10753

NATIONAL LIBRARY
OTTAWA

CANADA

BIBLIOTHÈQUE NATIONALE
OTTAWA

NAME OF AUTHOR.....JAMES PARK.....

TITLE OF THESIS....Effects of Direct and Vicarious....
..Experience in Learning Groups.....
.....

UNIVERSITY....of Alberta.....

DEGREE FOR WHICH THESIS WAS PRESENTED..Ph.D.....

YEAR THIS DEGREE GRANTED.....~~1970~~ 1971.....

Permission is hereby granted to THE NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(Signed).....James Park.....

PERMANENT ADDRESS:

269 Village Drive
Dollard des Ormeaux
Quebec

DATED...Nov. 4.....1971

NL-91 (10-68)

To Those Closest To My Heart-

Marianne, our boys, my Mom

THE UNIVERSITY OF ALBERTA

EFFECTS OF DIRECT AND VICARIOUS EXPERIENCE IN LEARNING GROUPS

by

James Park

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

FALL, 1971

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES

AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled EFFECTS OF DIRECT AND VICARIOUS EXPERIENCE IN LEARNING GROUPS submitted by James Park in partial fulfilment of the requirements for the degree of Doctor of Philosophy

...John McLeish....
Supervisor

...R. V. Rasmussen...

....

....

....
External Examiner

Date 17th September 1971 ....

ABSTRACT

The study reported herein was part of a comprehensive project which was designed to test process and outcome changes associated with small learning groups. The specific purpose of the present study was to determine whether or not any differential effects on personality, attitudes, communication ability (behavioral change) and understanding of group dynamics would be observed for teacher-trainees who either participated in, or observed a human relations training group.

Subjects were 94 teacher-trainees who volunteered for two experimental sections of a senior educational psychology course (Ed. Psych. 421) at the University of Alberta during the 1970 fall semester. Two forms of human relations training treatments were employed; a self-analytic treatment (SAT) and a direct communications treatment (DCT). Two types of observer groups were to view each treatment, a Bales' observer group and a clinical observer group. Subjects were randomly assigned to groups in the six treatment conditions, after blocking according to sex, to insure that the groups were strictly comparable.

Each treatment consisted of 15 sessions over a three month period. A number of tests, designed to assess changes in personality, attitude, communication ability, and cognitive understanding of group dynamics, were administered before and after the treatment sessions. No changes of a systematic nature were observed on the personality and attitude measures. However, significant differential effects on the learning of communication skills and understanding of group dynamics were evident.

The thesis reports important advances in four areas. These include (1) the development of two video-tape tests to assess understanding of

empathic communication, (2) the development of a proto-type video-tape test to assess understanding of group dynamics, (3) a comparison of the direct and vicarious effects of experience in learning groups, with an attempt to compare synthetic versus analytic observational learning (4) the identification of personality and attitudinal characteristics which significantly differentiated learners and non-learners.

ACKNOWLEDGEMENTS

My mother used to tell me a story about a diligent hen who sought help to bake some bread, but no one would help her. Such was not the case for the study described on the pages that follow. I had considerable help in turning out what otherwise might have been an undigestible product. To all who have helped - I offer a humble thanks.

In particular, I am indeed indebted to Dr. John McLeish who supervised the major project. During our association I came to realize that he is a man who sees farther and wider than others and has the energy to make public these visions.

In many respects this dissertation reflects the work of several other members of Dr. McLeish's research team. Wayne Matheson's brilliance and friendship made the project viable. Bob Bedecki helped by taking care of a variety of laborious tasks. With Dr. McLeish, these friends assisted in the development of various instruments described herein, managed the course, video-taped the group sessions, administered various psychological tests and, while turning our office into a shuffleboard of ideas, had the patience to wait for the penny to drop for yors truly.

Other important contributions were made. Dr. Larry Eberlein devoted considerable energy to 30 training sessions. Bob Anderson set a very energetic example to follow as he carefully combed through the Direct Communications sessions using interaction analysis techniques. Henriette Aubin helped collect data from our summer-study. Stella McLeish undertook the tedious task of scoring various personality test data. Larry LeClair and Andy Lamothe devoted considerable energy to various technical problems that arose during the video-taping of every session. K'yung Bay, Dan Precht, Ralph Hakstian and Tom Maguire

offered constructive comments on how to proceed with several of the statistical analyses.

The external examiner, Dr. Freed Bales, forwarded several "spot-on" insights to provide a final polish for the thesis. Drs. Rasmussen, Zingle, and Koziey offered appreciated suggestions.

Gratefully acknowledged are the ready cooperation of administrators, professors, and students whose names have not been mentioned, but who also donated their energies towards this specific project.

Finally, I would like to express my appreciation to my wife Marianne who had to increase her share of our parental load and yet was able to provide the love I required to complete these fondly-to-be-remembered graduate school years.

TABLE OF CONTENTS

CHAPTER

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

The problem of evaluating various treatment effects underlies much of the spirit of educational research. Baldly stated, researchers have sought to determine whether or not one particular educational experience facilitates greater behavioral change (or understanding) than another toward some specific desired goal. After a generation of research we have come to recognize that methods which work best for some pupils quite often do not work well for others (Edwards and Cronbach, 1952). In part, the task of the educational researcher is one of attempting to identify what variables are pertinent for predicting individual success in a particular treatment. As well, educational institutions have an implicit responsibility to society to strive for economical teaching experiences. In effect, it is desirable to attempt to develop treatments in which a majority of the subjects will benefit. It is safe to say, however, that most teaching techniques are never systematically evaluated in terms of either the outcomes they generate or processes involved.

In recent years there has been a marked increase in the use of various types of small group activities to develop human relations skills, interpersonal competence and so on. Typically, such groups involve 10 to 15 people in a relatively unstructured "face-to-face" setting (Campbell and Dunnette, 1968). Methods employed by trainers in such groups have shown considerable variation. For example, the earlier National Training Laboratories (NTL) T-group at Bethel, Maine were primarily concerned with the understanding of organizational processes. More recently, human relations

laboratories have delved into interpersonal and private concerns of group members, some to the extent that various West Coast groups have even advocated nude encounter experiences (Bindrim, 1969).

There does not appear to be consensus among advocates of human relations training methods as to whether or not any particular outcomes always develop as a result of human relations experiences (Egan, 1970). In their rather comprehensive review of the effectiveness of T-groups, Campbell and Dunnette (1968) have listed the following outcomes as desirable:

1. Increased self-insight or self-awareness concerning one's own behavior and its meaning in a social context. This refers to the common aim of learning how others see and interpret one's behavior and gaining insight into why one acts in certain ways in different situations.

2. Increasedsensitivity to the behavior of others. This goal is closely linked with the above. It refers first, to the development of an increased awareness of the full range of communicative stimuli emitted by other persons (voice inflections, facial expressions, bodily positions, and other contextual factors, in addition to the actual choice of words and themes) and second, to the development of the ability to infer accurately the emotional or noncognitive bases for interpersonal communications. This goal is very similar to the concept of empathy as it is used by clinical and counseling psychologists, that is, the ability to infer correctly what another person is feeling.

3. Increased awareness and understanding of the types of processes that facilitate or inhibit group functioning and the interactions between different groups--specifically, why do some members participate actively while others retire to the background? Why do sub-groups form and wage war against each other? How and why are "pecking orders" established? Why do different groups, who may actually share the same goals, sometimes create seemingly insoluble conflict situations?

4. Heightened diagnostic skill in social, interpersonal, and intergroup situations. Achievement of the first three objectives could provide an individual with a set of explanatory concepts to be used in diagnosing conflict situations, reasons for poor communication, and the like.

5. Increased action skill. Although very similar to No. 4, it was mentioned separately by Miles (1960) and refers to a person's ability to intervene successfully in inter- or intragroup situations so as to increase member satisfactions, effectiveness, or output. The goal of increased action skill is toward intervention at the interpersonal rather than simply the technological level.

6. Learning how to learn. This does not refer to an individual's cognitive approach to the world, but rather to his ability to analyze continually his own interpersonal behavior for the purpose of helping himself and others achieve more effective and satisfying interpersonal relationships. (p. 75)

Differential emphasis among the above objectives constitutes one of the most important dimensions for distinguishing among variations in T groups. Some groups tend to emphasize the individual goals of fostering self-awareness and sensitivity. Others orient toward the more organizational objectives of understanding interaction phenomena and intergroup processes (Buchanan, 1965) with the ultimate aim of improving organizational effectiveness. The evolution of different forms of T-Groups designed to achieve these two major emphases is discussed at length by Benne (1964) and Schein and Bennis (1965).

