater cohesiveness.

Certainly more research is needed in this area, because the present study does not answer many of the questions proposed by a person interested in the determinants of cohesiveness. However, it does establish the possibility that group properties, particularly goal-path

clarity, deserve more attention in developing an under-

standing of the phenomenon of cohesiveness in task-oriented

groups. The present study also strongly indicates that

interpersonal attraction is not central to the cohesive-

ness of all groups, and further research is needed to

define more clearly the conditions under which it is im-

portant.

REFERENCES

REFERENCES

Altman, I. & McGinnies, E. Interpersonal Perception and
        Communication in discussion groups of varied
        attitutional composition. Journal of Abnormal
        and Social Psychology, 1960, 60, 390-395.

Back, K. Influence through social communication. Jour-
        nal of Abnormal and Social Psychology, 1951, 46,
        9-23.

Broxton, June. A Method of predicting roommate compati-
        bility for college freshmen. Journal of the
        National Association of Women Deans and Coun-
        selors, 1962, 25, 169-174.

Byrne, D. & Wong, T. J. Racial Prejudice, interpersonal
        attraction, and assumed dissimilarity of atti-
        tude. Journal of Abnormal and Social Psychology,
        1962, 65, 253-264.

Cartwright, D. & Zander, A. Group Dynamics: Research
        and Theory. (2nd ed.) Evanston, Ill.: Harper
        & Row, 1960.

Cartwright, D. & Zander, A. Group Dynamics: Research
        and Theory. (3rd ed.) Evanston, Ill.: Harper
        & Row, 1968.

Deutach, M. The effects of cooperation and competition
        upon group process. Human Relations, 1949, 2,
        129-152 and 199-231.

Eisman, Bernice. Some operational Measures of cohesive-
        ness and their interaction. Human Relations,
        1959, 12, 183-189.

Festinger, L. Informal social communication. Psycholog-
        ical Review, 1950, 57, 271-282 (a).

80

Festinger, L. Laboratory experiments: The role of group belongingness. In J. G. Miller (Ed.), Experiments in social process. New York: McGraw-Hill, 1950. pp. 31-46 (b).

Festinger, L. Group attraction and membership. In D. Cartwright and A. Zander (Eds.), Group Dynamics: Research and Theory. Evanston, Ill.: Row, Peterson, 1953.

Festinger, L. A theory of social comparison processes. Human Relations, 1954, 7, 117-140.

Festinger, L., Schachter, S., Back, K. Social Pressures in Informal Groups. New York: Harper, 1950.

Festinger, L., Gerard, H., Hymovitch, B., Kelley, H., & Raven, B. The influence process in the presence of extreme deviates. Human Relations, 1952, 5, 327-346.

French, J. R. P., Jr. The disruption and cohesion of groups. Journal of Abnormal and Social Psychology, 1941, 36, 361-377.

Gross, E. Symbiosis and consensus as integrative factors in small groups. American Sociology Review, 1956, 21, 174-179.

Hammond, K. R. New Directions in Research and Conflict Resolution. Journal of Social Issues, 1965, 21, No. 3, pp. 44-66.

Horwitz, M. The Recall of Interrupted Group Tasks: An Experimental Study of Individual Motivation in Relation to Group Goals. Human Relations, 1954, 7, 3-38.

Jones, E. E., & Daughterty, B. N. Political orientation and the perceptual effects of an anticipated interaction. Journal of Abnormal and Social Psychology, 1959, 59, 340-349.

Korten, D. C. Situational determinants of leadership structure. The Journal of Conflict Resolution, 1962, 6, 222-235.

Lazarafeld, P. R., & Merton, R. K. Friendship as social process: A substantive and methodological analysis. In M. Berger, T. Abel, & C. H. Page (Eds.), Freedom and Control in Modern Society. New York: Van Nostrand, 1954, pp. 18-66.

Lewin, K. Field Theory in Social Science. New York: Harper, 1959.

Lott, A. J., & Lott, Bernice E. Group cohesiveness, communication level and conformity. Journal of Abnormal and Social Psychology, 1961, 62, 408-412.

Lott, Bernice E. Group cohesiveness: A learning phenomenon. Journal of Social Psychology, 1961, 55, 275-286.

Lott, Bernice E., & A. J. The formation of positive attitudes toward group members. Journal of Abnormal and Social Psychology, 1960, 61, 297-300.

March, J. G., & Simon, H. A. Organizations. New York: Wiley, 1958.

Marks, J. B. Interests and group formation. Human Relations, 1959, 12, 385-390.

Newcomb, T. M. An approach to the study of communicative acts. Psychological Review, 1953, 60, 393-404.

Newcomb, T. M. The prediction of interpersonal attraction. American Psychology, 1956, 11, 575-586.

Newcomb, T. M. The cognition of persons as cognizers. In R. Tagiuri & L. Petrullo (Eds.), Person Perception and Interpersonal Behavior. Stanford, Calif.: Stanford University Press, 1958. pp. 179-190.

Newcomb, T. M. Varieties of interpersonal attraction.
    In D. Cartwright & A. Zander (Eds.), Group
    Dynamics: Research and Theory. (2nd Ed.)
    Evanston, Ill.: Harper, Row, 1960.

Newcomb, T. M. The Acquaintance Process. New York:
    Holt, Rinehart & Winston, 1961.

Ramuz-Nienhuis, Wilhelmia & Van Bergen, Annie. Relations
    between some components of attraction-to-group:
    A replication. Human Relations, 1960, 13, 271-277.

Rappaport, L. Interpersonal conflict in non-competitive
    and uncertain situations. Journal of Experimental
    Social Psychology (in press).

