Transfer of Learning from a Sensitivity Group

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Transfer of Learning from a Sensitivity Group

by

Thomas W. Phelan

A Dissertation Submitted to the Graduate School of Loyola University in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

May, 1970
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LIFE

Thomas W. Phelan was born in Oak Park, Illinois, on November 26, 1943. He graduated from Loyola University with a Bachelor of Science degree in June, 1966. In the fall of that year he began his graduate work in clinical psychology at Loyola. He worked there as a graduate assistant in the psychology department from September, 1966, until June, 1967. He took his clerkship and part of his internship with the Veterans Administration West Side Hospital from June, 1967, until October, 1968. From September, 1968, until August, 1969, he taught undergraduate psychology courses at Loyola, and then he completed his internship at the Loyola Guidance Center from September, 1969, through June, 1970. He received his M.A. degree in clinical psychology in June, 1968, and his Ph.D. in June, 1970.
INTRODUCTION

The purpose of this paper is twofold. The primary concern is to study the transfer of learning from a sensitivity group to a person's life outside the group. T groups are currently popular and numerous. Transfer of learning is the issue upon which the real value of the T group experience depends. Relatively little research has been done in assessing the extent of transfer and the various things that affect it, and what has been done has focused on transfer of learning to the work setting. Since sensitivity groups are being used more and more for less specific and more personal goals, the study of transfer in this context is important.

The secondary concern of this paper is methodological. It concerns the nomothetic-idiographic dilemma regarding psychological research, i.e., can one study a psychological problem in a meaningful way that avoids both an overemphasis of unlawful personal idiosyncracies as well as generalizations and abstractions that accurately describe and fit no one person? An attempt will be made to develop a meaningful nomothetic structure with which to study and describe transfer. In addition and in contrast to this, transfer will also be studied idio graphically
through intensive interviews with people during and after their experience in a T group. The difficulties and merits of the two methods will then be compared.
THE PROBLEM OF TRANSFER OF T GROUP LEARNING

One of the most crucial problems affecting the meaningfulness of T group experience is the problem of transfer of training. Transfer refers simply to the application of learnings obtained in one situation to new situations. The importance of transfer is fairly obvious. If an individual cannot apply what he has learned in the T group to the rest of his life—to the "back-home" situation, then the T group is only a game for him, a fascinating and perhaps refreshing interlude in the course of his life. Such a game might be similar to a vacation, but in the long run, as Stock (1964) concludes, "the learnings which an individual gains at a human relations laboratory are valuable to the extent that he is able to utilize them in the groups which are important to him in his back-home setting" (p. 420). Campbell and Dunnette (1968) see transfer of training as one of the major assumptions underlying T group rationale and also as one of the major research problems in this field.

As Campbell and Dunnette (1968) point out, it cannot be naively or hopefully assumes that transfer will occur. Rogers (1968) states that although the intensive T group experience is "nearly always a positive process" for the group members, the
changes which occur in people do not always last. The emotional experience of leaving the T group might for some people be comparable to getting out of a warm shower on a winter day. As Whitman (1964) puts it, "from the supportive, questioning, experimental atmosphere of the usual T group, the individual must return to his former habitat . . . (and) . . . there he meets all the internal and external forces which maintain the status quo" (p. 334).

T group designers and trainers have not been oblivious to the problem of transfer. "How to promote transfer of laboratory learnings is one of the most challenging questions before every laboratory staff" (Benne, Bradford, & Lippitt, 1964). Historically, Benne (1964) points out, concern about transfer was greatly increased by the rather bewildering observation that there was in some instances only a minimal transfer from a T group to another part of the same laboratory. If this were generally true, prospects for back-home transfer would be bleak. Thus T group members were often helped in planning for transfer, anticipating its problems, and sometimes even in carrying it out.

Since the birth of the T group in 1947, there has been generally an increasing emphasis upon personal change and a progressive de-emphasis of group dynamics, though group
processes in themselves are still considered important. Thus the more recent term, "sensitivity training," tends to focus on an individual's acquisition of new personal and interpersonal insights and skills. The problem of transfer will be dealt with in this study primarily as an individual, personal problem.

Some of the critical issues involved in the problem of transfer have been summarized by Stock (1964):

What kinds of learning take place? To what extent are learnings transferred to back-home groups, and what factors influence the character and extent of transfer? Are some people better able to profit from the T group than others? (p. 420)

As an initial response to some of these questions it will be useful to consider some general notions relevant to transfer which can be derived from common sense and from learning theory. In other words, in terms of some of the psychological principles we already have at our disposal, what can we say or hypothesize about transfer of learning from a T group?

First of all, common sense might point to two broad explanations of sensitivity group learning and change which have opposite implications for the likelihood of transfer: 1) the person learns how to adapt temporarily to a unique situation, the T group, or 2) the person incorporates T group learning and he
changes internally. In the first instance the person learns that the T group puts pressure on him to be open, to discuss feelings, to give a certain kind of feedback to others, and so on. Being pragmatic, not wishing to be an oddball or to offend anyone, or for whatever reason, he goes along with this format and perhaps even enjoys it. After the group termination, however, he for the most part forgets it and continues to get along as best he can in whatever situation he finds himself. Thus if all a person learns is how to adapt temporarily to the unique demands of the T group, transfer will be minimal. In the second instance, however, internal personal change occurs, i.e., a person's actual habits or interpersonal reactions change, or he acquires a new self-concept, or he becomes more sensitive to others. Here transfer and permanence of learning are much more likely to occur, though this will still depend to a great extent on other conditions. Perhaps the experience of most people in the T group involves both temporary adaptation as well as some permanent learning.

General learning theory also has some fairly definite implications for transfer. This is not to contradict Campbell and Dunnette's (1968) claim that T group research and theory are hampered by the lack of an explicit learning theory, for these
considerations here are only of the broadest sort and are perhaps really no more than common sense. Transfer, first of all, involves to some extent the learning principle of generalization. Generalization usually depends upon stimulus similarity. Thus it would be expected that transfer would be facilitated by similarities between the back-home situation and the T group situation. Perhaps in a person's circle of close friends openness and exchange of feeling are not unusual, but at home they are rare. It would follow, therefore, that transfer of T group learnings could more easily occur for this person with his friends than with his family. Generally the interpersonal demands of the usual social situation are very different from those of the T group, and this, of course, would tend to discourage transfer.

Extinction of a learned response in the absence of reward is another broad principle or law of learning. The T group fosters certain behaviors to some extent by rewarding them, or approving of them. If back home a person's openness and sensitivity to feelings meet with little or no reward, transfer there will be discouraged. People might be indifferent, resistant, or even angered by his new behavior. On the other hand, they might be delighted or enthusiastic about it, and this would reward and
thus facilitate transfer. Jourard (1964) and Berne (1964) both state that "self-disclosure" and "intimacy" are rewarding experiences in themselves. However, it is likely that in most cases they still require the cooperation of at least one other person.

Closely related to extinction is the time element involved in learning. Simply stated, the shorter the time available for learning, the less permanent that learning will be. Whitman (1964) puts it a little differently: "It is a general psychological rule that the most recently acquired habit patterns are those most easily destroyed under the pressure of different external conditions" (p. 334). If the typical T group ranges in duration from 8 to 40 hours, it is at a great disadvantage when it attempts to alter or to undo personal habits that have been operating for 20 to 40 years. Thus the time factor in T group learning appears to militate against transfer.

The general learning theory considerations of generalization, extinction, and time are based largely upon a conditioning paradigm in which the learner is seen as passive, non-rational, and habit oriented. The gestalt psychologists, however, pointed out long ago that learning in higher animals and man can involve insight as well as habit, and one of the
most durable kinds of transfer of learning is that involving the transfer of insight or principles. T group experience does involve general insights and principles, and to the extent that it does transfer of learning might be expected to occur. These broad principles center around what is often for the T group initiate an entirely new approach to human relations. The T group involves, for example, sensitivity to feelings rather than superficialities; it fosters a certain kind of interpersonal problem solving approach stressing openness and cooperation; it encourages the probing and experimentation involved in "learning how to learn." These insights or principles are more easily transferable, at least in ideational form, than behavioral habits. In some people, perhaps, their use could make transfer a continual growth process rather than a static entity.

In summary, the effects of generalization and extinction upon the process of transfer will vary in accord with certain situational factors outside the group. Similarities between the T group and the back-home situation and reinforcement for learned behaviors outside the group will foster transfer, while situational differences and negative reinforcement, or no reinforcement at all, will militate against transfer. The time element would seem to discourage transfer, though this is made up for to
some extent by the fact that the T group learning is more deliberate and concentrated. Finally, one might expect that insights acquired in the sensitivity group would be transferred fairly readily, while overt behavioral skills would involve greater difficulty. Thus common sense and general learning theory do point to some fairly definite expectations concerning the transfer process. The ideas just mentioned, however, primarily concern response and situational variables and omit the person transferring them. Personal variables are important, however, and will be discussed later in reviewing the research in this area. Before continuing the discussion of transfer, though, the methodological problem, the nomothetic-idiographic dilemma, will be dealt with. Then the problem of transfer and the methodological problem will be integrated in the section dealing with the review of the literature and the structure of this study.
THE NOMOTHERIC-IDIOGRAPHIC CONTROVERSY

One of the fundamental theoretical differences in the approaches to the psychological study of human beings is the controversy over nomothetic and idiographic methods. These terms were taken from a German philosopher by Gordon Allport, probably the chief perpetrator of the dispute, and they are roughly equivalent to "universal" and "individual," respectively. The typical nomothetic approach deals with large numbers of subjects, seeks general or universal laws of behavior, and attempts to use these in explaining an individual case. The idiographic method, sometimes referred to as the purely "clinical" approach, usually concentrates on an intensive study of one individual in an effort to understand and maintain the concrete reality, uniqueness, and complexity of that one particular personality. Nomothetic psychologists stress comparison of individuals and inference from class membership, while idiographic psychologists stress unique dynamics and outcomes and believe that each person is a "law unto himself."

Few psychologists, perhaps, are exclusively nomothetic or idiographic in their orientation. Yet some methods more than others are characteristic of each approach. The actuarial
method, factor analysis, and the usual controlled experiment are most often nomothetic, since they deal with large numbers of subjects in the hope of discovering or verifying general characteristics or laws. Methods which tend to focus on the intensive study of the individual and which are therefore more idiographic in emphasis include the life-history, the Q-sort technique (Stephenson, 1953), intraindividual correlation (Baldwin, 1942, 1950), and the cluster analysis method used with personal documents (Allport, 1942).

Idiographic criticisms of the nomothetic approach include the following related positions: 1) the nomothetic approach ignores personality organization or pattern, 2) it ignores the uniqueness of the individual, 3) it utilizes norms and averages, as well as group differences, that refer to no concrete reality, and 4) it involves the unwarranted assumption that the methods of the natural sciences are applicable to the study of psychology. Allport (1965) states, in regard to the first criticism, that the nomothetic scientist's interest in classification results in a search for and delineation of separate dimensions by which many individuals are to be compared, or quantitatively differentiated. He points out Eysenck's (1952) characterization of the individual as "simply the point of intersection of a
number of quantitative variables." The weakness of this view, says Allport, is that it ignores the mutual interaction of these variables, and their consequent patterning or organization within an individual personality system. General qualities, such as intelligence and dominance, may interact in one person in such a way as to create a qualitatively unique trait, such as "brilliant follower," which only this individual possesses and the character of which is destroyed by analysis into separate quantifications of intelligence and dominance. Thus the organized system is considered more essential than quantitative specification of the person on several common dimensions.