There appears to be only limited evidence that T-Group training actually induces the behavioral changes advocated by its adherents (Campbell and Dunnette, 1968; Egan, 1970). Indeed some researchers such as Carkhuff (1969) and Smith (1965) have suggested that more direct approaches to developing perceptual, interpersonal sensitivity, and various communication skills would be more effective than the T-Group approach. For example, in discussing encounter, marathon, self-directed, sensitivity, and T-Groups, Carkhuff (1969a) has remarked:

> The recent advent of a bewildering array of growth groups...has done nothing to advance an extremely distressing state of affairs. There is little to recommend reviewing any of these positions, for in comparative studies they are not even competitive with more direct, simple and forthright approaches to effecting change in groups. (p. 129)

As an alternative to traditional T-Groups or sensitivity training Carkhuff (1969) and Smith (1965) have suggested that group leaders should systematically use didactic and experiential techniques to teach human relationsskills. Smith views interpersonal sensitivity as a complex variable which consists of six parts; level accuracy, spread accuracy, empathic accuracy, observation accuracy, stereotype accuracy, and individual accuracy. According to Smith, if we want to increase overall sensitivity to others then we must offer training which focuses systematically on developing skills in each of the five areas. For example, to develop observation accuracy, trainess might be taught to pay close attention to expressed attitudes, tone of voice, fidgeting, and so on. Carkhuff has been concerned with identifying what qualities differentiate"effective therapists from ineffective therapists." In a number of studies he has concluded that counseling (or "helping") "may be for better or for worse." Effective or "high functioning" helpers have been identified as being high on the dimensions of communication of empathy, warmth, regard, genuineness, and (to a lesser extent) concreteness, self-disclosure, and openness (outcome research is summarized in Carkhuff and Berenson, 1967; Truax and Carkhuff, 1967). Carkhuff has concluded that to varying degrees, trainees can be taught to develop their interpersonal skills on each of those communication dimensions.

In particular Carkhuff has forwarded two propositions which summarize his stance well. They are:

> 1. The most effective programs appear to be those that (a) focus upon primary facilitative and action-oriented dimensions complemented by secondary dimensions involving potential preferred modes of treatment and (b) integrate the didactic, experiential, and modelling aspects of learning. (Carkhuff, 1969, p. 151)

2. The level of the counselor-trainer's functioning appears to be the single most critical aspect of effective training. (Carkhuff, 1969, p. 157)

It is interesting to note that many T-Groups cover quite broad areas and sometimes employ more direct techniques. It is somewhat difficult, however, to ascertain what particular effects any exercise may have on outcomes. In their review of the literature on this matter Campbell and Dunnette (1968) concluded:

> Research concerning the relative contributions of specific technological features of the T-Group is also sparse. For example, there are no systematic studies examining the differences in trainer personality and/or style on the outcomes achieved by the participants. Case reports and anecdotal evidence are all that exist. (p. 97)

The Purpose of the Present Study

The present research project was inspired partly as a result of receiving training in Bales' Interaction Process Analysis (IPA) and observing social learning laboratory groups in a senior graduate Educational Psychology (592) course at the University of Alberta. The present researcher was part of a research team which was attempting to observe behavioral differences between two groups of graduate students exposed either to a Self-Analytic T-Group or a Case-Discussion experience (McLeish, Matheson and Park, being prepared). In that particular study the groups were observed by a small senior graduate student class (Ed. Psych. 592) through a one-way mirror. During the research project it was apparent that many of the observers seemed to become "addicted" to watching the Self-Analytic group but showed declining interest in the Case Discussion group.

After prolonged discussion of the project the research team concluded that certain measures of personality should have been collected from the

observers as well. Intuition suggested that viewing groups may bring about subtle changes, and some may indeed learn more than the participants whom they are watching.

The general purpose of the present study was to examine the effects of direct and vicarious experience in group training which is supposedly designed to develop various human relations skills. The major concern here was to examine what, if any, systematic changes in personality, attitudinal, behavioral, and cognitive variables are observed in teacher trainees who have participated in, or observed, a human relations training group. The above question was to be investigated through two experimental sections of an undergraduate Educational Psychology course (E.P.421). Two kinds of human relations training treatments were to be compared: a self-analytic treatment (SAT) and a direct communications treatment (DCT). Training groups in those treatments were to be observed by trainees who were either attempting to recognize group forces while learning Bales' Interaction Process Analysis, and trainees who were studying group dynamics while attempting to develop clinical understanding. A more complete description of the research design including a description of the various treatments, is presented in Chapter III.

While the general goal of the course was to increase competence in human relations, and particularly those situations related to teaching, more specific intended learning outcomes were as follows:

1. Self-Analytic Participants - were to increase their understanding of group dynamics by observing, discussing, and analyzing the ongoing behavior of their group. The trainer would not attempt to structure the group.

2. Direct Communications Participants - were to increase their ability to understand and employ "facilitative" communication skills, and in particular the communication of empathic understanding. The trainer was to follow a structured plan for developing these skills.
3. Bales' Observers - were to increase their understanding of group dynamics by studying and practising Bales' Interaction Process Analysis while observing either a self-analytic group or a direct communications group.
4. Clinical Observers - were to increase their understanding of group dynamics by viewing the group as a "patient" who is displaying various clinical symptoms, defensive reactions, and so on.

To determine what, if any, effects were associated with these various treatments tests were administered before and after training. These tests included measures of personality, attitude, ability to communicate empathy, and ability to recognize the presence of various group dynamics. The dissertation also reports the development of three video-tape tests which may be employed to assess the effectiveness of group training.

OVERVIEW

Chapter I is an introductory chapter designed to acquaint the reader with the need for assessment of human relations training courses. That chapter also discusses the purpose of the present study and suggests that the observation of training groups may be a potent instructional technique. Chapter II contains a review of the related literature including several

theories of why groups are effective change agents. A number of studies relating to changes on various dimensions which have been associated with self-analytic (T) or direct communications groups are discussed. Chapter II also presents a rationale for anticipating changes due to systematic training in Bales IPA. Chapter III outlines the research methodology employed in the present study. The results of the experiment are presented in Chapter IV and are discussed in Chapter V. Selected References and various appendices are attached to this report.

CHAPTER II

A REVIEW OF RELATED LITERATURE

The following review is by no means complete. It is intended to provide a limited amount of background information to the reader. For other reviews which refer to studies or T group (or self-analytic) training the reader is advised to locate the works of Campbell and Dunnette (1968), Gibb (1970), House (1967), or Stock (1964). Two recent books by Carkhuff (1969a) provide an excellent survey of studies involving direct communication skill training. Bandura's (1969) book on behavior modification summarizes literature on vicarious learning.

Specific topics mentioned in the following discussion include: several theories about groups as change agents, "Direct versus Nondirect" methods of developing interpersonal competence, studies involving personality and attitudinal change, transfer of learning, evidence of change associated with learning an interaction process analysis system, and a brief discussion on vicarious learning. The review reflects a disproportionate number of studies concerneed with self-analytic types of training. This form of treatment has been theorized about extensively in the literature and employed more often as an independent variable than the specific methods employed in the direct communication treatments described by Carkhuff (1969a).

The present review also discusses the effects of training laboratories interchangeably with discussions about T or self-analytic groups. While laboratory training often incorporates lectures and various excercises Bradford et al (1964) observed that the prime feature of laboratories is the T group. The terms are thus used interchangeably for the present review. The self-analytic treatment (SAT) employed in the present study

is considered to be a form of training which closely resembles the T groups conducted at the Tavistock Institute in London, England.

GROUPS AS CHANGE AGENTS

In one form or another, the basic vehicle of instruction has always been, and will likely continue to be, the human group. At birth, the infant is completely dependent on other humans for survival. In maturing he learns that gratification of his needs and desires are somewhat dependent on exhibiting "appropriate" social behavior while "inhibiting" various aggressive and destructive urges.

In adult life, his values, feelings, and behavioral style will reflect the interaction effects of his genetic potential and various environmental forces, the most powerful of which are the nuclear family and various other social groups. The fact that group experiences are described as "potent" learning mediums (Rogers, 1967) should not be surprising. It has long been known that most of us are highly suggestible. In small groups various forces are at play which decrease our ability to sort out and act upon the most rational ideas. Instead, basic individual social needs often take hold and group participants become particularly suggestible to cues from other participants, and especially the leader, which bring about a re-examination of, or changes in thoughts, feelings, and behavior. An extreme example of the power of groups to bring about apparent "about-turns" in personality is the revival meeting wherein it is common to hear of individuals acquiring new strengths through conversion and confession.