Raven, B. H. & Rietsema, J. The effects of varied clarity
    of group goal and group path upon the individual
    and his relations to his group. Human Relations,
    1957, 10, 29-44.

Reilly, Mary St. Anne, Commins, W. D., & Stefic, E. C.
    The complementarity of personality needs in
    friendship choice. Journal of Abnormal and
    Social Psychology, 1960, 61, 292-294.

Rokeach, M. The Open and Closed Mind. New York: Basic
    Books, 1960.

Schachter, S. The Psychology of Affiliation. Stanford:
    Stanford University Press, 1959.

Schachter, S., Ellerlon, N., McBride, Dorothy & Gregory,
    Dorris. An experimental study of cohesiveness
    and productivity. Human Relations, 1951, 4,
    229-238.

Shelly, H. P. Focused leadership and cohesiveness in
    small groups. Sociometry, 1960, 23, 209-216.

Smith, A. J. Perceived similarity and the projection of
    similarity: The influence of valence. Journal
    of Abnormal and Social Psychology, 1958, 57,
    376-379.

Smock, C. D. The influence of stress on the intolerance of Ambiguity. Journal of Abnormal and Social Psychology, 1955, 50, 177-182.

Thibaut, J. W. An experimental study of the cohesiveness of underprivileged groups. Human Relations, 1950, 3, 251-273.

Thibaut, J. W., & Kelley, H. H. The social Psychology of Small Groups. New York: Wiley, 1959.

Torrance, E. P. The Behavior of small groups under stress conditions of survival. American Sociological Review, 1954, 19, 751-755.

Weitz, J. Job expectancy and survival. Journal of Applied Psychology, 1956, 40, 245-247.

APPENDICES

APPENDIX A

SPECIFIC GROUP COMPOSITION

WITH CUT-OFF SCORES

SPECIFIC GROUP COMPOSITION WITH CUT-OFF SCORES

The cut-off scores were based on the national average of college females as reported in the Allport-Vernon-Lindzey (1960) Testing Manual. From this source, it was determined that a score on one of the values could be considered definitely high or low if it fell outside the following limits. Theoretical: 31-41, Social: 37-47, and Religious: 37-50.

The following presents the specific composition of each of the experimental groups based on theoretical, social and religious values presented in that order.

HIGH VALUE SIMILARITY GROUPS

GROUP 1	GROUP 5	GROUP 9	GROUP 13	GROUP 17
H M L	L M H	M H L	H L M	H M L
H M L	L H H	M H L	H L M	H M L
H M L	L H H	M H L	H L M	H M L

GROUP 2	GROUP 6	GROUP 10	GROUP 14	GROUP 18
L H M	M H L	M H L	H M L	H M L
L H M	M H L	M H L	H M L	H M L
L H M	M H L	M H L	H M L	H M L

GROUP 3	GROUP 7	GROUP 11	GROUP 15	GROUP 19
L H M	M H L	M H H	H M L	H M L
L H M	M H L	M H H	H M L	H M L
L H M	M H L	M H H	H M L	H M L

GROUP 4	GROUP 8	GROUP 12	GROUP 16	GROUP 20
L H L	M H L	M H H	H M L	H M L
L H M	M H L	M H H	H M L	H M L
L H M	M H L	M H H	H M L	H M L

LOW VALUE SIMILARITY GROUPS

GROUP 1	GROUP 5	GROUP 9	GROUP 13	GROUP 17
H H H	L H L	H L L	H L L	H M L
M M M	M M H	M L M	M H M	M L M
L L L	H L M	M H M	H M L	M H M

GROUP 2	GROUP 6	GROUP 10	GROUP 14	GROUP 18
L H L	M H M	M M H	L H H	M M M
M M H	H MM M	L L M	H M L	H L L
H M M	M L M	H H M	M L M	M H H

GROUP 3	GROUP 7	GROUP 11	GROUP 15	GROUP 19
M M H	M H M	M M M	M M M	H M L
H M M	H M M	M H M	L H H	L L M
M H L	L H H	H H L	H M L	M H H

GROUP 4	GROUP 8	GROUP 12	GROUP 16	GROUP 20
M H M	L H M	M M H	M H M	M M H
H L M	H M M	M L L	H L L	L H L
H M M	M L L	L H M	MM M H	H L M

APPENDIX B

FACTOR LOADING

MEMBER REACTION QUESTIONNAIRE

GROUP TRANSFER FORM

FACTOR LOADINGS

COHESIVENESS
FACTOR 1 LOADINGS

QUESTION #20.	0.6605
22.	0.6183
23.	0.7200
24.	0.5038
27.	0.5936

INTRINSIC LIKING--SOCIOMETRIC RATINGS
FACTOR 2 LOADINGS

QUESTION # 6.	0.7673
	0.7837
14.	0.6440
15.	0.7919
17.	0.7888
26.	0.6908

SATISFACTION
FACTOR 3 LOADINGS (GENERAL SATISFACTION)

QUESTION # 3.	0.5641
7.	0.4024
8.	0.5377
9.	0.4065
13.	0.4349
28.	0.5137

FACTOR 4 LOADINGS (GENERAL ATMOSPHERE AND
LEADERSHIP SATISFACTION)

QUESTION # 2.   0.5221

          4.   0.6280

         10.   0.7265

         11.   0.6757

         13.   0.4119

FACTOR 5 LOADINGS (TASK SATISFACTION)

QUESTION # 8.   -0.4826

          1.   -0.6463

          9.   -0.7284

         12.   -0.7341

         16.   -0.6642

         19.   -0.7047

         28.   -0.6294

FACTOR 6 LOADINGS (INTERACTION SATISFACTION)

QUESTION # 7.   0.6034

          8.   0.4460

         18.   0.6443

         21.   0.6344

MEMBER REACTION QUESTIONNAIRE

Directions: We are interested in your reactions to being a member of
this group. Please read each question carefully and rate
your reaction on the scales by placing a check on the
line below each question.