What Allport considers his most important objection to the nomothetic approach is that it overlooks the uniqueness of individuals. "The outstanding characteristic of man is his individuality" (Allport, 1965). Each person's heredity, biochemical makeup, and environment are unique to him, so that it is impossible that any two persons be exactly alike. This uniqueness is not, however, based upon incidental features of the individual, but it is part of what is most essential to him: the idiomatic, organized system that is his personality. Though he may be said to share universal and group norms with others, what is unique to him is not merely a "handful of residual, and
perhaps negligible, idiosyncrasies," for he organizes within himself universal, group, and individual norms into one personal system. "The organization of the individual life is first, last, and all the time a primary fact of human nature."

A third criticism from the idiographic viewpoint is that norms or averages by definition cancel differences and thus lead to a description of an individual based on fictitious constructs which refer to no concrete, empirical realities. The "average man," in other words, does not exist. Because these constructs do not really fit individuals, it is highly unlikely that behavioral predictions based upon them will be accurate. Prediction, says Allport, should be based on knowledge of individual dynamics, not on actuarial inference, and the key to better prediction is more complete information about the individual. Related to this problem of averages is the often abused notion of "significant group differences." As Dunnette (1966) and Bakan (1966) have pointed out, the actual differences between two groups can be very minute and yet still be statistically significant, especially if large numbers of subjects are involved. When significant differences are very small, however, an inference about an individual based upon his membership in one group or another is practically meaningless because in actuality the
groups overlap almost completely with regard to the criterion variable and the error of prediction, consequently, is tremendous.

The fourth criticism, which involves the others, attacks the nomothetic assumption that psychological science can and must proceed along the methodological lines established by the natural sciences. In this regard critics, such as William Stern (1938), say that such methods are often inapplicable and even dangerous because by being analytic they may destroy the nature of their object, the human personality. In addition the search for universal laws overlooks the individual and will, according to Stern, prove ultimately unfruitful. He adds, however, that these methods should not be completely rejected, because the experimental method has proved useful and some universal laws are at times meaningful in describing human behavior. They should be supplemented, though, by other techniques more oriented to the difficult subject of the human personality.

The major criticisms of the idiographic position from the nomothetic point of view include these: 1) idiography is not science and the individual case is of limited utility, 2) uniqueness per se is of little or no importance, 3) abstraction and classification are common and necessary to all knowledge,
4) actuarial prediction is in fact superior to clinical, or idiographic, prediction, and 5) dynamic interaction can be taken into account by mathematical description. The first objection states that the idiographic approach is proper to art, history and literature, but not to science. H. J. Eysenck, one of the more extreme exponents of strict adherence to nomothetic methodology, in *The Scientific Study of Personality* (1952), claims that there are two kinds of psychology: common sense and scientific. The goal of the first is empathic understanding, or reduction to the familiar. This is the method employed in the idiographic study of the individual, but all too often it involves a vague intuition and the mere multiplication of ad hoc hypotheses. Truly scientific psychology, on the other hand, seeks as complete a description of the natural world as possible by abstracting from individual phenomena, drawing out the general laws which seem to explain their mode of interaction. As for the individual, nomothetic method seeks to place him accurately within a unified, consistent system of description. Individual facts are considered only in order to obtain generalizations of increasing abstractness, and the ultimate scientific proposition is predictive: whatever has property x must also have property y. Hall and Lindzey (1957) agree to some extent with Eysenck
when they criticize Allport's notion that individual traits in persons are essentially unique and can never be stated in general form. If this were true, they point out, one would be faced with the empirically laborious task of formulating new traits for each individual, and this would appear to be in direct opposition to the generalizing nature of science.

Secondly, nomothetic enthusiasts point out that uniqueness as such is really of little consequence and that it is overemphasized by idiographic psychologists because it is seen as some sort of mystical quality. To Allport's emphatic statement that the individual is unique, Eysenck (1952) replies sarcastically, "So is my old shoe." In fact, he says, any existing object is unique; uniqueness is an indisputable fact that is just as true in the physical sciences as it is in psychology. Coutu (1949) calls the idiographic viewpoint the "fallacy of the unique personality," and he agrees with Eysenck and others that individuality can be adequately accounted for in terms of a number of common, general principles. Stouffer (1941) points out that with only ten traits, each of which may have four different values, more than one trillion individuals can be differentiated. Meehl (1954) states that it is common knowledge that the science of fingerprinting can identify the unique case with only a small
number of dimensions. Cattell (1946) also agrees that common, general terms are descriptively adequate for individuals, and any uniqueness beyond this must be—to borrow Allport's own terms—the specification of "residual . . . negligible idiosyncracies."

A third objection to the idiographic position is the idea that all knowledge, and even all language, involves abstraction and therefore classification, and this in itself involves the overlooking of some unique differences. This argument says in effect that the idiographic approach, as an attempt to focus completely on uniqueness, is impossible and in fact non-existent. Sarbin (1944) claims that there is really no logical difference between clinical, or case study, and actuarial methods; they merely differ in their degree of precision and explicitness.

Meehl (1954) raised a practical objection to the idiographic point of view when he investigated empirically the question of whether statistical (nomothetic) methods or clinical (idiographic) insight was more effective in predicting behavior. In about half the studies he examined the two methods were equally efficient, but in the other half actuarial methods were superior. In only one study did the clinicians predict better than the mechanical formulas. Allport would respond to Meehl's study by contending
that when the currently neglected idiographic methods are ade­quately developed, they will yield better prediction than statis­
tical methods. At the present time, however, it appears that they do not.

Finally, nomothetic psychologists respond to Allport's statement that they neglect dynamic interaction or patterning of traits by pointing out that such concerns are neither neglected by nor impossible for their methods. Eysenck (1954) states that part of the nomothetic approach has always been the study of traits in combination, interaction, and mutual modification, and how they subsequently bring about the total behavior of a par­ticular individual. Meehl (1954) adds that much confusion has resulted from the naive but frequent claim that mathematical description or prediction involves only simple additive relations among variables and that it is unable to deal with dynamic inter­actions. Mathematical analysis, says Meehl, in no way excludes the description of interaction or patterning; this very thing, in fact, is involved in terms such as the interaction term of the analysis of variance. The alleged opposition between patterning and statistics, according to Meehl, is to a large extent due to the "fantastic mathematical ignorance of most clinicians."
As in most controversies, the most useful approach probably lies somewhere between the nomothetic and idiographic extremes. Most of the writers mentioned above would probably agree that both methods can be useful and that neither should be overlooked entirely. For a long time, however, it appears that idiographic studies have been relatively rare and that they have been considered unscientific and not worthwhile. Too many nomothetic studies, on the other hand, are conducted which yield "significant" results that have no import for the real world and which really amount to nothing more than well-controlled games. One reason for this is that statistical significance in itself is no guarantee that group differences are really big enough to make a difference in a practical sense. Another reason for this is that many of the constructs used in psychological research do not fit real people accurately or comprehensively enough. Any abstraction, to begin with, by definition overlooks quite a bit in the object it describes. If a nomothetic construct overlooks too much in a person, it is in danger of being irrelevant to the dynamics of that individual. A person labelled "high-anxious," for example, is many other things in addition to being very anxious. If one is doing a study looking for a relationship between anxiety and learning, there is no guarantee that
this particular person's anxiety affects his learning at all, or as much as other traits he might have, such as hatred of school. The study as a whole, however, might demonstrate a slight but significant relationship between anxiety and learning, even though this finding is not truly descriptive of the dynamics of a large number of subjects involved in the study. The idiographic psychologist maintains, therefore, that a more detailed analysis of this person's high-anxiety and his learning is needed in order to accurately describe the causes and effects actually operating in him.

Another important nomothetic weakness lies in the area of statistics. There are interaction terms available, as Meehl (1954) points out, and these can to some extent describe patterning and organization. What Meehl does not point out, however, is that although the analysis of variance can demonstrate multiple interactions, it cannot interpret them, and once you are beyond the simplest two way interaction and into interactions among three or more variables it is almost impossible to make sense out of the discovery you have made. Here again the idiographic approach may help to clarify how these variables actually interact in a concrete situation.
The statements above are criticisms of the usual kind of nomothetic research. They are meant to indicate that there is a place too for an idiographic emphasis. It might be best to think of idiographic and nomothetic as extremes of a continuum, the different points of which are characterized by a greater or lesser degree of specification and thoroughness used in describing one's subject matter. Specification refers to the degree to which a term "fits" the persons it describes; the extent, in other words, to which it avoids the distortion or omission of crucial characteristics. Thoroughness refers to the number of variables taken into account. The more specific the variables and the more variables utilized, the more idiographic the study. The point on the continuum at which one chooses to work is determined by the purpose of his work. For institutional decisions regarding selection or placement of individuals, for example, a markedly nomothetic approach utilizing a few, broadly conceived variables might be most efficient. In individual psychotherapy, on the other hand, an idiographic approach taking into account a large number of relatively idiosyncratic traits might be best.

The purpose of much research, however, is not an immediate practical concern but simply the furthering of some kind of
knowledge. This unavoidable ambiguity probably aggravates the differences between nomothetic and idiographic enthusiasts. A recent study by Endler and Hunt (1966), however, may point toward a meaningful compromise between the two points of view, and one that might be able to take into account both individual complexity and the need for scientific generalization. They observed, in effect, that different people do different things in different situations. In analyzing the responses on an anxiety inventory they found that a large portion of the variance was due to triple interactions involving the individual, the situation, and the specific response. What a person does, in other words, is a function of what kind of person he is, what sort of thing he is doing, and what particular situation he is in. This implies that in order to study something as complex as transfer of training from a sensitivity group, one should simultaneously take into account response variables, personal variables, and situational variables. Response variables would refer to what is actually learned in the group and thus what is available for transfer. Individual or personal variables would include relevant personality traits and patterns as well as such things as attitudes toward T group training and motivation for personal change. Situational variables would refer to where,
when, and with whom transfer does or does not occur, e.g., is it easier to be sensitive to another's feelings at home or at work, with one's wife or with a male friend, two weeks after T group termination or six months after? This study, therefore, will attempt to study transfer by taking into account these three categories of variables. It is hoped that such a method will be comprehensive enough to deal meaningfully with the complexity of transfer as it actually occurs in the real world, and yet still yield meaningful generalizations descriptive of transfer. It is thus a compromise between idiographic and nomothetic methods. It is nomothetic in the sense that it utilizes general classifications of response, personal, and situational variables in the hope that each variable has specific effects that can be discovered. It is idiographic because in simultaneously considering more variables it is more thorough. This thoroughness, however, is not due merely to the multiplication of personal and response variables, as is often the case. The addition of consideration of situational variables is relatively rare in psychological studies, most of which simply relate personal variables to response variables. Yet it is obvious that personality traits and patterns are not the sole determinants of behavior, and that the situation in which an individual finds
himself is also a very crucial factor in determining what he does.

Several problems which might impair the relevance of this structure are: 1) lack of thoroughness, i.e., consideration of an insufficient number of variables, 2) lack of adequate specification within one of the three general categories of variables, i.e., a variable may not really "fit" many of the people it is meant to describe, and 3) errors of measurement. The first two problems are merely restatements of criticisms of the nomothetic approach mentioned before. However, this study is an initial attempt at the use of a certain method. It does not seem possible, therefore, to take into account all possible personality variables, for example, that might in some way be related to transfer. Those variables which appear more likely to affect transfer will be selected and thus some thoroughness sacrificed. Errors of measurement in assessing personality variables are very familiar and as yet insurmountable. In delineating response and situational variables, the three problems mentioned above still exist but are perhaps less serious.

In addition to the more or less nomothetic part of this study, several persons will be followed intensively through and after their experience in a T group. This will provide an opportunity
to evaluate the degree to which these three problems might have impaired the nomothetic part of the study.

The personal variables of primary interest here will be motivation for personal change, involvement in the group, anxiety, sex and perception of the group experience. Other personal data of interest will include age, marital status, education, and grade point average.