A number of educators and psychologists have put forth a variety of claims for the use of groups in changing attitudes and behavior. For

instance, Abercrombie (1960) has presented strong arguments for the use of discussion groups in improving the diagnostic judgments of medical students studying radiographs. After studying the production habits of General Electric Company employees, Elton Mayo concluded that informal work groups within the work plant exert very strong social controls over the work habits and attitudes of individual workers (Brown, 1954). Similarly in describing "scientific mind changing" Brown (1963) made the following interesting observations.

> Group attitudes are much more potent than individual ones because, by accepting membership of the group and becoming integrated into it, the person comes to accept its norms, since that in part is what group membership means.
>
> In group psychotherapy the individual confesses his 'aims' and is 'pardoned', becomes integrated emotionally with a social body, thus accepting the norms it painfully works out for itself and discovers in interaction with others a revelation of himself. (p. 206)

Commonality in All Discussion Groups

Some authors, such as Slavson (1950) have claimed that different forces are at work in "ordinary" groups in comparison to those in analytic groups. Rogers (1967) has argued that a certain amount of commonality is noticed between workshop groups which are designed to discuss problems in leadership, human relationships, education, research, and psychotherapy. The present researcher's experiences in staff meetings, case study groups, therapy groups, graduate seminars, self analytic (T) groups, and direct communication skills groups have indicated that similar forces are present, to differing degrees, in all groups. Their presence, of course, may come in various disguises. For instance, in T-groups open hostility is sometimes noticed between different leaders

or factions which are seeking power. In staff meetings, hostilities between certain camps are usually more subtly veiled through attacks on various items on the business agenda. If there is a certain amount of similarity present between all groups which rely on face-to-face interchange of information as the prime mode of instruction, then it follows that a certain amount of commonality should be observed in the types of factors which are accelerating or inhibiting learning.

The T-group, or self-analytic group, is of particular interest in considering what is learned in groups for several reasons. Firstly, numerous advocates of T-group theory have claimed that it is possible to learn to become interpersonally competent in such groups even though members are completely responsible for their own learnins and the teacher (trainer) does not impose any agenda. Secondly, the T-group tinges upon being "psychotherapy for normals." Its conditions seem to promote a greater amount of emotional investment than other types of human relations training programs (such as case study groups), while not usually being as dramatic as group therapy or attack therapy groups. It also differs from a therapy group in the sense that the inner lives of the participants (dreams, childhood experiences, and so on) are not usually at stake.

The T-group experience represents the "mean" between extremes in human relations training and therefore an examination of what, if anything, is learned in this type of group should have considerable transfer value to other types of learning groups. This view is not disparate from those of other authors (e.g. Abercrombie 1960, Kemp, 1970) who have noted similarities in different types of learning groups.

The most attractive reason for examining T-group learning is the fact that the T-group movement has received considerable attention in the literature. More than any other form of group training, a wealth of material has been published describing the intended goals and expected outcomes of T-groups. Described as an educational innovation, theories underlying why learning should take place in T-groups have been advanced by several schools of thought.

T-Groups: Goals and Aims

Bradford et al. (1964) have concisely described the T-group in the following terms:

> "A T-group is a relatively unstructured group in which individuals participate as learners. The data for learning are not outside these individuals or remote from their immediate experience within the T-group. The data are the transactions among their members, their own behavior in the group, as they struggle to create a productive and viable organization, a miniature society; and as they work to stimulate and support one another's learning within that society. (P. 1)

T-group procedures may differ according to trainer perferences and idiosyncracies, however, most trainers, after a few introductory statements about the group's purposes, do not attempt to impose their agendas on group movements. Instead, the trainer's participation is usually restricted to interpretative commentary, and procedural help (Miles, 1962; McLeish, 1969). For a further description on T-group procedures the reader is referred to the description of the self-analytic treatment trainer's role provided in Chapter III.

A review of the relevant literature on T-group theory has indicated that T-groups can be used to promote a variety of learning outcomes. The

earliest T-groups were primarily designed to increase participants understanding of group dynamics. In recent years more interest has been expressed by trainers for using T-groups as instruments of organizational change and helping individual members learn about their impact on others (Smith, 1965).

A number of prominent T-group theorists, including Bradford, Gibb, and Benne (1964), Bennis and Schein (1965), and numerous others, have enumerated skills which are apparently learned in T-groups. For practical purposes they might be classified according to the following schema.

A. Cognitive Changes

In a T-group an individual has the opportunity to develop understanding of:

1. group problem solving processes
2. forces determining the behavior of individuals in groups
3. components of leadership
4. attitudes towards the values of science and democracy in society
5. differences and similarities between group and individual members perceptions. In effect, the individual develops a broader frame of reference.

B. Affective Changes

In a T-group an individual apparently has an opportunity to become increasingly aware of:

1. the impact he has on others as he brings forth various role aspects of his personality
2. incongruities between intended behaviors and perceived affects

3. his own identity as distinct from other members
4. his own feelings and how he may or may not have been threatened by their presence

C. Behavioral Changes

In a T-group an individual apparently has an opportunity to:

1. increase action skills including an ability to diagnose ongoing social situations and act effectively to increase group productivity
2. increase ability in intervening successfully to improve more satisfying personal relationships.

There are strong disagreements between social scientists as to whether or not T-groups actually are effective in achieving their long range learning outcomes (Flanders, (1969a). Both Carkhuff (1969a)and Argyle (1967) have suggested that the T-group is not at all competitive with more direct forms of social skills training. The core problem of this thesis is concerned with examining these criticisms empirically. For the present discussion, however, it may be profitable to acquaint the reader with several theories which have been put forth to explain why learning should occur in T-groups.

MODELS OF LEARNING IN SELF-ANALYTIC OR T-GROUPS

The Analytic Interpretation

The scope of the present discussion cannot do full justice to any of the learning theories presented. For a more complete exposition of the analytic explanation of learning in groups the reader is referred to the writings of Slavson (1950). Foulkes and Anthony (1957), and Whitman

(1964). The first two authors are primarily concerned with learning in group psychotherapy settings, while the latter has directed his attentions to T-groups.

From the analytic viewpoint, each group bears some resemblance to the nuclear family. All members of a group enter training with a variety of attitudes and feelings which are locked to earlier experiences with parents. To some extent, the trainer is unconsciously perceived as a parental figure by each participant. If the trainer limits his remarks to objective interpretations of group behavior, he serves the function of a "blank screen" on to which the participants project their ambivalent feelings toward parental figures. If the trainer chooses to adopt a very open, outgoing, social posture, the members are less likely to be able to notice their projections with clarity and thus less personal change can occur.

Although he may explain his role at the beginning of a T-group's history, the members soon repress his comments and the expectations they have for an authority who will lead them appear in the form of dependent pleas. In this new situation most members experience a certain amount of inner conflict about this powerful person who, at once, represents something they love and hate. Feelings of guilt in the presence of aggressive urges tend to raise anxiety levels in the group and the members tend to regress to patterns of earlier behavior in an attempt to reduce their anxieties. Those who proclaim the analytic viewpoint, insist that some regression is necessary for any learning to occur.

The T-group situation of course does not usually bring about the depth of regression which is often witnessed in psychoanalysis. For one thing, the transference phenomena is somewhat diluted when the trainer

is in full sight and the fears of other members seem to serve as reality checks which prevent each other from sliding into states of infantile dependency. "Optimal regression" (Whitman, 1964), however, enables members to bring out interwoven networks of sexual and aggressive impulses which were earlier trapped in residues of the mind, but were clouding the ego's ability to maturely perceive reality.

By hurling their feelings about authority on the trainer directly, or displacing them on the members who serve as trainer substitutes, group members release the pent up energies which were interfering with their interpersonal lives in the form of competitiveness (sibling rivalry), feelings of guilt about aggressive and sexual urges, and so on. In this process the trainer's interpretive remarks, although in the earlier sessions they may not be perceived as such, serve to bring material which is operating at a latent level to the focus of the group. In the groups first few meetings most participants have difficulty understanding the trainer's remarks as their own defense systems seem to distort the group situation. If they are able to work through their own particular authority entrenchments, and begin to understand the effect of preconscious and unconscious material in behavior, the trainer's remarks become more appreciated. In effect, an increase in understanding interpersonal dynamics becomes manifest. The net effect then, according to the psychoanalytic viewpoint, is to force a number of adult "children" (who are unwittingly accustomed to being dependent on "father") to "grow up."