On this questionnaire the response alternatives are as
follow:

1 - Strongly disagree
2 - Moderately disagree
3 - Slightly disagree
4 - Neither agree or disagree
5 - Slightly agree
6 - Moderately agree
7 - Strongly agree

1. This group made the best use of its time solving the task.

```
    1       2       3       4       5       6       7
    |       |       |       |       |       |       |
    |_____|_____|_____|_____|_____|_____|
  St.D.   Md.D.   Sl.D.   Neither   Sl.A.   Md.A.   St.A.
                          agree nor
                          disagree
```

2. I felt tense and uncomfortable in this group.

```
    1       2       3       4       5       6       7
    |       |       |       |       |       |       |
    |_____|_____|_____|_____|_____|_____|
  St.D.   Md.D.   Sl.D.   Neither   Sl.A.   Md.A.   St.A.
                          agree nor
                          disagree
```

3. There was much disagreement among the members of the group.

```
    1       2       3       4       5       6       7
    |       |       |       |       |       |       |
    |_____|_____|_____|_____|_____|_____|
  St.D.   Md.D.   Sl.D.   Neither   Sl.A.   Md.A.   St.A.
                          agree nor
                          disagree
```

4. Some people in the group talked too much.

```
    1       2       3       4       5       6       7
    |       |       |       |       |       |       |
    |_____|_____|_____|_____|_____|_____|
  St.D.   Md.D.   Sl.D.   Neither   Sl.A.   Md.A.   St.A.
                          agree nor
                          disagree
```

5. I talked too much.

```
    1       2       3       4       5       6       7
    |       |       |       |       |       |       |
    |_____|_____|_____|_____|_____|_____|
  St.D.   Md.D.   Sl.D.   Neither   Sl.A.   Md.A.   St.A.
                          agree nor
                          disagree
```

89

6. Below there are three scales, one for each member of the group. Please rate each member, excluding yourself, on the scale as to how much you like or dislike them.

(a)
```
     1          2          3          4          5          6          7
     |_____|_____|_____|_____|_____|_____|
  Do not     Md.D.     Dislike   Neither    Like      Md.like    Like
  like                 just a    like nor   just a               very
  at all               little    dislike    little               much
```

(b)
```
     1          2          3          4          5          6          7
     |_____|_____|_____|_____|_____|_____|
  Do not     Md.dis-   Dislike   Neither    Like      Md.like    Like
  like       like      just a    like nor   just a               very
  at all               little    dislike    little               much
```

(c)
```
     1          2          3          4          5          6          7
     |_____|_____|_____|_____|_____|_____|
  Do not     Md. dis-  Dislike   Neither    Like      Md.like    Like
  like       like      just a    like nor   just a               very
  at all               little    dislike    little               much
```