Response variables here will refer to the actual T group learnings or changes that the members themselves and observers of them report. They will be coded according to the categories developed by Bunker (1965). The chief reason for using Bunker's categories is that they were derived inductively from reported observations of former T group members, rather than having been derived from theory and then imposed on the verbal descriptions.

Situational variables involve the factors of where, when, and with whom transfer takes place. Since the sensitivity group is primarily concerned with interpersonal skills and insights, the situations studied here will be defined interpersonally in terms of whom the subject is with. The situations will be comparable to the "Target-Persons" used by Jourard (1964) in studying self-disclosure: father, mother, spouse, male friend, and female friend. Not all situations, of course, will be
applicable to all subjects.

Transfer of learning from a T group, and how it is related to personal, response, and situational variables, was studied here both nomothetically and idiographically. The nomothetic part of the study consisted of an evaluation of transfer, largely by means of a questionnaire, in 32 people who participated in similar T group experiences. The idiographic part of the study involved intensive interviews with four people during and after their experience in a T group. These methods will be elaborated in the procedure section.
REVIEW OF THE LITERATURE

For the purposes of this study the studies reviewed will be grouped according to their relevance to the following concerns: 1) demonstrating the existence of transfer, 2) personal variables affecting transfer, 3) response variables in transfer, and 4) situational variables influencing transfer.

The mere existence of transfer to a work setting has been demonstrated in several studies. Miles (1960, 1965) followed a group of elementary school principals who had been in a three-week NTL group. On a job change criterion measure based on self-report and observations of coworkers, the laboratory participants showed a significantly greater change than control subjects over a ten month period following the group. Boyd and Elliss (1962) conducted a follow-up study of three groups of trainees from a Canadian company. One group received no training, one group received a program of case discussions and lectures, and a third group went through a laboratory training seminar. Following these experiences, an evaluation of changes in behavior was done by interviewing the supervisor, two peers, and two subordinates of each subject six weeks and six months after the completion of the course. Only 34 percent of the
observers of the untrained group reported change, 50 percent of the observers of the lecture and discussion group reported change, and 65 percent of the observers of the laboratory participants reported change. These differences were significant.

Bunker (1963, 1965) studied over 300 participants in six different NTL laboratories. Open-ended behavior change descriptions were obtained after the group from several coworkers of the subject and from the subject himself. The laboratory participants showed more change than a matched-pair control group in the areas of overt operational changes and changes in insights and attitudes. More changes of a vague, global nature were reported for the control group, however, but the author interpreted this as being due to the fact that observers who are asked to provide a change description, but who have nothing specific to report, tend to report vague descriptions in order to accommodate the researcher. Bunker noted that the same pattern of results was obtained when another set of earlier data are analyzed.

Bunker (1967) reported on a long-term followup of participants in four NTL laboratories conducted in 1960 and 1961. Ten to twelve months after the group the amount of change in relations with others in a work setting was assessed by asking
seven coworkers and the subject himself for change descriptions. A matched control group was obtained by having the experimental subjects name a person occupying a similar role in the organization. Two measures of change were derived from the descriptions: 1) a "total change score" which consisted of the sum of all reported changes in all categories by all describers for each subject, and 2) a "verified change score" which consisted of only those specific changes for each subject that were reported by two or more describers. With both the total change score and the verified change score there were marked and significant differences between laboratory participants and control subjects.

In summary, it appears that transfer of T group learning or change to the work setting does in fact occur. It occurs to a great enough extent that it is noticeable not only to the laboratory participant himself, but also to other people. It also seems to be fairly durable in many instances for a period of time of at least one year.

Several studies have indicated that certain personal variables may be related to transfer of T group learning. Personal variables are taken here in a very broad sense that includes anything descriptive of the individual or his behavior.
Two studies (Miles, 1960; Bunker, 1965) have indicated that the extent to which a person becomes involved in the group itself may be predictive of later change. Miles correlated observations of change in the group with change scores obtained ten to twelve months later in the work setting, and he came up with a significant coefficient of .55. Bunker put together his data on long-range change with those of Harrison (1962) on training process. Harrison's data consisted of peer ratings of the amount of change in a group member in response to feedback. Significant but low correlations were found between Harrison's measure and both the verified change score (.32) and the total change score (.24) from Bunker's data.

Another not too surprising finding in the area of personal variables came from Harrison and Oshry (1964). They found that people who were described prior to the group as being open to new ideas, open to the expression of feelings, and as avoiding externalizing blame for organizational problems, were those who later showed the greatest change in the group and the greatest amount of application of learning.

Miles (1965) supported to some extent and elaborated upon the findings of his earlier study (Miles, 1960) and that of Bunker (1965). He also found that process measures, which he
labelled unfreezing, active involvement, and reception of feedback, were the best predictors of post-group changes in job behavior. However explicit desire for change, ego strength, flexibility, and need affiliation were not directly related to later transfer of training. Paradoxically, though, the latter three variables were related to behavior during training. Another interesting finding was that trainer ratings of short-term change in the group correlated .55 with long-term transfer, while the members' own ratings of change in themselves showed no relation to transfer.

Concerning the personal variables of age and sex, Miles (1965) and Bunker (1967) found no significant links between either of these and amount of transfer. Miles did find that with trainer ratings men showed significantly more change in the group than women. This same difference persisted in long-term change on the job, but there it was not statistically significant.

Watson et al. (1961) found that attitudes toward the T group affected transfer considerably. People who expected the T group not to be very meaningful for them later reported little use of what they had learned. Another finding suggested that difficulties in transfer or application of learning were proportional to the extent to which the person experimented in
trying out new modes of behavior. People who had been frustrated during the group also reported more obstacles to transfer, and people who were very anxious showed less transfer. Along these same lines Mathis (1955) felt that personality tendencies toward dependency and flight would reduce experimentation with new behaviors, but he found only slight support for this.

Response variables relevant to transfer refer to what has been learned in the group and what is therefore available for transfer after the T group experience. Most studies find a good deal of variation among individuals in what they learn in a sensitivity group. Miles (1964, 1965) reported that changes in the groups he studied were reported mostly in interpersonal areas, such as sensitivity to others, communication and leadership skills, and group task and maintenance skills. Roughly one-fourth of the reported changes concerned personal traits, such as "more considerate" and "more relaxed." The remainder Miles called "organization-relevant" changes, such as "delegates more" and "aide group decision making." How these are different from group task and maintenance skills is not clear.

Boyd and Elliss (1962) found that three different types of changes each accounted for about ten percent of the change reports. The most frequent one was increased listening, which
meant the person paid more attention to the comments of others and was easier to talk to. Another ten percent of the reported changes involved "better understanding and better contributions in group situations," and the third major category was "increase in tolerance and flexibility." Less frequently reported changes included "more self-confidence" and "expresses himself more effectively."

A major step toward classifying T group learnings or changes was taken by Bunker (1965), who developed a means of coding the verbal data obtained in change reports involving an open-ended question. Rather than deducing the change categories from theory and then imposing this structure on the data, Bunker used an inductive approach, first inspecting and studying the data and then developing the appropriate categories. Three general categories developed: 1) overt operational changes--descriptive, 2) inferred changes in insights and attitudes, 3) global judgments. The first category included the areas of communication, relational facility, risk taking, increased interdependence, functional flexibility, and self-control. The second category included awareness of human behavior, sensitivity to group behavior, sensitivity to others' feelings, acceptance of others, tolerance of new information, self-confidence, comfort,
and insight into self. The last category involved "gross characterological inferences, noncomparable references to special applications of learning, and references to consequences of change."

In Bunker's study 11 of the 15 subcategories significantly discriminated laboratory participants from control subjects. He singled out three clusters of categories that had the greatest proportions of participants seen as changed and the largest differences between experimental and control groups. The major change cluster in this regard involved "increased openness, receptivity, and tolerance of differences." A second cluster involved "increased operational skill in interpersonal relations;" and a third major cluster was "improved understanding and diagnostic awareness of self, others, and interactive processes in groups."

Thus the responses available for transfer appear to be those one would expect in accordance with the goals of the T group. The emphasis placed upon various types of changes varies somewhat from study to study, and even more from person to person. One might expect that in groups that people enter on their own for various personal reasons, there would be fewer reported changes in the areas of group oriented and organization
relevant behaviors and more emphasis on personal traits.

Situational variables that might affect transfer after the group have not been studied thoroughly. In a sense only one situation, the work setting, has been involved in any kind of research, but even that has not been analyzed to any great extent with transfer in mind. Miles (1965) did relate three organizational variables to transfer of training: personal security, autonomy and power, and organizational problem solving adequacy. Security was measured by length of tenure in the present job, power by the number of teachers in the school (the subjects were all school principals), autonomy by the length of the time required between reports to the immediate superior, perceived power and perceived adequacy of organizational problem solving adequacy both by Likert scales. Of these factors two, security and power, showed significant but low correlations with on-the-job change. The perceived organizational factors showed no relationship to transfer.

When the sensitivity group is used primarily for personal gain, it becomes relevant to many situations other than the work setting. Research to date, of course, has not dealt with the problem of transfer of learning to these other situations. The initial problem in any such research is how to define the other
situations. Since the T group is chiefly an interpersonal experience, it might be most meaningful to define these situations interpersonally. If this framework is accepted, the work of Jourard (1964) on self-disclosure has direct relevance for T group transfer, especially since self-disclosure is such an integral part of the group experience and the learning that occurs there. Jourard studied the manner and extent to which people reveal significant things about their real selves to others. He measured the amount of self-disclosure given by his subjects to various "Target-Persons": father, mother, male friend, female friend, and spouse. He found several things: 1) in general men do not self-disclose as much as women, 2) married subjects disclose most to their spouses, 3) females disclose most to their mothers and girl friends, and least to fathers and boy friends, and 4) males (white) disclose about equally to mothers, fathers, and male friends, and least to female friends. In summarizing the results for the amount of self-disclosure given by all subjects (all young and single) to the different target persons, Jourard presents the following mean scores on the self-disclosure scale he developed: mother - 72.30, father - 51.70, male friend - 55.18, and female friend - 56.58. Thus mothers received the most self-disclosure from others and fathers
the least, with the male and female friends receiving slightly more than the fathers. The mean differences between fathers and male friends, and between male friends and female friends, however, were not significant.

It would not be unjustifiable to expect that the amount and ease of transfer of T group learning with the various target people would follow the pattern above which Jourard found to be characteristic of self-disclosure. Subjects might, for example, show the most application of behaviors and insights learned in the T group when they are with their mothers, and as a consequence mothers, as observers, might report more changes than the other target persons would. The situations in this study, therefore, will be defined in terms of Jourard's target persons. Both Jourard's subjects and the subjects in this study are young and unmarried, which increases the comparability of the data from the two studies.
THE PROCEDURE

This study involved two basically different procedures, which will be referred to as the "nomothetic" and "idiographic" parts of this research. The nomothetic method centered essentially around a questionnaire given to a group of 32 subjects in individual interviews; the idiographic method consisted of intensive interviews with four people during and after the course of a T group. The sensitivity group involved is a contract group experience described by Egan (1969).

A. The nomothetic method

Subjects. The subjects were 18 female and 14 male college students who took an undergraduate psychology course which was a T group. The group met twice a week for seven weeks during the summer of 1969 and each session lasted approximately three hours. The class was divided into four groups and the subjects interviewed represent all the groups.

A control group of 20 subjects was taken from undergraduate psychology courses. These volunteers were asked to submit the names of
four people who were then contacted and asked about changes in the control subject's behavior since May of 1969. The controls selected had not been in a T group since that time.

Procedure. The 32 subjects were interviewed from three to nine weeks after the termination of the group. The questions asked them covered the following things: reason for entering the group, view of the group experience, extent of their application of things learned in the group, how the group changed them or what they learned, the ease or difficulty with which they applied these learnings with the five target persons, and their estimation of whether or not these persons actually noticed changes in them.

When they were interviewed the subjects were also given the Taylor Manifest Anxiety Scale (Taylor, 1953). From the group trainers the following information was obtained: an evaluation of the extent of the subject's involvement in the group and how much he changed.
The subjects submitted the names of the target persons whom they were willing to let the researcher contact. These people were then contacted by mail and asked the one question used by Bunker (1965): "Since May of 1969, do you believe that this person's behavior when he/she is with you has changed in any specific way, as compared with the period prior to that? Yes____ No____. If yes, please describe." A stamped and addressed envelope was included for their reply.

B. The idiographic method

Subjects. There were two male and two female subjects who were interviewed intensively during the course of their experience in a T-group. The sensitivity group was essentially the same as that described above, except that it took place during the fall semester and consequently lasted approximately fifteen weeks, meeting once a week for three hours. Students in the course normally are required to write a
paper in order to receive a grade of A. In place of this requirement, however, the instructor allowed the four people involved here to substitute participation in this research. The subjects were chosen so that both sexes and various ages would be represented.

The entire class of roughly 40 students was divided into four T groups. All of the four subjects studied here were taken from the same group.

Procedure. Two subjects were seen primarily during the course of the group and two primarily after the group terminated in December. The reason for this was to attempt to assess any possible effects that the interviews might have on a person's performance in the group and the subsequent transfer of learning.

All four subjects were seen when the group began for two interviews of a primarily diagnostic nature. The two to be interviewed primarily during the course of the group were then seen seven more times before the group ended, and
after the group for three more interviews. The two subjects to be seen primarily after the group were seen once more during the course of the group, and then five times after the group over the course of several months.

The people being interviewed intensively were told that the interviews required nothing of them except that they talk about their experience. They did not have to perform, to change, or to like the group; they were to just be themselves as much as possible. The interviews focused on what was happening in the group and how it related to these people's lives outside the group. Specific attention was paid to the same personal, situational, and response variables that are being studied in the nomothetic part of this research.
RESULTS

previous Experience and Motivation

For twenty subjects this was their first T group experience. Eight subjects had had brief or experimental contacts with sensitivity groups, and four subjects had had experience in extended T groups.

The motives expressed by the persons studied for entering the group are shown in Table 1. A set of eight categories was developed for coding the responses given by the subjects to the question, "Why did you enter the T group?" "Prime reason" was defined as a motive that was either emphasized in some way or, if none was emphasized, simply mentioned first. The "Mentioned by" category includes persons for whom that motive was the prime reason and also those who mentioned it as a secondary motive. As can be seen in Table 1, the most frequently given reason was interest or curiosity, which was the prime reason for eight of the subjects and which was mentioned by twelve. It was followed by academic reasons, which included things such as being a psychology major and needing credit hours in it or wanting to take an easy course. Academic motives were the prime reason for
Table 1

Number of Subjects Expressing Various Motives for Entering the T Group

<table>
<thead>
<tr>
<th>Motive</th>
<th>Number of Ss</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prime Reason</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Interest, curiosity</td>
</tr>
<tr>
<td>2</td>
<td>Academic reasons</td>
</tr>
<tr>
<td>3</td>
<td>Suggestion of a friend</td>
</tr>
<tr>
<td>4</td>
<td>Desire for personal change</td>
</tr>
<tr>
<td>5</td>
<td>Desire to learn about self</td>
</tr>
<tr>
<td>6</td>
<td>Desire to learn about people, groups</td>
</tr>
<tr>
<td>7</td>
<td>Desire to get involved with people, meet different people</td>
</tr>
<tr>
<td>8</td>
<td>Other</td>
</tr>
</tbody>
</table>
six of the subjects and were mentioned by nine people. The more personally and interpersonally oriented motives, categories 4-7, were the prime reasons for twelve subjects, though individually none of these categories was larger than category 1 or 2.

**View of the Group Experience**

The subjects' views of the group experience after termination of the group were assessed in two ways: 1) the subjects were asked to rate their experience on a 7-point scale where 7 indicated "Very worthwhile experience," 1 meant "Very negative experience," and 4 indicated "Neutral experience"; and 2) they were asked an open-ended question, "What did you think of your experience in the T group?" and their responses were then coded on a 5 point scale where 5 indicated an entirely positive response, 3 a response in which positive and negative comments were evenly mixed, and 1 an entirely negative response. As seen in Table 2, the vast majority of subjects saw the group as a worthwhile or very worthwhile experience, while only two subjects rated it as a negative experience. With the open-ended question, however, this contrast is not as marked. While 18 subjects gave entirely or mostly positive responses concerning their experience
Table 2

Number of Subjects Expressing Various Views of the Group on the General 'Worthwhile' Rating and on the Open-ended Question

<table>
<thead>
<tr>
<th>General Description</th>
<th>Worthwhile</th>
<th>Open-ended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rating</td>
<td>No. of Ss</td>
</tr>
<tr>
<td>Positive Views</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Neutral or Mixed Views</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Negative Views</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
in the group, more than one-third gave entirely or mostly negative responses. The two measures of view of the group experience were apparently related; those rating the group 7 and 6 on the worthwhile scale had a mean of 4.0 on the open-ended question, while those rating it 5 and lower had a mean of 1.6.

An interesting and unexpected finding concerning view of the group experience is shown in Table 3. There it can be seen that men afterwards see the group more positively than women. On the worthwhile rating men rated the experience higher than women, and the t value for this difference reached significance at the .06 level. On the coding of the open-ended question, men averaged 4.2 and women 2.7, a difference which was significant at the .01 level. As a check on the reliability of this finding, the subjects' responses on the open-ended question were coded by a second scorer without knowledge of the sex of the subject. This coding yielded a smaller mean difference between men and women, and it was the one used in testing for significance.

**Trainer Reports**

The trainers were asked to rate the level of involvement of the subjects in the group on a 4 point scale where 4 meant
Table 3

Comparison of Mean View of Group Scores for Men and Women on the General 'Worthwhile' Rating and on the Open-ended Question

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worthwhile Rating</td>
<td>6.2</td>
<td>5.4</td>
<td>2.04</td>
<td>.06</td>
</tr>
<tr>
<td>Open-ended Code</td>
<td>4.2</td>
<td>2.7</td>
<td>3.01</td>
<td>.01</td>
</tr>
</tbody>
</table>
"Very involved" and 1 meant "No involvement." They were also asked to estimate the degree to which the subject changed on a four point scale where 4 meant "Great change" and 1 "No change." The mean involvement rating for all subjects was 3.3 and the mean change rating was 2.3. On the whole, therefore, the trainers saw their group members as being moderately to very involved in the group and as changing slightly to moderately. No subject was rated as putting no effort at all into becoming involved in the group, though eight subjects were rated as not having changed at all. The trainers tended to rate involvement and change similarly, i.e., those rated 4 on involvement had a mean of 3.0 on change, and those rated 2 on involvement had a mean of 1.1 on change.

Transfer Reported by the Subjects

A crude measure of subjects' views concerning the extent to which they have used or applied what they learned in the sensitivity group in their lives outside the group was obtained by asking them to rate this on a 7 point scale where 1 meant "Use it a great deal" and 7 meant "Don't use it at all." The mean for all 32 subjects was 4.0, indicating some use of T group learning. No subject rated his own transfer of learning 1 and
only one person gave it a 2. On the other hand, nine subjects rated themselves either 7 or 6, meaning minimal or no transfer.

The learnings or changes reported by the T group members are shown in Table 4. The subjects were asked to mention two things they learned or ways in which they changed. Three people said they did not change at all and three could come up with only one learning. Table 4 shows that the most commonly mentioned changes reported by the subjects themselves were categories A1 and B3, more open communication and insight into self and role, respectively. The next most frequently mentioned category was B4, sensitivity to the feelings of others, followed by A4, involvement with others, and B1, awareness of human behavior in general. The categories in Table 4 were adapted from Bunker's (1965) and they are explained more fully in the Appendix. The reason for the modification and the reliability of the new system will be discussed in the next section.

T Group Versus Control Group

When asked whether or not a subject had changed over a period of about six months, 49 percent of the observers of the control subjects said "Yes" and 51 percent of the observers of the former T group members said "Yes." This difference, of
Table 4

Number of Subjects Reporting Various Learnings or Changes as a Result of the Sensitivity Group

<table>
<thead>
<tr>
<th>Code</th>
<th>Description of Change Category</th>
<th>No. of Ss</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Open communication</td>
<td>13</td>
</tr>
<tr>
<td>A2</td>
<td>Relational facility</td>
<td>3</td>
</tr>
<tr>
<td>A3</td>
<td>Self-assertion</td>
<td>2</td>
</tr>
<tr>
<td>A4</td>
<td>Involvement with others</td>
<td>4</td>
</tr>
<tr>
<td>A5</td>
<td>Open-mindedness</td>
<td>2</td>
</tr>
<tr>
<td>A6</td>
<td>Self-confidence</td>
<td>3</td>
</tr>
<tr>
<td>B1</td>
<td>Awareness of human behavior in general</td>
<td>4</td>
</tr>
<tr>
<td>B2</td>
<td>Awareness of group behavior and process</td>
<td>2</td>
</tr>
<tr>
<td>B3</td>
<td>Insight into self and role</td>
<td>14</td>
</tr>
<tr>
<td>B4</td>
<td>Sensitivity to the feelings of others</td>
<td>6</td>
</tr>
<tr>
<td>B5</td>
<td>Increased feelings of self-worth</td>
<td>2</td>
</tr>
<tr>
<td>NC</td>
<td>No change</td>
<td>3</td>
</tr>
</tbody>
</table>

Note.--A more complete description of the modified code may be found in the Appendix.
Observers who reported "Yes" were asked to describe the nature of the change and their response was then coded. Bunker's (1965) categories were originally used in the coding, but partially because the interscorer agreement was rather low, a new set of categories was developed. As can be seen in Table 5, however, the improvement in reliability was negligible. There were several other reasons for believing that Bunker's code was not entirely appropriate for the present study: 1) it was developed to evaluate on the job behavior and therefore some categories, such as "Increased interdependence" and "Functional flexibility," were of limited relevance to the group being studied here; 2) some categories overlapped and could be combined, such as "Self-confidence" and "Comfort," or "Relational facility" and "Acceptance of other people"; and 3) the distinction between Bunker's "overt" changes, category A, and his "inferred" changes, category B, was ambiguous and even misleading for such categories as "Acceptance of other people" or "Self-confidence," which would certainly seem to involve overt behavior. In fact, for an observer to make a judgment concerning any category he must see some manifest behavioral change. It might seem, therefore, that the only person really in a position
Table 5
Interscorer Agreement for the Coding of Change Reports Using Bunker's Categories and the Modified Categories

<table>
<thead>
<tr>
<th>Group</th>
<th>Percent Agreement</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bunker's</td>
<td>Modified</td>
<td></td>
</tr>
<tr>
<td>Subjects</td>
<td>74</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Observers</td>
<td>60</td>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>
to report B category changes is the subject himself.

Table 5 shows that the interscorer agreement in coding the subjects' own responses was better than that for the observers' reports. This was because the subjects themselves, because of the nature of the questionnaire, gave one or two clearly distinguished responses, while the observers, responding to an open-ended question, gave multiple responses which were not clearly separated.

Table 6 shows the percentages of control group and T group for whom the observers reported the various types of changes. Only one change category, open communication (Al), significantly discriminated between the two groups. The group difference in category C was in the expected direction but could not be tested.