The Schein and Bennis Model

In concise terms Schein and Bennis (1965), by expanding upon Lewinian concepts, have presented a theory of learning designed to explain cognitive, emotional, and behavioral changes in T-groups. They view man as an

information dependent creature who, upon the reception of disconfirming information, may undergo attitudinal changes and subsequently behavioral changes. Figure 1 below summarizes Schein and Bennis' cyclical model.

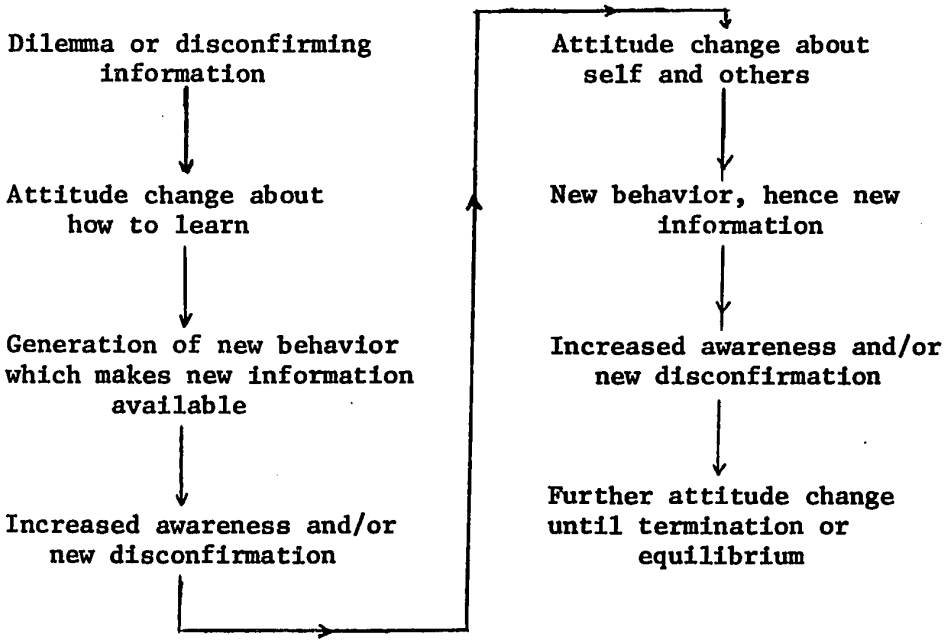


Figure 1 (Schein & Bennis, p. 274, 1965)

According to Schein and Bennis, the learning cycle is initiated by the nature of the laboratory to produce disconfirming information about a participant's self; "he obtains cues that all is not right in his relationships with others." (p. 273) If the participant is to learn in the training situation, he must come to recognize the value in receiving this information. In this model then, the first attitude change is toward the learning process itself. When attitude change occurs, this generates new behavior which in turn is new information for the group. The group's discussion of this new information can disconfirm the individuals' perception and thus the learning process recycles.

The key to learning in this model is the production of conditions which can enable attitude change to occur. The training staff must be sensitive

to insure that conditions are present and will allow three phases of attitude change to occur. Schein and Bennis have referred to these three phases as 1. unfreezing, 2. changing, 3. refreezing. Unfreezing is apparently a process wherein disconfirmatory cues are able to force the individual to be discomforted by some of his present motives, goals, or ideals. In an earlier article, Schein (1962), in discussing commonalities between prisoners of war camps, convents, and fraternities, remarked that all unfreezing situations had the following elements in common:

> a. the physical removal of the influence target from his accustomed routines, sources of information and social relationships; (b) the undermining and destruction of all social supports; (c) demeaning and humiliating experience to help the target see his old self as unworthy and thus become motivated to change; (d) the consistent linking of reward with willingness to change and of punishment with unwillingness to change. (p. 51)

Once unfrozen, the change phase is implemented by either of two types of learning: scanning or identification. New attitudes are learned in the group either by <u>scanning</u> the interpersonal environment and selectively cueing on information for other members, or; if he <u>identifies</u> with another member, learning can occur as he attempts to see himself through another person's frame of reference.

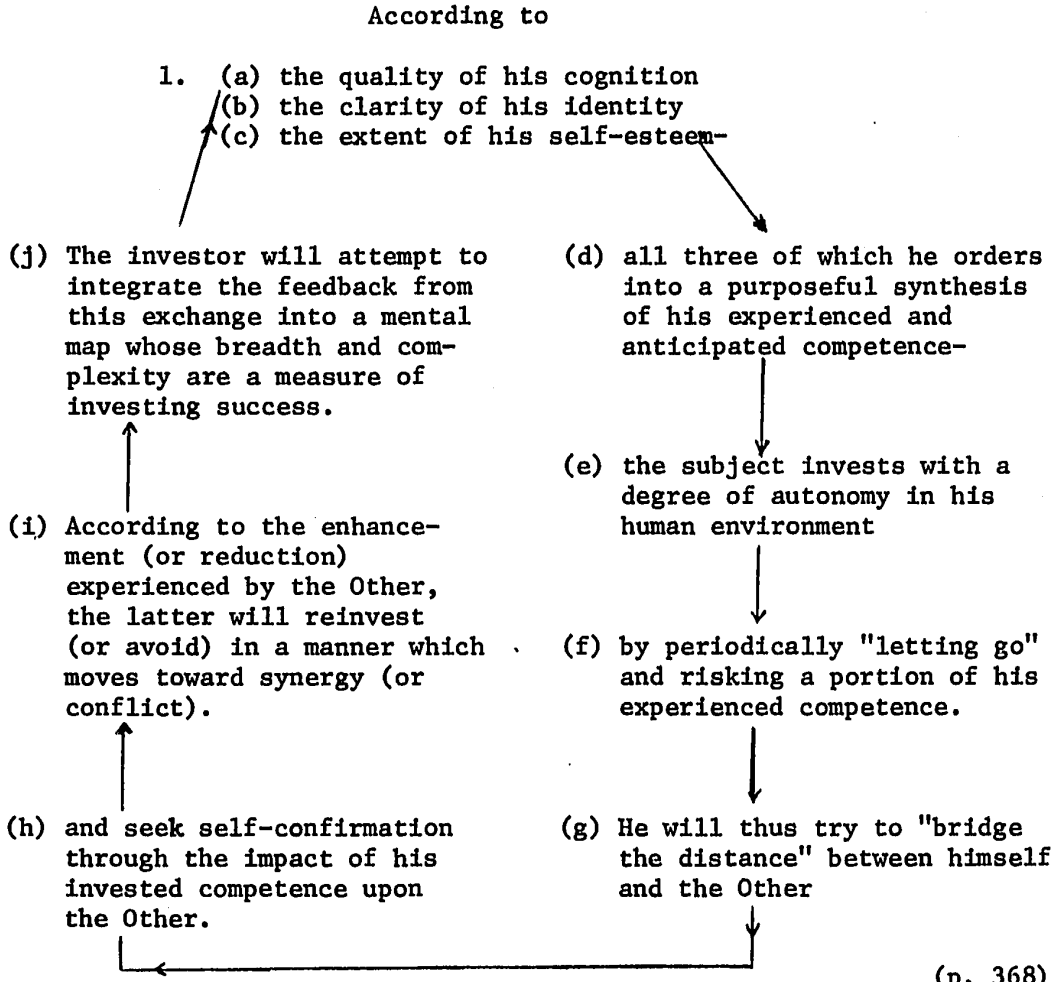
Refreezing is described as a phase wherein changes in beliefs, attitudes, and behavioral responses are stabilized. The success in maintaining the changes depends upon how well they match with other aspects of an individual's personality (personal freezing) and whether or not important others continue to reinforce the changes (relational refreezing).

For a more complete development of this model the reader is referred to Schein and Bennis's book "Personal and Organizational Change Through Group Methods."

Wampden-Turner's Existential Learning Theory

Much of the literature describing T-group experiences and outcomes has an existential flavour and as such it is laden with terms that are often difficult to operationally define. In a sense, the heightened interest which is evident in many social circles about the value of groups may be considered as a response to various existential questions which some authors maintain are not answered satisfactorily in a technocratic society. It is not uncommon to hear how groups help one obtain back their true identity. Newspaper advertisements in many large dailys promise that one can really come in "contact" with their true self through group exieriences. Unfortunately, practice in this area has rapidly leaped away from research. There is only a good amount of self-report evidence that such group encounters really do provide self confirming experiences.

Whether groups whose goals are to increase self-awareness really accomplish that aim is difficult to determine. Many trainers who claim that they are interested in helping others ask various existential questions are difficult to pin-down to committing themselves to a specific treatment aim. Scientific investigations of such groups have thus yielded only wiggly pictures of what really takes place and what outcome effects are noted. Hampden-Turners (1966) theory of T-group learning is presented here as representative of existential thought. He views learning as the accumulation of human experience which spirals through various levels of maturity. In a T-group the cycle apparently has 10 phases. They are:



(p. 368)

Figure 2: The Hampden - Turner Model

In expanding upon the above model, Hampden-Turner has documented research that indicates that enhancement of every step of the cycle has been observed by prominent T-group theorists. For instance, Gibb (1964) has described the "illuminative" function of T-groups (Step a). Bradford et al. (1964) has discussed the power of T-groups to strengthen identity (Step b). Gibb (1964) treats the need for acceptance as a primary model concern (Step c). Argyris (1964, 1965) has focussed upon development of interpersonal competence (Step d). Schein and Bennis (1965) have linked autonomy with authenticity as a meta-goal of laboratory training (Step e),

and also discussed the risk involved in unfreezing (Step f). Benne (1964) has discussed the capacity of T-groups to involve some of the deepest concerns of personal and social life, and partially overcome human loneliness (Step g). Bradford (1964) has discussed the impact of T-groups in providing self confirmation (identity) (Step h). Benne (1964) has described T-groups as moving from polarization to paradox (Step i). Schein and Bennis (1965) have argued that expanded consciousness is a meta-goal of T-groups (Step j). Hampden-Turner argues that the integrated feedback from a successful series of investments causes "every segment of the cycle to enhance itself (p. 368).

It is interesting to note that Hampden-Turner considers the model to be "proactive" rather than "reactive." It is apparent however that he is merely deciding that an egg will become a chicken, for if the cycle were considered to start at Steps i or j the model would have a reactive nature.

Behaviorism and Learning in Groups

The most impressive advances in applied psychology in the past two decades have been made by that camp of scientists referred to as behaviorists (or neo-behaviorists). In particular, the experimental work of B.F. Skinner has widened our understanding of reinforcement contingencies and their effects on learning. According to Skinner (1953, 1959) the transmission of culture occurs through learning variables, and changes in cultural practices are a result of men being reinforced in certain ways. It is clear then that if learning occurs in groups, it is the result of various patterns of reinforcement.

Unfortunately only a few attempts have been made to systematically examine group behaviors in terms of reinforcement patterns, while no

literature seems to be available tying reinforcement contingencies and group learning. Several reasons probably account for behaviorists shying away from examinations of various types of human relations groups. Behaviorists have favoured the systematic application of reinforcers contingent upon the learners successful demonstration of desired behavior. T-groups, therapy groups, case study groups and so on are not usually interested in the application of reinforcers on any conscious and systematic basis. Behaviorists have not questioned that learning occurs in such groups, but would no doubt be skeptical about what is learned. In effect, allowing the group to administer reinforcements without direction (as in the case in T-groups) could generate the learning of highly undesirable behaviors.

The absence of research which ties reinforcement contingencies to learning outcomes is also partly due to the fact that group advocates have not clearly demonstrated that predictable and observable behavioral changes occur in groups. This inability of trainers to operationally define the effects of their treatments in behavioral terms has raised considerable doubts about the value of human relations training groups.

Of the research which behaviorists have done on groups, most of it has been concerned with the planned presentation of reinforcers to increase some target behavior. For example, Hastorf (1965) reported being able to significantly increase the verbal behavior of subjects in discussion groups by manipulating red and green lights. Hastorf's technique was quite simple and yet demonstrated the power of reinforcers in shaping behavior. The typical experimental procedure involved having four subjects discuss three case studies around a circular table. They were observed for 10 minutes from behind a one-way mirror by social psychologists who

tallied, who talked the most and for what length of time. After the first case, sociometric data was collected and was used in combination with the previously mentioned behavioral output to determine the status ranking of each group member. For the second case study, the subjects were told that they were going to be given feedback about their performance in the group. Each subject was to receive this feedback from a little box in front of him with a red and green light which no other participant could see. The subjects were told that if they made a contribution to the discussion the green light would go on, if not, the red light would be switched on. The subject who was number three in the status ranking was chosen as "target".

By discouraging the target's silence and the talk of other members with red lights, while encouraging the target's talk with green lights, the experimenters were able to increase significantly the target's speech output and leadership status. Hastorf concluded that it is possible to take a low status person and make him leader in a very short period of time. Other researchers (Cieutat, 1959; McNair, 1957) were also able to associate the effects of reinforcers with verbalization patterns in groups.

More recently, Lewinsohn (1969) systematically treated depression by having clients work in groups and receive individual feedback through earphones, from therapists who are observing behind a one way mirror. This approach to treatment sounds promising.

Only a few behavioral scientists have attempted to construct the forces present in groups in terminology of behaviorism. Leaning heavily on a model developed by Adams and Romney (1959), Staats and Staats (1964) have formulated a few explanations about group behavior. In their view, group members could be considered as stimuli who have differential reinforcing effects upon one another. A given group member's stimuli characteristics

are a combination of his physical attributes (age, grooming, etc.) and behavioral attributes (role, actions, etc.).A member's ability to influence other members then depends to some extent on the reinforcement value his stimuli characteristics represent. For instance, the ability to establish and maintain an authority relation in a group is in part a function of the amount or variety of reinforcers an individual has available (Adams and Rommey, 1959). In an authority situation involving two individuals the authoritative behavior of one can either be strengthened or extinguished depending upon the reactions of the other. Such should also be the case in group interaction.

Staats and Staats (1964) also draw from the principles of classical conditioning to explain group phenomena. They suggest that one person who is present when another is rewarded will elicit a "positive evaluative" response on later occasions. They maintain that in groups "the group member becomes a conditioned reinforcer through the principles of respondent conditioning, eliciting the response previously associated with the reward." (Staats and Staats, 1964, p. 343.) They suggest that group cohesiveness is the extent to which group members, acting as stimuli on one another, elicit positive and negative responses from one another. In effect, group cohesiveness is a result of the extent individuals act as reinforcers.

In the Staats and Staats model, language is seen as having strong reinforcing value. They suggest that by pairing a conditioned negative reinforcer (such as the word Bad) with a particular nationality, it should be possible to condition attitudes. They assume that attitude formation in groups toward individual members or classes of members may be acquired directly or vicariously.

Of course, a number of other theories describing learning in groups are prominent (e.g., Harrison and Lubin, 1968, Insko, (1969) in the literature. Their inclusion, however, would make the present review much too lengthy.

Direct vs. Non-Direct Methods of Developing Interpersonal Competence

For the lack of better terminologies the terms "direct" and "non-direct" methods of developing interpersonal competence may be misnomers. As it is employed here the term "direct" refers to teaching situations wherein the teacher (or trainer) refers to some "a priori" structured plan to encourage learner activities. A direct method for developing interpersonal competence might involve systematically attempting to teach various communication skills through practice in role playing, discussion, paraphrasing and so on. On the other hand, some T-group leaders have preferred to assist development of interpersonal competence by placing only a minimum of structure on the group. In such groups members are told that they can learn about their own motives, feelings, and behavioral strategies from continuous observation of others. While the T-group trainer might offer ways of helping members utilize their experiences, he does not act as a discussion leader (Benne, Bradford, and Lippitt, 1964).

In discussing "why individuals learn" in T-group settings Benne, Bradford, and Lippitt (1964) have drawn upon various elements of learning. They have remarked:

> The concepts of "reinforcement" and "feedback" are perhaps most useful in understanding laboratory learning. One learns about people as one learns about any other subject matter--by responding to a stimulus. In the laboratory the stimulus is the behavior of other persons. "Correct" responses are reinforced positively and tend to be established in the learner's repertoire of responses. "Incorrect" responses are negatively reinforced and tend to disappear. The training laboratory provides a group of other people as agencies of positive and negative reinforcement.

> The problem of course, lies in the determination of which responses are "correct" and "appropriate." The lab group must work toward the formulation of standards against which "correctness" or "appropriateness" of member responses and group performances can be measured. Much individual learning about criteria of appropriateness occurs in this process. Much individual learning about self may also occur as a result of the multifaceted responses from a variety of other group members. (Benne, Bradford, and Lippitt, 1964, p. 25).

Advocates of more direct approaches to training in interpersonal competence (such as Carkhuff) would likely agree that "correct" responses should be reinforced. However, instead of waiting for the group to determine what standards of "correctness" will be employed, Carkhuff has suggested that previous research has already pointed what responses (emphathic, genuine, etc.) should be strived for. With regard to group training Carkhuff (1969) has stated:

> We can do anything in training that we can do in treatment—and more. Training in interpersonal skills strikes at the heart of most difficulties in living. Systematic training in interpersonal skills affords a means of implementing the necessary learning in progressive gradations of experience which ensure the success of the learning. In making explicit use of all sources of learning--the experiential, the didactic, and the modeling--systematic group training in interpersonal skills provides the most effective, economical, and efficient means of achieving the individual growth of the largest number of persons. (p. 131)

It is interesting to note that Carkhuff (1969a) has forwarded the idea that development of interpersonal skills is independent upon the level of functioning of the trainer. Carkhuff's position is evident in the following remarks:

> Again the key throughout all group helping processes is the level of functioning of the leader. If helpees work intensively and extensively with a high-level functioning helper, the helpees will improve a variety of significant ways. If the helper provides an atmosphere in which the helpees can move toward higher levels of functioning, then each individual group member has multiple potential helpers. (Carkhuff, 1969, p. 131)

The view expressed by Carkhuff that the group trainer should strive to be high functioning with respect to level of empathy, genuineness, positive regard and so on is somewhat contrasting to the position advocated by Tavistock style self-analytic T-group leaders. In a Tavistock group the trainer is usually perceived by most members as being either neutral or negative, without empathy, genuineness and so on. Indeed, it is an interesting thought, that advocates of two quite dissimilar styles of training maintain that they develop areas of interpersonal competence, sensitivity to needs of others and so on which seemingly have some overlap.

In a recent article Hall (1970) has described the position of various types of human relations training groups on a "learner-involvement" continuum. Figure 4 depicts Hall's model.

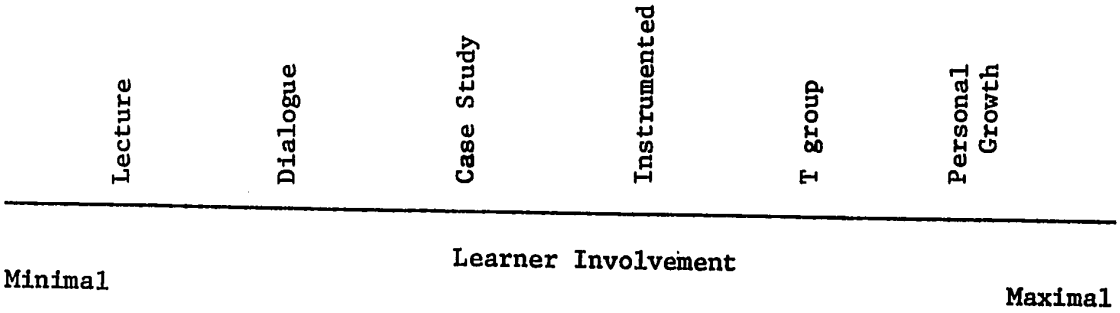


Figure 4: A learning involvement continuum. (modified from Hall's)

In the present study two groups received T-group training and two other groups received training which blended experiences from various points on the "learner-involvement" continuum (other S's will observe in an observation room). For example, the direct communications sessions were usually didactic, although later sessions became more experiential. All of the T-group sessions, of course, were experiential in nature.

With regard to whether or not either of the approaches employed were expected to be more "effective" than the other the available literature was somewhat equivocal. Jordan (1968) attempted to compare the effects of didactic and experiential training on accurate empathy, nonpossessive warmth, and genuineness. In that study, techniques such as role playing, shaping, and teaching by precept were part of the treatment for subjects in a didactic group. An "experiential" group of subjects who were in a group therapy experience and a control group of subjects who received no training were also employed in the research design. After training treatments of approximately 20 hours, Jordan found no significant differences between the two training treatments. When compared with the control group, only the didactic group was significantly higher in accurate empathy and nonpossessive warmth.

In another study Reddy (1968) compared the effects of immediate and delayed feedback on the learning of empathy. In that study use was made of six training films to assist undergraduate psychology students in learning to make empathic responses. Reddy found that S's who were given immediate feedback after each response (on a film stop) gained significantly more than S's who were given delayed feedback at the completion of each film.

In a rather weak study (from criterion and treatment viewpoints) Payne and Gralinski (1969) found that counsellor trainees who had received 20 minutes of "technique" oriented instruction were significantly higher in giving accurate empathy responses than trainees who had received 20 minutes of non-directive supervision. It is interesting to note that the "technique" group rated themselves "less relaxed" and "less confident" with regard to understanding the meaning of empathy than the group

which received non-directive supervision. Members of the latter group also thought they had learned more about counselling.

Friedlander (1968) compared three training programs conducted in an organizational setting. Two of the programs relied entirely on laboratory sessions for development of "group effectiveness." One of these programs was run by a trainer who adopted a rather "passive" style of intervention. The other laboratory was conducted by a trainer who preferred to employ a more active teaching role. These sensitivity laboratory programs "had little or no impact" on group effectiveness back in the organizational work group setting. A third training program, however, had a much greater impact on increasing work group effectiveness. Friedlander concluded that the major unique ingredient of the third program was the fact that the trainer and group members had an "extensive client-consultant relationship prior to and after the laboratory" (1968, p. 395). Friedlander concluded that "development programs which are ongoing, integrated and context based are far more effective than single laboratory training sessions in creating increased effectiveness and interaction patterns for family workshops" (1968, p. 395).

In an abstract, Schmuck (1968) reports the development of a teacher laboratory program which has seven core activities: (1) sensitivity training, (2) didactic discussions about group research, (3) problem-solving techniques for group situations, (4) analysis of classroom data, (5) discussions about various teaching techniques, (6) role playing classroom techniques, (7) follow-up discussions. Teachers in the laboratory program were compared with teachers who participated in a seminar section which included all phases of the program except for sensitivity training and role playing. Schmuck reports that the laboratory teachers "made more

positive changes in their group processes" (p. 402) than teachers in the seminar group. Both training groups were "more improved" (p. 402) than a control group at the end of the school year.

A study, which compared T-group and didactic approaches to training 90 undergraduate resident assistants at Ohio University has recently been reported by Rand and Carew (1970). The purpose of that study was to investigate what, if any, differential effects would be associated with the preparation of undergraduates to work effectively with students on their floor sections. The T-group focussed primarily on understanding self and others in relation to individual and group dynamics. The didactic course was designed to teach principles of counseling, guidance, and group dynamics. A control group was also employed in the design. The groups were conducted three hours per week for three months. All subjects were rated by their supervisors, other students, and themselves — at the end of training— and three months after. Using analysis of covariance techniques and rather high alpha levels (.20), Rand and Carew concluded that subjects in the T-groups were perceived significantly better as assistants than subjects in the didactic group. Indeed, subjects in the didactic group were perceived to be poorer assistants by their fellow students than the control group.

Personality Change

Despite the fact that T-group training is considered to be a "powerful force for behavioral change" (Egan, 1970, p.371), there is only sparce evidence that this educational innovation is capable of inducing changes which can be measured on standardized personality measures. In their extensive review of the literature, Campbell and Dunnette (1970) cited only two studies which were strictly concerned with personality change.

With regards to change in this area Campbell and Dunnette made the following observations:

> "An internal criterion, which so far has yielded completely negative results, is the standardized personality measure.... changes in such basic personality variables may be just too much to expect from such a relatively short experience, even if the T-group is a "good" one.
>
> (Campbell and Dunnette, 1970, p.95)

Much of the information available on personality change in various kinds of human relations training groups is of a "soft" nature, often in the form of testimonials on self-report questionnaires. Even these reports are somewhat quite contrasting. For instance, Foulds et. al., 1970, found that 100 per cent of the participants in a marathon group reported positive changes in their overall personal functioning six months after the experience. On the other hand a study by The Foundation for Research on Human Behavior (1960) (cited by Egan, 1970) found that participants in a laboratory believed that they had changed in seven or eight areas, but half of these changes were negative.

Turning to those studies which have used standardized personality measures in an attempt to ascertain what changes in personality, if any, are associated with human relations training, it is apparent that Campbell and Dunnette's conclusions about negligible change have merit. For example, Massarik and Carlson (cited by Dunnette, 1962) administered the California Psychological Inventory (CPI) to 70 business administration students before and after completing 48 hours of sensitivity training. Only minor changes were noted on most of the CPI scales, but "in the expected direction of increased spontaneity and slightly lower overall control" (Dunnette, 1962, p.300). More recently, Cecere (1969) investigated change in certain personality variables for counselor education candidates who were involved in a

T-group experience. In that study subjects in "training" groups and "non-training" groups were compared on the Interpersonal Orientation Scale (IOS) and the Fundamental Interpersonal Relations Orientations-Behavior (Firo B). Cecere reports that the altruism variable on the IOS showed a significant difference for the training group, in the positive direction of increased altruistic behavior.

The only other variable which showed a significant difference for the training group was Masking, but in a negative direction. Random changes only were found on the remaining 10 IOS and Firo B scales. Unfortunately, Cecere's thesis abstract makes no reference to the size or nature of samples studied, and only little mention is made about the training experiences.

In another study Kernan (1963) evaluated the effect of laboratory human relations training on the personality of supervisory engineers. Subjects in that study were 60 engineers who were drawn at random from the staff of a large manufacturing company. Twenty of these subjects served as a control group. Christie et al's F scale, Fleishmans Leadership Opinion Questionnaire, the Guilford-Zimmerman Temperament Survey, and the Thermatic Apperception Test (TAT) were administered before and 10 weeks after a three day laboratory training experience. Of twenty four variables which were examined using an analysis of covariance technique, only two showed significant differences between the experimental and control groups. Kernan found that the number of words required to relate TAT stories decreased significantly, while Machiavellian scores increased significantly. Kernan interpreted his results to suggest that behavior changes induced by such group training procedures may be very specific and do not presuppose changes in more general and basic personality characteristics.

A more recent study which also used the TAT to examine the effects of human relations training for confined delinquents was completed by Washburn

(1968). In that study Washburn compared experimental S's in a one-week, instrumented, residential human relations training program, with paired control S's who received a conventional form of group counseling over an equivalent amount of time. The experimental treatment resulted in a significantly greater decrease in antisocial interpretations for social situations on selected TAT cards than the counselling group.

One of the earliest attempts to investigate personality changes in a human relations seminar is reported by Zimet and Fine (1952). These researchers also employed a projective instrument, This Picture Story Test (PST), to examine the effects of two forms of human relations training. A highly structured content centered and lecture-oriented group discussing problems in educational administration was to be compared with a less structure client-centered group discussing similar problems. After 12 sessions, however, the experimenters yielded to pressure from members in the highly structured group and converted their remaining sessions into client-centered ones. The changes on the PST on three major scales; attitudes toward self, adults, and children were significant beyond the .01 level of chance using a t-statistic. Zimet and Fine concluded that their results favoured the use of a threat reduced climate, which is provided in client-centered training groups, for evoking positive personality changes.

Before moving on to examine the effects of group training on attitude changes, it should be noted that some interesting research has been done in the area of self-concept or self-perception change. For instance, Burke and Bennis (1961) investigated changes in self and ideal-self perception discrepancies for members in six human relations training groups at Bethel, Maine during the summer of 1958. Each laboratory experience lasted three weeks. The researchers hypothesized that discrepancy scores between self

and ideal-self perceptions of their behavior in a T-group would be significantly greater at the beginning of training than after training. To investigate this hypothesis Burke and Bennis developed the group Semantic Differential test and administered it to the 84 participants during the first and third weeks of training. Their hypothesis that the self-ideal self discrepancy would decrease over training was verified ($p < .05$) Burke and Bennis interpreted this result as indicating that a significant number of T-group members increase in self-satisfaction, but the present researcher believes that such an interpretation is somewhat beyond the data presented.

Two studies which investigated changes in self-concept as a function of sensitivity or T-group training are reported by Brook (1968) and Cabianca (1967). Both researchers utilized the Tennessee Self Concept scale before and after one week of intensive T-group experiences. Their results are somewhat equivocal. Brook, who used 70 Episcopal priests as experimental subjects, reported no significant increase in self esteem as a function of training experience. Cabianca used 28 student teachers as subjects and tested them 10 weeks after the laboratory terminated. The experimental group showed significant changes on five of eight subscale self-esteem variables and the Total Positive Self score.

If it is true that only minimal changes can be anticipated in basic personality structures, such as those measured on Catell's 16 PF, then it is perhaps most useful to use personality measures for investigating who can and who cannot be expected to profit from training experiences. Personality and attitudinal change are both discussed later in this report with respect to the present study and various indices of learning. Dogmatism, a variable which might also have been included in the present section, is discussed later in this chapter.

Attitudinal Change in Human Relations Groups

In their review of human relations laboratory theory and methods, Bradford, Gibb and Benne (1964) attributed the development of the T-group movement, in part, to the fact that innovators saw various cherished values threatened by historical trends of events. In particular, the aforementioned authors suggest that innovation was required to enhance the values of science, of democracy, and of helping relationship. Summing up the reasons why laboratory training developed, Bradford, Gibb and Benne (1964) remarked:

> The training laboratory was thus designed to increase intelligent commitment to three sets of values beleagured and inadequately utilized in contemporary society. These are the values associated with the social and behavioral sciences with democracy, and with the building of the helping relationship among people. It was these values, seen in interrelationship, that the laboratory innovators believed were best calculated to meet the unmet learning needs of a changing, industrialized society. And these values have continued to guide laboratory training during the seventeen years of its development. (p.12)

Thus to some extent laboratory training in general has attempted to transmit the "group dynamics" values of democracy in the sensethat they have encouraged informality, openness, tolerance, participative decision-making and so on (Nadler and Fink, 1970). It is suggested, then, that T-group laboratories may be one means for reducing racial prejudice, attitudes towards delinquents, and so on. Similarly, Carkhuff (1969) has made rather strong claims that the didactic, modeling, and experiential training in various human relations dimensions offers a means to handle problems concerned with racial relations, marital relations, labor relations, criminal populations, or any other problem requiring social action.

With regard to the effects of laboratory training on attitudinal change the available literature is somewhat limited (Campbell and Dunnette, 1968; Egan, 1970). Rubin (1967) demonstrated that one effect of T-group

training was an increase in self-acceptance. In that study Rubin observed that increased self-acceptance was accompanied by increased "human heartedness" (acceptance of others). He went on to postulate that increased acceptance of others would have the direct effect of reducing ethnic prejudice.

Nadler and Fink (1970) report a study wherein they attempted to determine the impact of laboratory training on sociopolitical ideology. The central question in that study was--Do changes in small-group values in a democratic direction generalize to larger questions of social ideology? (Pre and post tests of ethnocentric prejudice, ideology of conformity, personal authoritarianism, and rugged individualistic ideology, were given to 41 college students who were attending a human relations laboratory.) Laboratory sessions included general sessions, pairings, T-groups, and various communication exercises. Nadler and Fink found highly significant shifts in a democratic direction on each of the four different subscales. It is also interesting to note that trainees whose attitudes were close to laboratory norms changed the least, while those with the most discrepant attitudes changed the most.

In an attempt to assess the effects of a college course which was designed to develop sensitivity and skills training in group processes, Haiman (1963) also investigated attitudinal changes. For that study Haiman used items from the Rokeach Dogmatism Scale and the California F scale to develop a composite scale to measure "open-mindedness." After testing a variety of groups Haiman concluded that training in discussion and group leadership does "produce significant changes" (p.245) in the direction of open-mindedness. Unfortunately, Haiman does not specify to what extent his discussion groups resemble other laboratory settings.

In their review of the literature available on attitude change Campbell and Dunnette (1968) made the following comments:

> Turning to another type of internal criterion, the authors were surprised to find relatively few studies relating T-group experiences to attitude changes....The scarcity of research relating laboratory education to attitude change is disappointing and rather hard to understand (Campbell and Dunnette, 1968, p.92,95).

It would seem, however, that the area of attitude change should be fruitful to explore in view of the following remarks by Egan (1970):

> It is suggested that effective diagnosis in the training group will lead to attitude change (that is, if such change is warranted)....Attitude change is a modest and realistic goal. For instance, a participant who has difficulty responding to even responsible confrontation by self-examination finally realizes that he is very defensive, that he usually sees even helpful and well-meant confrontation as attack. Gradually his attitude toward confrontation changes. Although even responsible confrontation has punitive side effects, it is possible to ignore or endure these for the sake of the benefit to be obtained. After the laboratory is over, the participant may still react adversely to honest criticism (he has not changed overnight), but his attitude has changed and this is the seed of behavioral change. Research then, should show attitude changes by the end of the laboratory experience and behavioral changes in follow-up studies (p.103).

In the current research project some attempt was made to determine what, if any, attitudinal changes seem idiosyncratic to a given laboratory or observation room experience. The instruments which were employed for examining such changes are the Rokeach Dogmatism Scale (Form E) and The Cambridge Survey of Educational Opinions.

Open-Mindedness as a Research Concept

For some time various theorists (such as Spearman (1927) and his idea about a "perseveration" factor) have been interested in the fact that different individuals have different abilities with regard to acquiring new response sets which conflict with old established mental

sets. Of key influence in the area of examining a general style of handling incoming information has been the work of Milton Rokeach (1956, 1960). It is Rokeach's (1960) contention that the structural properties of belief systems could be studied independent of their specific content. According to Rokeach a belief system is composed of verbal and non-verbal, implicit and explicit beliefs, sets or expectancies which represents a total framework for understanding the physical and social world. Rokeach maintains that all belief systems can be viewed along three major dimensions: A belief-disbelief dimension, a central-peripheral dimension, and a time-perspective dimension. With respect to the organization of a belief-disbelief continuum a system is defined as closed if there is:

> ...a high magnitude of rejection of all belief-disbelief syb-systems, an isolation of beliefs, a high discrepancy in degree of differentiation between belief and disbelief systems, and little differentiation within the disbelief system (Rokeach, 1960, p. 61).

With respect to the central-peripheral dimension Rokeach has made the following remarks about closed and open systems:

> ...the more closed a person's belief system, the more he should evaluate others according to their agreement or disagreement with his system; also the more difficult should it be to discriminate between and separately evaluate a belief and the person holding that belief. Conversely, the more open the belief system, the less should beliefs held in common be a criterion for evaluating others, and the more should others be positively valued, regardless of their beliefs (1960, p. 63).

In reference to closed belief systems on the time-perspective dimension Rokeach has offered the following description:

> ...a narrow, future-oriented time perspective, rather than a more balanced conception of past, present, and immediate future in relation to each other, is also seen to be a defining characteristic of closed systems (1960, p. 64).

Using Rokeach's system, then, it is at least theoretically possible to tie the three dimensions of a given belief system together and describe it as being an open or closed mind.

A brief survey of the available research literature on Rokeach's dogmatism concept and the Dogmatism Scale (DS) indicates that the open-closed mind continuum is a popular subject. For instance, Vacchiano, Strauss, and Hochman summarized 139 studies concerned with Rokeach's concept of dogmatism. In the present study, an examination of dogmatism scores is pertinent for a variety of reasons. Firstly, one of the general goals of T-group training is to increase openness to experience (Egan, 1970). A decrease in dogmatism scores may reflect at least partial achievement of that goal. Secondly, a number of studies have suggested that dogmatism may be logically related to perceptual accuracy (Sawatzky, 1968) and empathic accuracy (Paley, 1969; Sawatzky (1968) reviewed a number of studies (Dymond, 1948; Scodel and Mussen, 1953; Crockett and Meidinger, 1956; Jones, 1954; Burke, 1966) and hypothesized that open minded persons are more accurate in their interpersonal perceptions. The rationale underlying Sawatzky's (1968) hypothesis is summarized as follows:

> On the basis of Rokeach's definition it would appear that the dogmatic individual will not be keenly aware of the emotional and social attitudes of others. Since he cannot tolerate ambiguity he will tend to think of people in rigidly stereotyped categories. His perception of others will be restricted because of his selective attention and his approach to others will tend to be conventional and non-personalized. The open-minded individual will be more objective in his evaluations. Therefore he will be better equipped to use subtle personality cues and make more personalized, insightful assessments of the attitudes and values of others (p. 31).

Sawatzky found no significant relationship between open-mindedness and overall accurate interpersonal perception, as measured by ratings on

Cline and Richards' films. Sawatzky did report, however, that open-minded subjects were significantly more perceptive of verbal stimuli, whereas there was a tendency for dogmatic subjects to perceive visual cues more accurately.

Use of a dogmatism measure is also important in the present study in the sense that some researchers (such as Hough and Admidon, 1967) have suggested that there is a relationship between a person's belief-disbelief system and his ability to profit from experience. Interestingly enough, Hough and Amidon (1967) found that the pre to post change scores on the Teaching Situation Reaction Test of education students in a human relations laboratory group were positively related ($r = .38$, $p \leq .05$) to Dogmatism Scale scores. After reviewing the literature Ehrlich and Lee (1969) also concluded that: "Closed-minded persons are less able than open-minded persons to learn new beliefs and to change old beliefs")p.258). Ehrlich and Lee (1969) have also pointed out that certain intervening variables, such as the authority source of new beliefs, novelty and so on may account for some studies which have not found that dogmatic persons are resistant to change.

Transfer of Learning:

To be of full value, educational innovations should provide skill training which can be transferred to other "en vivo" situations. There is virtually nothing to command about any training technique which develops skills which cannot be maintained in either a work or recreation setting. In the present context, studies describing transfer of learning from group settings are clustered under two types: 1. studies which cite instances of "back-on-the-job" changes which are associated with laboratory the central feature of which is the T-group) training, and 2. studies which have used simulation tests to demonstrate learning transfer.

1. Back-on-the-Job Changes

Since Miles' (1960) famous study investigating learning processes and outcomes in human relations training, a number of studies (including Bunker, 1965; Bunker and Knowles, 1968; Moscow, 1968; Valiquet, 1968, and others) have used similar designs to follow-up participants. Subjects in Miles' (1960) study were 34 elementary school principals who attended a two week human relations training laboratory at Bethel, Maine. Two control groups were also chosen: a matched-pair selected by the participants, and a random group (N=148) which was drawn from a directory of principals. As Miles was primarily interested in investigating changes in sensitivity, diagnostic ability, and action skills three measures were taken at the laboratory: a performance test, trainer ratings, and a self-perceived learning measure. The Ohio State Leader Behavior Questionnaire, a peer nomination form, the Group Participation Scale, and a perceived-change measure combining the views of each S with job associates were administered to all groups. These measures were taken before, three months after, and eight months after the laboratory. By using various statistical techniques, Miles found that 76 per cent of the experimental group gained in "overall effectiveness" as rated by trainers in sensitivity, diagnostic ability, and action skill. Personality variables did not correlate with gain during treatment.

Reported changes over the eight month period following the laboratory, by each subject and 5 or so associates, were categorized with the aid of a content analysis form. Miles reported that the experimental groups showed significantly more changes than the control groups, on personal traits, increased sensitivity to others, skills of communication and so on. The

Miles (1960) has been given prominence in the literature as one of the first studies to demonstrate valid experimental - control on-the-job differences as a result of participation in human relations training experience.

Following Miles (1960) lead a number of studies have taken similar approaches to investigating changes in on-the-job performance which might be associated with laboratory training. Bunker (1965) selected six educational conferences for evaluation at Bethel, Maine in the summers of 1960 and 1961. Subjects included members of various industrial, governmental, educational, medical, and social service organizations. A variety of training programs were employed. To obtain a control group each subject was asked to nominate an associate from the back home setting. The main criterion measure was an open-ended perceived change questionnaire which was to be completed by several other associates eight to ten months after returning to the job setting. Complete returns for three hundred and forty-six subjects from experimental and control groups were available for analysis. After analyzing the response questionnaires with a content analysis format it became apparent that the results were quite similar to those in the Miles study. A significantly greater proportion ($p.<.001$) of experimental subjects when compared to controls were in the middle and top thirds of change scores. Significantly higher changes ($p<.05$) were reported for the experimental group in ability to receive communication, increased interdependence, self-control, awareness of behavior, sensitivity to others and several others. Bunker interpreted his results to suggest that "laboratory training tends to facilitate changes in behavior in the job setting "(1965, p.262). A closer examination of the results also suggested that of the training programs studied, "there is no standard learning outcome and no stereotyped ideal toward which conformity is induced." (1965, p.264).

More recently Bunker and Knowles (1967) employed a similar design and questionnaires to investigate differences between length of training laboratory and perceived change by self and associates. Significantly more changes were reported for subjects in a three week laboratories than a laboratories of two weeks duration. Krafft (1968), interviewed subjects, controls, and their job associates six months after a 10 day laboratory. Interview results were scored using Bunker's content analysis system. Krafft reported 15 areas in which participants made more favourable on-the-job changes than members of a control group. As subjects in this study were seminar instructors from secondary schools, Krafft concluded that the perceived behavioral changes improved the instruction of participants in the experimental group. Similar findings using the questionnaire approach developed by Miles (1960) have also been reported by Moscow (1968), Smith and Pollack (1968) and Valiquet (1968).

Two studies which investigated "on-the-job" changes of teachers after sensitivity training pertinent to the present study. Baller (1968) compared an experimental group of teachers who had received sensitivity training with a control group who had volunteered and did not receive sensitivity training. Criterion measures were student perceptions of their teacher's change in the classroom. Rating scales of classroom performance were administered prior to a 25 hour group training experience and five weeks later. Interestingly enough, the students viewed their teacher less favourably on the post-test whether they had received the training or not. