

THE EFFECTS OF VARYING GROUP ORGANIZATION
UPON PERCEPTION OF POWER AND BENEFIT

by

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I. INTRODUCTION

The social psychology of groups has a tendency, like Stephen Leacock's horseman, to "gallop off in all directions." A survey of its diverse aims is an almost impossible task, as the Office of Naval Research advisory panel on human relations found out some years ago. The following, paraphrased from a monthly report of the ONR (10), is descriptive of only a few of the many areas of group research:

- (1) Comparative studies of different cultures. To provide a basis for the understanding of the behaviors and goals of groups... (knowledge of) nationality grouping is essential.
- (2) Structure and function of groups... It is the aim of (this) research to study the productivity, structure, and development of... various groups in relation to their assigned tasks.
- (3) Problems of communication of ideas, policies, and values.
- (4) Leadership.
- (5) Growth and development of the individual... as a functioning member of society... (This research) includes studies that are focused on the development of the individual's capacities to participate in group life.

An alternative classificatory scheme might be concerned with the theoretical "levels" of analysis of group activity:

- (1) The (usually large) group is the experimental unit, treated as a theoretical and methodological whole. This level may be termed that of "classical" sociology and includes the fields of ethnology, migration, etc.
- (2) The foci of attention are the process, function and structure of a particular group or type of group. Study may be directed toward large or small social groupings. Urban sociology and Group Dynamics are

representative of this level. The group is occasionally also treated as a unit to a limited extent.

- (3) The focus of attention is the individual in relation to his social stimuli, utilizing in large part psychological concepts. The work of Newcomb and Sherif and Cantril is typical of this approach.
- (4) The individual is the experimental unit. This approach differs from the immediately preceding in that psycho-biological factors are emphasized, while social factors are minimized. Early psycho-analytic and behavioristic theorists are typical exponents of this level.

Doubtlessly these related lists could be extended indefinitely without embracing adequately the many varied techniques and points of view which have directed research upon some aspect of social behavior.

There appears to be little uncertainty that Bruner (6) was largely correct when he recently wrote, "The critical shortage in social psychology is not in its lack of zeal for data but in its paucity of integrative theory." It may be, however, that this criticism -- despite its importance -- is premature. A first reason for this statement is that Bruner and the many who share his opinion may be emphasizing differences in theoretical adequacy among levels of analysis, for there is little doubt that certain of the approaches listed above are more advanced than others in the extent in which integrating theory has been developed.

But it is also true even within the more "developed" approaches, there is a "paucity" of theory to a certain extent. The reason for this condition, Lewin (37) implied,

lies in the nature of the material rather than in a lack of desire for concepts. "Enthusiasm for Theory? Yes! Psychology can use much of it. However, we will produce but an empty formalism, if we forget that mathematization and formalization should be done only to the degree that the maturity of the material under investigation permits at a given time."

Further consideration of this point requires the recognition that even within an integrated level development of theory proceeds simultaneously with development of appropriate methodology. "Only ask the questions in your research that you can answer with the techniques you can use," was Lewin's further advice. "If you can't learn to ignore the questions you are not prepared to answer definitely, you will never answer any." In view of this interrelationship, it is not surprising that there be numbers of apparently non-related reports of the kind with which all social scientists are familiar and to which Bruner refers.

Assuming that the majority of these reports are attempts of investigators to pull themselves up by their bootstrings in the absence of fully-adequate integrating theory, it would appear that social psychologists are failing to fulfill their roles of scientists by their failure to build upon and replicate when necessary the findings of earlier investigators. Certainly, one of the tests of a good theory in psychology (and other science) is its productivity; failure

to utilize the efforts of others represents failure also to evaluate these efforts in a scientifically acceptable way. One may speculate, for example, what the status of modern physics might be if a Michelson or Morley had not utilized and re-evaluated the findings of others in the test of crucial physical hypotheses!

Social psychology is now in much the same position with regard to both theory and methodology as was physics in its formative years, although psychologists disagree whether experimenta crucis are possible. Certainly, crucial experiments between levels are impossible. We are rather, as Sherif (47) remarked at the Oklahoma conference on social psychology, in a state of determining and selecting our best level of approach to problems. "Social psychology," he said, "...is still groping its way at the crossroads. Groping at the crossroads may be taken as a sign of vitality. A few decades ago, conditions were not ripe even for serious groping." The "crossroads" to which he refers are the alternative paths of the "individual" versus the "socio-cultural" approaches to social psychology. He goes on to note the point that is emphasized here: "When we survey the blind alleys of both approaches, we find refined material which can be utilized advantageously in the construction of a thoroughfare which we are bound to take some day."

What is the nature of this "refined material" upon which social psychologists must build? Not only Sherif,

but most recent investigators (e. g., Newcomb, 40), would probably be quick to agree that it is the product of a realization of the inter-relation of individuals and social stimulus conditions rather than the study of either the individual or group in isolation. Newcomb (41) notes that a social psychology must be built "which takes full account of the realities of psychological processes as well as the realities of social organization." The emphasis is that we must not be content merely to consider individual and social aspects of problems, but also to assume the responsibility of determining the "realities" of each. The implication is that we must start with other than merely improvised notions in our new investigations.

This is not to say, obviously, that we need scrap the constructs and concepts already found to be productive. Rather, it would seem that caution must be foremost in the evaluation of many "facts" and hypotheses we now hold to be true. It means that we must build upon functional analyses of social situations with explicit reference to the behavior of individuals. "The task," continues Sherif, "is to go beyond the general statement that everything is related to everything else within the frame of reference and laboriously to vary this factor now, that factor later, with the ultimate aim of finding the relative weights for each, and finally, expressing the relations in short-cut expressions" (47, p. 5).

This, he says, will be the function of a unified social psychological approach.

The acceptance of the unified approach in the tedious process of theory and methodology development does not mean that the psychological approach -- in the sense of individual orientation, with relevant psychological concepts -- must be abandoned. What must be cast aside are preconceived notions that the individual's social behavior can be studied adequately in the absence of information regarding his social stimulus conditions. Newcomb sets forth the basic postulates for the "psychological" study of behavior by the social psychologist which adequately describe the unified frame of reference:

- "1. Any observable behavior is not only a response (on the part of the subject) which is to be treated as a dependent variable; it is also a stimulus to be perceived by others with whom the subject interacts, and thus to be treated as an independent variable...
2. There is a remarkable correspondence between the psychological processes on the part of an overtly behaving individual and on the part of the individual who perceives and responds to him... This correspondence can be explained only by the assumption that interacting individuals are parts of some more inclusive system -- groups or whole societies.
3. The relations among parts (i. e., individuals) of such systems (i. e., groups) are quite different from the relations of individuals...to inanimate objects. That is, while the same basic processes apply to the interaction of organisms with the non-human and the human environment, there are also orderly conditions of interaction with the human environment which do not apply to interaction with the non-human environment. These additional orderly processes correspond to

laws and principles which, to my judgment, should be the special province of the social psychologist" (41, p. 34).

Two general courses are open to the investigator with the intrepidity to enter the study of group behavior from this frame of reference: the first is to set out insofar as possible in his own way, with the anticipation of devising his conceptual program with a minimum dependence upon others. It is possible that Cattell's development of the concept of "syntality" (8) is of this sort, despite his reliance upon the elder methods of factor analysis. Dodds and Lundberg are imaginative, original investigators from the sociological frame of reference. The second method open to the beginner is to build upon the foundations laid by other investigators, employing the best available concepts and methods. There is not the aura of "originality" in the second, but definite advantages from the scientific point of view -- as discussed in this section -- are to be found.

Statement of the Problem

The problem of change in the individual as a result of his membership in a small discussion group is one aspect of the more general area of influence phenomena which has occupied the attention of social psychologists within the past few years. Psychologists and non-psychologists alike are aware that individuals do change frequently as a result

of membership in a small group, but the fact that not all individuals change in all groups, or change in the same manner when behavior is altered, requires some knowledge of the conditions which initiate change. The problem becomes particularly pressing to those who are in some way responsible for the induction of change in the individual for some end, whether that end be training, therapy, or common action.

Many group situations founded upon differing relationships among individuals have been widely utilized for training, therapeutic, or common action purposes in the belief that some conditions are more efficacious than others for the production of change in the individual participant. In view of the absence of commonly-accepted bases for the measurement of change and the difficulty of establishing criteria for change when group purposes differ, there is little present possibility for the evaluation of the various types of group situations in terms of objective measurement. It would be extremely difficult and possibly undesirable, for example, to establish a measure of change in individuals that could be successfully applied to both a sales-managers' meeting and a group therapy session.

The problem may be attacked from another angle, however. The unified psychological approach described in the previous section has at its foundation the postulate that perception is fundamental to behavior and that changes in

behavior necessarily precede changes in action by the individual. From this frame of reference, the understanding of the processes of individual change as a consequence of group membership is to be approached from an understanding of the group and individual conditions which lead to changes in perception. These conditions may refer either to successive relationships among individuals within the same group or in groups within which perceived relational patterns remain relatively constant.

The purpose of this study is to define four group situations or relationships among individuals in an attempt to describe the effects of these situations upon perceptions of the extent to which the actions of others influence own behavior (power) and the effect of the behavior of others upon own locomotion (benefit). The method used is that of introspective reports of the ability of others to influence own or others' behavior (perceived power) and of the effect of that power (perceived benefit) upon the self or other persons in the group.

This study is an outgrowth of research begun at the National Training Laboratory in Group Development at Bethel, Maine, during the summer of 1950. At that time work was initiated on the related concepts of power and benefit, which will be described more fully at a later place, and upon the utilization of these concepts in the

understanding of phases of development of small face-to-face groups.¹ Specifically, in accordance with hypotheses established by Thelen and Dickerman (54), Bradford and Lippitt (5), and other members (59) of the Research Center for Group Dynamics, it was believed that the course of small group development would proceed through stages of dependence upon the leader through independence of leader and non-leaders in common action toward some set of goals. The chief purpose of the University of Kansas research team was to determine whether each stage of development could be characterized in terms of particular patterns of power and benefit perceptions of group members in conjunction with certain behavioral variables.

In part because the use of a single small training group by the Kansas team at Bethel did not allow clear differentiation in some respects of the stages of development and restricted the use of certain statistical techniques, the present writer undertook the investigation to be described in this paper, with the addition of new concepts and theoretical formulations to be described

¹ The Bethel research program briefly described here was undertaken by Dr. A. J. Smith, Mr. Jack Jaffe, and the writer. The concepts of power and benefit, with the exception of certain theoretical formulations, represent the combined efforts of this team. The National Training Laboratory was sponsored by the Research Center for Group Dynamics of the University of Michigan and the National Education Association. Cooperating universities were Kansas, Cornell, Illinois, UCLA, McGill's Allan Memorial Institute of Psychiatry, etc.

at another place with the following purposes:

1. To develop a more complete conceptual structure for the perceptual variables of power and benefit;
2. To reproduce experimentally social situations conforming to the hypothesized stages of group development previously mentioned and to utilize the concepts of power and benefit in the derivation of hypotheses concerning the nature of these perceptions at the varying stages of group development;
3. To describe the nature of these variables in a fourth setting of social interaction (i. e., competition) for purposes of generalizability and extended understanding, and,
4. To suggest the use of power with benefit distributions as a methodological instrument for the understanding and control of individual change.

The specific hypothesis of this paper is that social situations conforming to (a) those postulated by other writers to typify stages of small group development and (b) a setting of social action of a relatively familiar type (competition) will have effects upon and can be characterized by particular related perceptions of power and benefit derived from ratings made by each participant-percipient in the group situations.

Basic Assumptions of the Study

The investigator attempting to describe and understand

any aspect of social behavior can make a tremendous number of observations which may form the basis of his system and explanation. While not all of his observations and assumptions underlying them can be made explicit, certain of them can and must be identified. The most important of these assumptions involved in the present study are the following: (a) The basic assumption is that behavior is motivated, and that an understanding of the motivation is necessary to understand behavior. (b) The second assumption is that behavior, social as well as physical, is steered by perception, and that thereby the perceptions of behaving persons constitute significant aspects of behavior. (c) It was assumed that the most productive manner of approaching many of the problems of "group" process is by way of the study of social perceptions. This entails the assumptions of the subjective frame of reference with the necessary restrictions implied in that approach upon the number and kind of concepts properly used (51).

Survey of the Literature

Existing formulations of the concepts of power and benefit are not easily found, largely for the reason that while many investigators freely utilize these or related concepts few make explicit to what they refer. It would be possible, for example, to canvas the literature of such related concepts of authoritarianism, dominance-submissiveness, social control and organization, status, class, and

caste relations and so on; the task would be Herculean, but relevance would be fairly low in the absence of explicit formulations of the terms. It is doubly difficult to secure explicit joinings of the concepts with specific situational variables, although it must be noted that both power and benefit are always with relation to non-self persons or objects in psychological and non-psychological literature -- and that therefore, linkage of situations with perceptions ^{is} are strongly implied. For purposes of convenience, available literature on the subjects will be divided into two sections: the first on power and benefit, the second dealing with the situational variables.

The literature of power and benefit. Three general types of discussions of power-benefit relations may be discerned: (a) those which furnish descriptions of relatively objective aspects of power and benefit, such as are to be found in most non-psychological literature and speech and in much psychological literature; (b) those which attack the "deeper" aspects of power, benefit, and other inter-personal perceptions -- Frenkl-Brunswick's The Authoritarian Personality (17) and other publications of the California research group are typical; and, (c) those which are concerned with more or less technical studies of social perception in some of its many forms. Of particular interest here, of course, are those of this category which deal with power and benefit perceptions within or between organized groups.

Among writers whose work falls within the third category, Heider (21) is of particular concern. In the development of his symbolic representations of basic interpersonal relationships, Heider gives careful attention to power in the form of influence originating in the perceiving person (p), a second person (o), or in other persons or objects. The self, or perceiving person (p) may be aware of his ability to alter or influence the actions of another person (o) or a third person or object (x); reciprocally, (p) may recognize (o) as capable of exerting power over either (p) or (x) or both. Since Heider's formulations deal with the perceiving person (p), i. e., are concerned with what is "real" for that person, a necessary implication is that power is defined solely with reference to p's own cognitive structure. He further makes the necessary distinction between the ability to influence and the type of influence with reference to p's perceptions, that is, whether a particular act associated with a person is beneficial or detrimental to p or whether p perceives his own acts to be beneficial or detrimental to others. No benefit or detriment can occur in the absence of power to influence behavior, so that a statement of benefit or detriment implies power.

This formulation of power is closely akin, although at a different level of conceptualization, to that of Lewin (32, 33, 37) who described power as "the possibility of inducing forces" toward some particular goal or goal region.

Lewin was rather sparing in his use of the concept of power and "power fields," conceiving them as only a single determinant of locomotion not to be isolated from all other sources of forces operating upon the person. Not only people but also non-human objects and own values and goals constitute spheres of influence in his system. Benefit occurs in Lewin's writings as a descriptive term rather than as a dynamic or psychological concept, referring to the direction of induced forces relevant to the locomotion of the individual.

A third investigator, Knickerbocker (25), has explicitly defined power, but is more limited in relevant benefit statements. Writing of the inter-personal relations of leaders and followers, he points out that a leader may serve to augment or reduce the behavior possibilities of a subordinate (less powerful) member of the group by removing or adding obstacles to need satisfaction and by personal encouragement and discouragement of the non-leader. "The control of means ('scarce means' the economists call them), which others desire for their satisfaction, constitutes what we ordinarily call power." He goes on to note that "the use of power (or 'means control') to gain the means for need satisfaction from others appears to be an essential aspect of all human relationships. The individual who controls many or scarce means which other people seek to utilize for need satisfaction is in a position of power. Such power may be used by an individual

either to reduce the means of other individuals (punishment), or to augment their means (reward) towards the ultimate end of inducing these other individuals to provide him with means for the satisfaction of his own needs." The last sentence contains a statement of what this study terms "benefit," i. e., the direction of the application of power with reference to the locomotion of others. It is curious to note in Knickerbocker's use of power that power is utilized for the purposes of self-gratification as the "ultimate" end.

The hedonistic approach of Knickerbocker is not shared by Lasswell (29) and Lasswell and Kaplan (30), who, in point of fact, describe eight "base values" and sixty-four "scope values" for the satisfaction of which power or influence is manifested. Lasswell's definition and use of power and influence deserves special mention in this study as an example of the use of the variables in the understanding and conceptualization of social processes not only within but also between groups.² "Power," Lasswell and Kaplan write (30, p. 223), "is participation in the making of decisions: G has power over H with respect to the values k if G participates in the

² "The doctrine of power is political doctrine," they write, "and the science of power (in its narrowest sense) is political science."

making of decisions affecting the k policies of H." Influence is equivalent to power, generally speaking, when accompanied by severe enough sanctions or deprivations, but influence is not necessarily a form of power. "Since power is itself a value, forms of influence that include power in their scope are usually themselves forms of power. The king's mistress, though she has only influence, not power, over the king, may have power over his subjects in the degree of that influence. Forms of influence based on power are themselves forms of power only if the scope of the influence is included within that of the power in question. The king may exercise influence over standards of morality, say, by virtue of his power position, but he does not necessarily exercise power over morality."

So far as the direction of power with reference to the behavior of others is concerned, Lasswell and Kaplan note that both deprivation and "indulgence" aspects of the use of power exist. Some refer "to the exercise of power or influence, some to its possession, and some to the condition or results of being subject to it," they write of their designations for the various forms of power or influence.

Perhaps the preceding descriptions of the uses of power and benefit have demonstrated to the reader that they may be utilized in many contexts; examples have been offered of their use in relatively simple social perception (Heider), in theory of individual motivation (Lewin), in the inter-

personal relations of leaders and followers (Knickerbocher), and in a conceptual frame for political science (Lasswell and Kaplan). We may turn from these formulations of the concepts to those which are particularly appropriate to small group study.

Perhaps a good transition may be obtained by reference to the experimental findings of Pepitone (42), who was expressly concerned with the perception of power and approval under semi-group conditions. Experimentally varying first the perceived approval of powerful persons, then the power of approving persons, Pepitone demonstrated, inter alia, the existence of a marked tendency for those perceived relations to shift together under the conditions of his experiment. We tend, he concluded, to see those more powerful than ourselves generally as approving, and those who approve our conduct as more powerful.

These conclusions are supported by evidence gathered by Horowitz, Lyons, and Perlmutter (22) at the third summer session of the National Training Laboratory. "It turns out that liking someone is a kind of subsidization both for the other fellow as well as yourself. For o, it is a requirement that p must feel he is liked also; for p it is an obligation, almost a psychological imperative, that he likes what o says and does..." (Emphasis added.) This is particularly so if p is "forced" to conform to o's part in p's decision making, as occurred in Pepitone's experiment. "We make psychological commitments to others

that require certain kinds of behavior. It is recognized implicitly that we cannot knock our host." The same is true when host becomes enemy; our psychological commitments allow but certain perceptions of the "other fellow" and these perceptions may be systematically described under varying conditions.

The ability of others to influence the percipient's behavior is apparently not only a function of the logical worth, intrinsic value, or cleverness of the actions of others, but rather a function in large part of the persons with whom the particular acts are associated. More clearly, point out Horowitz, Lyons, and Perlmutter, it makes a difference "who makes the statements and to whom they are made." We need not accept statements which o may intend to influence the course of action of p; we may reject the person o and/or his action x, or may reinterpret the configuration of o and the acts associated with him in such a manner that they have different relevance for own conduct. Finally, it is possible to reject attempted influence by refusing to acknowledge either person or act; this is the event familiar to most observers of groups wherein group members simply do not listen to the suggestions and remarks of others. The assessment of the attraction of any person o or his acts x depends upon an assessment of the total interchange of power within the group under consideration as a whole.

The literature of power and benefit with respect to group functioning. It is difficult, as previously stated, to classify uses of power and benefit as to whether group situational variables are expressly linked with them. Perhaps Newcomb has given a hint of the path when he noted (cf. p. 6) that responses of individuals are not only to be considered as dependent variables, but also as independent variables insofar as they affect the behavior of others. Thus, in some of the uses of the terms described in the preceding section, power and benefit (when the latter is defined at all) are occasionally treated as independent variables (e. g., in Lasswell's system), and sometimes as dependent variables (e. g., in Horowitz et al, Pepitone). The following section is concerned with a resumé of the few available studies in which power and benefit are treated as dependent variables of group functioning, in general, although this classification should not obscure the fact that these group-produced variables still constitute independent variables with respect to the functioning of the individual member of the group.

Festinger (14,15,16) has noted that the ability to exert influence is directly related to several variables. "The greater the attraction of members to a group, given some discrepancy of opinions concerning a relevant issue, the more pressure toward uniformity will develop within a group and, consequently, there will be greater attempts to influence others within the group and greater readiness

on the part of members to change their opinions in line with the opinions of others. The result of this, of course, is more rapid progress toward a state of uniformity." He summarizes his experimental findings by noting that the pressure toward uniformity present in a small group has the following effects:

- "1. The greater the pressure, the more is influence exerted on extreme opinions.
2. The greater the pressure, the more influence is actually accomplished" (15, p. 38).

Benne, Bradford, and Lippitt (2) acknowledge that power and influence within a group are also dependent upon the possibility of achievement of "group" goals. "If the group chooses to work on some problem about which they think 'nothing can be done,' (the resulting) discussion will be 'interesting talk' but it will not be oriented to decision and action; it will not be 'realistic' discussion." If the goal or goals of the group are not within the perceived power field of the group, they assume an unreal status. It would appear that in such instances, pressure toward uniformity and hence the exertion of influence would be diminished within the group.

In a related experiment, Rosenthal and Cofer (45) studied the influence of deviates upon the functioning of small groups. In the presence of persistent deviate members, both group and individual hopes of obtaining goals are diminished and attempted exertions of power lessened

as the possibility of goal achievement became dimmer. It may be assumed that pressures toward uniformity were initially high because of the deliberate attempts of the experimenters to create a condition of interdependence of members in the achievement of a common goal.

The growth and development of power within groups as a result of group organization has long been the province of sociologists such as Whyte, particularly with reference to organized industrial groups. One such example is to be found in his paper, "Patterns of Interaction in Union-Management Relations (57)." According to his conceptual framework, power is to be studied at each level of organization with reference not only to formal position within structure, but also to the peculiar pattern of interactions, actions, sentiments, and symbols germane to the person in the position. In this manner, he has studied the spread and distribution of power within systems of highly interlocking parts, observing first interactions from which actions, sentiments, and symbols are determined.

Classroom situations as well have been scrutinized from the standpoint of power relationships inherent in them. Thelen (53) has noted that "The third kind of problem (in overcoming resistance within the classroom) hinges about the power relationships of various individuals. The whole problem of interdependence (which is commonly considered the basic criterion of a group) becomes extremely

important at this point. If my success or failure makes a difference to the feeling of success or failure on the part of others, then I am an influential person. If on the other hand my success or failure passes unnoticed and makes no difference, then I'm a person with very little influence..." "The fact that one has power is not necessarily a mandate to wield power," he says at a point later, "... (the perception by students) that any contribution is an effort at power-seeking rather than an effort to help students do things they want to do poses a problem of changing perceptions in the group."

Out of their clinical experience in working with children in groups, Polansky, Lippitt, and Redl (47) were encouraged to undertake the study of the phenomenon of "behavioral contagion" in enduring organizational structure. An incident of behavioral contagion in their study was "an event in which a recipient's behavior has changed to become 'more like' that of the actor or initiator." The creation of similarity of behavior in a recipient of action from others was hypothesized to be a function of the prestige position of the source of influence. Additional correspondences concerning impulsiveness and relevance of group membership to the child's willingness to exert or receive influence were obtained.

Finally, writing of power under the conditions of "democratic cooperation," Benne et al (2) present a complete discussion of the growth and resolution of power

conflicts in achieving common action. After a discussion of the complex forms power assumes both in a sophisticated group and in the relations of the group as a whole to other groups, the remark that "Still the pattern of control³ which operates to attain and maintain concerted action, to suppress conflict, and to determine the ends of cooperation may rest essentially on a marked difference of power possessed by parties to a common action..."

The conditions which determine the existence of power both for the group and the individual, the effects of the exertion of power, and the derivation of benefit from the powerful actions of others have been discussed in this section. Power has been used, as the writer has previously mentioned, as both a resultant of group functioning and as a determinant of it. With respect to the basic problems of this paper, the description of relevant literature has been somewhat of an excursus, designed to demonstrate that we may approach the problems of power from many frames of reference, that it is potentially and actually a strong conceptual instrument in the understanding of group process, and that it constitutes a significant aspect of human behavior in social relations.

³ Power as the basis of the pattern of control may also be the basis of Lewin's "total management pattern," an apparently equivalent concept otherwise incompletely defined in his writings (34, 35).

Definitions and Problems of the Concepts of Power and Benefit

"Character," said Duncker (13), "insofar as it is shaped by living, is of the type of a resultant solution..." No person is completely free in his social interactions. All of us are subject to innumerable pressures and obligations which require us to adhere to a rather uniform path. Three general sources of these pressures may be (a) other persons or acts associated with others (21, 22), (b) the demands of the physical-psychological situation (58), and (c) our own goals and values. Each of these, Lewin said, comprises "power fields" with reference to our locomotion toward our own particular goals.

This study is not primarily concerned with the influence upon behavior exerted by own goals and values or with non-human surroundings. The reason for omission of non-human influences^{is} explained by Newcomb's postulates, and it is partly for the same reasons that the influences due to own goals and values are omitted: first, these phenomena constitute a major source of theoretical and methodological problems far beyond the scope of this study, and (b) it is believed that information concerning the power and benefit perceptions of behaving persons with regard to the acts of others may shed a certain amount of light upon the peculiar problems encountered when own goals and values or non-human surroundings are the sources of influence. It is true, also, that information concerning the

effects of own goals and values is neither in adequate supply nor consistency. It is freely admitted that the lack of relevant hypotheses and conceptualizations concerning the influence of "own" and physical factors upon behavior must be considered in evaluation of the final results of this study.

The preceding summary of the literature of power and benefit have shown some of the problems and considerations which must be met in an adequate definition of the variables. The first such consideration rises from the fact that power and benefit "exist" in the perceptions of behaving persons and constitute the basic data of this study.

The implication of this consideration is that the exertion of power must be appropriate or relevant to the locomotion of the perceiving person if it is to "exist" for the person. A drug store clerk, for example, may be very proficient at the dispensing of sundaes or restricted drugs, and may alone control our access to these commodities in time of need. These skills or "means controls" -- to use Knickerbocker's term -- have no appropriateness to our behavior when no need exists for the services of the clerk. This does not imply that consciousness of such means control is a necessary criterion for the existence of influence, however. Lewin clearly states this important fact:

"It is likewise doubtful whether one can use consciousness as the sole criterion of what belongs in the psychological life space at a given moment in regard to social facts and relationships. The mother, the father, the brothers and sisters are not to be included as real

facts in the psychological situation of the child only when they are immediately present. For example, the little child playing in the garden behaves differently when he knows his mother is at home than when he knows she is out. One cannot assume that this fact is continually in the child's consciousness. Also a prohibition or a goal can play an essential role in the psychological situation without being clearly present in consciousness... Here, as in many other cases, it is clear that one must distinguish between "appearance" and the "underlying reality" in a dynamic sense. In other words, the phenomenal properties are to be distinguished from the conditional-genetic properties of objects and events, that is, from the properties which determine their causal relationships---As far as the conceptual derivation is concerned, one may use effectiveness as the criterion for existence: "What is real is what has effects" (33, p. 19).

The perceptions of a person of the real or potential actions of others, insofar as these actions are effective in determining the locomotion of the percipient, constitute the basic data of perceived power and of this study.

We may assume that the concept of psychological existence of "appropriateness" takes cognizance of the fact that it is occasionally true that the expectation or anticipation of power alone may act as a deterrent or stimulant to certain behaviors. A thug holding a gun need not shoot to enforce his demands! The child instructed by his parents not to play in the busy street may acquiesce to their edicts simply from fear that he will be punished if a possible transgression be discovered by them. This fact is surely included in Lewin's statement above, but must be made explicit in the conceptualization of power. We may note that theoretically it makes no difference whether power is expressed in

actual behavior or not; the chief question being: does it affect the behavior of the person under consideration?

An interesting variety of appropriateness appears in these instances where failure to act is a determinant of behavior. The question whether such failures to act are to be included within the definition of power may be answered in the same manner as before: if failure to act effectively alters the behavior of the perceiving person, then the person with whom the failure is associated is perceived as a powerful figure.⁴

The preceding discussion of some of the problems and considerations involved in the definition of power has been by way of pointing out these facts: (a) there may be many sources of power, but only a single source -- other persons -- is of concern to this study; (b) that only the perceptions of the actions of others psychologically existent and relevant to the percipient's own locomotion are of concern in this study's use of power concept; (c) that both potential and actual influence may be conceived as power, to the extent to which they meet the criterion of appropriateness; and (d) that objective failure of others to act can, under

⁴ Two kinds of such failures could be expected which would have differing consequences in the perception and locomotion of the individual: (1) where the other person has the ability but not the wish to act in a way supportive to p's locomotion; and (2) where the other person has the ability, but not the wish to interfere with the locomotion of p. The former may be perceived as harmful to p, the second beneficial.

certain conditions, be included within the definition of power to follow.

In view of the foregoing discussion and relevant uses of the term, power, in the literature, the following definition may be offered: power is the perceived actual or anticipated ability of another person to determine the goals of the perceiving person or of imposing such goals, of aiding in the selection of paths or of imposing such paths upon the individual whether beneficial or detrimental. A more formal definition may be that power is the perceived ability of another person to induce forces in the locomotion of the perceiving individual, and/or the ability of another person to effect the presence or absence of barrier, restraining forces, or external forces in the locomotion of a perceiving person.

It may be said that if another person is perceived as influencing actually or potentially a person's locomotion toward his own goals, a supplementary statement of the effect or direction of the influence from the standpoint of the perceiving person is necessary. Thus, influence exerted in a way or direction contrary to p's own locomotion or against his wishes may be considered negative benefit or detriment. Influence exerted in a fashion consistent with p's own locomotions and wishes may be said to be beneficial to p. The general term, benefit, refers to the direction of applied influence with reference to the pre-existing goals, values and wishes of the perceiving (influenced) person.

Three reference combinations of power and benefit are recognized:

- (a) No power -- No benefit⁵
- (b) Power -- negative benefit
- (c) Power -- positive benefit

Combination (a) is in explicit recognition that benefit cannot occur in the absence of influence or power. No distinction is made between "influence" and "power."

The above combinations are not intended to imply that quantitative differences in power and benefit do not exist for the perceiving person. Thus, person A may be perceived by person P to have more influence over P's locomotion than does a third person, B. Benefit may vary in an equivalent form.

Definitions of the Social Situations

It was one of the chief purposes of this study to seek an answer to the question, "What is the effect of membership in a small face-to-face group under differing conditions of social interaction upon the perception of power and benefit?" Four such conditions or situations were selected for study: three, as previously mentioned, pertaining to stages in the development of small face-to-

⁵ "Zero" power may indicate two different perceptions: (a) the instance when another person may be phenomenally present, but have no practical power over the percipient's behavior; and (b) the instance where a person is not phenomenally present in the group and therefore has no power at all, insofar as immediate locomotion is concerned.

face discussion groups, and one as a means of extension and comparison of results.

The three conditions resembling stages of group development as described by Bradford, Lippitt, and others (notably Thelen and Dickerman) are those of (i) interdependence, (ii) independence, and (iii) dependence. The fourth situation is that of competition.

No effort will be made to recount the multiplicity of studies of the conditions numbered above. Not only are adequate surveys of the literature of these and related situations available (3, 11, 28, 40, 44), but it is also true that most are of no relevance except in the definition of the situations themselves. That is to say, the present study is concerned only with the effects of the situations defined by Bradford et al and that of competition upon social perceptions, rather than with the situations themselves, in isolation. The theory of the competitive process is adequately outlined in reference (11) by Deutsch. Available studies of the inter-relationships of the group situations and perceptions have been described under the heading of "The literature of power and benefit with respect to group functioning" in another part of this paper.

In an independent social situation (Ind), the goals for the individuals under consideration have the following characteristics: the goal-regions for each of the individuals are defined so that if a goal-region is entered by any person in the group, the remaining members of the group must

abandon to a partial extent their respective goal-regions within the social situation and must enter the goal-regions of the successful person. The rationale of this situation and concept of independence is this: in the independent phase of group development, it is not sufficient merely to obtain own goals in the absence of group approbation and consolidation. Security of position in the group is dependent not only upon individual achievement, but also upon the extent to which the individual's goals become the goals of every other member of the group.⁶

In a dependent social situation (Dep), the goals for individuals under consideration have the following characteristic: the goal-regions for each person, with the exception of one, is defined so that if the goal-region is entered by that one specific person, the other persons will to a large degree also enter their respective goal regions in the situation under consideration.

In an interdependent social situation (Int), the goals for individuals under consideration have the following char-

⁶ The style of definition used here has been borrowed from Deutsch (11) for two reasons: (a) to allow maximum transposition and generalization of hypotheses and results between the two experiments, and (b) because of the clarity of his method. The similarity of definitions here and in Deutsch's paper are readily apparent. Note, however, that Deutsch's "cooperative" situation has no direct parallel in this study. The definition of the competitive situation used here is more rigorous than his in the sense that it is an "all or nothing" affair from the point of view of the individual participant.

acteristic: the goal-regions for each person in the group are defined so that if the goal-region of any member of the group is entered, all other members of the group are more likely to enter their respective goal-regions.

In a competitive social situation (Comp), the goals for the individuals under consideration have the following characteristic: the goal-regions for each person are defined so that if any one person enters his respective goal-region, all other members of the group are unable to enter their respective goal-regions. This situation differs from the Ind situation in that the goals in Comp are not sharable.

It may be true that the situations here defined are rarely, if ever, approached in "real" life, chiefly for the reason that most situations are far more complex in the number and variety of goals and the restrictions thereon in every-day life. It is also true, here as well as in Deutsch's original paper, that members of groups may be interdependent with respect to certain goals, and dependent with respect to others. Other combinations may obtain, of course, in many social situations. Even, as in the present experiment, when deliberate attempts are made to minimize additional "own" goals and goal relationships, the assumption is always necessary that the experimentally-described situations are superimposed in an effective manner upon existing relationships.

The question must be asked: can we assume that a correspondence exists between the objective social situations experimentally created and the subjective perceptions and judgments of participating subjects? This, as the present writer understands the concept, refers to the problem of veridicality.

The answer to the question is far from simple. It is necessary that every study of the relationship of objective social situations to individual behavior rest ultimately upon the assumption of a coordination of physical (objective) and perceptual (subjective) worlds. Briefly, then, social scientists, if they are to accept demonstrated relationships of social and physical factors, can have no alternative than to assume veridicality.

It is not enough, unfortunately, merely to agree that we have no choice other than to make this assumption. This problem has occupied the attentions of many of our foremost social scientists, with the result that we have some evidence to maintain the assumption. We may refer, for example, to the writings of Köhler, (27), Koffka (26), Snygg and Combs (50), and Krech and Crutchfield (28); and to the other evidence gathered by Gardner Murphy and associates (31), Heider (20), Sherif (46), and Sherif and Cantril (49).

The conclusion of these writers and investigators concerning perception and "reality" seems to be that perception (including social perception) "which is taken as the prototype of all cognitive processes, is not an additive build-up.

It is not merely an intellectual affair. Perceptions are organized and structured products. And organization or structuring is a bipolar affair which is jointly determined by both external stimulus factors and internal directive factors (47)."⁸ That is to say, perception reflects both "subjective" and "objective" worlds.

Sherif remarks at another place upon the problem:

"It is becoming more and more evident that perceptual, judgmental, motivational, and other reactions of the individual member in a group situation can be adequately studied only by placing him in the group setting of which he is a part. And this, in turn, implies that the effects of group situations and participation as a group member will be reflected even in the relatively simple discriminations (judgments), perceptions, and other reactions of the individual. This being the case, the effects of group situations, and the change brought about in attitudes...can be studied in terms of precise laboratory experiments, such as the currently accumulating judgment and perception studies. This will constitute a significant advance in method over observation of the actual behavioral events alone... If the psychological significance of the actual behavioral events can be epitomized and measured in terms of representative judgmental and perceptual situations, we shall be achieving a methodological gain close to the laboratory level" (48, p. 421-2). (Emphasis in original.)

8

Wright, Barker, et al., (58) have shown, by the method of behavioral observation, remarkable consistencies in behavior which can only be explained by the fact that certain physical-social situations are perceived in common ways. They have, in part, utilized these consistencies in the enumeration of "behavior settings", i. e., loci of behavior in which individuals commonly perceive only certain actions to be appropriate. Examples of such loci of behavior are "drug store," "band stand," "classroom," etc.

Plan and Basic Data of This Study

Before undertaking the theoretical section of this paper, it is necessary that the reader be familiarized with certain procedural plans which will serve to limit and determine the following sections. A complete account of the plan of the experiment will be given in a subsequent chapter.

Out of many possible factors, this study has chosen to focus primarily upon the relationship of four group situations to the perceptions of individual group members of certain power and benefit categories. A secondary focus has to do with the description of certain general relationships among these several variables without necessary reference to differences among group situations.

The general plan of this study was to attempt to establish by appropriate rewards and instructions the four group conditions described in this section. Eleven groups of subjects, six members to a group, were used; three groups were to function under conditions of Independence, three under conditions of Dependence, three under Interdependence, and two under competitive conditions. Each group met for one one hour period on each of three successive days to discuss certain case history material. At the end of the allotted discussion period each day every member of each group completed a number of rating scales designed to obtain the following basic data for this study:

- 1) Perceptions by each member of the power over the group possessed by each other member of his group;
- 2) Perceptions by each member of the power over the group he himself possessed;
- 3) Perceptions by each member of the benefit to the group of the actions of each other member in his group;
- 4) Perceptions by each member of the extent to which he himself was beneficial to the group;
- 5) Perceptions by each individual of his satisfaction or liking for his respective group meeting;
- 6) Perceptions by each member of the benefit to himself of the actions of each other member of his group;
- 7) Perceptions of each member of the power over himself possessed by each other member of his group.

All perceptions described above are in forms of rating scales made by each group member for a particular day. Rating scales and the assumptions necessary for their use in this experiment are described in a subsequent chapter also.

In addition to the above perceptions, additional basic data were obtained from optional descriptive comments and criticisms by each person about his group meeting for a given day.

The following chapters will be concerned with the development of formulations for the power and benefit variables, the addition of psychological assumptions,

derivations of hypotheses, description of the experiment, results, and interpretation of the results.

II. THEORETICAL

"What happens psychologically when someone attempts to influence the behavior of another person?" asks Cartwright (7). "The answer, in broad outline, may be described as follows: To influence behavior, a chain of processes must be initiated within the person. These processes are complex and interrelated, but in broad terms they may be characterized as: (i) creating a particular cognitive structure, (ii) creating a particular motivational structure, and (iii) creating a particular behavioral (action) structure. In other words, behavior is determined by the beliefs, opinions and 'facts' a person possesses; by the needs, goals, and values he has; and by the momentary control held over his behavior by given features of his cognitive and emotional structure. To influence behavior 'from the outside' requires the ability to influence these determinants in a particular way."

The purpose of the remainder of this chapter is to attempt to formulate some of the basic conditions necessary for the initiation of the "chain of processes" within a person which lead to change in his behavior, to relate these conditions to the concepts of power with benefit by means of certain additional psychological assumptions, and finally to relate certain characteristics of the various

group situations to the basic conditions for the perception of power with benefit with the aim of deriving hypotheses appropriate to this study.

Conditions for the Perception of Power

The purpose of the application of power, assuming this behavior to be motivated, is the reduction or dissolution of obstacles which tend to impede the locomotion of self and/or others toward some particular goal.¹ Power is applied to another person in an attempt to influence his conduct, i.e., set in motion the required complex "chain of processes" which lead to alteration in behavior, when this change in conduct will in turn produce increased possibilities for need satisfaction for either or both interacting persons.

The first assumption of this paper, then, insofar as determination of the conditions for power is concerned, is that power behavior, like all other behavior, is motivated; secondly, it is directed toward need satisfaction in either or both persons involved. Power, of course, can be used for altruistic or philanthropical purposes as well as for gratification of own needs, although self-gratification

¹ It has also been suggested to the writer that a power relationship may exist in such a manner that one person becomes an "extension" of the motives of another. The office manager who has a secretary to type his letters is such an example.

may be the "ultimate" end.

But these statements concern the exertion of power, and, as others (e. g., 43) have shown, the amount of attempted power in a small discussion group by a given member bears little relation to the amount of power he is perceived by others to possess. It is with the latter that this study concerns itself, and it is for the perception of power that conditions must be established.

We can draw several implications concerning the perception of power attempts originating in others:

First, with reference to the cognitive structure of the individual:

C1. The actions of others, if received, will be interpreted differentially to the extent to which they are consistent with the prevailing cognitive structure of the perceiving person. "Messages" from others (whether verbal or gestural) will be accepted or rejected by the perceiving person to the degree to which they tend to "disrupt" or "augment" the existing cognitive structure of the individual.

C2. The differential acknowledgement of others' actions will be related also to the "strength" of the existing cognitive structure of the perceiving individual. In the absence of firmly held beliefs, opinions, and "facts" about some category of events, "messages" can be incorporated with a minimally disruptive effect; and, if a tendency toward completeness of cognitive organization can be assumed

messages under this condition will be more likely to be accepted.

Each of the foregoing implicitly demands a recognition of some level of motivation of the perceiving individual:

M1. The attractiveness of the actions of others is also related to the extent to which these actions are seen to be consistent with the perceiving person's own locomotion toward some set of goals. A given action will be accepted as consistent or appropriate to an individual's locomotion if the actions conform to the person's larger cognitive structure.

M2. In the presence of several possible actions perceived to be consistent with or appropriate to own locomotion, acceptance will also be in terms of minimum effort for the individual. That is to say, those actions which are seen to enable the individual to reach his goal with less expenditure of energy or those which allow him to achieve a greater number of possible goals will tend to be accepted.

M3. Actions of others will also tend to be accepted in terms of the perceived needs of others which the action represents. This may refer to either the perceived intent or motive of another person who is attempting in some way to influence the activity of the percipient. To the extent to which the perceived intent or motive of another tends to correspond with own intents or motive, ac-

tions representative of those intents will be accepted.

The forgoing may be utilized for the examination of a specific psychological situation, namely, where the actions of some other person tend to reduce need satisfaction possibilities of a percipient. We may suppose that in this event, pressures will arise which will tend to restore or reinstitute the previous condition of the individual. Those actions of others which tend to reduce need satisfaction possibilities of another person are detrimental to the latter; those actions which tend to increase need satisfaction possibilities for an individual tend to be beneficial to him. Any action of another person which tends to disturb the existing state of functioning for the individual is a powerful action.

If satisfaction of own needs is in some way dependent upon the actions of another person, the existence of inconsistent goals of the two individuals tends to lessen opportunities for need satisfaction of the perceiving person. Conversely, if satisfaction of own needs is not dependent upon the actions of other persons, the existence of inconsistent goals tends not to have a substantial effect upon satisfaction of own needs.

The preceding statements can be clarified by reference to the following formulations:

Perceived Power = f (NO, IG, Mot), where NO is the perceived need for the actions of others for own need

satisfaction, IG is the perceived inconsistency of own and others' goals, and Mot refers to the level of motivation of the perceiving person.

In terms of this functional relationship, the actions of others which are (a) perceived to be necessary to own need satisfaction and (b) directed in some manner toward goals different from own goals will be given a certain level of own motivation, perceived as powerful actions.

There are several implications of the formulation which are of immediate importance:

(1) Where a need for the actions of others exists ($NO > 0$) and others are perceived to be locomoting toward precisely consistent goals (i. e., goals perceived to be identical with own goals), there will be a low level of perceived power of others in the stated relationship with the perceiving person.

(2) Where there is no need for the actions of others ($NO = 0$), and there is complete identity of goals, there will be a minimum of perceived power. Implications (1) and (2) represent extremes or bounding limits for the perception of power.

(3) If $NO > 0$, and some inconsistency of goals is perceived to exist ($IG > 0$), the actions of others will be perceived to be powerful.

The "consistency" of own and others' goals refers to the extent to which they are perceived to overlap, to be

sharable, or lie in the same "direction" with reference to the perceiving person's own locomotion. We may suppose that, phenomenologically, differences in ability among individuals within a small discussion group may be understood in terms of individual differences of sub-goals, so that a person perceived to be of high ability in a group is also perceived to be the possessor of different goals to a certain extent, even though both actor and percipient are working toward identical ultimate goals.

It must be carefully noted that in the present formulations means or paths may occasionally assume the character of goals (or, better, sub-goals). Thus, where "ultimate" goals may be identical, lesser goals may not be and power actions may be perceived if $NO > 0$.

Among a number of members of a single small discussion group, the "average" level of power may be defined in approximately the same terms as perceived power by the individual. In a small group, the general level of power will be:

$GPL = f(MNO, IG, Mot)$, where GPL is the general power level, MNO is the mutuality of need for the actions of others, IG is the inconsistency of goals, and Mot is the motivational level of each participant.

The preceding formulations are intended to be in the nature of coordinating definitions which will allow the derivation of hypotheses from the social situations to the

perceptions of individual members of a group under consideration.

The Perception of Benefit

Since the preceding statement of power has been concerned with amount of perceived power, consideration should also be given to the directional aspect of power. Benefit, in these terms, is corollary to power, since it is to be compared with the direction of power applications with reference to the locomotion of the perceiving person.

Power is not only a prerequisite to benefit, but is also a limiting factor in the amount of benefit which may occur, excepting of course fortuitous benefit. The relationship between power and benefit cannot be supposed to be monotonic in the sense that increasing power is always accompanied by increasing benefit (where benefit may be either positive or negative). Such an assumption would overlook the important findings of the processes of cognitive reorganization, among other things.² We could expect, for example, that power applied in a detrimental manner may set in motion the processes of cognitive reor-

² It is recognized that benefit is not a unitary aspect of power, but may be conceived as a resultant in some instances of both positive and negative effects upon own locomotion by some other person's actions. This is particularly important in this study, since reported benefit of other's actions probably is a kind of "summary" of a number of both positive and negative influences from others.

ganization (such as rationalization) which would suddenly shift the benefit perceived to the positive side of the ledger.

This study takes the additional position that if power is applied, it has either a detrimental or beneficial effect upon the locomotion of the perceiving person. This is to say that if behavior is influenced, it is influenced in some fashion with respect to the wishes, values, and goals of the perceiving person.

An important fact is that the conditions for the perception of positive or negative benefit must be stated in terms of the cognitive and motivational structures of the percipient, for it is here that evaluation of the efforts of others takes place. Further, it is necessary here, as in the redaction of power to take specific cognizance of the necessity for coordination of situational to perceptual variables.

Deutsch developed the concept of the "rivalry" ratio which, with some modification, may be of value in the formulation of the conditions for benefit. The rivalry ratio, briefly, is an index of the perceived locomotion of others toward their goals with reference to own locomotion toward own goals.

Rivalry ratio:
$$\frac{\text{Locomoting person's distance to his goal}}{\text{Perceiving person's distance to own goal}}$$

In the present study, if the actions of other people are perceived, they will be evaluated by the percipient (to the extent to which others' actions are powerful) as either lessening or increasing the percipient's own distance to his goal. It is always assumed that when another person locomotes, he is moving toward some goal, although the percipient of others' locomotions may not be always completely aware of the motive or intent for others' actions. In view of this, the relatively static concept of the rivalry ratio may be modified as follows:

$$\text{Perceived Benefit} = \frac{\text{Locomotion of another person toward his own goals}}{\text{Locomotion of self toward own goals}}$$

The following implications of this formulation are of importance to this study:

(1) If the actions of others toward their goals aids the perceiving person's own locomotion to his goal, the perceived actions of others are positively beneficial to the individual.

(2) If the actions of others toward their goals hinders the perceiving person's locomotion to his own goal, the actions of others are negatively beneficial to the perceiving person.

The relationship of these formulations to the existence of consistent goals and need for others should be easily seen. The amount of power present (i. e., the existence

of consistent goals and need for others) is a determinant of the limit and amount of benefit when a "locomotion" concept is employed of the kind described in this section.

Implications of the Group Situations

The purpose of this step in the theoretical development is to relate the conditions for the occurrence of power with benefit to certain characteristics of the group situations with the aim of the development of hypotheses for the present study. Each of the four group situations will again be defined as formerly, followed by the eduction of certain implications of characteristics relevant to the conditions for power with benefit.

In the Ind situation, the chief characteristics are: the goal-regions for each of the individuals under consideration are defined so that if certain goal-regions are entered by any person in the group, the remaining members of the group will be unable to enter certain of their respective goal-regions within the social situation and must enter the goal-regions of the successful person.

1. The locomotion of a given person toward his own goals is dependent not only upon his own abilities, etc., but also to a certain extent the ability of each other person in his group to aid or hinder his locomotion. This is true of all described situations. In the Ind, however, the final achievement of own goals requires that each other person give up differing goals and enter the goal region of the successful person. This amounts to a necessity for any given person, if he is to be successful, to alter the cognitive and motivational structures of other members of the group.

1A. There will be, initially at least, a divergence of own goals among the members of the group.

1B. There will be, finally at least, a high need for the actions of others to achieve own need satisfaction.

2. As any one person locomotes toward his own goals, the

opportunities for need satisfaction for each other person in the group decreases, particularly in the initial stages of locomotion. In the final states, if new goals have been accepted by each member of the group, the locomotion of any one person toward his goals increases possibilities for need satisfaction for all other persons.

In the Int situation, the chief characteristics are: the goals for individuals are defined so that if the goal region of any member of the group is entered, all other members of the group also reach their respective goal regions.

1. The locomotion of a given person toward his own goals is dependent upon the success of each other person in obtaining his particular goal.

1A. There will be but little divergence of own goals among members of the group.

1B. There will be a high degree of need for the actions of others to achieve own need satisfaction.

2. As any one person locomotes toward his own goal, each other person in the group also locomotes toward his own goal.

In the Dep situation, the chief characteristics are: the goal-regions for each person are so defined that if a particular person enters his own goal region, all others also reach their respective goals.

1. The locomotion of a given "member" toward his own goal region is dependent upon the success of the "leader" in reaching his own goal region.

1A. There will be very little divergence of goals among members of the group.

1B. There will be a high degree of need for the actions of a specific person for satisfaction of own needs, but less need for the actions of each non-leader member of the group.

2. As any specific person locomotes toward his own goals, each "member" also locomotes toward his own goals, but a non-leader is generally unable to locomote toward own goals in the absence of locomotion by the leader.

In the Comp situation, the chief characteristics are: the goal-regions for individuals are defined so that if any

given person enters his goal-region, all other persons are unable to enter their goal-regions. This situation differs from the Ind situation in that the goals in Comp are not sharable.

1. The achievement of the goal by only one member implies that all other members do not reach their respective goals.

1A. There will be much divergence of goals among members of the group.

1B. There will be minimal need for the actions of others to achieve own need satisfaction.

2. As any person in the group locomotes toward his own goal, each other person in the group becomes progressively further from his own goal.

Hypotheses of the Study

Two kinds of power and benefit will be distinguished:

(a) perceived power of others over the group and perceived benefit of others to the group; and (b) perceived power of others over the individual and perceived benefit of others to the individual. This distinction is made on the grounds that each may have differing psychological consequences for the individual percipient in a group situation. For example, person A may perceive B to have a great deal of power over or benefit to the group other than A, but perceive B to have relatively little influence over A himself. The converse would also be true.

Undoubtedly, the two sets of perceptions are closely related in at least two ways: first, if B possesses a great deal of influence over the group, and if A's success depends upon what other members of his group do, then B has at least indirect influence over A's activities as well. Secondly, if

it is true, as much clinical experience indicates, that a person's conception of his "group" is largely in terms of his own needs and values, then an additional correspondence will exist between perceived power of others over the group and over the individual, and between perceived benefit of others to the group and to the individual.

In view of these two possible sources of relationship between the two power and two benefit categories, the following hypothesis may be formed:

Hypothesis IA: There will be a positive relationship between perceived power of others over the group and perceived power of others over the individual.

Hypothesis IB: There will be a positive relationship between perceived benefit to the group and perceived benefit to the individual attributed to other members of the various groups.

It must be noted that the above hypotheses do not refer to any differences among group situations, since it is expected that these relationships will generally exist.

It is now possible to return to the preceding sections of this chapter for the purpose of deriving additional hypotheses for the study.

From the application of power and benefit concepts to the characteristics of the group situations, we may expect that the extent of the relationship between perceived power over the group and over the individual will be minimized in those situations where the individual may locomote in relative isolation from his fellow group members, i. e., where NO approaches 0. In the Comp situation, for example, what

helps or harms other members of the group respectively harms or helps the individual, until the zero point is reached. When NO is equal to zero, what influences the rest of the group has no effect upon the functioning of another member. Since it is difficult to assume in the present study that NO is ever zero, the previous statement that some positive relationship between the two variables exists still applies. Demonstration of the validity of the general relationship, of course, is dependent upon verification of the first hypotheses.

Hypothesis IC: There will tend to be differences in the extent of the positive relationship between perceived power of others over the group and over the individual among the four group situations. The expected order of the relationships, from highest to lowest, will be: (1) Int, (2) Ind, (3) Dep, and (4) Comp.

And, for benefit:

Hypothesis ID: There will tend to be differences in the extent of the positive relationship between perceived benefit of others to the group and to the individual. The order of the expected differences will be, from highest to lowest; (1) Int, (2) Dep, (3) Ind, and (4) Comp.

The relative orders of the Ind and Dep group situations in the above hypotheses are to be considered somewhat tentative. The basis for the primary position of Ind in hypothesis IC is that it is necessary in the Ind situation for a successful person to attempt to "sell" his point of view to the rest of his group; the successful person is forced to "go along" with the group, but may be nonetheless influenced by the

successful person, even though against his wishes. In view of this possibility -- that dissatisfaction may occur if the individual is forced to give up his own goals -- the relationship between perceived benefit to the group and benefit to the individual will be lowered. As an example, person A may see that another person, B, has successfully convinced each other person of the "rightness" of his acts, i. e., that B's acts are of value to them; A may disagree, but go along with the rest of the group out of necessity, perceiving B's actions to be detrimental to him. In the Dep situation, only one person is capable of exerting a great amount of power or benefit; the resulting relationship, when all other persons in the group are included, will tend to be lowered insofar as power is concerned. If any member of the Dep group performs any useful action, however, all tend to benefit from it, thus making the relation between benefit to the group and benefit to the individual higher. We may expect also a degree of homogeneity among non-leaders of the Dep group in power and benefit which would tend to lower a correlation coefficient of the two sets of ratings used in this study.

It is also of value to the present study to define the average levels of power and benefit which exist within the various group situations. These averages may have three distinct uses: first, support may be given to the basic formulation of power and benefit described earlier in this

chapter; secondly, further tests may be applied with the purpose of discerning the nature of the distributions of power and benefit within each type; and, finally, indications may be received of the possibility for individual change within a particular type of group situation. In the last category, a higher level of power perceived in the actions of others is an indication that the individual is being influenced, i. e., is being changed, with either greater facility or more frequently.

The first of the hypotheses concerning the average levels of power and benefit to be expected are:

Hypothesis IIA: There will tend to be differences among the four group situations in the average amount of power attributed to the actions of others over the self. The order of these averages, from the highest to lowest, will tend to be: (1) Ind, (2) Dep, (3) Int, and (4) Comp.

Hypothesis IIB: There will tend to be differences among the four group situations in the average amount of power over the group attributed to the actions of other persons. The order of these averages, from highest to lowest, will tend to be: (1) Ind, (2) Dep, (3) Int, and (4) Comp.

The relative orders of the various group situations has already been partially discussed above. The orders may be further clarified by noting that there is no necessity to exert power and there is less perception of power when each other person is perceived to share one's goals and be in a mutual need satisfaction with him (where NO is high, but IG approaches 0). The Int situation is of this type and is therefore placed third in the two sets of ranks. The Comp situation is typical of the second bounding limit

upon the perception of power, for here NO is low, while IG may or may not be high. It is presumed that IG is high in the Comp situation, however. The relative placements of the Int and Dep situations is more difficult, but the given order is based upon the assumption that there is less mutual need satisfaction in the Dep, but a possible greater consistency of goals than in the Int situation. In the Dep situation, only one person generally determines what the goals of the group shall be, hence consistency approaches complete unity. It would appear that the important determinant of relative position of the two groups would be the distribution of ratings given, i. e., the average amounts of power or benefit would be altered in the Dep situation if leader and members are not homogeneous. The relative placements of the Dep and Int situations must be considered tentative.

Reference to the group characteristics reveals also what may be expected of the average levels of benefit within the situations:

Hypothesis IIC: There will tend to be differences among four group types in the average amount of benefit to the individual attributed to the actions of other persons. The order of these averages, from highest to lowest, will tend to be: (1) Int, (2) Dep, (3) Ind, and (4) Comp.

And, if hypothesis IIB is demonstrated:

Hypothesis IID: There will tend to be differences among the four group types in the average amount of benefit to the group attributed to the actions of other persons. The order of these averages, from highest to lowest, will tend to be: (1) Ind, (2) Int, (3) Dep, and (4) Comp.

Again the relative rankings of the four situations :

should be clarified. That the highest amount of positive benefit to the group should occur in the Ind situation while this situation is ranked third in benefit to the individual may be surprising. It must be remembered that an action by an individual in this situation may be directed toward either the group goal or own goal or both, since we may expect both to lie in the same "direction" for the acting individual. However, if any person in the group is successful in obtaining both goals, the implication is that each other person must at least partially give up his own goals, and that therefore the actions of the others will be less beneficial to the perceiving individual. Marked differences among the first three situations' ranks are not to be expected, however, particularly in the hypothesis concerning benefit to the group (IID).

It is still unclarified why the Ind situation should be expected to rank first in this hypothesis (IID). Again, a characteristic of the group situation must be borne in mind with reference to the benefit formulation. The amount of power expected is closely related to the amount of benefit which may occur, of course, and in this sense a greater amount of power is expected to occur in the Ind situation which may produce benefit. That positive benefit is expected rather than negative is due to the fact that one of the characteristics of the Ind situation is that as any person moves toward the group's goals, so also do other members of the group, just as in the Dep and Int situations.

The amount of power present, however, would allow a greater amount of benefit than could be expected in Int or Dep situations. Again, the question of the distribution of perceptions within the group may affect the relative positions of Int and Dep to a certain extent.

The Comp situation, of course, ranks lowest in both benefit categories as in the two power hypotheses. The question of benefit to the group in the Comp situation is not realistic, since there is no reason to suppose any person will deliberately attempt benefit to the group since it will injure his own efforts ^{TOWARD} to his goal. A similar argument precludes the possibility of individual benefit to another individual in the group, since assistance to another implies harm to the self.

A related problem to the average levels of power and benefit is that of the emergence of "heads" (37), or those who deviate markedly from the remainder of the group in either power or benefit to the group or individual. This problem is concerned with the question of the homogeneity of ratings of power and benefit given other persons. We should expect, for example, that the Dep situation should be characterized by the presence of consistent ratings of one person, the "leader," to be high in both power and benefit categories, while non-leaders ("members") will be homogeneously rated much lower. No formal hypotheses will be offered at this point with respect to the homogeneity of ratings received,

except to note that the characteristics of the group situations will allow the inferences that on both power and benefit the Int situation should be relatively homogeneous, the Ind moderately heterogeneous, and the Comp also homogeneous.

Another set of basic data of this study which are of importance are those which contain the individuals' own estimates of their power over or benefit to the group. There is no measure of the individual's power over his own actions, of course. Judgment of the power or benefit of others either to the self or to the group is a relatively easy task when compared to the assessment of own impact upon the rest of the members of a group. This self-assessment requires a certain degree of social sensitivity on the part of the perceiving person, as well as an amount of willingness to state his opinion of himself to the investigator. We may expect that this kind of social pressure may act at least to depress the amount of self-ratings which may be received in the study.

Sherif and Cantril (49) have given, in their work on the problems of group norms, an indication of what may be expected in terms of self-assessments. It may be believed that, in general, the stronger the norms of the group of which an individual is a member, the more accurately he will be able to judge his own actions. For present purposes, group norms are equated

to the extent of commonality (concordance) of perceptions of the power and benefit attributed to the actions of others in the group. Accuracy of self-perceptions refers to the extent to which self estimates of power or benefit deviate from average ratings of power or benefit received from other members of the group.

Hypothesis III: There will tend to be differences among the four group situations in the extent to which there is concordance of perceptions of the actions of others.

A. The order of the expected concordances of perceptions of the power of others over the group will tend to be: (1) Int, (2) Dep, (3) Ind, and (4) Comp.

B. The order of expected concordances of perceptions of the benefit of others to the group will tend to be: (1) Int, (2) Dep, (3) Ind, and (4) Comp.

Because there are no self-estimates of power or benefit to the individual and because of difficulties in obtaining accurate measures of concordance when this ranking is missing, no indication of the concordance of perceptions of the power or benefit of others to the individual will be attempted.

The relative ranking of the four group situations above is premised upon the belief that group norms are directly related to the extent of common goals within a group. If the actions of others are evaluated in terms of the individual's own needs and goals, those who possess similar need-goal structures will tend to judge the same "objective" events in a similar way insofar as

these events are psychological facts for the individual. In the same manner, own actions can be judged more accurately when there are such common frames of reference:

Hypothesis IVA: There will tend to be differences among group situations in the extent to which individuals are able accurately to judge their own power over the group. The order of expected accuracy, from highest to lowest averages, will tend to be: (1) Int, (2) Dep, (3) Ind, (4) Comp.

Hypothesis IVB: There will tend to be differences among group situations in the extent to which individuals are able accurately to judge their own benefit to the group. The order of expected accuracy, from highest to lowest averages, will tend to be: (1) Int, (2) Dep, (3) Ind, (4) Comp.

If power is the extent to which others can influence own behavior, then in those situations where power is highest we should over a period of time expect a lessening discrepancy between the individual's perception of his own power and benefit to the group and the perception of others as to how powerful or beneficial they believe him to be. This may reflect the development of group norms, although they are primarily related to the extent of common or consistent goals, or they may indicate that learning through the actions of others is taking place, e. g., through rebuffs, courteous attention when speaking, etc. Actually, group norms may change in the powerful situations (such as Ind), particularly if there are persons with extreme power, since the goals of one person or a few persons may become the goals of the entire group. Because of the difficulty in stating what increases should be expected in group norms -- e. g., is a rise of 15% in Int

norms equivalent to a rise of 15% in Comp norms? -- no formal framing of expected norm changes will be made.

Since this study proposes to hold three group meetings over a period of three days for each group, it is possible to observe changes in self-ratings over that period. In view of the statements made in the previous paragraph concerning possible learning effects in "powerful" situations, the following hypotheses may be formed:

Hypothesis V: There will tend to be increasing accuracy of perception of own power over the group over the three day observational period. The following order of extent of increasing accuracy, from highest to lowest among the four group situations, will tend to exist: (1) Ind, (2) Int, (3) Dep, and (4) Comp.

Hypothesis VA: There will tend to be increasing accuracy of perception of own benefit to the group among the four group situations over the observational period of three days. The order of increasing accuracy, from highest to lowest, will tend to be: (1) Ind, (2) Int, (3) Dep, and (4) Comp.

Some General Relationships

Are there psychologically meaningful relationships among the variables other than those discussed? There are many possible combinations which might be attempted, of course, but those to be described here are believed to be of particular relevance to the present study.

One may raise the question whether accuracy of self-perception of own power or benefit to the group is related to ratings given others, ratings received from others, or with satisfaction. For example, Polansky, Lippitt, and Redl (43) have suggested that, among other things, security of own position (which they equate to accuracy of

self-perceptions) is an important determinant of whether a person will be susceptible to influence "from the outside." In terms of the present study, this may furnish an interesting relationship which may easily be tested.

In the terms employed here, we may suppose that those people who accurately perceive their own positions in the group also are more aware of the extent of which they depend upon others for own need satisfaction, and may be more ready or more willing to receive influence from others provided the other general conditions for the perception of power and benefit are present:

Hypothesis VI: There will be a greater tendency for those who accurately perceive their own power and benefit to the group to perceive each other member of the group as capable of influencing them more highly than those who do not accurately perceive their own power and benefit to the group.

Along the same lines as the Polansky, Lippitt, and Redl hypothesis, a modification of which is hypothesis VI of this study, it is reasonable to believe that those people who tend to see themselves to be high or low in power or benefit to the group will perceive others to be lower or higher than themselves, i. e., there will be an inverse relationship between reported own power or benefit and power or benefit attributed to others. This hypothesis does not refer to accuracy of self-perceptions of either power or benefit to the group.

Hypothesis VII: There will be an inverse relationship between self-ratings and ratings given to others:

A. There will be an inverse relationship between self-ratings on power over the group and per-

ceived power of others over the group.

B. There will be an inverse relationship between self-ratings of benefit to the group and benefit of others to the group.

These relationships cannot be assumed to be simple in nature, for contributing factors such as social pressure to rate one's self relatively low and the nature of the group situation will undoubtedly have effects upon the extent of either of the relationships under consideration.

One of the basic data of the study was a report following each meeting of the individual's satisfaction or liking for the meeting. Is there reason to believe that there are relationships among ratings of self and others and satisfaction with a particular meeting? For example, it is possible to believe that those people who perceived others as generally positively beneficial to them will also be satisfied with the group's meeting:

Hypothesis VIIA: There will be a positive relationship between benefit to the individual ratings given others and satisfaction with the group meeting.

Relatedly, knowing where one stands in a group, whether in power or benefit, may be an important determinant of satisfaction:

Hypothesis VIIB: Accuracy of self-perception of power over the group is positively related to satisfaction with group meetings.

Hypothesis VIIC: Accuracy of self-perception of benefit to the group is positively related to satisfaction with group meetings.

But it may be that knowledge of own position in a

group is not a sufficient predictor of satisfaction. The new Tenderfoot Boy Scout, for example, may well know his position in the troop, but be completely unhappy -- perhaps as a result of this knowledge. What seems to be important here is a combination of the perceptions described above: knowledge of where one stands and a feeling that something is being gained from membership in a group:

Hypothesis VIID: There will be a positive relationship between (a) benefit to the individual ratings given others and accuracy of own perception of power and benefit to the group and (b) satisfaction with the group meeting.

III. DESIGN OF THE EXPERIMENT

Some Basic Considerations

Insofar as this experiment proposes to test the effects of hypothesized stages of group development upon particular perceptual patterns, it is necessary to examine some of the conditions under which early formulations of the stages were developed. Specifically, observations of the participation in training group sessions at the National Training Laboratory by social psychologists such as Lippitt, Bradford, and Thelen combined with theoretical hypotheses of Lewin and his adherents led, in the presence of a need to evaluate the success of training methods, to preliminary descriptions of the stages.

The fact that these stages were first developed with respect to the Bethel training groups may have a definite bearing upon not only the present experimental design but also for the generalizability of the stages of development in toto. The simple fact is that Bethel groups are deliberately organized in such a manner and in such a locale that many of the disrupting elements of more prosaic groups are absent. Additionally, it is true that the aims and purposes of the training groups are rarely duplicated in everyday life, desirable as they may be.

The following, culled from a prospectus for the Fourth Summer Session of the Laboratory, describes the major aspects of laboratory training methodology for those

who may be unfamiliar with the program:

- "A. The trainees or learners serve as subjects of their own analysis through systematic observation by themselves of their own processes of working as individuals and as a total group.
- B. Trainees act as experimenters on themselves. Here the learning group serves as the subject of its own experimentation.
- C. Trainees practice experimentation on other groups and societal units.
- D. Trainees use experimental data collected and analyzed by others either concerning their own behavior or concerning the behavior of others."

The disparity of the Bethel training groups' aims and functions and those of common varieties of groups does not end here, of course. The particular ideology of the Laboratory, its democratic ethics, and related criteria of successful training could also be examined, although adequate recounting of them is beyond the scope of this paper. An excellent, though somewhat "popularized," account of the Laboratory and its program may be found in Stuart Chase's new Roads to Agreement (9).

The important points, here, are whether (a) the ideological and training program of the Bethel Laboratory may restrict the applicability of the stages of group development only to those group situations which are based upon the same conditions, and (b) whether groups may be studied in experimental situations resembling the Bethel conditions in the absence of a possibility of change to a successive condition.

With reference to the first of these problems, two

things may be said. First, it will be remembered that the basis for the formulations of the stages of group development lay not only in the Bethel situation itself, but also in the broader theoretical and methodological achievements of Lewin and his group. The implication is that, while these stages were actually formulated in large part in conformity with a particular type of group organization and function, they actually represent only an application of a broader theory of group functioning. To the extent to which an experimental study also conforms to the basic theoretical position involved, it is possible to make other applications to a different variety of groups. The second remark to be made is a more pragmatic one. Two investigators in particular -- Thelen (52) and Benne (1, 3) -- have already utilized the concepts of stages in their writing and experimentation with groups other than those founded upon the Bethel tradition. Thelen has noted both in his writings and in personal communication to the present writer that these stages are generally to be discerned in almost all group functioning, although neither the order nor completeness of the stages is generally achieved. It may also be noted that success in the utilization of these concepts has occurred in such diverse groups as upper-level insurance management conferences and industrial grievance meetings.

The second problem, whether groups can be studied in the absence of a possibility of change to a successive

condition, is more difficult. The present experiment proposes to "abstract" from a continuous process of group development relationships which are seldom clearly demarcated. No group, for example, suddenly and in its entirety shifts from being "independent" to being "interdependent." Development is a continuous process, so that within any generally-defined stage some individuals may be "interdependent" with others, "dependent" with some others and so on. Thus, the stages here studied represent "ideal" conditions of a stage, wherein attempts are made to achieve maximum uniformity of inter-personal relationships. It is of interest to note that the hypothesized stages do not necessarily represent successive steps which invariably describe the course of group development, for not even the Bethel groups proceed in any necessary order of growth. Some stages may be completely missing, for example -- as the dependent stage often is at Bethel -- or the supposed order may be reversed in one or more stages.

Selection Procedures

The selection of subjects. The selection of subjects in most psychological experimentation is done in such a manner as to reduce, insofar as the experimenter may recognize them, extraneous variables over which he has little or no control or evaluation. Much criticism has been directed at the use of college students for psychological experimentation on the grounds that they are not represent-

ative elements of our society, but this criticism tends to overlook the fact that the very homogeneity of this segment of our society also serves to reduce experimental error. The "homogeneity" of college students can be over-emphasized, of course, and the problem need always be stated in the form of "homogeneity with respect to what variables?"

The variables among individuals in the present study which would appear to be of most importance were the following: (a) are the subjects of approximately equal intelligence and reasonably well-adjusted? (b) will they regularly attend experimental meetings? (c) is there any reason to believe that the individual has had past experience in similar situations which would affect his behavior in the experiment? (d) is the individual reasonably highly motivated to do his best as a member of a group? and (e) are particular existing relationships among individuals of such a nature that they might influence experimental results?

There were limiting factors as well upon the possibility of obtaining subjects of suitable homogeneity with respect to these variables. The first was to be found in the nature of the experiment: it is an unfortunate fact that many persons are unwilling to participate in psychological experimentation for various reasons. The second is that the supply of persons who can be contacted is relatively limited without expense, and no funds were

available either for this purpose or to pay participants. Lack of financial assistance also made the types of rewards to be offered for participation relatively limited, and hence attractive only to a smaller number of individuals with special interests. Yet another factor, and one that assumed much importance, was that the experimental plans called for three one hour sessions spread over three days. Many individuals cannot spare this amount of time from their regularly scheduled duties. The final factor was somewhat unusual in that the University is emphasizing the so-called "case method" in a number of well-attended courses, and it was believed by the experimenter that enrollment in classes centering about this pedagogic method might constitute an important experience for the individual which would affect his performance in the experiment.

In view of the requirements and limitations discussed, announcement was made in the experimenter's two General Psychology sections that participants were desired for an experiment in group behavior, the purpose of which was to understand more about how individuals behaved in differing varieties of reward situations. Little of a specific nature was mentioned about the differing situations, except to point out that not every person would work under the same set of conditions, that participation would mean three one hour sessions, and that a requirement was a promise that they would attend each session without fail.

The reward offered for participation in the experiment was rather complex. Essentially, prospective subjects were told that they would have a chance to obtain twenty points credit or less to count toward a total possible score of one hundred points on their final examinations in the course. They were to be allowed either to use the score they obtained from the group situations or to attempt a certain final examination question worth twenty points as well if they were not satisfied with their experiment score. Whichever of the two scores was higher would be credited. Both the question on the final and the group meetings would deal with problems of personality, they were told.

In all, sixty-nine subjects were needed from a total available population of one hundred and twenty General Psychology students. One hundred and three volunteered of which number thirty were forced to withdraw because of difficulty in arranging times for sessions over three days in which they could participate. The remaining subjects were given a questionnaire asking if they had at any time in the past two semesters enrolled in a course emphasizing the case method and containing the names of each individual in the classes in General Psychology. Beside the name of each person in the class except their own each potential subject was asked to indicate whether he knew the individual named by sight or by some closer relationship. Ten, mostly upperclass-

men, were rejected because of affirmative answers to the question of participation in case histories classes. Two then withdrew because of commitments which had arrived following the first meeting, leaving a total of only sixty-one subjects.

Through the cooperation of Dr. F. R. Wake, six members of an elementary Personality class were obtained in an effort to attain the requisite number of subjects. Since only sixty-seven subjects were obtained, this number left four alternates in the event that any further withdrawals should occur. Participants chosen from the Personality class were all known to each other, but no especial relationships were discerned. They, too, were given the alternative choice of twenty final examination points in the same manner as those selected from the General Psychology classes. None had participated in a case history class which came within the arbitrary definition adopted.¹

A comparison among the several groups of grades received in General Psychology, however, indicated a fortunate distribution among groups on this criterion in the

¹ "Case history" classes were those organized in whole or largely about the discussion of specific case histories. Typical courses are to be found in the School of Business, the Department of Human Relations, Sociology, and Political Science. Psychology courses and others within the preceding categories using case material for illustrative purposes did not fall within the excluded categories. The form of the question asked was: "Have you been enrolled within the past two semesters in any course organized chiefly about the discussion of case history material? What was the name of the course?"

sense that students below average did not participate in the experiment. The strong response of volunteers is an indication of the motivation of the subjects, despite the hurdle of arranging personal schedules in order to participate. There is no doubt but that the prospect of evading a question on the final examination was a strong inducement to many, according to comments received by the instructor-experimenter.

Selection of experimental groups. Deutsch has pointed out that groups as well as subjects should be equated, since the product of group functioning is different from the sum of contributions by each of its members. A difficulty in this, however, is that groups, once members are selected, must be observed and evaluated in action. Aside from the lack of objective indices of group productivity in this instance, preliminary sessions may have materially altered subsequent group behavior in a manner unknown. It was deemed better by the experimenter that each group should start off "fresh" in view of this difficulty.

Subjects were assigned in this experiment to groups largely upon grounds of expediency (i. e., individual schedules were insufficiently flexible to allow shuffling of members from group to group), and upon the presence or absence of friends in the same groups. Every attempt was made to eliminate pairs or cliques of friends from the same group, one result of which was the necessity of

using all four alternates and rejecting four previously selected subjects. Effort was also exerted to keep the sex ratio in each group constant, but the inadequate supply of women volunteers caused the experimenter to resort to randomization of women among the four types of groups.

The sixty-three available subjects were divided into eight groups of six each and three groups of five each. Three groups were designated "interdependent," three "dependent," three "independent," and two "competitive."² Each group was composed of six volunteer subjects except the three dependent groups, each of which were made up of five subjects and a graduate student. The dependent groups deserve special consideration.

In view of the definition of the dependent group previously given, it was necessary that a particularly well-informed person be added to the group to serve the combined roles of resource person and expeditor of the group's progress. Three graduate students were asked by the experimenter to perform these functions in the dependent groups. Three possible courses of action were open

2

Some question may arise as to the reason for failure to include three rather than only two competitive groups. The major reason was the lack of sufficient number of subjects. That a competitive rather than some other group was dropped was due to the fact that the situation of competition was of lesser importance in the overall design and purposes of the experiment.

to the experimenter in which these graduate students could be utilized. First, one graduate alone could have been the "leader" of all dependent groups; second, three graduates could have been asked to help, each taking one group through all three days of the group sessions; and third, the graduates could be varied from group to group so that the same person was never twice leader of the same group. Each method would have rather obvious advantages and these disadvantages: in the first, a constant source of possible error would exist for which there could be no adequate assessment; in the second, differences due to leader personality could not be determined in a reasonably adequate manner, a possible source of systematic error; and, in the third, personal contact and group relatedness might be lacking. The third alternative was chosen as the best way of minimizing group variation due to leader behavior over the three meetings; leaders were assigned to the three dependent groups in Latin square form.³ A further description of their introduction to the group is given at a later place.

The Experimental Situation

The group meetings. Each group met three times at

³ The Latin square design is a method of arrangement of observed units so that no identical unit appears twice in the same row or column. An example is given at a later place.

assigned hours in a room especially arranged and sound-treated for small group discussion purposes. A one-way mirror which dominated one end of the room afforded an excellent observational position for the experimenter. A second room, not sound-treated and without observational facilities, was also used when two groups were scheduled for the same period or when one group ran over its allotted time. At the beginning of each group meeting for each of the three successive days of meeting the following instructions were read as appropriate:

1. Instructions to the Independent groups.

Since we have been talking and reading about personality and individual adjustment in class, you should have some insight into the adjustment problems of a particular individual. Today you will be given the case history of such a maladjusted person. You are asked to discuss this problem among yourselves and attempt to arrive at a diagnosis of the difficulty and make suggestions and recommendations about what this person should do.

We will have three meetings. Each day each of you will be individually evaluated as to your contribution to the diagnosis, suggestions, and recommendations. Your average score for the three meetings plus an average rating of the accomplishments of your group will be the final score for each of you to use on the final examination if you wish. Let me illustrate: suppose today one or more of you was given ten points, the maximum rating for individual achievement. Tomorrow you are given eight points, the day after tomorrow nine points. Your average would be nine points. To this average will be added the rating given of your group's accomplishment -- a score of from zero to ten for each day and averaged in the same manner. You will have a maximum possible score of twenty, a minimum of zero. Everyone will get at least the group's average, whatever it might be.

These meetings are being recorded to help me in

my evaluation of your individual and group achievements. You will have a few minutes to read over the case, then twenty minutes in which to discuss it and arrive at your conclusions. At the end of the period you will be given a brief questionnaire to complete.

Please do not discuss either the cases or meetings with any person outside the group meeting. The next meeting will be at _____ o'clock tomorrow.

2. Instructions to the Interdependent groups.

Since we have been talking and reading about personality and individual adjustment in class, you should have some insight into the adjustment problems of a particular individual. Today you will be given the case history of such a maladjusted person. You are asked to discuss this problem among yourselves and attempt to arrive at a diagnosis of the difficulty and make suggestions and recommendations about what this person should do.

We will have three meetings. Each day your group will be evaluated on the basis of its achievements for the day. At the end of the third meeting, the daily ratings of your group will be averaged and that score will be your individual score for use on the final examination if you wish. The maximum score your group can make each day is twenty points, so your maximum individual score for use on the final examination can be twenty points -- if your group gets twenty points each day. Remember, you will all receive the same score. The score you get depends upon the achievements of your group.

These meetings will be recorded to help me in my evaluation of your group achievements. You will have a few minutes to read over the case, then twenty minutes to discuss it and arrive at your conclusions. At the end of the period you will be given a brief questionnaire to complete.

Please do not discuss either the cases or meetings with any person outside of the group meeting. The next meeting will be at _____ o'clock tomorrow.

3. Instructions to the Dependent groups.

Since we have been talking and reading about personality and individual adjustment in class, you should have some insight into the adjustment problems of a particular individual. Today you will

be given the case history of such a maladjusted person. You are asked to discuss this problem among yourselves and attempt to arrive at a diagnosis of the difficulty and make suggestions and recommendations about what this person should do.

We will have three meetings. Each day your group will be evaluated on the basis of its achievements for the day. At the end of the third meeting, the daily ratings of your group will be averaged and that score will be your individual score for use on the final examination if you wish. The maximum score your group can make each day is twenty points, so your maximum individual score for use on the final examination can be twenty points -- if your group gets twenty points each day. Remember, you will all receive the same score. The score you get depends upon the achievements of your group.

Because the cases you will have are somewhat difficult, I have asked a member of the departmental staff who has had special training in clinical psychology and personality to come in and help you to reach your conclusions. Today, Mr. _____ is here to help you.

These meetings will be recorded to help me in my evaluation of your group achievements. You will have a few minutes to read over the case, then twenty minutes to discuss it and arrive at your conclusions. At the end of the period you will be given a brief questionnaire to complete.

Please do not discuss either the cases or meetings with any person outside of the group meeting. The next meeting will be at _____ o'clock tomorrow.

4. Instructions to the Competitive groups.

Since we have been talking and reading about personality and individual adjustment in class, you should have some insight into the adjustment problems of a single individual. Today you will be given the case history of such a maladjusted person. You are asked to discuss this problem among yourselves and attempt to arrive at a diagnosis of the difficulty and make suggestions and recommendations about what this person should do.

We will have three meetings. Each day each of you individually will be evaluated on your achievements for the day. The person making the

outstanding contribution will be given twenty points for the day. The rest of you will receive no credit for the day. At the end of the third meeting your individual daily scores will be averaged, and that score will be your score to use in the final examination if you wish. For example, suppose your daily scores are 20, 20, 0. Your average for use in the final examination would be 40 divided by 3, or 13 1/3. Everybody has an equal chance to win.

These meetings will be recorded to help me in my evaluation of your individual achievements. You will have a few minutes to read over the case, then twenty minutes to discuss it and arrive at your conclusions. At the end of the period you will be given a brief questionnaire to complete.

Please do not discuss either the cases or meetings with any person outside of the group meeting. The next meeting will be at _____ o'clock tomorrow.

The foregoing instructions were repeated at the beginning of each group session. Two slight modifications were necessary: the first was that the final statement concerning time of the next meeting was changed as relevant; the second was that the group composed of students from Dr. Wake's Personality class was told in the initial statement "Since you have been talking, etc..." In addition to the original statements to the groups, each group was told that they would be notified by the experimenter when ten, fifteen and nineteen minutes of their discussion period were up so that they could "round off" discussion and summarize if they wished.

The crucial differences among the instructions to subjects were, of course, generally to be found in the second paragraph of each set of instructions. These state-

ments were expressly designed to create the conditions and nature of the goal for which individuals should strive. Opportunity was also given for participants to ask questions about the instructions. If any, the instructions were clarified and repeated as often as necessary.

Several questions arose during the course of the experiment pertaining to a more detailed description of the nature and purposes of the group sessions. In response to these questions, the experimenter informed the groups that at the end of the experimental sessions a full and detailed account of the entire experiment would be duplicated and distributed. Care was taken to explain to the students that the entire nature of the experiment could not be divulged until the end of the sessions because of a possible deleterious effect upon the members of groups. Because the students were reasonably familiar with this common restriction in psychological experimentation, this condition was accepted with good grace by the group members. Every effort was exerted to reduce subjects' suspicions that they were being "tricked" or otherwise misled into a possibly uncomfortable personal situation by what they might say and do in the group meetings.

A question of particular importance frequently arose which pertained to whether groups were competing against

one another for the maximum possible score. Subjects were assured that this was not the case, but that evaluation was to be made of individuals or groups singly.

The method of evaluation, the results of which do not comprise any part of the data of this study, was based upon Roethlisberger's descriptions of the various levels of analysis to be found when groups attack case history material and upon the experimenter-instructor's subjective estimation of the extent to which group members effectively utilized classroom information about personality structure and dynamics. A certain amount of adjustment was necessary for those students drawn from the Personality section in this evaluative procedure for the reason that they had become familiar with a greater amount of information on the topic. The chief reason that the results of the evaluative procedures are not included in the results of this study lies in the subjectivity of estimations, and in the difficulty of formalizing evaluative criteria.

At the end of the third meeting of each group, subjects were informed that they could receive both their scores and a description of the experiment the next day, which was also the day of the final examination.

It should be emphasized that the groups worked in the absence of the experimenter and that their findings were entirely the result of their own efforts. The experimenter was not present in the room except as necessary

to inform the groups of the amount of remaining time. The only differences in instructions to the groups have been stated.

The Problems

The case study material was designed and selected chiefly as a medium for group process. Case history data were selected for two major reasons: first, it is generally interesting to students and afforded a relationship between group tasks and the General Psychology course; and second, case history material is an approximation of the content of a Bethel-type discussion group. It was believed that other tasks (e. g., maze learning) would have provided relatively clear, objective goals which would have afforded opportunity for an individual to act in the absence of any particular group standards.⁴

The three case histories used in the present experiment were selected from Berrien's Comments and Cases on

⁴ Deutsch, who used both human relations and puzzle solving tasks, comments: "The human relations problems are tasks in which the group itself, through consensus, provides the criteria for judging locomotion. In addition, the content of these problems is likely to evoke strongly-held personal value systems among the discussants. The puzzle problems...were chosen for contrast. Due to their 'objective' (i. e., logically demonstrable) solutions, locomotion could take place without group consensus. This, of course, provided the possibility of relatively more individual work in the puzzles...The relative lack of ideological relevance of the content of the puzzle problems also made 'conflict' more likely in the human relations problems" (12, p. 204).

Human Relations with the approval of concerned University departments which might subsequently wish to make use of them for instructional purposes. The cases were those of "Nick," "Bill Fischer," and "Bob Jackson." An alternate case, in the unlikely event that any group should dispose of a case before the allotted time was exhausted in a group meeting, was "George Heimer." This case was not used since no group completed discussion of its case for the day.

Because of copyright restrictions, the cases are not reproduced here.

The chief problem concerned in the use of the cases was the possibility that differences in behavior could be caused by differences in case material. In view of this possibility, three graduate students, including the investigator, read a number of those contained in Berrien's book and agreed among themselves that the four finally used differed very little in interest and difficulty. As a further precaution, the order of presentation of cases was in Latin square form within types of groups, so that both cumulative and daily effects might be canceled out in massed data analysis. Within the dependent groups, no leader twice discussed the same problem.

It must be emphasized that the cases were considered only as media for group process, and that no explanation of differences in behavior is predicated in this study upon differences among cases. This is not intended to

imply that cases may not have had effects, of course, but that they were far from the central focus of the experiment.

The Experimental Schedule

The following design, in view of the problems previously discussed, was adopted and followed throughout the course of the experiment.

<u>TYPE</u>	<u>GROUP</u>	I	II	III
INT	1	BJ	BF	N
	2	N	BJ	BF
	3	BF	N	BJ
IND	1	N	BF	BJ
	2	BF	BJ	N
	3	BJ	N	BF
DEP	1	BF - A	N - B	BJ - C
	2	N - C	BJ - A	BF - B
	3	BJ - B	BF - C	N - A
COMP	1	BJ	N	BF
	2	N	BF	BJ

Cell entries in the schedule above represent case histories, except among dependent groups. BF is the case of Bill Fischer, BJ the case of Bob Jackson, and N the

case of Nick. In addition to these, the dependent groups also contain letters A, B, and C in their respective cell entries to designate the leader for each day.

It will be noticed that the above design may be considered to be reducible to three complete and one incomplete Latin squares. Excluding the Competitive groups, the remaining three types constitute a larger 3 X 3 Latin square design.

We may expect, of course, not only differences among the four types of groups in the variables under consideration, but also cumulative effects within a given group over the experimental period of three days. The form in which the experiment was scheduled allows for analysis of these factors as well as minimization of effects due to varying cases and leaders. The Latin square form is extremely useful and sensitive in the statistical analysis in that the relatively small numbers of subjects within groups and types are accurately accounted for. Certain other hypotheses concerning the effects of these and other factors or combinations of factors may also be tested by statistical analysis in the Latin square form. Discussion of these additional problems will appear in the section on results.

The Measuring Instruments

Not only in the interests of economy of time and responsibility to subjects, but also in consideration of

of the kinds of questions a study proposes to answer, an experimenter is limited in the number of observations he may make of his experimental process. Particularly when introspective reports of subjects play an important role in determining the results of an experiment, the investigator must be careful not to demand more of his subjects than they are prepared to give.

The data of this study, as previously indicated, are largely in the form of such introspective reports for the major reason that there are no satisfactory means of "getting at" a given individual's perceptions other than through his statements. Reports of this kind are themselves far from perfect, of course, and require certain assumptions in their use as experimental data.

Perhaps the chief assumption in the use of introspective reports of subjects is that they understand properly what is expected of them, i. e., whether instructions are understood equally well among all participants and whether the judgment they are required to make is clearly distinguished. Cooperation of the subjects must also be assumed in the sense that subjects not only be able but also willing to furnish the information desired insofar as it is within their capabilities of doing so. It is unfortunately a fact, as early introspectionists discovered, that when subject is both "instrument" and variable, reliability and validity of reports are tenuous.

Several obligations fall, then, upon the investigator

who makes use of such data. Foremost is that the questions asked of subjects be simple in content and require fairly simple discriminations. Secondly, care must be taken that the method of report (i. e., the form of the questionnaire in this case) be as free as possible from ambiguity. Finally, some indication of the willingness of the subjects to participate in completing the reports to the best of his ability should be obtained.

The method of report used in this experiment was the rating scale combined with a simple ranking procedure described more fully on the following pages. Rating scales involve additional assumptions beyond those previously indicated: (a) scalar units should be clearly defined, (b) should as nearly as possible represent equidistant points along which some variable may be continuously distributed, and (c) the scale as a whole should be unidimensional, i. e., should refer to and be derived from a single frame of reference (18). An excellent discussion of these and certain other qualifications to be noted in the use of rating scales is to be found in Volkmann's paper (56).

Five rating scales were used in this experiment, from which seven of the nine basic classes of data were obtained. These scales were: (a) power over the group (including a self-rating), (b) benefit to the group (including a self-rating), (c) power over the individual, (d) benefit to the

individual, and (e) a post-meeting report (PMR) of liking for the meeting.

These scales are modifications, in part, of those originally used at the National Training Laboratory by the Kansas research team. The chief changes were in the addition of a method of ranking, the PMR, and space for optional comments by the discussants. Instructions to subjects were modified from those formerly used. The last addition, space for optional comments, constituted the source of the last basic datum of this study.

Every effort was made to conform to the assumptions in the use of both introspective data and rating scales listed on the preceding page. Two problems arose, however, which should be mentioned. First, with respect to the discriminability of the variables, it is possible to question the extent of the judgment required of subjects. Since these rating scales were administered at the end of each group meeting, it would appear that subjects were asked to make an "average" or over-all judgment of each other person's activity during the entire meeting. The alternative would have been an impossible task: to stop the discussion after each statement by any participant and secure a rating at that point. Therefore, the ratings received and given by each person are generalized expressions of others' perceptions of his activities or his perceptions of others. That this may be psychologically meaningful, however, can be inferred from two sets of facts:

particularly when entering unstructured or ambiguous relationships with other persons, there is a strong tendency to rely upon past experience with the others as a guide to appropriate action; it is likely that this experience is of the nature of a generalized perceptual "guide."⁵ In this manner, the over-all impressions educed by the rating scales may be strongly indicative of the important general attitude of an individual toward everyone in the group which will be the gross basis for his further actions. A second fact is that in the type of subject matter and personal relationships existing in the experimental groups, power (or benefit) is undoubtedly not simply the result of a few simple interactions, but is a pervasive aspect of the relation between any pair of subjects.

Second of the problems encountered in the use of the rating scales which might be at variance with the assumptions inherent in their use was the tendency not to rate other people low. Whether the instigation for

⁵ It is interesting to find that Thelen actually attempted a procedure to secure ratings during the discussion at the Human Relations Laboratory of the University of Chicago. Each of ten discussants were asked to depress a lever, after a statement was made by any other person in the group, in such a manner as to indicate on a lighted board whether that statement was pleasing or displeasing. The total number of green (pleasing) or red (displeasing) lights would then indicate to the speaker how he was affecting each other member of the group. Almost needless to say, the discussion outran the rate of lever-pressing and the experiment was abandoned. (Personal communication.)

this effect is cultural, due to a defect in the scale itself, or if it is actually representative of the perceptions of the raters is unknown. It would be difficult in the results of this experiment if any other assumption than that of representivity were adopted, however. There is some basis on which to maintain this assumption, viz., that some low responses were obtained and, more importantly, the subject material of the discussion groups was not of a kind which would lead to either extreme of relationships in the face of general cultural pressures to "acceptable" behavior in such situations.

Especial care was taken to make sure that all subjects knew what was expected of them, and questions were freely answered. When the actual ratings were made following a group meeting, the experimenter was present if assistance was needed. Subjects were asked to move to parts of the experimental room where their ratings could not be observed by other members of their group. That the ratings made by each person would be confidential (in that they would not be identified in any way) was repeatedly emphasized. As a part of this promise, the designator numbers of groups within each type have been altered in the present study.

Copies of the rating scales and instructions given to all subjects are to be found in the Appendix.

IV. RESULTS

Effectiveness of the Instructions

What indications are there that the subjects perceived themselves to be in the particular relationships intended by the instructions? Another way of stating this question is: How well did the instructions serve their purposes in the various groups?

Perhaps the best available information on this subject is to be found in the optional descriptive comments which each participant could make at the conclusion of each meeting. This is somewhat indirect evidence, to be sure, but some indication can nevertheless be obtained of the presence of the various relationships under consideration.

It must be remembered that these comments were entirely optional, both in actual execution and in content. Not all subjects described any aspect of their relations with other members of the group; a few chose the option of not answering the question at all.

Table I to follow is a summary of these comments arranged according to four recurrent general topics: the problem, own opportunity to participate, the adequacy of others' actions, and "group" oriented statements. Omitted are subjects' references to their satisfaction with the meeting, since these are to be dealt with at a later place.

Cell entries in the following table are the percent of

TABLE I

SUMMARY OF OPTIONAL STATEMENTS

Statement	Group											
	<u>Ind</u>			<u>Int</u>			<u>Dep</u>			<u>Comp</u>		
	1	2	3	1	2	3	1	2	3	1	2	
Problem												
interesting	83*	66	66	66	66	66	50	66	50	50	50	
uninteresting	0	0	17	0	0	0	17	0	17	17	17	
too long	0	0	0	0	0	0	0	0	0	0	17	
too short	50	17	0	0	0	0	0	0	0	0	0	
difficult	0	0	0	17	33	0	0	0	0	50	33	
easy	50	17	33	0	0	17	0	33	17	0	0	
"about right"	17	0	0	33	0	17	17	17	0	0	0	
unanswerable	0	0	0	0	0	0	0	0	0	33	17	
Opportunity to participate:												
adequate	50	33	33	33	33	0	0	17	0	0	0	
inadequate	0	0	17	17	17	0	33	0	33	33	33	
Adequacy of Others												
good	17	0	17	33	0	0	83	66	66	0	17	
average	0	17	0	0	0	0	17	0	17	0	0	
poor	0	0	0	50	33	0	0	17	17	0	17	
"Group"												
Equality	50	33	33	33	33	0	0	17	0	0	0	
Inequality	0	17	0	17	0	17	33	33	17	50	17	
Togetherness	66	17	33	17	17	33	17	17	0	0	17	
Disharmony	0	0	17	17	0	0	0	17	0	50	0	
Other	0	0	0	0	0	0	0	0	0	17	0	
Not answering	17	17	0	33	17	17	17	33	17	33	17	

* per cent of subjects within a group making this statement at least once in 3 days

group members making some specific statement in their comments on any of the three days. Many, of course, make two or more statements which were differently categorized, so that the total percentage for any group is greater than 100%.

It will be noticed from Table I that the Ind groups consistently perceived their problems to be interesting, relatively easy and occasionally "too short." Several students remarked to the experimenter after one of the Ind group meetings that they had to "pad" out part of the twenty minute discussion period because they had, at least to their satisfaction, thoroughly discussed the case history of the day. This, of course, could mean that they had dealt only with the superficial aspects of the case although no measure of "productivity" in this sense is available. Each person mentioning the necessity of "padding" also stated that they were ready and willing to tackle another case the same day.

Dependent groups as well as Ind groups saw the case as being "easy" on one or more days, while Int and Comp groups found case material difficult in some instances. Several members of the two Comp groups declared that they believed the cases had no solution -- a statement which has a certain amount of validity -- but coupled with their statements in two instances an indication that they did not feel the cases worth their time and energy.

Opportunity to participate was relatively infrequently

mentioned in the optional reports. Typical statements were: "People listen to me in our group and I like that," (from an Ind group); "I find sometimes I can't get a word in edgewise" (from a Comp group); "Even though they don't have to, they give me as much time to talk as I want" (from an Int group); and "I don't mind not being able to say anything. Nobody else says anything worthwhile anyway" (Comp).

The derogatory final part of the last statement was an evaluation of the adequacy of others. It was surprising to find that Int groups one and two more frequently were thus disapproving of others than were any other groups. The comments within these groups, however, appeared to be directed toward specific individuals who were not doing their share of the work or who appeared uninterested in the group proceedings. Negative comments about others in the Dep groups were of two kinds: derisive comments about one of the three leaders, and remarks to the effect that "some people think they know more about psychology" than the leader. The Comp group criticism was that a certain person monopolized the discussion time for presentation of his own views.

The leader was selected for favorable comment in the Dep groups very frequently. Most such comments reflected a high degree of confidence in the leaders' knowledge of the subject matter or in their methods of helping the group.

Those statements which referred to equality of participation other than those in the second category, opportunity to participate, were categorized under the heading of Group

Equality. Typical statements in the Ind groups were "I like it when everybody does his share," and "Others bring up important things I hadn't thought about." Int group statements were of the same order.

Inequality of participation statements appeared less often. Among these were "Two or three people -- I won't name any names -- run the meetings. I thought we were all supposed to have a chance to talk," (from a Comp group); "Two people never say anything, they just sit there" (Dep); and "I don't know why _____ even comes since nobody pays any attention to him" (Int).

"I have a strong sense of what you called 'we-feeling' about this group," was an example of the "Group Togetherness" category. This example, from an Int group, was duplicated in various forms throughout the groups. One Comp group member noted "I think everybody in this group likes the meetings because we get all wound up. It's a challenge." Other "Togetherness" statements were "I like it when everybody works together for something good," and "I think this (Ind) group deserves to win the twenty points because everybody does such a good job for the group."

Disharmony statements referred most often to confusion and bickering among group members. One statement, from an Int group, was "I think we ought to elect a leader or have you (the experimenter) come in here to keep people quiet and on the subject." A Comp group member reported "Everyone tries to outshout everybody else. As soon as

one person stops talking, someone else talks about something else." "Too much confusion and arguing" was a typical Comp response.

One unclassifiable response was "I don't like having to deprive other people of winning if I win, but I have to." This remark came from a Comp group member and perhaps points up the important fact that strong social pressures are brought to bear on the "eager" person who attempts to work his will upon the group. This pressure, of course, probably appears in all of the four group types, particularly those in which individual initiative is selected out for reward.

If the comments of subjects may be accepted as evidence of the effectiveness of the instructions, it would seem that the Competitive and Dependent groups were effectively and distinguishably structured. The Independent and Interdependent groups, however, shared many of the same characteristics. The chief distinction between these groups, however, is an exceedingly important one: emphasis was placed in the comments from Independent group members upon sharing and participating in the problem discussion. This emphasis was not noted in the Interdependent groups to a marked extent. A frequent complaint in the Int groups was that certain persons were failing to do their part, or, less often, that some participants "took over" the meetings.

It is possible to characterize the groups to a very limited extent from the comments: For example, the Indepen-

dent groups saw the task to be not only attainable, but relatively easily so; opportunity for discussion was adequate, and there was some praise of others. They frequently felt themselves to be a "group" working together on a common task in which each person was responsible for making a contribution to the group's progress.

The Interdependent groups were fairly satisfied with the task and their opportunities to participate in discussion. Others were freely evaluated, both positively and negatively; and there was some feeling of being a "group." There was a tendency, however, to blame failure upon those who failed to "do their shares," although not to the extent to which this criticism appeared in the Ind groups.

The Dependent groups found the problem interesting and easy at each meeting, but did not feel that they had fully found the solution to it. Opportunity to express own views was several times considered inadequate, but the leader was generally held in high esteem. Non-leaders were, if evaluated at all, generally discredited. There appeared to be no strong group-feeling expressed, and there were some indications of disharmony and aggression toward the leader.

Competitive groups were not well satisfied with either the nature or the ease of the case histories. Some members apparently found the task incapable of solution or rejected it entirely. Togetherness and other indications of "groupness" were absent. Inequality of participation and "hogging" the speaking time were often mentioned.

Perceived Power and Benefit Relationships

One of the basic hypotheses of this study was that there will be a positive relationship between perceived power of others over the group and perceived power of others over the individual. In order to arrive at the extent of this relationship each score given to each other individual on his amount of power over the rating individual each day was paired with each score given that other person on his amount of power over the group for that day. Ratings of own power were omitted, of course. These three hundred and thirty pairs of ratings were then correlated, using Pearsonian product-moment r . The obtained coefficients of correlation, the number of degrees of freedom available for each coefficient, and the levels of significance (from the Wallace-Snedecor tables) are given in Table II.

TABLE II

RELATIONSHIPS OF THE TWO POWER CATEGORIES

Days	r	df	P
1	.780	328	< .01
2	.686	328	< .01
3	.802	328	< .01

It may clearly be seen that the two power categories are correlated to a high degree and that the hypothesis is

supported. The second hypothesis, concerning an equivalent relationship between perceived benefit to the group and benefit to the individual, was tested in the same manner as that of the two power perceptions:

TABLE III
RELATIONSHIPS OF THE TWO BENEFIT CATEGORIES

Days	r	df	P
1	.689	328	< .01
2	.786	328	< .01
3	.809	328	< .01

It would appear then that benefit to the individual and benefit to the group perceptions are closely related, and that the hypothesis is supported.

It was questioned, however, whether differences in the extent of the relationships between the two power and two benefit categories were related to the extent to which need for others for own need satisfaction was present. These hypotheses (IC and ID) were tested in the following way: For each group situation on a given day, ninety pairs of scores were obtained (each of the eighteen participants made five ratings on each of the two variables). The only exception to this number of pairs was the Competitive situation, where but sixty pairs could be obtained. For each group situation on a

particular day, r was computed. Each r was then converted to its appropriate z value for the purpose of testing significance among obtained r 's.

TABLE IV

DISTRIBUTION OF RELATIONSHIPS OF POWER CATEGORIES
AND OF BENEFIT CATEGORIES BY GROUPSITUATIONS

Group	Day						
	I		II		III		
	r	z	r	z	r	z	
IND	Power	.87	1.333	.83	1.188	.83	1.188
	Benefit	.66	.793	.72	.908	.76	.996
INT	Power	.82	1.157	.88	1.376	.91	1.528
	Benefit	.70	.867	.79	1.071	.86	1.293
DEP	Power	.45	.485	.56	.633	.61	.709
	Benefit	.79	1.071	.75	.973	.87	1.333
COMP	Power	.39	.412	.55	.618	.62	.725
	Benefit	.42	.448	.54	.604	.49	.536

The predicted order of the correlations between power over the group and power over the individual was (1) Int, (2) Ind, (3) Dep, and (4) Comp. On Day I Int and Ind were reversed, but assumed the predicted positions on the following days. Dep and Comp groups revealed very little differences in obtained coefficients; there was no significant difference between Dep and Comp groups' coefficients when subjected to Fisher's z -test for the significance of obtained difference between r 's. There were also no significant differences between obtained r 's of the Int and Ind groups except on the third day,

when the r of .91 of the Int group was significantly higher than that of the Ind group ($P = .05$).

The two Int and Ind group situations were on each day significantly different from the obtained r 's for the Dep and Comp groups ($P \leq .01$). That is to say, the obtained correlation coefficients of perceived power to the group and power to the individual were significantly higher in the Int and Ind groups than those obtained for the Comp and Dep groups. The obtained order, with the exception of the first day when Ind and Int were reversed, was as predicted.

With reference to the obtained correlations between benefit to the group and benefit to the individual, the Dep group was not significantly different from the Int group; obtained coefficients were higher for the Dep group except on the second day. On the third day, Dep and Int obtained r 's were significantly higher than that obtained for the Ind groups. On all days, Comp was significantly below the other three groups. The expected order (Hypothesis ID) was (1) Int, (2) Dep, (3) Ind, and (4) Comp. The results indicated that this order, with the exception of the reversal of Int and Dep, on days I and III, was verified.

To sum up, the data gathered and described in this section tend to support the hypotheses (1) that perception of the power of others over the group and power of others over the rater are positively and significantly correlated;

(2) that perception of the benefit of others to the group and to the individual are also positively and significantly correlated; (3) that there are differences among the four group situations in the extent of the relationship between perceived power of others over the group and over the individual (i. e., Int and Ind were significantly different from Comp and Dep); and (4) that there are differences in the relationship of perceived benefit of others to the group and to the individual among the four group situations (i. e., particularly on the third day Int and Dep were significantly different from either Comp and Ind).

What do these tests imply for the experiment? There are several possible meanings which may be attributed to them. Chiefly, they imply that while a relationship exists between perceptions of the power or benefit of others' actions to the group and individual, this relationship may be modified by the nature of the group situation. It would appear that in some situations the individual is relatively "divorced" from his group: although he feels influenced by the actions of others which in some way affect the functioning of the group as he sees it, what benefits the group does not necessarily benefit him to the same extent. This discrepancy in benefit was most pronounced on the third day of the group meetings in those situations where need for the actions of others is relatively less (the Ind and Comp types) and where commonality of goals is also relatively lower.

Analysis of Variance

The powerful statistical tool of analysis of variance has not often been applied to problems of small group functioning, although it has a strong potential value. It is utilized in the present study for the purpose of testing the means of the various group situations with respect to power over the group (hypothesis IIB) and over the individual (hypothesis IIA) and benefit to the individual (IIC) and group (IID).² It has the added advantages of locating sources of variance due to the subjects themselves, to the various groups used, and to the three days over which the meetings were held, as well as certain other advantages to be described later.

One note of caution must be interjected, however. One of the basic assumptions of the form of analysis to be described is that if there is more than one score per cell, it is assumed that these m scores are independent of each other. Since it is the plan of the study to use the cell to represent the six sums of all five ratings received by each of the individuals who make up a group of a certain kind on a given day, this assumption is tenuous indeed. The effect of lack of independence of

¹ Particular thanks are due Dr. William Cass for the statistical design and form of this section.

this kind would be to increase variance due to subjects over the three days. Failure adequately to satisfy this assumption is a basic weakness unaccounted for in the analysis. That a correlation exists between subjects of group N on days 1, 2, and 3 is obviously true, but is accounted for in the method of analysis.

The following form of analysis will be utilized:

TABLE V
BASIC ANALYSIS OF VARIANCE TABLE

Source	Sum of Squares	df	Var. Est.
Columns (Days)	$mR \sum_c (\bar{X}_{..c} - \bar{X})^2 *$	C-1	s_c^2
Rows (Subjects)	$mC \sum_r (\bar{X}_{r.} - \bar{X})^2$	R-1	s_r^2
Interaction	$\sum_{rc} (\bar{X}_{rc} - \bar{X}_{r.} - \bar{X}_{.c} + \bar{X})^2$	(R-1)(C-1)	s_i^2
Total	$\sum_{rc} (\bar{X}_{rc} - \bar{X})^2$	mRC-1	

* McNemar's notation is used here (38).

The basic analysis above will be differentiated in the following ways:

Subjects	df
between subjects within groups	G(m-1)
between groups	G-1
between types of situations	T-1
between groups within types	T(G-1)
Days X Subjects interaction	(D-1)(S-1)
days X types	(D-1)(T-1)
days X groups within types	T(D-1)(G-1)
days X subjects within groups	G(m-1)(D-1)

The first hypothesis of this series concerned the differ-

ences among means of perceived power over the individual. The complex break-down of the basic sources of variance described above, however, allows insight into a great many more problems than this. The following questions will be asked for each of the four subsequent analyses:

1. Do individuals tend to maintain their same order through all three days of the meetings? That is, are there significant subject means?

2. Do means of the experimental groups within each type of group situation vary more than chance will allow?

3. Do type means -- that is, group situations means -- vary more than chance allows? This is the central question, of course.

4. Are there changes in group situation means through the three day experimental period? Are observed daily changes above chance expectancy?

It must be noted that the analyses of variance do not include the Competitive situations, for the chief reason that only two groups of this type of group situation were obtained. Comparison of the means of these groups, then, must be accomplished with caution.

With these data in mind, it is now possible, by means of the F-test, to seek answers for the four-questions previously raised.

1. Do individuals tend to maintain their same order throughout all three days of the meetings? That is, are there significant subject means? Each individual's score in a cell was the sum of all the ratings on one variable he received for a particular day.

TABLE VI

ANALYSIS OF VARIANCE OF PERCEIVED POWER OVER
THE INDIVIDUAL

Source	Sum of Squares	df	Var.Est.
Days	21.11	2	10.55
Subjects	999.19	53	18.85
between Ss w/in Grps.	766.06	45	17.02
between Groups	233.13	8	29.14
between Types	43.77	2	21.89
between Grps, w/in Type	189.35	6	31.56
Days X Subjects	216.81	106	2.04
Days X Types	17.60	4	4.40
Days X Grps. w/in Types	179.45	12	14.95
Days X Ss w/in Grps.	19.76	90	.22
Total	1237.11	161	

TABLE VII

ANALYSIS OF VARIANCE OF PERCEIVED BENEFIT TO THE PERSON

Source	Sum of Squares	df	Var.Est.
Days	40.11	2	20.05
Subjects	538.86	53	10.17
between Ss w/in Grps.	457.86	45	10.17
between Groups	81.00	8	10.12
between Types	58.47	2	29.24
between Grps. w/in Type	22.53	6	3.75
Days X Subjects	188.84	106	1.78
Days X Types	31.13	4	7.78
Day X Grps. w/in Types	55.95	12	4.66
Day X Ss w/in Grps.	101.76	90	1.13
Total	767.81	161	

TABLE VIII

ANALYSIS OF VARIANCE OF PERCEIVED POWER OVER THE GROUP

Source	Sum of Squares	df	Var.Est.
Days	7.94	2	3.97
Subjects	803.78	53	15.17
between Ss w/in Grps.	686.53	45	15.26
between groups	117.25	8	14.66
between Types	8.77	2	4.38
between Grps. w/in type	108.48	6	18.08
Days X Subjects	448.00	106	4.23
Days X Types	201.13	4	50.28
Days X Grps. w/in Types	34.78	12	2.90
Days X Ss w/in Grps.	212.09	90	2.36
Total	1260.00	161	

TABLE IX

ANALYSIS OF VARIANCE OF PERCEIVED BENEFIT TO THE GROUP

Source	Sum of Squares	df	Var.Est.
Days	9.253	2	4.63
Subjects	721.067	53	13.61
between Ss w/in Grps.	593.030	45	13.18
between Groups	128.037	8	16.00
between Types	5.46	2	2.73
between Grps. w/in type	122.58	6	20.43
Days X Subjects	203.83	106	1.92
Days X Types	14.48	4	3.62
Days X Grps. w/in Types	61.83	12	5.55
Days X Ss w/in Grps.	127.52	90	1.42
Total	934.152	161	

Test: Subjects within groups; with between groups and between days variances removed, significance will indicate whether subjects within their groups show significant variation.

Error Term: Day X Subjects within Groups; This error term contains variance due to errors of measurement and variance due to possible (but untestable) interactions of subjects and days within each group. The error term has been freed of variance due to possible interaction of Types X Days and Groups within Types X Days. The latter two interactions should have no bearing on individuals within groups. Significant F means that Subjects within Groups variance has variance over and above variance due to errors of measurement and relevant interactions.

Findings:

- | | | | |
|-----|----------------------------|------------|----------|
| (1) | Power over the individual: | F = 77.36; | P = .001 |
| (2) | Benefit to the individual: | F = 9.00; | P = .001 |
| (3) | Power over the group: | F = 6.47; | P = .001 |
| (4) | Benefit to the group: | F = 9.25; | P = .001 |

Conclusion: On all variables, individuals tend to remain in approximately the same order with reference to each other individual in their groups.

2. Do means of the experimental groups within each of the three types of group situations vary more than chance allows?

Test: Between Groups within types; significance will indicate that group means vary more than chance.

Error Term: Days X Groups within Types; this test will take into account whether groups within types vary significantly over and above possible interaction effects between days and groups within types.

Findings:

- | | | | |
|-----|----------------------------|-----------|-----------|
| (1) | Power over the individual: | F = 2.11; | not sign. |
| (2) | Benefit to the individual: | F = .80; | not sign. |
| (3) | Power over the group: | F = 6.23; | P = .01 |
| (4) | Benefit to the group: | F = 3.97; | P = .05 |

Conclusions: Group means within types over a period of three days do not vary more than chance allow in power and benefit to the individual categories; means vary significantly in power and benefit to the group categories. Inspection of data shows greatest variability in Ind groups.

3. Do means of the group situations over a period of three days vary more than chance allows? This is a re-statement of Hypothesis II, parts A, B, C, and D.

Test: Between Types; Significance will indicate that means of the three types vary more than chance on a given variable.

Error Term: Days X Types; Test takes into account whether types vary significantly over and above possible interaction effects of days on types.

Findings:

- | | | |
|-----|----------------------------|---------------------|
| (1) | Power over the individual: | F = 4.98; not sign. |
| (2) | Benefit to the individual: | F = 2.35; not sign. |
| (3) | Power over the group: | F = 1.51; not sign. |
| (4) | Benefit to the group: | F = .31; not sign. |

Conclusions: The hypothesis was not supported by the findings of the analysis of variance. Further comment concerning the order of obtained means will occur at a later point.

4. Are there changes in group situations means through the three day period? That is, what is the effect of days upon type means?

Test: Days X Types; significance will indicate that the passing of days has an effect upon situation means.

Error Term: Days X Groups within Types; This test indicates whether types change significantly through days over and above variation due to the effect of days on groups within types.

Findings:

- | | | |
|-----|----------------------------|---------------------|
| (1) | Power over the individual: | F = .29; not sign. |
| (2) | Benefit to the individual: | F = 1.67; not sign. |
| (3) | Power over the group: | F = 17.43; P = .001 |
| (4) | Benefit to the group: | F = .70; not sign. |

Conclusions: Days have no effect upon types with the exception of the category power over the group. Inspection of the data shows that the change occurred mainly in a decrease in average power attributed to others over the group on the second day. The Dep situations decreased most, with a steady decrease through the third day. Ind situations increased through days in power over the group.

It would be possible, as previously mentioned, to obtain many more tests from the foregoing analyses of variance. The point of diminishing returns is reached, however, if too extensive questionings are made. The most important facts for the present study obtained from the analyses are described in the preceding two pages.

The chief disturbing result of the preceding analyses of variance was that differences among type means, i. e., group situation levels, were not significant. Since the hypotheses were formulated in terms of expected orders, inspection of the data may be of some value.

Hypothesis IIA asked whether there would tend to be differences in the type means among the four situations in the average amount of power over the individual. This set of differences, when tested by the F statistic in the analysis, showed the smallest probability value (P was about .10). The expected order was (1) Ind, (2) Dep, (3) Int, and (4) Comp. The obtained order, and the average ranking in power over the individual given each member of the group, was: (1) Ind ($\bar{X} = 1.49$); (2) Int ($\bar{X} = 1.36$); (3) Dep ($\bar{X} = 1.23$); and (4) Comp ($\bar{X} = .95$). Power over the individual ratings as well as power over the group, were made on a four point scale ranging from 0 power to 3.

Hypothesis IIB predicted differences among the four group situations in the averages of power over the group ratings. The expected order was (1) Ind. (2) Dep, (3)

Int, and (4) Comp. The obtained order, with the average ratings in power over the group, was (1) Ind ($\bar{X} = 1.82$); (2) Dep ($\bar{X} = 1.75$); (3) Int ($\bar{X} = 1.69$); and (4) Comp ($\bar{X} = 1.22$).

The third hypothesis, IIC, was concerned with the average perceived benefit to the individual. The expected order in this instance was (1) Int, (2) Dep, (3) Ind, and (4) Comp. The obtained order, from inspection of the data, shows the following rankings, again with average ratings given to each other person in the group: (1) Dep ($\bar{X} = 3.84$); (2) Int ($\bar{X} = 3.79$); (3) Ind ($\bar{X} = 3.56$); and (4) Comp ($\bar{X} = 3.01$). The two benefit rating scales were on a five point continuum, ranging from -2 through 0 to $\frac{1}{2}$. In the calculations described in this section, -2 was given the value of 1, -1 the value of 2, 0 was given 3, etc. Therefore, the averages above indicate that some positive benefit was generally perceived in all the groups, although the Comp group average is only slightly above 0 on the original scale, the point which designated "neither aid nor hindrance."

The last of these four hypotheses concerning the levels of perceived power and benefit is that which predicted differences among the group situations in the average perceived benefit to the group. The expected order was (1) Ind, (2) Int, (3) Dep, and (4) Comp. The obtained order of averages was: (1) Ind ($\bar{X} = 4.06$); (2) Int ($\bar{X} = 4.01$); (3) Dep ($\bar{X} = 3.93$); and (4) Comp ($\bar{X} = 3.09$). It is interesting to note that benefit to the group of others was gen-

erally perceived to be slightly higher than benefit to the self deriving from others' actions.

The comparison of obtained orders with expected orders just described indicates that the relative orders of each of the perceptual averages were about as predicted, although there was an occasional transposition of Dep and Int types. In view of the lack of significance of the differences among the various means as revealed by the analysis of variance there can be no conclusive answers to the hypotheses.

The problem of homogeneity of ratings of individuals on the power and benefit variables is the last item which is partially answered by the analysis of variance in the form of the finding that individuals tend at least to maintain their same positions in the group. The chi-square distribution can be used as an approximate test of the homogeneity of several estimates of variance with differing degrees of freedom. This test, adopted from Rider (44), when applied to modified variance estimates of the analyses will furnish an answer to the question of whether significant homogeneity exists among the three group types included in the analysis. The procedure used in the present problem was to take the marginal sums of summed ratings obtained by each individual within a particular group, obtain an estimate of the variance of the derivations of these marginal sums about the mean of the group in which the individuals are located, and then per-

form the requisite calculations. It is sufficient to know in this study whether three estimates of variance are or are not homogeneous: the most heterogeneous group of the Ind type, the most heterogeneous group of the Int type, and the most heterogeneous group of the Comp type. The Dep group marginal sums are those other than the leader for a particular group, so that the available degrees of freedom for this group are only four in number. Estimates of variances in the Int and Ind groups are predicated on five degrees of freedom each.

Significance of X^2 will indicate that the three estimates of variance are not homogeneous. It is expected that homogeneity will not appear if the Dep group's non-leaders are clustered together in a marked manner.

TABLE X
CHI-SQUARE TESTS OF HOMOGENEITY OF VARIANCE

<u>Variable</u>	<u>Chi-Square</u>	<u>df</u>	<u>P</u>
Power over individual	3.207	2	.20
Benefit to the individual	6.007	2	.05 *
Power over the group	7.121	2	.03 *
Benefit to the group	1.656	2	.55

* Significant

The results of this test indicate that the three groups, tested on each of the four power-benefit categories were homogeneous on power over the individual and benefit to the group. Heterogeneity occurred on the variables of

benefit to the individual and power over the group.

Inspection of the marginal sums used for the test shows that in benefit to the individual in the Dep group sums of ratings were closely clustered and that non-leaders received very similar scores on this variable. So far as power over the group is concerned, there does not appear to be any difference between the Dep and Int groups' variances; the non-homogeneous group was the Ind group tested, which is consistent with the findings of the analysis of variance which showed group means to vary on power over the group. Inspection of the data at that time revealed that the major group within type variability was to be found in the Ind group.

What does this maze of statistics demonstrate? The most important fact from the last test is that subjects in the Dep groups tend to be seen very much alike in their ability to benefit the individual, but that they were consistently perceived to be rather deficient in this ability. In the Ind group, subjects were alike perceived to be consistently high in their ability to influence what the group did. Since the most heterogeneous groups were used for the test on each of the four variables, we may suppose that these findings apply to all groups within the four situations, i. e., that Ind groups tend to perceive their members as being powerful to the group in a similarly great degree, and that Dep groups alike see

their members as relatively low in ability to benefit the individual.

The test described here may have been over-rigorous in that the selection of only the most heterogeneous group within each type for comparison may contribute strongly to the acceptance of the null hypothesis when it is false. A second test may distinguish differences in distribution of ratings between Int and Dep groups which could have been obscured by the presence of an Ind group. It is necessary to bring out such discrepancies in distribution, since these are probably the chief points of difference between Ind and Dep groups in this study.

The appropriate test here is one of the comparison of marginal sums, i. e., sums of ranks ratings received by each person over the three day period, with and without consideration of the scores obtained by the leaders of the Dep group. The groups selected for this test, which was performed on each of the four major perceptual variables, were the most heterogeneous of the Int and the most heterogeneous of Dep groups.

Significance will demonstrate that the variance estimates of the two groups are not homogeneous. It may be seen that on two of the perceptual variables -- power over and benefit to the individual -- there were significant differences between the two groups. The major conclusion from this test is that the two groups differed in the homogeneity of ratings given their members on the extent

TABLE XI

F-TESTS OF VARIANCE ESTIMATES OF INT AND DEP GROUPS

<u>Perceptual Variable</u>	<u>F w/leader</u>	<u>F w/out leader</u>
Power over the individual	1.62	6.49*
Power over the group	1.56	4.85
Benefit to the group	1.27	2.22
Benefit to the individual	2.18	6.94*

* Significant at 5% level.

to which others could have power over or benefit the individual. There were relatively wide variations in these perceptions among members of the Int group, relatively narrow variation among the members of the Dep group.

Self-Estimates of Power and Benefit

The first hypotheses in this series dealt with the question of commonality of perceptions of the actions of others which tend to have power over and benefit the group. It was suggested that knowledge of the extent of common perceptions would be of value in estimating the strength of group norms which enable the individual better to estimate his own impact upon the group.

The statistical tools utilized to obtain the amount of agreement of raters of the power or benefit of other persons to the group are of a rather unusual kind. The W statistic of Kendall and its related tests are not

familiar to most psychologists, although they may be of great value. The primary use of this statistic in psychological investigation is in the determination of the measure of agreement among subjects' judgments, which is precisely the problem at hand. W is a measure of the concordance of rankings, irrespective of the correctness of the rankings about the matter at hand. There may be high concordance of rankings about something which is incorrect.

Part of the instructions to the subjects in this experiment was that they rank each member of the group as well as rate them on the four variables. This was done for two reasons: first, to allow easy transposition to the W statistic of judgments, and second, to clarify ratings when they might appear at the same place on the scale. It was commonly found, for example, that rating checks were large and did not touch the continuum; where there was doubt as to the correct location for any person the relative position of that person could be clarified by referring to the ranking given. Highest individuals on any set of ratings (such as power over the group) were ranked 1, next highest 2, etc. Ties were allowed, of course.

It must be noted that the use of rankings obscures the fact that there might be a wide discrepancy in ratings given to two consecutive individuals, but that their ranks would not disclose this fact. The rankings are only

statements of relative positions of persons in the group with respect to some set of judgments.

The questions to which the *W* statistic should provide information are those, as noted, concerning the commonality or concordance of judgments about the relative position of each person in the group with respect to the rest of the members of the group. Specifically, we wish to ask if obtained *W* values are greater than could be expected by chance.

TABLE XII
CONCORDANCES OF POWER AND BENEFIT TO THE GROUP

Type	Group	Days					
		I		II		III	
		P	B	P	B	P	B
I Int	1	.163	.276	.449	.090	.518*	.490
	2	.586*	.648*	.711*	.589*	.809*	.798*
	3	.425	.545*	.479	.540*	.771*	.578*
Ind	1	.502*	.530*	.375	.313	.191	.299
	2	.651*	.498	.608*	.375	.448	.590*
	3	.270	.235	.340	.332	.277	.273
Dep	1	.212	.214	.571*	.556*	.594*	.579*
	2	.264	.592*	.470	.063	.580*	.118
	3	.266	.606*	.659*	.502*	.595*	.631*
Comp	1	.262	.153	.448	.163	.371	.231
	2	.202	.191	.132	.248	.160	.302

* Significant at 5% level or less.

Table XII shows the *W* values for each of the eleven groups on each of the three meeting days. The values marked with an asterisk are significant. The minimum significant

value was .499, as computed by the method outlined in Kendall (23, p. 419). The formulae for the test of significance will not be reproduced here.

Summarily, the most striking characteristics of these values are the changes which they undergo in the various group situations. It will be noticed, for example, that W begins relatively low in the Int groups, but rises toward the third day of meetings, indicating that commonality of judgment is growing. The reverse is apparently true for both the power and benefit judgments of the Ind situation. The Dep situation values rise in a manner similar to that of the Int groups, but never reach as high limits as do those of the latter situation. W values for the Comp groups remain relatively constant.

It is unfortunate that there is no statistical means of determining the difference between two obtained W 's, for it would be interesting to determine whether Int and Dep are significantly different on any day, among other comparisons which might be made.

It is also possible to test for the commonality of judgments for a given group over all three days, asking the question whether groups consistently judged the same individuals in the same relative positions within the group. Some indication has been obtained from the analysis of variance on this subject, namely that individual means are significant and that individuals remain in approximately the same positions throughout the three

experimental days. A W test of the consistency of ratings of individuals, however, will show more clearly where discrepancies of agreement occur than does the analysis of variance procedure.

The concordance values given in Table XIII refer to the consistencies of position within a group over the entire three day experimental period.

TABLE XIII

CONCORDANCES OF POWER AND BENEFIT TO THE GROUP OVER THE EXPERIMENTAL PERIOD

<u>Type</u>	<u>Group</u>	<u>Power</u>	<u>Benefit</u>	<u>Type</u>	<u>Group</u>	<u>Power</u>	<u>Benefit</u>
Int	1	.835*	.682*	Dep	1	.778*	.794*
	2	.835*	.898*		2	.749*	.644*
	3	.794*	.760*		3	.762*	.860*
Ind	1	.568	.560	Comp	1	.584*	.540
	2	.496	.486		2	.489	.403
	3	.370	.275				

* Significant at 5% level or less

The minimum significant value for W (5% level) was .572, computed in the same manner as those for Table XII.

Table XIII shows that the Int and Dep situations regularly produced consistent perceptions of each individual in the group. Combined with the information gained from the analysis of variance, the picture appears to be that the Int groups tend to perceive their members in a consistent way, but the average rating given each person is relatively lower than in the Dep (usually) and Ind

groups. The Ind group tends to give more high ratings, but the distribution of these ratings is generally inconsistent. Ind group I of Table XIII is the same group that was tested for homogeneity of variance previously (Table X). At that time, this group appeared to be homogeneous with respect to marginal sums, i. e., sums of individual scores through all three days. The conclusion which could be drawn from the W values in Tables XII and XIII concerning the Ind groups and from the information on homogeneity is that no person stood out among all the members of the group for all persons each day. Different persons were apparently selected as the most powerful over the group by differing raters on each of the three days.

It is now possible to furnish an answer to the hypotheses for which the W values were computed. Specifically, the order of expected concordances of perceptions of the power of others over the group was, from Hypothesis IIIA: (1) Int, (2) Dep, (3) Ind, and (4) Comp. Table XIII verifies this order. It is interesting to note, from Table XII, that changes do occur each day in the direction of increasing commonality for Int and Dep, decreasing commonality for Ind, and relatively little change for the Comp groups.

Hypothesis IIIB predicted that the order of concordance of perception of the benefit of others to the group would be: (1) Int, (2) Dep, (3) Ind, and (4) Comp. The

obtained concordances in Table XIII indicate that Dep and Int are almost identical in obtained W values, with Dep having perhaps a slight lead. Ind and Comp were in the predicted sequence.

Attention may now be turned to hypotheses IVA and IVB, which refer to differences among group situations in the extent to which individuals are able accurately to estimate their own positions in the group, and VA and VB, which deal with changes in accuracy of self-perceptions over the three day period.

The measure of accuracy of self-perception was the extent to which an individual's self rating deviated from the average rating given him by all other members of his group on the variable under consideration. Obviously, those with small deviations were most accurate in their self-perceptions in these terms. When all sixty-six deviations were arranged, the thirty-three deviations of the smallest size were considered "accurate" deviations; all others, regardless of direction of deviation were "inaccurate." Tables XIV to XIX show the number of members within each type whose perceptions fell within the "accurate" category for each day. Both the variables of power over the group and benefit to the group are included in the tables.

Hypotheses IVA and IVB predicted that the orders of accuracy of self-perceptions would be (1) Int, (2) Dep, (3) Ind, and (4) Comp, which were exactly the orders obtained, with the exception of benefit on day III, at

TABLES XIV-XIX

ACCURACY OF SELF-PERCEPTIONS OF POWER AND BENEFIT
BY DAYS AND TYPESTable XIV
Perceptions of Power-Day I

	Int	Ind	Dep	Comp	
Accur.	12	8	10	3	33
Not Accur.	6	10	8	9	33
	18	18	18	12	66
	$X^2 = 5.44$				
	$P = .15$				

df = 3

Table XV
Perceptions of Benefit-Day I

	Int	Ind	Dep	Comp	
Accur.	11	9	11	2	33
Not Accur.	7	9	7	10	33
	18	18	18	12	66
	$X^2 = 7.09$				
	$P = .07$				

Table XVI
Perceptions of Power-Day II

	Int	Ind	Dep	Comp	
Accur.	12	6	12	3	33
Not Accur.	6	12	6	9	33
	18	18	18	12	66
	$X^2 = 8.00$				
	$P = .04$				

df = 3

Table XVII
Perceptions of Benefit-Day II

	Int	Ind	Dep	Comp	
Accur.	10	9	12	2	33
Not Accur.	8	9	6	10	33
	18	18	18	12	66
	$X^2 = 7.54$				
	$P = .06$				

Table XVIII
Perceptions of Power-Day III

	Int	Ind	Dep	Comp	
Accur.	13	7	11	2	33
Not Accur.	5	11	7	10	33
	18	18	18	12	66
	$X^2 = 6.07$				
	$P = .12$				

df = 3

Table XIX
Perceptions of Benefit-Day III

	Int	Ind	Dep	Comp	
Accur.	10	9	11	3	33
Not Accur.	8	9	7	9	33
	18	18	18	12	66
	$X^2 = 4.11$				
	$P = .25$				

which time Dep and Int were reversed. This is to say that more people were able to judge their own locations in the group accurately in the Int and Dep situations (which were very much alike) than in the Ind and Comp situations.

Hypotheses VA and VB, were not supported, however, either by the data shown in Tables XIV to XIX or by inspection of the changes in average deviations within each group over the three day period. These hypotheses, which were concerned with changes in the direction of increasing accuracy over the three day period, predicted that the order of increasing accuracy on both self-perceptions would be (1) Ind, (2) Int, (3) Dep, and (4) Comp. Inspection of the tables shows that no group changed greatly over the three days in either category. Averages of average deviations for each group show a similar lack of trend toward accuracy.

The General Relationships

Hypothesis VI raised the possibility that those who accurately perceive their own position in their groups on power and benefit to the group will tend to see other members of the group as more capable of influencing their behavior. Table XX describes this relationship.

The way in which entries for Table XX were obtained was this: accuracy scores for all individuals were arrayed and ranked. Those thirty-three persons scoring most

TABLE XX

RELATIONSHIP OF ACCURACY OF PERCEPTION OF OWN POSITION
AND POWER OVER THE INDIVIDUAL RATINGS GIVEN
ON DAY I

Power Ratings Given	<u>Accuracy of Self Perception</u>		Totals
	Accurate	Not Accurate	
Above median	24	9	33
Below median	9	24	33
Totals	33	33	66

df = 1

 $\chi^2 = 13.61$

P = < .01

TABLE XXI

RELATIONSHIP OF ACCURACY OF PERCEPTION OF OWN POSITION
AND POWER OVER THE INDIVIDUAL RATINGS GIVEN
ON DAY II

Power Ratings Given	<u>Accuracy of Self Perception</u>		Totals
	Accurate	Not Accurate	
Above median	22	11	33
Below median	11	22	33
Totals	33	33	66

df = 1

 $\chi^2 = 7.32$

P = < .01

TABLE XXII

RELATIONSHIP OF ACCURACY OF PERCEPTION OF OWN POSITION
AND POWER OVER THE INDIVIDUAL RATINGS GIVEN
ON DAY III

Power Ratings Given	<u>Accuracy of Self Perception</u>		Totals
	Accurate	Not Accurate	
Above median	24	9	33
Below median	9	24	33
Totals	33	33	66

df = 1

 $\chi^2 = 13.61$

P = < .01

accurately on each power and benefit were selected as the "accurate" group for the first day. Tables XXI and XXII describe the relationships for days II and III. Combined ranks were used to obtain these individual categories. Average power over the individual scores given others were also arrayed and the median found. In this manner, the "accuracy" group of a given person and the relative position of his scores given others could be compared and entered in the tables.

A related pair of hypotheses, VIIA and VIIB, were concerned with the prediction of an inverse relationship between self ratings on power over the group and the perceived power of others over the group. Each of these possible two relationships were tested for each day by matching the individual's own perceptions (regardless of the accuracy of these perceptions) of his power or his benefit to the group with the average ratings given others on each of the variables, and then performing a Pearsonian product-moment r .

TABLE XXIII

RELATIONSHIPS OF SELF-PERCEPTIONS TO RATINGS OF POWER OR BENEFIT TO THE GROUP GIVEN OTHERS

<u>Variable</u>	<u>Day I</u>	<u>Day II</u>	<u>Day III</u>
Power over the group	.182	.207	.286*
Benefit to the group	.234	.254*	.320*

* Significant at or less than 5% level ($\alpha_p = .124$)

The hypotheses were not supported in any instance, as may be seen from the table. The findings, rather, may be interpreted in several possible ways. First, it is possible to assume that there is no necessary relationship between self-ratings and those given others, except for a slight tendency to rate others higher or lower when the rater puts himself as high or low. A second possibility is that the raters distribute their ratings of others about their conceptions of their own position in the group, i. e., the raters use themselves as a frame of reference for all their ratings. Since average ratings given were used in the above coefficients, this may easily be the case. Still a third possibility is that the raters or the recipients were homogeneous, which would serve to depress the obtained relationships. The third possibility is not well supported in view of the findings reported in Tables XIV to XIX, for example, in that self-ratings, at least, were not homogeneous.

What relationships are there between ratings given to the self or others and satisfaction with the group meetings? Hypothesis VIIIA was concerned with one such relationship, namely, the possibility of a positive agreement between perceptions of the benefit of others to the individual and the rater's satisfaction with the meetings.

Hypotheses VIIIB and VIIIC related to the relationship between accuracy of knowledge of own position

TABLE XXIV

RELATIONSHIP OF PERCEIVED BENEFIT TO THE INDIVIDUAL AND SATISFACTION ON DAY I

Satisfaction	Perceived Benefit		
	Above med.	Below med.	
Above median	20	13	33
Below median	13	20	33
	33	33	66

df = 1 $\chi^2 = 2.97$ P = 2.08

TABLE XXV

RELATIONSHIP OF PERCEIVED BENEFIT TO THE INDIVIDUAL AND SATISFACTION ON DAY II

Satisfaction	Perceived Benefit		
	Above med.	Below med.	
Above median	21	12	33
Below median	12	21	33
	33	33	66

df = 1 $\chi^2 = 4.92$ P = 2.04

TABLE XXVI

RELATIONSHIP OF PERCEIVED BENEFIT TO THE INDIVIDUAL AND SATISFACTION ON DAY III

Satisfaction	Perceived Benefit		
	Above med.	Below med.	
Above median	21	12	33
Below median	12	21	33
	33	33	66

df = 1 $\chi^2 = 4.92$ P = 2.04

TABLE XXVII

RELATIONSHIPS OF ACCURACY OF SELF-PERCEPTION OF POWER
OVER THE GROUP AND SATISFACTION ON DAY I

Satisfaction	Not		
	Accurate	Accurate	
Above median	17	16	33
Below median	16	17	33
	33	33	66

df = 1

 $\chi^2 = .064$

P = .80

TABLE XXVII I

RELATIONSHIPS OF ACCURACY OF SELF-PERCEPTION OF POWER
OVER THE GROUP AND SATISFACTION ON DAY II

Satisfaction	Not		
	Accurate	Accurate	
Above median	18	15	33
Below median	15	18	33
	33	33	66

df = 1

 $\chi^2 = .552$

P = 0.60

TABLE XXIX

RELATIONSHIPS OF ACCURACY OF SELF-PERCEPTION OF POWER
OVER THE GROUP AND SATISFACTION ON DAY III

Satisfaction	Not		
	Accurate	Accurate	
Above median	19	14	33
Below median	14	19	33
	33	33	66

df = 1

 $\chi^2 = 1.756$

P = 0.19

TABLE XXX

RELATIONSHIPS OF ACCURACY OF SELF-PERCEPTION OF BENEFIT
TO THE GROUP AND SATISFACTION ON DAY I

Satisfaction	Not		
	Accurate	Accurate	
Above median	18	15	33
Below median	15	18	33
	33	33	66
df = 1	$\chi^2 = .552$		P = 0.60

TABLE XXXI

RELATIONSHIPS OF ACCURACY OF SELF-PERCEPTION OF BENEFIT
TO THE GROUP AND SATISFACTION ON DAY II

Satisfaction	Not		
	Accurate	Accurate	
Above median	19	14	33
Below median	14	19	33
	33	33	66
df = 1	$\chi^2 = 1.756$		P = .19

TABLE XXXII

RELATIONSHIPS OF ACCURACY OF SELF-PERCEPTION OF BENEFIT
TO THE GROUP AND SATISFACTION ON DAY III

Satisfaction	Not		
	Accurate	Accurate	
Above median	20	13	33
Below median	13	20	33
	33	33	66
df = 1	$\chi^2 = 2.97$		P = 0.08

TABLE XXXIII

RELATIONSHIPS OF ACCURACY OF SELF-PERCEPTION AND PERCEIVED BENEFIT TO THE SELF AND SATISFACTION ON DAY I

Satisfaction	<u>Accuracy of self-perception and perceived benefit to the self</u>		
	Above med.	Below med.	
Above median	21	12	33
Below median	12	21	33
	33	33	66
df = 1	$\chi^2 = 4.88$		P = .03

TABLE XXXIV

RELATIONSHIPS OF ACCURACY OF SELF-PERCEPTION AND PERCEIVED BENEFIT TO THE SELF AND SATISFACTION ON DAY II

Satisfaction	<u>Accuracy of self-perception and perceived benefit to the self</u>		
	Above med.	Below med.	
Above median	21	12	33
Below median	12	21	33
	33	33	66
df = 1	$\chi^2 = 4.88$		P = .03

TABLE XXXV

RELATIONSHIPS OF ACCURACY OF SELF-PERCEPTION AND PERCEIVED BENEFIT TO THE SELF AND SATISFACTION ON Day III

Satisfaction	<u>Accuracy of self-perception and perceived benefit to the self</u>		
	Above med.	Below med.	
Above median	22	11	33
Below median	11	22	33
	33	33	66
df = 1	$\chi^2 = 7.28$		P = .01

in the group and satisfaction with meetings, but were not generally supported by the data. Tables XXVII to XXXII show these relationships.

The final hypothesis (VIII D) was concerned with a combination of the perceptions described, since it would appear that none by itself is a sufficient predictor of satisfaction. It is also meaningful psychologically to question whether a combination of knowing one's position in the group and perceiving benefit to derive from the actions of others is not conducive to satisfaction. The results of Tables XXXIII to XXXV indicate that this is strongly possible.

Cell entries for Tables XXXIII to XXXV were obtained in a manner similar to those previously described in this section. Individual scores were arrayed and ranked on each of the three variables, accuracy of own position, perceived benefit to the self derived from others, and satisfaction. Individuals whose sums of ranks on the first two variables fell into the upper half of the distribution were compared with those whose sums of ranks fell in the lower rank.

It may clearly be seen from the above tables that the hypothesis is supported by the data. Those people who accurately perceive their own position in the group and see others as sources of high benefit are the most satisfied with the group meetings.

Caution demands that it should be remarked that these results should be accepted with the recognition that (a) those people who most accurately perceive their own positions are more frequently in the interdependent and dependent groups (cf. tables XIV through XIX), and (b) these groups tended always to rate others high on benefit to the individual (cf. p. 112). The point is that there may be a common factor running through the variables being tested here. What the nature of this common factor may be, if it exists at all, is open to speculation. Unfortunately, there is no satisfactory statistical technique to examine each of the groups individually on this question.

V. DISCUSSION AND CONCLUSIONS

What may be said of the effects of the four group situations upon perceptions of power and benefit in summary of the results of the previous section? Perhaps a useful means of integrating the findings of the study is to attempt to characterize again each group in terms of the variables and the optional reports.

The chief characteristics of the Independent situation are to be found in the changes which occurred throughout the course of the meetings. It would appear that all three groups began with high motivation, interest in the work, equality of opportunity, and confidence in themselves and their problems. There was a relatively high concordance of perceptions of the power and of the benefit of others to the group; self-perceptions were fairly accurate. On the second day, however, reports and ratings began to appear as if the level of functioning of the day before had been disrupted in some way. Concordances of perceptions dropped slightly, as did accuracy of self-perceptions of power over the group. Perceptions of the power of others over the group rose slightly, but the other major categories of perceived power or benefit did not change significantly. On the third day, changes continued in the same direction, although accuracy of self-perceptions remained at the former level.

The general levels of power over the group and over the individual remained consistently higher in the Independent groups than in any other group situation. Benefit to the group was also the highest of all situations over the three day period, but benefit to the individual decreased steadily. Overall, there was a strong tendency to rate others high, but the high ratings did not appear to be given regularly to any particular persons over the three day period; that is to say, there were no persons consistently perceived to be outstanding by all members of the group.

Another noteworthy change was the steady decrease in perceived benefit to the individual occurring in the Independent groups, despite the high power ratings given. It is as if the raters saw other members of the group as seeking to influence the group's actions and occasionally succeeding in doing so -- but that the individual member was not benefited by these actions. This is precisely what could be expected in this situation if the individual were forced to forego his own immediate goals in the event that someone else succeeded in obtaining his own goals.

The Dependent and Interdependent situations should be considered together, since they shared many of the same characteristics. The general power and benefit levels of the two groups were nearly identical in all cases, but

when the differences in distribution were taken into account as to their effects upon the general levels the two situations differed markedly. It was particularly upon power over the individual and benefit to the individual that the two groups differed in homogeneity when the ratings given the leader in the Dependent group were removed. Other members of the Dependent group were perceived to be homogeneously less able to benefit or have power over the individual. The concordance values demonstrate that subjects increasingly agreed among themselves as to the relative positions of all persons in both the Dependent and Interdependent situations, but the Dependent group did not perceive non-leaders to be strong in ability to influence or help the individual. The Interdependent group, while concordance existed, tended toward a greater spread of distribution of ratings than did the Dependent group.

The presence of the leader in the computations of power and benefit levels caused the average of these levels to rise in the Dependent groups. When the leader was removed, the general level of power and benefit to the individual of non-leaders was lowered below that of the Interdependent groups, considering of course the differences in number of raters.

In both instances, presence or absence of the leader in the Dependent situations did not materially affect the averages of power and benefit to the group. It is as if

the raters perceived other non-leaders to be relatively incapable of helping or influencing them as individuals, but capable of affecting the group's progress. The Interdependent groups clearly showed the importance of the individual member in the determination of both individual and group success.

The Competitive group situation has received relatively less consideration in this study, largely because of the inability to include these groups in the statistical computations. The importance of these situations, however, must not be overlooked.

While the Competitive situation was atypical in the sense that such "pure" competition rarely arises in ordinary living, it demonstrates well one of the bounding limits upon the perception of power and benefit. Since in this type of situation need for others for own locomotion was minimized, it was expected that power would be the lowest of the four situations, as it was. Because of the fact that advance by one person implied detriment to all others in the group, benefit also was the lowest in this group situation. There were frequent complaints from members in the optional reports that some members were holding the floor, thus preventing others from speaking, or were in other ways discouraging equality of participation among members. Power self-perceptions were the least accurate of the entire series,

but both these and self-perceptions of benefit to the group remained relatively constant through the three day period.

The Competitive group situations are impressive because of their lack of change. The impression received from examination of this situation is that of maximum heterogeneity among members; that is, an absence of the factors which are usually considered to be essential to efficient organization. This situation points out best of all four that pressures toward uniformity (which are understood in this study in terms of perceived power) are minimized in the absence of need for the actions of others for own locomotion.

In reference to the basic theoretical position of this study, there are several possible conclusions which may be drawn:

(1) The amount of perceived power of others to the individual or over the group can be predicted from the primary formulation that perceived power is functionally related to (a) the extent of need for others for own need satisfaction, and (b) the extent to which others are perceived to be locomoting in directions different from own goals. The level of motivation of participants in this study was assumed to be a constant factor, and some indications of this element were received from inspection of the optional reports.

(2) The amount of perceived benefit, given the conditions for the occurrence of power, can be predicted

from knowledge of the extent to which actions of others are in a direction equal to own locomotion.

(3) The condition for the occurrence of power is one of perceived disequilibrium in the social situation of the individual, for the reduction of which disequilibrium power is exerted. Unless some commonality of goals is achieved, the exertion of power by a member, which is perceived by other members of a group, is not beneficial to the percipients. This, as in the Independent situation to a marked extent, leads to the exertion (and perception) of more power and somewhat less benefit through the course of group meetings. The exertion of power when common goals cannot be achieved and where there is need for the actions of others for own need satisfaction leads to the exertion of more power. The result may be disruption of the group.

(4) Knowledge of own position in the group is related to the extent to which commonality of goals is present, whether these goals are present in the group situation (Int and Dep) or, by extrapolation from the data, whether they are impressed upon the group by a powerful person or coterie (Ind).

(5) Knowledge of own position in the group is also related to the amount of perceived benefit of others to the self, is also related to satisfaction with group meetings.

(6) Benefit to the individual and to the group would

seem to be related both to the amount of power present and to the extent to which common goals are available. The maximum benefit can occur when there is some disequilibrium in the situation, with the limitation that goals are sharable. When there is no disequilibrium, there can be neither power nor benefit.

In view of the preceding conclusions, it is possible to ask some specific questions which may be answered by future research. The first of these questions refers to a very important problem of individual learning in a small discussion group of the type studied here. We may ask: when conditions are such that there are no opportunities for the manifestation or perception of power, can individual change (learning) take place? Which of the four types of group situations are most conducive to such learning?

On the basis of this study, it is suggested that the Independent situations be closely examined as to their value in the promotion of learning. The present Independent situations were such that final commonality of goals was not completely possible, but, if such had been possible, would more learning have taken place? There is strong reason to believe that this would be true; these reasons are based upon the belief that only when power occurs can change in perceptions occur which lead to learning. Those situations in which the amount

of power is restricted can probably produce less change in the individual.

These suggestions, of course, refer to those instances where in some manner the existence of group organization is prerequisite to learning. No reference is intended here to the many instances when learning may be an individual function.

There are a great number of important implications in the above statements for those who are engaged in therapeutic, training, or action group work, i. e., where change in the individual is in part at least corollary to group membership. One of the chief such implications is that the source of change need not be from outside the group when there is disequilibrium and possibility of attainment of goals within the group. A completely interdependent or competitive group, if such exist, can be changed only by outside pressures. If the change desired is wanted to come from the individual participants, there must be discrepancies of the kind described. It is becoming recognized among psychologists and others working in the area of learning and change that the most effective and lasting changes are those which come from changes in the individual's own cognitive and motivational structures rather than induced "from the outside." This study supports the position that variations in group organization can produce changes in perception, the essential first step to

learning.

In illustration of the foregoing, it is possible to suggest that an understanding of the conditions for change in perceptions may be of value in the solution of important social problems of greater scope. The treatment and conception of the Negro by Southern whites, and the attempts which have been made to alter these circumstances, may be examined in terms of the conditions for the production of change in perceptions.

One may also refer to those situations in which there is a relatively excessive single source of power, such as may be found in the classroom. Those teaching methods which emphasize the predominance of the instructor may be considered to be wasteful of human resources in that the prime source of power or benefit lies in one person rather than in a number of possible other contributors who cannot be recognized. Another aspect of this problem is the emphasis upon the competitive elements described in this study, i. e., when non-sharable grades are the objects or goals of endeavor. This study strongly agrees with Deutsch's position that these pedagogic methods bear re-examination in the light of possible permanent change or learning for the individual.

It would be possible, obviously, to extend these implications to many other situations: industrial, business, therapeutic, etc. An important point here is that complete harmony does not always imply complete benefit to

the individual, whether benefit is to take place either in the day-by-day actions of the participants or in the individual's psychological growth.

Still another possibility for further investigation would be systematically to vary the attainability of goals within each of the situations described. This would clarify the role of this important factor more than has been possible here.

Are there any "practical" purposes to which the findings of this study may be applied? Briefly, it was hoped at the outset of this experiment that a survey of perceptions within a group would indicate the level of development of that group -- a kind of stethoscope of group functioning. The major obstacle to the use of the findings here to such a problem is that mentioned before: the course of development of a group, if opportunities for development are present, is not sharply differentiated into stages. Therefore, the application of an instrument premised upon differentiated stages might not offer a completely representative picture of that group's functioning.

However, there is still the strong possibility that the investigation of perceptions and a study of the distribution of these perceptions are of real value in the understanding of development. If the relation of learning to power and benefit can be clarified, it is completely possible that an indication of the amount of

learning possible at varying stages of group development can be predicted. This, of course, is based upon the assumption that learning should come from the group for maximum efficacy. Even if the source of learning is a non-group member, however, it should be possible to understand at what point the application of the knowledge of a "resource person" or similar authority can be most effectively utilized. The conditions for the perception of any power have been described in this study insofar as groups of this kind are concerned; even an authority can have no power unless these additional criteria or conditions are satisfied.

VI. SUMMARY

One approach to the problem of individual change as a result of membership in a small discussion group is by means of the unified psychological frame of reference. At the base of this method is the postulate that social behavior is steered by social perception, with the consequential corollary that changes in behavior are preceded by changes in social perception.

This study was concerned with the investigation of two perceptual variables which were assumed to be significant determinants of social behavior. The first of these variables, perceived power, was defined as the actual or anticipated ability of another person to determine the goals of the perceiving person or of imposing such goals, of aiding in the selection of paths or of imposing such paths upon the individual whether beneficial or detrimental. Two types of power were distinguished: power over the group and power over the individual. The second variable, perceived benefit, referred to the direction of perceived power with reference to its effects upon the pre-existing goals, values, and wishes of the perceiving (influenced) person. Two effects of benefit were described: positive benefit and negative benefit. The former referred to the effects of the perceived power of others in aiding own locomotion to own goals; the latter pertained to the effects of the perceived power

of others in hindering or obstructing own locomotion. Ratings were obtained on the categories benefit to the group and benefit to the individual.

That social situations of four defined types would have effects upon and could be characterized by particular related perceptions of power and benefit obtained from ratings made by each participant-percipient in the group situations was the major hypothesis of the study. The four situations selected for investigation were those of independence, interdependence, and dependence (derived from hypothesized stages of group development) and that of competition. The four situations were defined according to the extent to which others were necessary for achievement of goals, the consistency of goals for each participant, and the nature of the goal regions:

In the Independent situation, rewards were offered for both individual and group achievement; success in obtaining own goals by one participant implied that all other members would fail to a certain extent to reach their individual goals, but group goals were sharable.

In the Interdependent situation, rewards were offered for group achievement alone; success in obtaining own goals implied that each other person in the group also obtained his individual goals.

In the Dependent situation, rewards were offered for group achievement alone; success in obtaining own goals

implied that each other person in the group also obtained his individual goals. This situation differed from the Interdependent situation in that a person of special attainments in the subject under discussion was introduced into the group.

In the Competitive situation, rewards were offered for individual achievement alone; success by any one person in the group implied that each other person would fail to obtain own goals.

Certain psychological assumptions and implications concerning motivational and cognitive structures led to the development of functional relations (coordinating definitions) of various characteristics of the group situations and perceived power or benefit of others' actions. With the addition of further psychological assumptions, hypotheses concerning the effects of the four social situation upon perceptions of power and benefit were derived. Included among these hypotheses were expectations of the effects of the social situations upon the average amount of power and benefit to be obtained, the distributions of ratings of these variables, and upon self estimates of power and benefit. General relationships were formulated between the two power categories, the two benefit categories, self-perceptions and satisfaction with group meetings, and self-perceptions and ratings given others.

The experimental test of the hypotheses was carried out by the establishment of eleven discussion groups, each composed of six college students. Three such discussion groups were given instructions intended to promote dependent conditions, three to establish interdependent conditions, three for independent conditions, and two groups for competitive conditions. Rewards for individual or group achievement, as appropriate, were in the form of credits on a final examination in a course in General Psychology. The Interdependent and Dependent groups were to receive twenty points or less for group attainment; the Independent groups up to ten points for individual and up to ten points for group achievement; and the Competitive groups were offered twenty points to the single individual in each group who made an outstanding contribution. All others in the Competitive groups received no credit.

Each group met once a day for three successive days to discuss case history materials, following which twenty minute discussion periods each subject completed a number of rating scales designed to elicit his perceptions of others' power over his actions, others' benefit to him, own and others' power over the group, own and others' benefit to the group, and his liking for or satisfaction with the group meeting. Space for additional descriptive comments was supplied on each rating form.

Analysis of the data led to the following conclusions:

(1) The amount of perceived power or benefit of others can be predicted from understanding of the extent to which there is a need for the actions of others for own need satisfaction and the extent to which others are perceived to be locomoting toward consistent goals. There were differences among the four situations in the amounts of power and benefit perceived.

(2) The condition for the occurrence of power and benefit is largely one of perceived disequilibrium for the individual. Power is exerted to reduce this disruption insofar as it interferes with need satisfaction. In the absence of common goals and where there is a need for the actions of others for own success, the exertion of power leads only to the exertion of more power until group disruption ensues.

(3) Awareness of own position in the group is related to the extent to which there is commonality of goals, whether these goals are present in the group situation or, it would seem, whether they are impressed upon the group by powerful members.

(4) Awareness of own position in the group, when coupled with the perception of benefit in the actions of others, is related to satisfaction with group meetings.

(5) The maximum condition for benefit is one in which common goals are available, but in which power is also present. Where there is no disequilibrium the occur-

rence of benefit is doubtful.

It was also suggested that these conclusions may have important implications for training, therapeutic, and action groups, and for the production of lasting change (or learning) in the individual. Uses of the findings of the study for the understanding and "diagnosis" of group functioning were discussed.

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APPENDIX

YOUR NAME _____

GROUP _____

DAY (circle) 1 2 3

INSTRUCTIONS TO RATERS

You are asked to rate each of your fellow group members -- and sometimes yourself -- on several variables. The ratings you make will be completely confidential, and will not be used to determine achievement. Please be as honest and objective as you can.

When you finish each page of ratings, do not turn back. Do not look ahead in the rating scales, either!

A particular definition of each variable is being used in this research, and we ask you to adopt these definitions in making your ratings.

A particular method of rating is being used in this research also, and we ask you to adhere to this method. To rate a person on a variable, you place a check mark after his name on the line provided. Make certain this check is exactly where you want it to be. It need not be on one of the line dividers or points.

After you have checked the line after the person's name, put a number over your check mark to designate where that person falls among all the people of your group. For example

	1	2	3	4
Joe. Blowhard.	³ ✓	!	!	!
Max. Difference	!	!	!	! ✓
Sally. Bly....	!	!	² ✓	!

You may give any number of people the same rating you want to, if you feel that this is an accurate picture of your feelings. We ask you to be discriminating, though, to the best of your ability.

If you have any questions, ask the observer of your group.

Thanks for your co-operation. It's very much appreciated.

I. POWER

When you report the level of a person's power, you are reporting on the extent to which he has influenced the group or the extent to which you expect him shortly to influence the group. This influence may take the form of determining the goals of the group or imposing goals, of aiding in the selection of ways to solve problems or imposing such means upon the group. In short, a person's power is a measure of his actual or anticipated ability to determine what occurs in the group, whether beneficial or detrimental.

We shall distinguish four levels of power:

- 0 no actual or likely power
- 1 some influence exerted or likely to be exerted shortly, but a minimal amount
- 2 a moderately high level of actual or anticipated power or influence
3. a high degree of actual or anticipated power or influence

You may place a mark (and its corresponding number) at any place along the line that seems best to describe each individual's level of power or influence.

RATE YOURSELF, TOO!

	0	1	2	3
.....				
.....				
.....				
.....				
.....				
.....				

Now check back over your ratings, making sure that you've rated yourself and have left no one out. Make sure the numbers designating each person's rank are present.

Go on to the next page. Do not turn back.

II. BENEFIT

When you report on the extent to which an individual can benefit the group, you are evaluating the efforts of that person. Thus, an individual through his efforts may help the group, or, he may through his actions neither aid nor hinder the group. Finally, his activities may actually harm or frustrate the group.

We shall distinguish five levels of benefit:

- / 2 This person makes or may shortly make a strong positive contribution to the group
- / 1 This person is or may shortly be helpful to the group
- 0 This person is neither aid nor hindrance to the group
- 1 This person blocks or interferes or may shortly block or interfere with the group to a moderate degree
- 2 This person blocks or interferes or may shortly block or interfere with the group to a greater degree.

You may place a check mark (and its corresponding number) at any place along the line that seems best to describe each individual's level of benefit to the group.

RATE YOURSELF, TOO!

	/2	/1	0	-1	-2
.....					
.....					
.....					
.....					
.....					
.....					

Now check back over your ratings, making sure that you've rated yourself and have left no one out. Make sure that the numbers designating each person's rank are present.

Go on to the next page. Do not turn back.

(II - A) POWER II

On this page when you report the level of a person's power, you are reporting on the extent to which he has influenced you or the extent to which you expect him shortly to influence you. This influence may take the form aiding you to select goals and ways of solving problems or of imposing selection of paths and goals upon you. In short, a person's power here is a measure of the extent to which he actually or may determine what you do, whether beneficial or detrimental.

We shall distinguish four levels of power:

- 0 This person has no actual or likely power over me
- 1 This person exerts or may be expected shortly to exert a minimum amount of influence over me
- 2 This person exerts or may exert shortly a moderately high level of power or influence over me
- 3 This person exerts or may be shortly expected to exert a high degree of power or influence over me

Remember, you may place a mark anywhere along the line that best describes your feelings toward each person. Don't forget the corresponding ranking numbers.

DO NOT RATE YOURSELF.

	0	1	2	3
.....				
.....				
.....				
.....				
.....				

Forget anybody? Check back, make sure all marks are exactly where you want them. Go on to the next rating scale, but DON'T TURN BACK!

(I - A) BENEFIT II

On this page, you are asked to report on the extent to which each other member of the group can benefit you. Through his efforts, he may help you. Or, he may through his actions neither aid nor hinder you. Finally, his activities may actually harm or frustrate you.

We shall distinguish five levels of benefit:

- / 2 This person makes or may shortly make a strong positive contribution to me
- / 1 This person is or may shortly be helpful to me
- 0 This person is neither aid nor hindrance to me
- 1 This person blocks or interferes or may shortly block or interfere with me to a moderate degree
- 2 This person blocks or interferes or may shortly block or interfere with me to a greater degree.

You may place a check mark (and its corresponding ranking number) at any place along the line after each person's name in the place which best describes how you feel toward him.

DO NOT RATE YOURSELF!

	/2	/1	0	-1	-2
.....					
.....					
.....					
.....					
.....					

Check back -- are they all there? Make sure the numbers showing the relative rank of each person are present.

Go on to the final page Do not turn back.

How did you like the meeting today?

! ! ! ! !
not at poor fair good excellent
all

Have you any comments, suggestions, criticisms or anything else you'd like to say about the meeting today?

THE EFFECTS OF VARYING GROUP ORGANIZATION
UPON PERCEPTION OF POWER AND BENEFIT

1951

This experiment was concerned with the effects of four group situations upon two perceptual variables assumed to be significant determinants of social behavior, perceived power and perceived benefit. The four situations were those of interdependence, dependence, independence, and competition. Each form of organization was defined according to the extent to which other persons were necessary for achievement of own goals, the consistency of goals among participants within each situation, and the nature of goal regions. Perceived power was defined as the actual or anticipated ability of another person to determine the goals of the perceiving person or of imposing such goals, of aiding in the selection of paths or imposing such paths upon the individual, whether beneficial or detrimental. Perceived benefit referred to the "direction" of perceived power with reference to its effects upon the pre-existing goals, values, and wishes of the percipient.

Certain psychological assumptions and implications concerning motivational and cognitive structures led to the development of functional relations (coordinating definitions) of various characteristics of the group situations and perceptions of power and benefit. Hypotheses concerning the effects of the four social situations upon perceptions were derived from the functional relationships.

The experimental test of these hypotheses was performed by the establishment of eleven discussion groups, each composed of six college students. Three such groups were given instructions intended to promote dependent conditions, three to establish independent conditions, three for interdependent conditions, and two groups for competitive conditions. Rewards for individual or group achievement, as appropriate, were given in the form of credits on a final examination: the interdependent and dependent groups were to receive twenty points or less for group achievement; the independent groups up to ten points for individual and up to ten points for group attainment; and the competitive groups were offered twenty points to the one person in each group who made an outstanding contribution. All others in the competitive groups received no credit.

Each group met once a day for three successive days to discuss case history materials. Following each discussion, each subject completed a number of rating scales designed to elicit his perceptions of others' power over his actions, others' benefit to him, own and others' power over the group, own and others' benefit to the group, and his liking for the group meeting.

Analysis of the data led to these conclusions: (1) The amount of perceived power or benefit of others can be predicted from an understanding of the extent to which there is a need for the actions of others for own need satisfaction and the extent to which others are perceived to be locomoting toward consistent goals. There were differences among the four groups situations in the amounts of power and benefit perceived. (2) Power arises and is perceived in those instances where consistent goals are lacking and where there is a need for the action of others

The Effects of Varying Group Organization Upon Perception of Power and Benefit.— Concluded

for own need satisfaction. (3) The maximum condition for individual benefit is that situation in which common goals are available, but in which power also is present. (4) Awareness of own position in a group is related to the extent to which there is commonality of goals. (5) Awareness of own position in the group, when coupled with the perception of benefit in the actions of others, is related to satisfaction with group meetings.

It is suggested that these conclusions may have important implications for training, therapeutic, or action groups, and for the production of change or learning in the individual. A question is raised as to the utility of maximally interdependent group organization for these purposes.

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