7. Considering the entire problem-solving session, my opinion was given adequate consideration by the other group members.

```
       1          2          3          4          5          6          7
       |_____|_____|_____|_____|_____|_____|
     St.D.      Md.D.      Sl.D.     Neither    Sl.A.      Md.A.      St.A.
                                    agree nor
                                    disagree
```
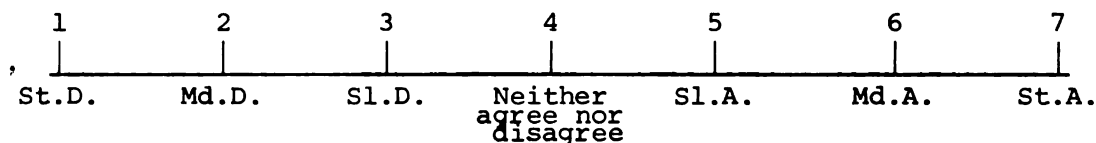
8. I was quite satisfied with being a member of this group.

```
       1          2          3          4          5          6          7
       |_____|_____|_____|_____|_____|_____|
     St.D.      Md.D.      Sl.D.     Neither    Sl.A.      Md.A.      St.A.
                                    agree nor
                                    disagree
```
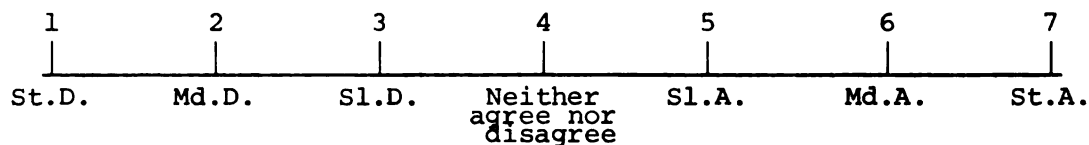
9. On a whole I was satisfied with this group's performance.

```
       1          2          3          4          5          6          7
       |_____|_____|_____|_____|_____|_____|
     St.D.      Md.D.      Sl.D.     Neither    Sl.A.      Md.A.      St.A.
                                    agree nor
                                    disagree
```
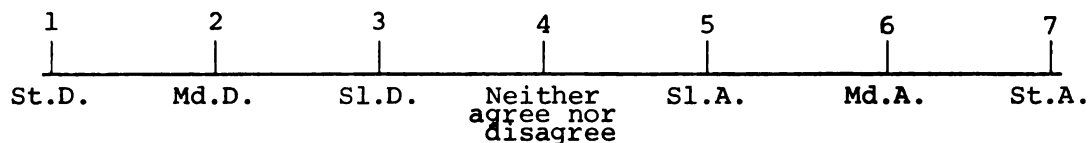
10. There was a definite leader in the group.

```
       1          2          3          4          5          6          7
       |_____|_____|_____|_____|_____|_____|
     St.D.      Md.D.      Sl.D.     Neither    Sl.A.      Md.A.      St.A.
                                    agree nor
                                    disagree
```
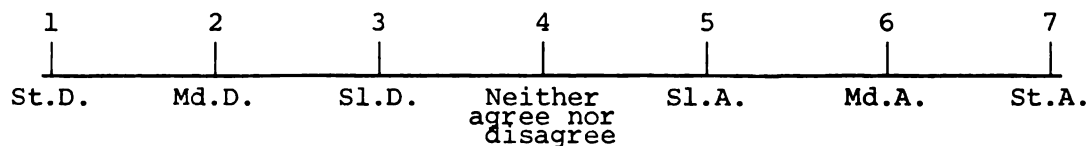
11. My group needed a strong leader to keep on the track.

```
    1         2         3         4         5         6         7
    |         |         |         |         |         |         |
St.D.    Md.D.     Sl.D.     Neither    Sl.A.     Md.A.     St.A.
                              agree nor
                              disagree
```
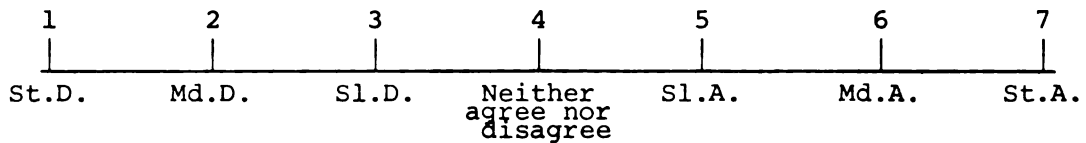
12. My group was creative on this task.

```
    1         2         3         4         5         6         7
    |         |         |         |         |         |         |
St.D.    Md.D.     Sl.D.     Neither    Sl.A.     Md.A.     St.A.
                              agree nor
                              disagree
```
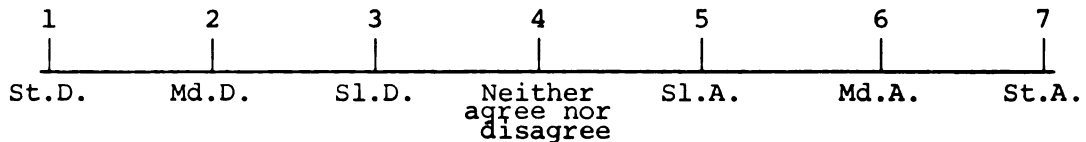
13. I felt inhibited from expressing my feelings during the group discussion.

```
    1         2         3         4         5         6         7
    |         |         |         |         |         |         |
St.D.    Md.D.     Sl.D.     Neither    Sl.A.     Md.A.     St.A.
                              agree nor
                              disagree
```
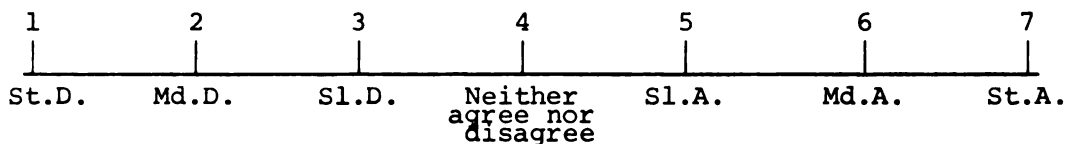
14. The atmosphere of this group was quite friendly.

```
    1         2         3         4         5         6         7
    |         |         |         |         |         |         |
St.D.    Md.D.     Sl.D.     Neither    Sl.A.     Md.A.     St.A.
                              agree nor
                              disagree
```
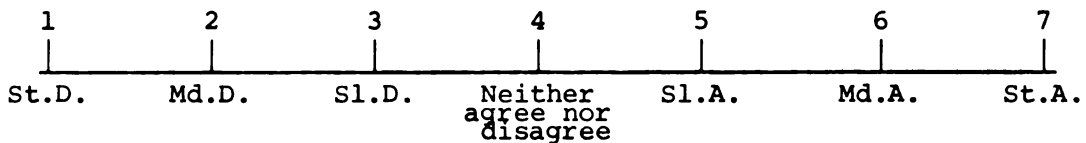
15. On the whole the members of this group were quite responsible.

```
    1         2         3         4         5         6         7
    |         |         |         |         |         |         |
St.D.    Md.D.     Sl.D.     Neither    Sl.A.     Md.A.     St.A.
                              agree nor
                              disagree
```
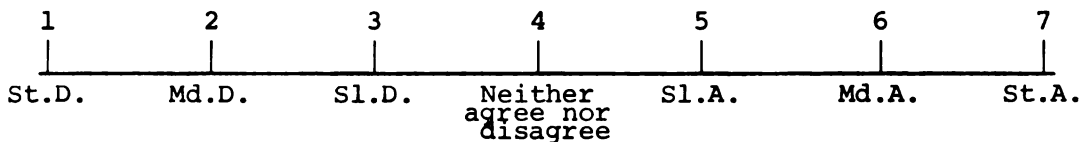
16. This group was organized well for the task we were to perform.

```
    1         2         3         4         5         6         7
    |         |         |         |         |         |         |
St.D.    Md.D.     Sl.D.     Neither    Sl.A.     Md.A.     St.A.
                              agree nor
                              disagree
```
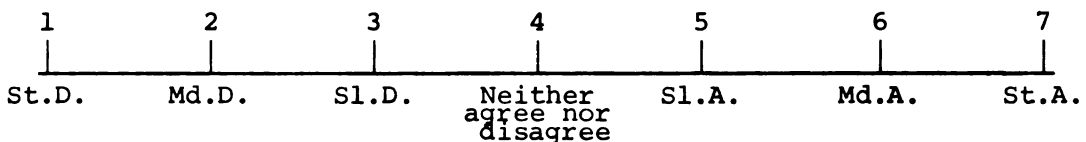
17. On a whole the members of this group were quite reliable.

```
    1         2         3         4         5         6         7
    |         |         |         |         |         |         |
St.D.    Md.D.     Sl.D.     Neither    Sl.A.     Md.A.     St.A.
                              agree nor
                              disagree
```
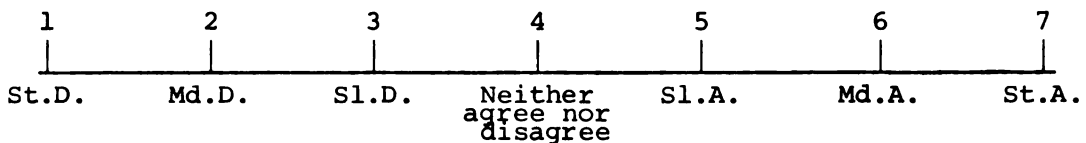
18. The group placed no restrictions on what or how much each member of the group could say.

```
       1        2        3        4        5        6        7
       |        |        |        |        |        |        |
     St.D.    Md.D.    Sl.D.    Neither  Sl.A.    Md.A.    St.A.
                              agree nor
                              disagree
```
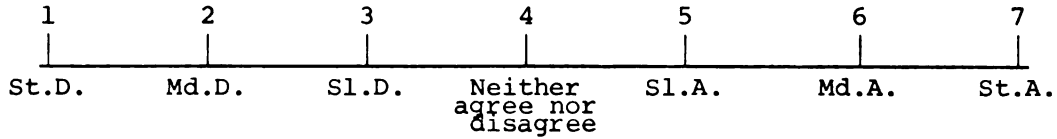
19. I think my group developed a high quality solution to this task.

```
       1        2        3        4        5        6        7
       |        |        |        |        |        |        |
     St.D.    Md.D.    Sl.D.    Neither  Sl.A.    Md.A.    St.A.
                              agree nor
                              disagree
```
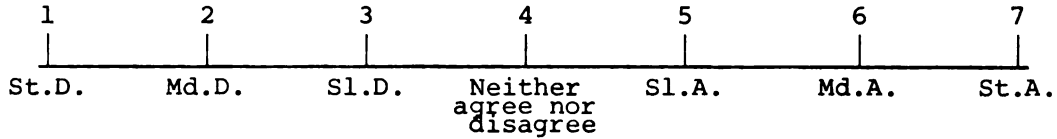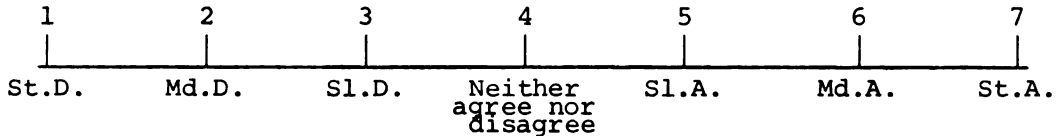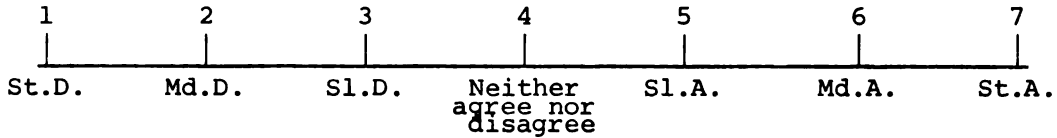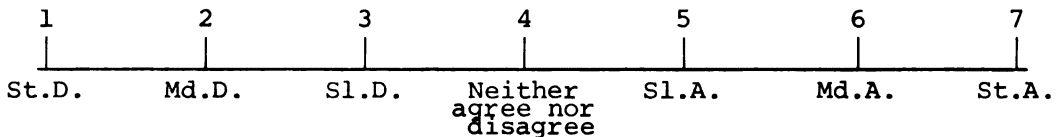
20. I had considerable influence in determining my group's final solution to the task.

```
       1        2        3        4        5        6        7
       |        |        |        |        |        |        |
     St.D.    Md.D.    Sl.D.    Neither  Sl.A.    Md.A.    St.A.
                              agree nor
                              disagree
```

21. On the whole I was satisfied with my performance in this group.

```
       1        2        3        4        5        6        7
       |        |        |        |        |        |        |
     St.D.    Md.D.    Sl.D.    Neither  Sl.A.    Md.A.    St.A.
                              agree nor
                              disagree
```

22. I felt a real sense of involvement with the group.

```
       1        2        3        4        5        6        7
       |        |        |        |        |        |        |
     St.D.    Md.D.    Sl.D.    Neither  Sl.A.    Md.A.    St.A.
                              agree nor
                              disagree
```
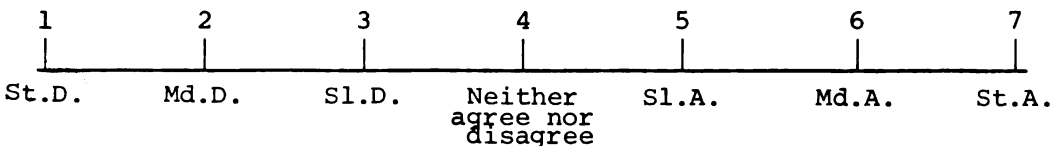
23. If I were taking part in another experiment, I would like working with these same women.

```
       1        2        3        4        5        6        7
       |        |        |        |        |        |        |
     St.D.    Md.D.    Sl.D.    Neither  Sl.A.    Md.A.    St.A.
                              agree nor
                              disagree
```
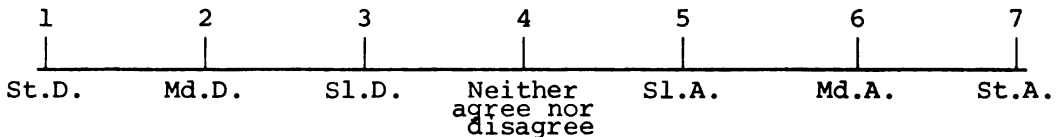
24. Rather than working as one unified group, it seemed the group worked in sub-groups or as individuals on this problem.

```
       1        2        3        4        5        6        7
       |        |        |        |        |        |        |
     St.D.    Md.D.    Sl.D.    Neither  Sl.A.    Md.A.    St.A.
                              agree nor
                              disagree
```

25. I was interested in the task this group performed during this session.

```
   1         2         3         4         5         6         7
   |         |         |         |         |         |         |
   |_____|_____|_____|_____|_____|_____|
 St.D.     Md.D.     Sl.D.     Neither   Sl.A.     Md.A.     St.A.
                               agree nor
                               disagree
```
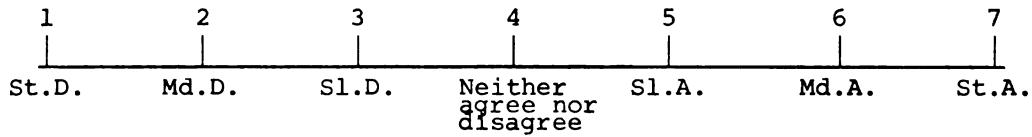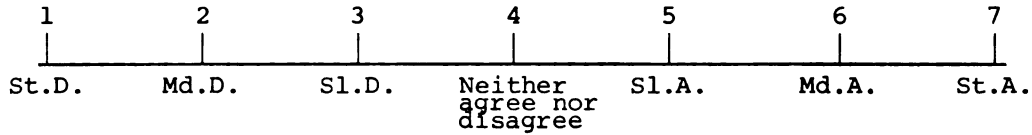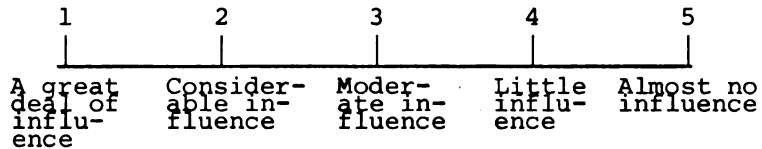
26. On the whole the members of the group seemed quite sincere.

```
   1         2         3         4         5         6         7
   |         |         |         |         |         |         |
   |_____|_____|_____|_____|_____|_____|
 St.D.     Md.D.     Sl.D.     Neither   Sl.A.     Md.A.     St.A.
                               agree nor
                               disagree
```

27. How much influence did the group have on your personal final ideas about what would be a good solution to the task?

```
   1         2         3         4         5
   |         |         |         |         |
   |_____|_____|_____|_____|
 A great   Consider- Moder-    Little    Almost no
 deal of   able in-  ate in-   influ-    influence
 influ-    fluence   fluence   ence
 ence
```

28. On a whole I was satisfied with the group's performance.

```
   1         2         3         4         5         6         7
   |         |         |         |         |         |         |
   |_____|_____|_____|_____|_____|_____|
 St.D.     Md.D.     Sl.D.     Neither   Sl.A.     Md.A.     St.A.
                               agree nor
                               disagree
```
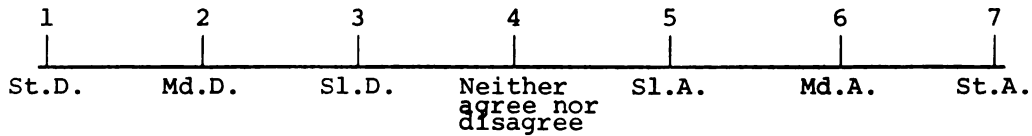
GROUP TRANSFER FORM

As you know this study involves a large number of people, each participating in a group. Some students have not been at all happy with their group. They have asked to be changed to another group where they might get along better with the other members and have a better chance of winning the prize. In these situations we have accomodated them. What we'd like to know now is since there are other group situations available as a result of these changes:

1) Would you like to change your group?

Yes_____   No_____

2) Who would you like to be with in the next group?

Person: A_____   B_____   C_____

APPENDIX C

EXPERIMENTER DUTIES, INSTRUCTION

SHEETS, AND TRAINING CARD

EXPERIMENTER DUTIES
Warm-Up Session

1. Report at least 15 min. before your first session.

2. As the S's arrive ask them to be seated and tell them the session will start as soon as everyone arrives.

3. When all S's are seated pass out the instruction sheet to each S. Pause then leave the room.

4. Return after 40 min. "Time is up, will you please conclude your discussion now."

    (a) Collect the instruction sheets.

    (b) "Now I have a short questionnaire that I would like you to complete."

    (c) Pass out MRQ and pencils.

    (d) When all S's have finished collect MRQ and pencils.

5. Collect all of the S's credits cards.

    "As you know this is a four-part experiment. At the end of the final session I will tell you what the research is about and answer any questions you might have regarding the study. At that time I will also return your cards with the full 6 credits. You will be contacted by telephone within one week to arrange for the next testing session. Do you have any questions? (Pause.) Thank you for coming and I'll be in touch."

INTRODUCTION TO INSTRUCTIONS
Warm-Up Session

I'm glad that all of you could come. I know you are all probably wondering about the purpose of the test you took last month. Well, we wanted to assemble groups based on those test scores and determine if there is a relationship between test performance and your performance in this group. I'll be glad to explain the exact relationship we are looking for at the conclusion of the study.

Now to get started. Here are your instructions for this session. (Pass them out.) Please read them to yourselves as I read them aloud. Are there any questions? Fine, then I will return in about 40 minutes. Turn on tape recorder and leave.

INSTRUCTION SHEET

The purpose of this part of the study is to find out how people communicate in a group of strangers. Please imagine that you are a panel of experts on the subject of Human Relations and that you are meeting today for the first time. Your agenda for today includes comprehensive discussions of the following issues: (1) Euthanasia (mercy killing), (2) Capital punishment (pro or con), and (3) the morality of war (to include the question of whether the taking of another life under circumstances of war, is murder or something else).

Since you anticipate working with this group for several meetings you are interested in finding out the views and opinions of your fellow group members. So, your task in this session is to get to know your fellow group members and for them to get to know you. Remember, this is a study of communication styles, so feel free to say or do whatever you please.

EXPERIMENTER DUTIES
(Session II)

1. At the beginning of the session say something like the following:

   "Today we are going to participate in a part of the study which I

   think you will find both interesting and perhaps profitable. Today

   you have an opportunity to win $5.00 apiece. But I'll tell you

   more about that later. I won't be able to tell you a great deal

   about the nature of the research at this time, but I will do so

   immediately after we have finished the study. I'll also be glad

   at that time to answer any questions you might have about it.

   Now to get started.

2. Pass out 1st instruction sheet. "Please read the instructions to

   yourselves while I read them aloud." Be sure to make appropriate

   jestures toward the training deck.

3. Demonstrate to the S's the exact procedure for going through the

   training deck and recording their predictions. Try to answer all

   of their questions and be sure they understand what's going on at

   this time. We want to try to eliminate any talking before the

   discussion phase. After the demonstration say the following: Now

   the task is designed so that completely accurate predictions on

   every trial are very unlikely. Therefore, you should not be

discouraged that you cannot predict the ratings perfectly. You will,

however, be able to come quite close on almost every trial when you

learn to use the information presented on the front correctly.

4. Give each S an answer sheet, a training deck and a pencil. Be sure

to remind them to sign their name on the answer sheet. Ask S's to

move to the desks. Then tell them: "You will have 40 minutes to

complete this part of the session. I will notify you when 20 minutes

have passed.

5. When 20 minutes have passed tell the S's: "20 minutes have passed

and you should be half finished now."

6. After 40 or 45 minutes tell them that time is up. Pass out the

second instruction sheet. "Please read the instructions to your-

selves while I read them aloud."

7. Pass out blank sheets of paper to each S. (Let them keep training

decks for now.)

8. Notify them when 5 minutes have passed.

9. Say: "Now will you move to this table for your group session. You

may leave your graphs and answer sheets at the desk. Remember you

are to make a joint decision on which facility to hold at a moderate

level as compared to the others. I'll return in 45 minutes for your

decision." (When you leave the room be sure to take the training decks with you.)

10. At the end of 45 minutes say, "the group discussion period has ended; will you please conclude now."

11. Collect all materials except the pencils and stack them somewhere.

12. Ask S's to move back to the desks, then pass out MRQ.

13. When the 1st S has finished the MRQ . . . (see next page).

14. With the door closed, prepare the room for the next set of S's.

INSTRUCTIONS
Behavioral Measure

13. When the first S finishes the MRQ, collect hers and say the following: "When you've completed the questionnaire can you come, one at a time, to the desk outside for the last step for today. This part will be brief and I'll be back for the next person in just a minute." (Point to the first S finished.) "Will you come first and bring your X (coat, purse, books or whatever.) (Motion her toward the door as you leave. When you are in the hall with the door closed behind you, give her a "Group Transfer Form" and say the following:) "Will you please read this and place a check on the appropriate lines." (When they have finished, say the following without even glancing at the form--I do not want them to think their response eliminated them from the research.) "This session was actually the last in the research and this is the last measure we will need. I realize that we misled you about there being another session but it was very important to the success of the research that we do so. I hope you don't mind. If you are interested in finding out exactly what the research is about, there will be an optional debriefing session held on May 24th in Room 455 Baker Hall. I'm sorry I can not tell you now. (Return their cards as you say:) Thank you very much for participating."

The purpose of this part of the study is to investigate decision-making communication patterns in small groups. Specifically it is directed toward studying how administrators reach decisions on the basis of information gathered from several similar sources.

Because this is a laboratory study, the decision in which you will be involved has been simplfied so that certain features of the decision process may be investigated in a relatively pure form--without the interference of various disturbing factors in the real world. Nevertheless, in order that the information obtained from the study is relevant, it is important that you treat the decision you will make as a real one and do the very best you can.

In this part of the study we are interested in learning how people put facts together, how they reach decisions on the basis of these facts, and the type of communication that goes on during the group decision-making process. This is fundamentally a study of decision-making and group communication patterns. Thus, we will first give you some background information to serve as a basis for your decision. Then you will be given an opportunity to put this information to work by making a group decision about a hypothetical situation.

All administrators need information regarding the specifics of their task. Ordinarily this information is accumulated over a fairly

long period of time. Because the amount of time we have is limited,

however, we have summarized all the information you will need to know to

make your decision in these decks of cards. The deck represents a sample

of universities throughout the country. Each one of the cards represents

one particular school in the nation. Each card has three bar-graphs on

the front of it which represents the amount of a given facility the dor-

mitories on that campus has. That is, it represents the make-up of the

dorms at one school in terms of the amount of each facility in all dorms

at that school. The numbers on the back represent how the dormitories

have been rated in terms of "their desirability as a total living/learning

situation." The ratings are based on the responses of students, faculty

and administrators from all over the country as reported in a recent

issue of the magazine "American Universities and Colleges."

Each of the three bar-graphs has 5 levels and two steps within

each level. One of these graphs provides information about educational

facilities, another about recreational facilities, and the third about

residential facilities. On the basis of this information, you are to

predict how the dorms are rated which is shown on the back. Now by

learning how the values on the graphs relate to the ratings on the back

you can learn how to correctly make predictions of those ratings and gain

the information for your future group decision. It may be, for example,

that only the educational facility graph is important for your predic-

tions and that the higher the values on this scale, the larger will be

the number on the back of the card. Or it may be that only the

recreational or residential facility graph is important and the others
should be ignored. It is also possible that some combination of the
three graphs must be used to make accurate predictions. Essentially,
your job here is to try to figure out a system, based on one, two or
all three of these things, that will enable you to make accurate pre-
dictions of the rating on the back of the cards. When you can do this
successfully, you will have become an "experienced" administrator in
that you will know all of the relevant information.

You should try to predict the rating on each trial (with each
card) and record your prediction on the answer sheet provided you. Then
you may turn to the back of the card so that you can see how accurate
your prediction was.

The prediction scale for rating an "optimal living/learning
dorm" is pictured on the following page and has 5 levels and 4 steps
within each level. You are to give your decisions in terms of both
the levels and the steps on the prediction scale.

You may have questions at this point but most of your questions
will be answered by working out a few examples. When you have gone
through the entire deck please look up at me. It is essential that you
understand the task.

4	
3	A (Good)
2	
1	
4	
3	B (Above Average)
2	
1	
4	
3	C (Average)
2	
1	
4	
3	D (Below Average)
2	
1	
4	
3	F (Bad)
2	
1	

Optimal Facilities for a Living/Learning Dorm

INSTRUCTIONS
2nd Part of II Session

Now that you have reviewed the graphs it should be evident that they indicate a good administrator will exercise a certain amount of control in planning a living/learning dorm. It seems that certain facilities can vary in amount without affecting the desirability of the dorm, while one type of facility must be strictly controlled for the dorm to receive a good rating.

Your task now is to plan and sketch a living/leraning dormitory. It is important that you decide and include in your plan, the most important facilities to control in terms of amount, in order to create the most ideal living/learning dorm possible.
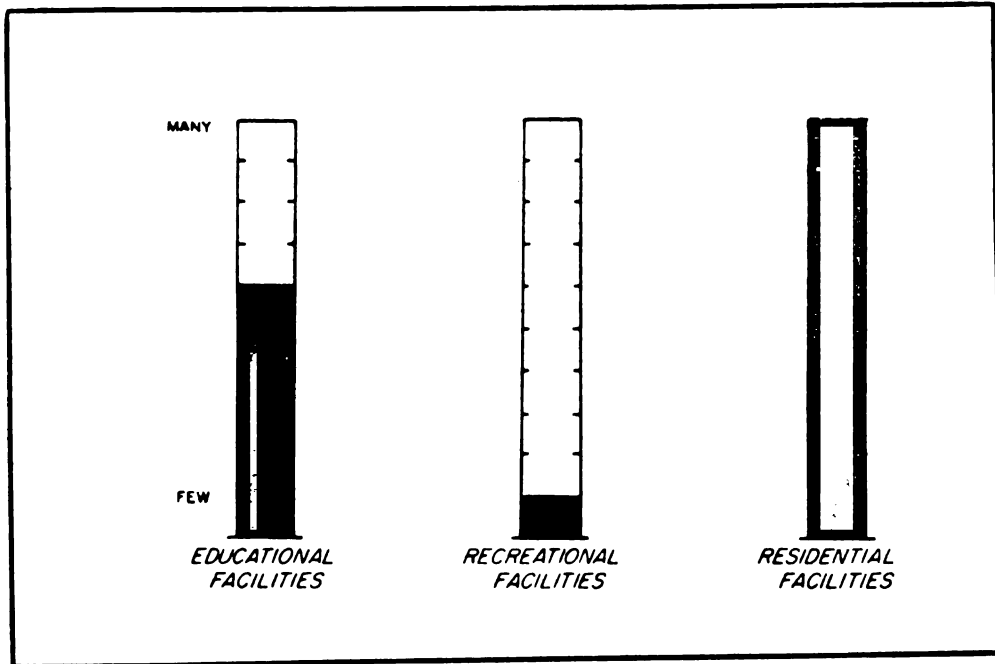
(1) First I would like for each of you to work privately on your plan for the ideal living/learning dorm. Please spend about 5 minutes on this.

(2) After you have had some time to gather your thoughts and do some preliminary planning, we are going to see if three heads are better than one. At that time you will all be working on a common plan. After each of you have done your private plan, you are to reach a joint decision on the plan you will use and what facilities you should keep within what certain limits. That is, I want you to agree on exactly how the dormitory should look. Then record your agreed-upon decision. And lastly make a brief rough sketch of the facility that should be strictly controlled. It is this joint decision that will count toward the prize. There is only one correct decision that can be made. The group which has the most complete discussion and makes the correct decision will win $5.00 prize for each person in the group.

Remember it is your joint discussion and decision that counts toward the prize. Your private judgments are just for the records. So be sure to discuss everything completely before you make your group decision.

You may start on your individual plan now. I will notify you when 5 minutes have passed.

MANY

FEW

EDUCATIONAL
FACILITIES

RECREATIONAL
FACILITIES

RESIDENTIAL
FACILITIES

(FRONT)

F-2

(BACK)