Transfer of Learning

The data relating transfer of T group learning to different variables are shown in Table 7. The "Self-report" transfer score for each individual is the composite average of his ratings on 7 point scales for difficulty of transfer and frequency of transfer across all relevant target persons and for all reported changes. The lower the score, the greater the reported transfer. Group means, then, are simply the means of all individuals'
Table 6

Comparison of the Percentages of Control Group and T Group for whom Various Change Categories were Reported by the Observers

<table>
<thead>
<tr>
<th>Change Category</th>
<th>Percent T Group</th>
<th>Percent Control</th>
<th>$x^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>43</td>
<td>15</td>
<td>3.794&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>A2</td>
<td>16</td>
<td>30</td>
<td>1.525</td>
</tr>
<tr>
<td>A3</td>
<td>12</td>
<td>15</td>
<td>0.066</td>
</tr>
<tr>
<td>A4</td>
<td>16</td>
<td>15</td>
<td>0.004</td>
</tr>
<tr>
<td>A5</td>
<td>3</td>
<td>5</td>
<td>--</td>
</tr>
<tr>
<td>A6</td>
<td>28</td>
<td>25</td>
<td>0.061</td>
</tr>
<tr>
<td>B1</td>
<td>0</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>B2</td>
<td>0</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>B3</td>
<td>6</td>
<td>0</td>
<td>--&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>B4</td>
<td>3</td>
<td>0</td>
<td>--&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>B5</td>
<td>3</td>
<td>10</td>
<td>--&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>C</td>
<td>12</td>
<td>25</td>
<td>--&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>$p < .05$.

<sup>b</sup>$x^2$ could not be calculated because the smallest expected cell frequency was less than five.
Table 7
Transfer, as Measured by Self-report and Verified Change Scores, Related to Different Subject Variables

<table>
<thead>
<tr>
<th>Subject Variable</th>
<th>Mean Self-report</th>
<th>Percent Verified Changes</th>
<th>t</th>
<th>x²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>3.0</td>
<td>50</td>
<td>0.50</td>
<td>2.97</td>
</tr>
<tr>
<td>Females</td>
<td>3.3</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-23</td>
<td>3.0</td>
<td>35</td>
<td>0.70</td>
<td>0.01</td>
</tr>
<tr>
<td>24 and up</td>
<td>3.4</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3.0</td>
<td>30</td>
<td>0.86</td>
<td>0.48</td>
</tr>
<tr>
<td>No</td>
<td>3.4</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TMAS:1-14</td>
<td>2.9</td>
<td>31</td>
<td>1.26</td>
<td>0.01</td>
</tr>
<tr>
<td>TMAS:15-28</td>
<td>3.5</td>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal (4-7)</td>
<td>2.9</td>
<td>67</td>
<td>0.48</td>
<td>5.42a</td>
</tr>
<tr>
<td>Impersonal (1-2)</td>
<td>3.2</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desired personal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>change</td>
<td>2.9</td>
<td>35</td>
<td>1.14</td>
<td>0.01</td>
</tr>
<tr>
<td>No desire personal change</td>
<td>3.5</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>View of Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive (5 and 4)</td>
<td>2.8</td>
<td>33</td>
<td>2.10b</td>
<td>0.00</td>
</tr>
<tr>
<td>Negative (1 and 2)</td>
<td>3.9</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trainers' Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High involv.</td>
<td>3.0</td>
<td>33</td>
<td>1.23</td>
<td>0.34</td>
</tr>
<tr>
<td>Low involv.</td>
<td>3.8</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change (3 and 4)</td>
<td>3.0</td>
<td>33</td>
<td>0.80</td>
<td>0.01</td>
</tr>
<tr>
<td>Change (1 and 2)</td>
<td>3.4</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade pt avg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0 and up</td>
<td>2.7</td>
<td>42</td>
<td>1.25</td>
<td>0.48</td>
</tr>
<tr>
<td>2.9 and below</td>
<td>3.4</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Interview</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before 9/15</td>
<td>3.1</td>
<td>--</td>
<td>0.38</td>
<td>--</td>
</tr>
<tr>
<td>After 9/15</td>
<td>3.2</td>
<td>--</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a p < .02.     b p < .05.
self-report scores in that group. The "Verified change" score is an all or nothing score for each individual; it means that for that subject there was agreement in change reports on at least one category. This agreement was either between the subject's own report and an observer's, or between observers. The verified change percentage, therefore, refers to the percentage of persons in a group who had at least one verified change.

No significant relationship was found between transfer, as measured by these two scores, and the following variables: sex, age, whether or not it was the first T group, anxiety, involvement and amount of change in the group, grade point average, and date of interview. Two significant relationships, both in the expected direction, were found. Persons with "Personal" motivation (categories 4-7 in Table 1) showed more transfer, according to the verified change score, than those with "Impersonal" motivation (categories 1 and 2). This difference was not corroborated, however, by the self-report means for the two groups. The other significant difference related transfer to view of the group. According to the self-report means, those who viewed the group positively (5 or 4 code on the open-ended question) showed more transfer than those who viewed it negatively (1 or 2).
Transfer with the Target Persons

A total of 152 letters were sent to the target persons, fathers, mothers, spouses, male friends, and female friends. From these 110 replies were received, a return of 73 percent. Roughly the same proportion of each target person group responded, as can be seen in Table 8. Thus all groups were fairly well represented, except perhaps for spouses, since few of the original subjects were married. It can also be seen in Table 8 that subjects expected fathers and mothers to say "No" more often than spouses, male friends, and female friends in response to the question about their having changed in the last six months. The subjects' predictions were fairly accurate; mothers and fathers together said "No" significantly more often than spouses, male friends, and female friends as a group.

The most important part of Table 8 is the self-report mean for each of the target person categories. This is the composite of the reported difficulty and frequency of transfer for all subjects for that specific category. Table 9 shows that it is significantly more difficult to transfer T group learnings with a father or mother than it is with a male friend or a female friend. In other words, transfer is easier and occurs more
Table 8

Data for the Target Persons, Including Mean Self-report Transfer for Each Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Target Person</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Father</td>
</tr>
<tr>
<td>Percent Responding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>76</td>
</tr>
<tr>
<td>S Predictions: NO</td>
<td></td>
</tr>
<tr>
<td></td>
<td>45</td>
</tr>
<tr>
<td>Actual Percent NO</td>
<td></td>
</tr>
<tr>
<td></td>
<td>57</td>
</tr>
<tr>
<td>Self-report Mean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.5</td>
</tr>
</tbody>
</table>

*Difference between peers and parents significant, p < .05.*
Table 9

Comparison of the Self-report Means for the Target Persons

<table>
<thead>
<tr>
<th>Variable</th>
<th>Father</th>
<th>Mother</th>
<th>Spouse</th>
<th>Male Friend</th>
<th>Female Friend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father</td>
<td>0.78</td>
<td>0.24(^a)</td>
<td>0.78</td>
<td>2.19(^b)</td>
<td>4.18(^c)</td>
</tr>
<tr>
<td>Mother</td>
<td>0.70</td>
<td>0.24(^a)</td>
<td>0.70</td>
<td>2.17(^b)</td>
<td>4.17(^c)</td>
</tr>
<tr>
<td>Spouse</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.34</td>
<td>1.21</td>
</tr>
<tr>
<td>Male Friend</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.44</td>
</tr>
</tbody>
</table>

\(^a\) values for mean differences.

\(^b\) \(p < .05\).

\(^c\) \(p < .01\).
often with peers than with parents. The mean for spouses, however, was not significantly different from any other group, but it was probably not a reliable measure because there were so few married subjects.

Table 10 deals with sex interactions on the self-report transfer measure. None was significant, though the number of degrees of freedom in each case was relatively small and replication with a larger number of subjects might produce significant results.

Table 11 shows the different response categories reported by the different target persons for both control and T group subjects. Spouses have been omitted here because there were too few. In testing differences with a \( \chi^2 \) fourfold contingency table, groups at times had to be combined in order to meet the requirement of a minimum expected cell frequency of five. The most logical combinations were along parent-peer lines. Where even combining groups could not meet the requirement, however, tests of significance could not be conducted. It can be seen in Table 11 that male friends and female friends as a group reported significantly more A1 responses than mothers and fathers combined. The parent-peer differences in categories A2 and A6 were also testable, but they were not significant. Of the nine
Table 10

Sex Interactions: Self-report Transfer with the Target Persons

<table>
<thead>
<tr>
<th>Target Person</th>
<th>Subjects</th>
<th>Males</th>
<th>Females</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father</td>
<td></td>
<td>3.8</td>
<td>3.2</td>
<td>1.19</td>
</tr>
<tr>
<td>Mother</td>
<td></td>
<td>3.6</td>
<td>3.3</td>
<td>0.74</td>
</tr>
<tr>
<td>Male Friend</td>
<td></td>
<td>2.0</td>
<td>2.9</td>
<td>1.97</td>
</tr>
<tr>
<td>Female Friend</td>
<td></td>
<td>2.2</td>
<td>2.2</td>
<td>0.15</td>
</tr>
</tbody>
</table>

Note.—Spouses omitted due to insufficient N.
Table 11
Percentages of Target Person Groups Reporting Different Change Categories across both Control and Sensitivity Groups

<table>
<thead>
<tr>
<th>Change Category</th>
<th>Father</th>
<th>Mother</th>
<th>Male Friend</th>
<th>Female Friend</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1²</td>
<td>11</td>
<td>0</td>
<td>54</td>
<td>43</td>
</tr>
<tr>
<td>A2</td>
<td>22</td>
<td>46</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>A3</td>
<td>11</td>
<td>9</td>
<td>23</td>
<td>10</td>
</tr>
<tr>
<td>A4</td>
<td>0</td>
<td>18</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>A5</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>A6</td>
<td>11</td>
<td>27</td>
<td>46</td>
<td>38</td>
</tr>
<tr>
<td>B1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B3</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>B4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>B5</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>55</td>
<td>27</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

Al difference between peers and parents significant, p < .01.
category responses reported, eight were reported by mothers and fathers. Though this difference was not testable, it is to some degree corroborated by the fact that the only B category responses, which imply greater familiarity or intimacy with a person, were given by male friends and female friends.

**Differences among the Four Groups**

Table 12 summarizes the data for the four separate T groups that made up the sample studied. Mean involvement and amount of change ratings are shown, though group differences in these measures could depend as much on a trainer's manner of rating as on the performance of the group members. None of the group differences on view of the group experience or self-report transfer was significant.

**Idiographic Results**

The results of the idiographic part of the study will be reported here as case studies, with special attention to the variables evaluated in the nomothetic section. Before doing this, however, it should be pointed out that the idiographic part of this study took a somewhat different direction than originally intended. Rather than involving an exhaustive and
Table 12
Data Comparing the Four Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td><strong>View of Group:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Open-end Code(^a)</td>
<td>3.9</td>
<td>3.1</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td><strong>Trainers' Rating:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Involv.</td>
<td>3.4</td>
<td>3.7</td>
<td>2.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Mean Change</td>
<td>2.1</td>
<td>2.9</td>
<td>2.1</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Transfer:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-report(^a)</td>
<td>2.9</td>
<td>3.2</td>
<td>3.8</td>
<td>2.7</td>
</tr>
</tbody>
</table>

\(^a\)None of the differences between groups was significant.
systematic analysis and explanation of the dynamics of transfer with the four individuals studied idiographically, it focused more on the largely methodological concerns which will be mentioned later. There were probably two main reasons for this change: 1) the nomothetic and idiographic parts of the study were conducted simultaneously, so that it was difficult to analyze idiographically hypotheses suggested by the nomothetic treatment of the problem, and 2) transfer appeared to be minimal and scattered, and therefore it was difficult to relate idio-
graphically to other variables. A more thorough idiographic analysis is still desirable.

Case 1: John. John is a 20 year old college senior who majored in psychology. His background could be described as urban middle-class, and he had one older brother and an older sister. He was living in an apartment with friends close to the campus. At one time he had thought of being a priest and still considered the idea periodically, but his current plans involved teaching grammar school and getting his master's degree in psychology at night.

John had not been in an actual T group before, but he had been a leader of a small group during freshman orientation. Though the group had largely religious goals, he felt it was
similar to a T group in that the members did become close. John described this experience as very enjoyable and very worthwhile.

John's motivation for entering the sensitivity group was largely academic; he was a psychology major and took it as an elective. However, after his initial contact with the group, which he described as "exciting," he became interested in how he might personally profit from the experience.

The initial impression John made on the other group members was somewhat negative. They described him as rather insecure, as rigidly adhering to middle class values, as needing a good deal of structure, concerned about his impression on the opposite sex, and as having definite expectations of others and as a consequence being rather judgmental. John described himself as kind of quiet and able to get along with a variety of people. He felt the most important thing in life was "to be nice." He reported that at times, however, he became somewhat "boisterous and rude," often directing this towards women. He did not like this in himself, and therefore from time to time he became concerned with self-improvement. John stated that his religion was important to him, but that he could sometimes "get on (his) high horse about principles."
On the whole, John's experience in the group might be described as moderately favorable. Although his very first reaction was favorable, he soon became uncomfortable with the lack of structure and with the silences. The group gave him feedback about this reaction of his, and he reported that he enjoyed "being put on the spot." He tended to be active in the group, though at times he got "tired of trying to be deep and sincere" and wished the group could get together elsewhere to discuss war, sex, or religion. After the group had ended, he described it as having been enjoyable and relaxing, a kind of "refuge where people listen to you."

The other group members reported that John did change during the course of the group. They described him as more open-minded and accepting of others, and as feeling less need to be active and more tolerant of silences. One person described the change in him as a "complete turnabout," and added that he had eventually come across as a sensitive person. In the interviews themselves the investigator felt he noticed a perceptible change in John's behavior; he seemed calmer, spoke less and more slowly, and appeared more tolerant of others and in particular of women.

John himself felt that he did change in the group, but he was not sure if he had changed outside the group, except for the
fact that he reflected more on his behavior. He felt there were no general behavioral changes as far as he was concerned, but from time to time in different situations he might be able to listen to others better or to communicate more directly his own feelings. John noticed definite effects of the amount of time since the group on these changes. As the group experience became more and more remote, he tended to reflect less on himself and to communicate less directly. He felt the weekly sessions were a great support to transfer of learning, but that after the group ended he tended to "forget the little things."

John was asked if he transferred T group type behaviors more with some people than with others. He felt he did not react differently with his parents at all as a result of the group, though he did feel he had gradually been becoming more open with them simply as a result of his getting older and growing up. With a close male friend he felt it would be hard to apply T group learning because he had not been used to doing things that way in that kind of relationship. With someone not so close, he felt he might apply it more readily. With a close female friend, John felt it would be easier and he would do it more because in that kind of relationship "you're growing and you talk things over more." In either case, male or female, he felt the T group
would affect any friendship he might subsequently build. John felt the sensitivity group had not affected his relationships with his brother and sister, because they had been close and communicated freely to begin with. He thought that the people discussed above would not report changes in him, but if they did the changes would not be changes due to the group.

Case 2: Mary. Mary is a 23 year old senior who majored in political science. She was living with two friends in an apartment close to school. Her mother and father were both living, she had one younger brother, and she was engaged to be married in several months.

This was Mary's first experience with a sensitivity group. Her primary reason for taking the course was semi-academic: she wanted a course that would not be a lot of work. However, she added that "sensitivity" was important in her circle of friends.

Other group members described Mary as a pleasant and active girl, but one who thought a lot and tended to be preoccupied with troubles and introspection. Though she appeared at times friendly and spontaneous, she could also appear anxious, withdrawn, and apathetic regarding the group. Mary described herself as wanting to project an open and uninhibited appearance, but as often coming across as "super-straight." She believed she had a mind
of her own and was very sensitive to people playing down women or woman's role. She shared many of the interests and attitudes current among young people and was at the same time experiencing several of the conflicts typical of late adolescence, such as dependence versus independence and relationships with authority.

Mary's experience in the group could be described as mildly favorable. Her very first reaction to the group was one of enthusiasm. She liked very much the lack of authority and felt the group might help bring her outside herself. Her initial stance of uninvolvement gradually gave way to much greater interest and participation in the group process. She also seemed to enjoy being put on the spot, and at one point she enjoyed the support of the group while arguing with a male group member on the subject of the role of women. On the whole, she felt the group experience was good and did not involve "too much pressure."

The other group members reported that Mary did change during the course of the group. They felt she became more involved in the group, more insightful, more trusting, and more confident and willing to stick by her opinions. In the interviews themselves the investigator could see no noticeable changes in Mary's behavior.
One month after the group ended Mary reported that though she felt the course was valuable, it seemed remote and she was not sure if she had changed as a result of it or not. Although she was uncertain about overt behavioral changes, she said the group did help her "look at things differently." Mary said she gained insight into the "emotional workings of others" and realized they were like her. This helped make it easier to accept her parents and to understand a troubled friend of hers.

With regard to the target persons, Mary said that recently she and her fiance had become closer and were able to fight more constructively, but she was not sure if these changes were due to the group. Her fiance had simultaneously been in another T group and Mary noticed big changes in him, but she was not sure if he noticed changes in her. She felt she had recently become more independent from her mother, but she related this more to changes in her mother than in herself. With her father she felt things were the same, though they had had a fairly good relationship to begin with.

Case 3: Mike. Mike is a 31 year old priest who had been in the religious life for eight years. He lived alone close to a seminary and was taking several college courses in addition to his other work. His parents and brothers were living, but in
another part of the country so that he seldom saw them.

Mike said he was taking the T group course to help him communicate better and deal with people better. He liked working with people and said he was "sold" on working with groups. His previous experience with small groups was varied. He had been through a couple of weekend sensitivity group experiences. Once a week for one semester he had also been a member of a non-directive group where all communication was done through the leader; this he described as worthwhile but not necessarily enjoyable. Finally, he had run an adolescent group which he very much enjoyed.

The other group members described Mike largely in negative terms. They felt he was rigid and defensive, and that he seemed to find it difficult to trust the group enough to open up. Though he not infrequently made hesitating gestures at becoming involved in the group, these, the other people felt, came from a sense of duty or obligation. His reserved demeanor involved intellectual controls of all input and output, but a certain amount of resentment still seemed to show through. Mike was also described as deep, at times perceptive, and as wanting to change but not quite being able to. Mike himself felt that one of his problems in the group would be his tendency to take the
initiative, and that he would have to try to restrain himself.

Mike's experience in the group might be characterized as moderately unfavorable, though he did feel it was worthwhile. His very first reaction was mixed, partly because there were more older people in the group than he had expected. Though he did have some positive or enjoyable experiences, his dominant feeling during the group seems to have been one of being left out and almost cheated by the group, and especially by the trainer. He was frequently critical of the trainer and felt the group did not progress fast enough or far enough because of him. At one point Mike expressed some of his angry feelings about the situation in the group, but for the most part he held them back and expressed them more in the individual interviews. Early in the group he blamed others for his frustration, saying that he had tried to get involved with them but they had not cooperated. However, after he had been told on different occasions by group members that he was aloof and holding back, his perception of the situation was mixed. He felt he "had to accept" that feedback because several people in the group had said the same thing about him, but he still was not sure if it were true. Later in the group, therefore, he vacillated between blaming the group and feeling "maybe I'm not doing my share."
The other group members disagreed somewhat as to whether or not Mike changed in the group. They did agree that he showed little or no overt behavioral change, but they suspected nevertheless that the feedback he had received had made an impression on him. One person felt it might have made him at least want to change, and another felt Mike had become more open to feedback and actually gave more himself. In the interviews themselves, the investigator noticed that though Mike's behavior was largely the same. In later interviews he talked more about his own personal feelings than he had earlier.

When asked if he felt he had changed as a result of the group, Mike said that his behavior was not too different, though he was consciously aware at times of not being open. He felt he had been through the experience of open and honest communication and realized it was very difficult. He added, however, "when it's called for I usually get around to it." Mike mentioned several incidents where he felt he had been more open about his feelings with some male friends. He felt he could communicate better to an extent, but thought this change involved primarily his being more receptive to communications from others, particularly communications about him personally. He also felt that in interpersonal situations he was more aware of
what was actually being communicated and of people's attitudes. When asked whether or not his friends would have noticed any changes in him, he replied, "It's hard to say."

Case 4: Jane. Jane is a 27 year old laboratory technician who received her bachelor's degree several years ago. She had one older sister who was a nun and a younger brother in the army. Her father had died recently, but her mother was living in another part of the country. Jane lived alone not far from the college campus.

Jane had had no previous experience with sensitivity groups. She entered the group because she knew several people who had, and she added, half-seriously, "It's the thing to do, you're left out if you haven't." She also mentioned, however, that she was interested in personal change; she had a problem with anxiety when talking in a group and hoped the T group might help her with this.

The other group members described Jane as quiet, nervous, and reserved. They felt she had a lot inside, but walled herself off from others and felt rather lonely. She was, however, sensitive to the opinions of other people, but her silence and lack of assertiveness made her difficult to get to know.
Jane's experience in the group might be generally described as mildly unfavorable. The recurring conflict between her inability to open up and the group's pressure on her to do so created tense situations that left some resentment in her as well as the others. After the group Jane said she felt disappointed, though she was not sure if she were disappointed in the group or in herself. Though she found the experience and the "T group techniques" interesting intellectually, she "wound up not feeling as close to the others or as warm" as she thought would usually be the case. Jane felt that part of the problem was that the trainer did not like her and tended to favor others.

On the whole the other members of the group felt that Jane did not change in the group. They said it was difficult to tell whether or not she had changed internally, though, because she did not reveal herself very much. Some felt that she might have resented the group more at the end. In the interviews themselves there was no noticeable change in Jane.

Contrary to the opinions of the other group members, Jane felt she had changed, though not necessarily in the group itself. "Somehow a feeling of self-worth" came out of the experience, she said. People in the group had told her she should value herself more, and she realized that though she did value herself, she did
not show it in her behavior and she even tended to give the oppo-
site impression. Jane was also surprised by how many different
people in the group could arouse hostility in her by making
"boring or stupid" remarks. She had previously felt she was a
more positive person. Behaviorally, Jane felt she had changed,
not generally but in isolated incidents in which she thought she
behaved more aggressively. She gave as an example of this tell-
ing the fellow she was dating something he did that bothered her.
Before, she noted, she would not have said anything because
she could see only a very negative way to do it. Now she felt
less fearful of saying something negative and thought it could
be a way of expressing concern for someone. Jane felt that the
changes she had mentioned would be noticeable to some of her
friends, such as her boyfriend.
DISCUSSION

For almost two-thirds of the people involved, this was their first experience with a sensitivity group. This proportion will probably decrease further in the future as more and more people become involved in sensitivity groups. Thus the subject pool for studies of sensitivity training is likely to become more and more sophisticated.

For most people the desire for personal change was not their primary reason for entering the group. Curiosity, academic reasons, and the suggestions of friends were mentioned as primary motives more frequently. This suggests that the people in this group may have taken a more casual approach, at least initially, to the group experience. It might be expected that people sent by a company or some other organization would be more invested in the group and subsequently show more change because of the pressure on them to do so.

As far as view of the group is concerned, most people look back on the T group experience as having been worthwhile; few see it as having been a negative or even a neutral experience. It seems, however, that for some people rating the group as worthwhile does not necessarily mean that it was an entirely
enjoyable or easy experience for them. This is not at all logically inconsistent, since many healthy processes, such as growing up, involve considerable difficulty.

An unexpected finding concerning view of the group was that women look back on the group much more negatively than do men. Three plausible explanations for this difference can be suggested, the first of which is to some extent unique to this particular sensitivity group course and the last two of which are based upon popular stereotypes of men and women: 1) the trainers were all males and all priests, and their manner of relating to women or the women's perception of them in the group led to the difference, 2) women are more open than men to begin with, and therefore the T group is not as much of a novelty or pleasant change for them as it is for the men, and 3) women's feelings are hurt more easily than men's, so the critical feedback often involved in the group process hits them harder and they "take it more personally" than men.

With regard to the subjects' reporting of transfer, most persons reported that in general they used what they learned in the T group to a moderate extent. Few reported that they were not different at all as a result of the group and no one said he had changed drastically. When the subjects were asked more
specifically about what they learned or how they changed, however, most of them had some difficulty reporting specific changes. This difficulty was probably due to two things: 1) the changes were not that great or noticeable and 2) despite the T group experience, the subjects were not used to analyzing their behavior in this way. The changes they eventually did report were primarily more open communication and insight into self. Open communication was also the most frequently reported change category by the target persons, and it is probably the one most equated in general with T groups and T group changes. While one can largely control whether or not he becomes more open in communicating, changes in the B3 category, insight into self, are to some extent unavoidable for the T group member. He will probably receive feedback about his behavior whether he wants it or not, though it may or may not involve something of which he was already aware. Many of the subjects reporting the B3 category apparently did learn something new about themselves, for many of them said that they learned in the group that they come across to others differently than they had previously thought.
Control Group versus T Group

There was no difference between the control group and the T group in the percentage of target persons reporting change for each; half of the observers for each group did so. This was to be expected, since it was in accord with Bunker's (1965) finding that observers of control subjects frequently reported changes. Bunker felt that they did so in order to accommodate the researcher, even though they may not really have noticed changes in the other person. In this study there is an additional possible explanation for reported changes in control subjects: most of the subjects were under 25 years of age, a time of life when significant personality changes do occur frequently. This fact might also explain why most of the changes reported for the control group subjects fell in the A and B categories, rather than in the C category as Bunker found.

Bunker also found that 11 of his 15 change categories significantly discriminated between his control and experimental groups. In the present study only one category, open communication, did so. When many tests of significance are run and one is accepting the .05 level, one can expect that one test in twenty will yield significance by chance alone. This hypothesis might
be entertained here, except for the fact that the Al category, as mentioned before, involves probably the primary goal of any sensitivity group, openness in communication. Thus it appears more likely that the difference is real and reliable. There is, however, another alternative hypothesis to the notion that the T group subjects really became more open in their communication. It is the possibility that the observers who reported the Al changes, almost all of whom were male and female friends, were aware of the fact that the subject had been in a T group. Thus they might have reported this type of change in order to accommodate their friend and/or the researcher.

The present study, therefore, found less marked differences between control and T groups than did Bunker. Three reasons for this can be suggested: 1) the age of the subjects in this study, as mentioned above, 2) a real difference in the magnitude of the changes resulting from the T groups, perhaps due to the motives and the pressures to change in the two groups, and 3) the fact that Bunker's observers reported changes in behavior in a work setting; this on the job behavior would involve a more limited number of specific role behaviors and thus changes would be more noticeable.
Transfer and Other Variables

Transfer was not significantly related to most of the variables evaluated. Only two significant relationships appeared. It is likely that the first, relating transfer to "Personal" and "Impersonal" motivation, was a chance difference, for the following reasons: 1) many tests of significance were conducted, 2) the difference was not substantiated by the self-report score, and 3) the verified change scores in general, depending as they did upon the reliability of the coding, did not appear to be accurate measures of transfer.

The other significant difference related the subjects' view of the group to transfer. Those who saw the group more positively showed more transfer. If one applies learning or reinforcement theory to this situation, the fact that a person describes his impressions and memories of the group in positive or negative terms may well have implications for transfer. If behavioral changes and the formation of new habits depend upon positive reinforcement, and if a person who remembers the group largely in favorable terms does so because in it he received a fair amount of positive reinforcement for his behavior, then persons who describe the group positively should show more
transfer. This might explain this finding relating view of the group to self-report transfer, though two reservations should be mentioned: 1) this relationship was not substantiated by the reports of observers, and 2) the relationship may exist only in reporting and not in actuality, i.e., those who report a negative view of the group also report less transfer, regardless of their actual behavior.

Transfer with the Target Persons

There were significant differences reported in the amount of transfer with the different target persons. In general it seems that the subjects are closer to peers than to parents, and they therefore feel more comfortable transferring T group behaviors with male friends and female friends. Further evidence that the psychological distance is greater between subjects and parents than between subjects and peers can be found in two other results: 1) almost all the A1 or open communication changes were reported by male friends and female friends, and 2) all the B category changes, which imply greater familiarity with a person's inner psychic world, were also reported by male and female friends. What parents reported more frequently were C category changes, vague or global responses which might indicate lack of
familiarity with the subjects. Thus if parents alone had been asked about changes in the subjects, no significant differences would have appeared between control and T groups.

It is interesting to compare these findings regarding target persons with Jourard's (1964) results on self-disclosure. Although the subjects in both studies were similar in age and were mostly college students, in Jourard's study the mother was the person disclosed to most, while the other target persons were much lower and fairly similar in their group means on the self-disclosure score. Thus the parent-peer distinction found here did not hold. This difference between the two studies may in some way be due to the fact that the present study involved several responses other than self-disclosure (Al, open communication) and it also tried to measure change rather than the ongoing state of affairs.

Idiographic Contributions

This section will discuss the contributions of the idiographic part of this study and relate them to the nomothetic results. It should be said from the beginning, however, that it is felt that an idiographic treatment of a problem is a very valuable, if not indispensable, complement to the nomothetic
method. It can help eliminate certain deficiencies, lack of reliability, and lack of validity in a study, as well as suggest ways of dealing with a problem more creatively and fruitfully. The reasoning behind this statement will first be discussed in abstract terms and then it will be elaborated upon concretely in terms of this study.

When one creates or designs a study of some problem in psychology, he must begin with a phenomenological or common sense analysis of his own experience. It is true he may have gotten an idea from other writings, experiments or theory, but ultimately someone began with an analysis of his experience. If, for example, he comes up with the notion that severe anxiety impairs test performance, he will check the validity of the idea spontaneously by trying to remember times when anxiety hindered him or when something similar happened to someone he knew. Even after an hypothesis is developed and even after it is tested, people continually evaluate it by relating it to their own knowledge and experience. This evaluation is usually a kind of idiographic process, i.e., it is an inductive process that begins with a fairly thorough analysis of an N-equals-one situation, taking into account as many variables as the person feels are relevant. This idiographic, phenomenological, common sense
beginning, therefore, is crucial in the formulation of whatever nomothetic design and treatment result from it; it can also easily reflect the attitudes, deficiencies, and biases—in other words, the lack of objectivity—of the designer or investigator. Therefore the fact that a study is essentially nomothetic, and thus felt to be scientific and objective, is no guarantee that the process that preceded it also lived up to those same criteria. Consequently, the crucial role of the common sense, idiographic phase should be admitted and accepted, and that phase should be handled as objectively, thoroughly, and systematically as possible. This refers not only to the phase that is involved in developing a hypothesis and designing a study, but also to the period after a study has been completed, when the investigator and others are again relating, on a common sense basis, the results to their own knowledge and experience. Simply stated, the point is this: common sense and idiographic analysis are going to be crucially involved in any investigation whether one likes it or not; they should therefore be handled as carefully and as well as possible.

More specifically, the contribution of the idiographic part of this study might be broken down into three related areas:

1) "troubleshooting": the pointing out of potential sources of
difficulty in a study, such as problems in the acquisition of data or in the reliability of reporting, 2) elucidation of hypotheses: elaboration of the complexity or clarification of the operation of the variables involved in the hypotheses, and 3) suggestion of new hypotheses.

Under the first category, troubleshooting, the idiographic part of the study brought to light the difficulty subjects had in identifying and reporting changes in themselves. Some of the problems they encountered are these: whether a certain behavior represents a change from former behavior or not, whether a change in a relationship with a target person is due to a change in the target person rather than the subject, whether a change in a subject is really due to the T group or some other cause, and whether a relationship with a target person has changed or whether it always involved openness and thus there is really no transfer of T group learning. When one is interested in changes due to the T group, these are all potential sources of lack of validity in subjects' reporting. Another problem is this: are the reports of subjects concerning T group learning and change reliable and complete? One subject discussed previously, John, mentioned few changes resulting from the group when presented with an open-ended question. When given a checklist based on the
modified form of Bunker's categories, however, he reported enduring changes in almost all categories.

Under the second category, elucidation of hypotheses, the idiographic part of the study clarified the nature of transfer and the context in which it occurred, and demonstrated that several of the variables evaluated were not related to transfer as simply as might have originally been thought. The case studies revealed that transfer from this sensitivity group did not involve sweeping or drastic changes in people. Instead, the T group was assimilated into the ongoing context of a person's life, where other problems and concerns were usually much more important. Thus transfer after the group involved isolated incidents for most people rather than universal changes. In addition, certain variables and their relationship to transfer appeared more complex. Subjects who viewed the group negatively reported less transfer in general, yet in the cases of Mike and Jane, both of whom looked back on the group largely in a negative light, significant personal changes were still reported. The motivation variable became more complex when John demonstrated the possibility that a person's motivation before the group may be two different things. The problem of target persons and transfer became more complex when it appeared that transfer may be
more affected by aspects of a relationship other than its more formal definition. In other words, more important for transfer than the fact that someone is one's father may be the kind of person he is, open or constricted, warm or cold, etc.

The third category mentioned above was suggestion of hypotheses. Under this category the idiographic part of the study suggested several things that might merit further analysis or nomothetic treatment. John and Mary, for example, indicated that the amount of time since the group might be an important factor affecting transfer. It appeared that the longer the time since the group, the less the transfer. In the cases of John, Mary, and Mike, the initial reaction to the group seemed to be predictive of the general nature of the entire group experience for that person. It also seemed that people in the group reported changes in people they liked. Finally, Mike and Jane revealed themselves more in the individual interviews than in the T group. What factors might be related to such differential self-revelation and how might they affect transfer in general?

The preceding examples were intended to demonstrate concretely how the idiographic part of the study suggested methodological improvements, clarified the nature and operation of some of the variables being studied, and generated new ideas relevant
to the problem of transfer. It does not contradict the belief that science is an inductive process where confirmation of an hypothesis results from its having been validated across a number of subjects. In other words, scientific validity still depends ultimately upon the successful completion of a nomothetic procedure. Where the idiographic approach enters in is in making the nomothetic formulation of the problem as meaningful and as accurate a description of the real state of affairs as possible. It does this by helping with the selection of appropriate methods and by helping to delineate and accurately describe all the relevant variables.

Methodological Problems

A few of the methodological difficulties involved in studying transfer of T group learning will be discussed here. The first is not specifically methodological and might be specific to this particular investigation. If one is attempting to uncover a significant correlation between two variables, the ideal is for the individual scores for each variable to have as wide a range as possible. If the range for the scores for either variable is restricted and that group is therefore overly homogeneous, the likelihood of finding a significant relationship
is decreased. In the present study it appeared that the criterion variable, transfer of learning, was restricted in its range. Two things indicated this: 1) on the 7 point self-report transfer scale, of the 32 scores only three fell above 3.8 and only two below 2.0, and 2) the idiographic results seemed to indicate that for most people transfer was not great and involved scattered incidents rather than sweeping changes. Whether this is representative of T groups in general or specific to this group, it probably obscured whatever relationships exist, if any, between transfer and the independent variables.

Another problem, discussed briefly before, involves the reliability of the reports of subjects themselves concerning what they learned or how they changed in the group. There might be two options available in collecting such data: an open-ended question or a checklist. The danger of the first is the subject's overlooking significant changes; the danger of the second is the subject's reporting changes that did not really occur. Perhaps a workable compromise is a checklist in which only a certain number of responses are allowable and in which A and B category responses are mixed with buffer items and C category responses. This might also solve some of the problems with observer reports, where the reporters are usually even less
psychology sophisticated and often invested in showing their friends, sons, or daughters in the best possible light.

The last methodological difficulties which will be discussed here were specific to the questionnaire used in this study. The questionnaire did not give subjects sufficient freedom to report no change; it should have asked "Did you change?" before it asked "How did you change?" Secondly, questioning people on all reported learnings across all target persons overlooked the probability that people changed in different ways with different target persons.

A Rudimentary Theory of Transfer of T Group Learning

This section attempts to outline a theory of T group learning and transfer based upon well known and widely accepted principles of learning (e.g., Ullman & Krasner, 1969). Briefly stated, the theory is this: 1) the sensitivity group teaches people about a new class of interpersonal responses; this learning involves primarily insights or cognitive acquisitions and secondarily overt behavioral training; 2) behavioral change in the group itself occurs as a result of the interaction between the individual and the reinforcement contingencies existing in the group; generally people will attempt to maximize positive
reinforcement and to minimize aversive stimuli; and 3) transfer after the group, in terms of behavioral change, depends upon the interaction between the individual and the reinforcement contingencies operating in his environment; he is aware of the interpersonal responses he might make, but whether or not he makes them depends upon how people in his environment react or how he expects they will react.

1. As mentioned previously, in the T group the person perhaps first becomes aware of a different kind of interpersonal behaviors, such as open communication of one's own feelings, sensitivity to the feelings of others, analysis of personal interactions, and potential alterations of personal idiosyncracies. Cognitively he cannot easily escape becoming aware of the goals of the T group and what the trainer and the group as a whole conceive to be the ideal in interpersonal behaviors. Secondarily, he receives some behavioral training in these new responses; he may try some of them out and see how others respond. Behavioral training is secondary, however, because it is usually restricted to a limited number of the potential behaviors of which the person is cognitively aware.

2. When a person experiments with new behaviors, how the other group members respond to him will influence how much he
changes in the group itself. Some people feel that a sensitivity group is a permissive, unstructured situation where an individual is free to do whatever he wishes. On the contrary, the T group involves a very definite and often stringently reinforced behavioral code which members cannot avoid responding to in one way or another. Pressure from a group of one's peers is a potent influence, and usually the members of a sensitivity group accept the T group goals and mutually reinforce one another for adhering to them. Thus the group presents powerful positive reinforcements and powerful aversive stimuli in attempting to shape the behaviors of its members. It seems likely that the behavioral changes occurring in people in the group itself occur in response to one or the other of these influences. This is not to say that the group is such a potent influence that everyone in it must change, for people respond differently to the same external reinforcement contingencies. The cases of Mike and Jane contrast markedly with those of John and Mary in their degree of responsiveness to the demands of the group. Where change does not occur in the group, it is either because habit strength or other potential aversive stimuli supercede the effects of the reinforcements operating in the group, or because not changing itself is in some way positively reinforcing.
3. Whatever happens in the group and however people change in it, whether or not they change after the group depends for the most part upon a new set of reinforcement contingencies, those operating in the person's nongroup environment. This means that what happens in the group itself is not the primary determiner of the nature and extent of transfer, aside from the fact that the group taught the potential responses to begin with. If the behaviors learned in the group do not "pay off" in some way after the group has ended, they will be extinguished.

It has been mentioned previously that the learning theory notions of generalization and time allowed for new learning seemed to militate against transfer. The T group involves essentially a new set of responses to a new stimulus, the sensitivity group. Transfer will decrease to the extent that a group member discriminates between the novel stimulus of the group and the old stimuli of his environment. That this does occur was attested to by the reports of some of the persons interviewed that even during the course of the group they changed more in the group than outside it.

The problem of the generalization of new responses is aggravated by the fact that the time available for learning the new responses is relatively insignificant when compared with the
amount of time during which the pregroup habits were learned. Habit strength, in other words, is proportional (to a point) to the number of reinforced trials. Though the T group might be a more concentrated learning experience, it cannot hope to equal in 40 hours the number of trials which occurred over 20 years.

The notion that reinforcement contingencies in the non-group environment largely determine transfer also has built into it a pessimistic view concerning the likelihood of transfer. One might assume that in his pregroup environment a person learned by his behavior to maximize positive reinforcement and minimize aversive stimuli, and that the resulting behavior involved many interpersonal habits at variance with T group ideals. One would expect, therefore, that after the group, in this same old environment, the person will return to his old behaviors because they paid off there. The only ways in which this will not happen are 1) if the environment itself changes or 2) if the person changes the environment so that it reinforces him for his new behaviors.

To illustrate the notion that the environment for the most part controls transfer, one might imagine two T group subjects. The first is sent by his company to improve his managerial skills and the second enters a T group for his own personal benefit.
The first will be likely to show more transfer, because his environment after the group will provide him with two potent kinds of reinforcement: positive reinforcement from subordinates who like his more understanding, open, and tactful way of dealing with them, and potential aversive stimuli from his superiors, should he not show the desired improvements in his behavior after the group. The second subject, however, has no reinforcers built into his environment, and therefore his transfer of T group learning should be substantially less. This might explain the difference between Bunker's (1965) results, where T group subjects differed significantly from controls in 11 of 15 categories, and the results in the present study, where the two groups differed in only one category.

It was said before that the environment controls transfer for the most part. The group itself, however, does have some effect—in addition to teaching potential responses—upon the extent of transfer and upon its resistance to extinction. Behavior that is engaged in frequently in the group and is positively reinforced there by other group members will be more likely to be transferred and will resist extinction in proportion to the number of reinforced trials and the strength of the reinforcement. Behavior in the group that is engaged in
primarily to avoid aversive stimuli, such as disapproval, will not transfer outside the group where the potential aversive stimuli do not exist.

What might be done in the group itself to maximize transfer? Three things could be suggested: 1) designing the group to maximize the possibility of positively reinforced trials for new behaviors, 2) working on transfer to the environment during the group, i.e., using the influence of the group to encourage and to reinforce new responses to the old stimuli on the outside, and 3) instructing subjects in methods of altering their environment so that it provides them with reinforcement for new behaviors. Transfer might also be furthered by periodic follow-ups or by having the group meet again from time to time.

The theory just outlined, like much of learning theory, is deceptive in its simplicity. It becomes much more complex when one realizes that what is reinforcing or aversive to one person may not be to the next. Thus the old problems of uniqueness and personal idiosyncracy sneak back in to mar what at first appeared to be general yet simple laws of human behavior. This theory does, however, provide the possibility of a unique and fruitful combination of nomothetic and idiographic approaches: the nomothetic involving the general laws of learning and
reinforcement, and the idiographic involving the unique definition of reinforcement contingencies for each individual.
SUMMARY

The purpose of this paper was to study the transfer of learning from a sensitivity group to a person's life outside the group and to compare nomothetic and idiographic methods in psychological research.

The nomothetic part of the study involved interviewing 32 subjects after their experience in a sensitivity group. They were asked about their experience in the group, how they felt they changed or what they learned as a result of it, and how they applied these learnings with several different target persons: father, mother, spouse, male friend, and female friend. The target persons were then contacted by letter and asked about changes in the subjects. A control group was taken from an undergraduate psychology course, and these subjects were also asked to submit the names of the target persons, who were then contacted. The idiographic part of the study involved intensive interviews with four subjects during and after their experience in a T group.

For approximately two-thirds of the subjects this was their first experience in a T group. They entered the group most often out of curiosity or for academic reasons, and less frequently
for personal or interpersonal motives. After the group the majority of the subjects saw the experience as worthwhile. An unexpected finding, however, was that women viewed the group experience more negatively than men.

The changes reported by the subjects themselves involved two major categories: more open communication and insight into self. The first of these, according to the reports of the observers, was the only change category that significantly discriminated the T group subjects from the control group. It was interesting that almost all the reports of change involving more open communication came from male and female friends.

No significant relationship was found between transfer and the following independent variables: sex, age, whether or not it was the first T group, anxiety, involvement and amount of change in the group itself, grade point average, and date of the interview. Significant relationships were found between transfer and view of the group and between transfer and "Personal" versus "Impersonal" motivation.

Subjects reported that transfer was significantly more difficult and less frequent with mothers and fathers than with male friends and female friends.
It was felt that the idiographic part of the study was extremely valuable. The contribution of the idiographic part was divided into three areas: troubleshooting, elucidation of hypotheses, and suggestion of new hypotheses.

A rudimentary theory of T group learning and transfer, based upon well known principles of learning, was described.
REFERENCES


APPENDIX

The Modified Change Categories
A. Overt behaviors: positive additions to behavioral repertoire (1-4) or elimination of possibly negative behaviors (5-6)

1. Communication: the person reveals himself more or more effectively; or, on the other hand, he is a better listener (re. listening, if the content of the communication listened to is specified, it may imply a code of A5 or B4).
   Ex: more open, expresses feelings, shares, tries to understand, listens

2. Relational facility: the person interacts with others more smoothly, pleasantly, or efficiently.
   Ex: easier to get along with, tactful, kinder, considerate, accepts others, patient

3. Self-assertion: the person asserts himself in a way he didn't before
   Ex: takes stand, sticks up for his rights, takes what's his, takes risks (if, however, communication is emphasized and assertion minimized, the more appropriate code is A1)

4. Involvement with others: person makes more of an attempt to know, or be with others; or with more or new people
   Ex: more outgoing (communication not specifically mentioned), tries to make more friends, goes out more

5. Open-mindedness: the person is more tolerant of novelty or of points of view different from his own, or is able to entertain a variety of viewpoints
   Ex: doesn't block new ideas, flexible, less rigid intellectually, can appreciate others' points of view (if others' feelings, code is B4)

6. Self-confidence: person appears more self-assured, secure, or comfortable
B. Insights or awareness: internal cognitive or attitudinal changes that may or may not have behavioral consequences

1. **Awareness of human behavior in general**: intellectual grasp of why people act as they do, what kinds of things motivate them
   *Ex*: understands people better, can see thru motives

2. **Awareness of group behavior and process**: understands how small groups operate
   *Ex*: knows how people interact when they try to accomplish something

3. **Insight into self and role**: awareness of own feelings and motives, or of one's appearance to others
   *Ex*: knows how he comes across, can spot my own feelings now, know when I'm angry

4. **Sensitivity to the feelings of others**: ability to recognize feelings in others at the time they are occurring (only recognition of feelings is implied here; this category is distinguished from B1 in that B1 involves intellectual appreciation of the motives for human behavior in general)
   *Ex*: knows how I feel, aware of others' emotions in interpersonal situations

5. **Increased feelings of self-worth**: feels more worthwhile as a human being or as a unique person
   *Ex*: feel I'M of value, feels lovable, others actually liked me

C. Vague, global judgments; specific, uncodable behaviors
   *Ex*: more mature, more dependable

Rules

1. No more than three different codes per respondent.
2. If absolutely necessary, the same response may fall in two different categories. If this is done, the second code will be put in parentheses. Multiple responses will not be put in parentheses.
3. When there are multiple responses and more than three, the three most emphasized will be coded; if there is no special emphasis, then the first three given will be coded.
4. The "C" code precludes all others.
5. An * denotes a negative change.
The Dissertation submitted by Thomas W. Phelan has been read and approved by members of the Department of Psychology.

The final copies have been examined by the director of the Dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the Dissertation is now given final approval with reference to content and form.

The Dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

5-28-70

Date

Ronald E. Walker
Signature of Advisor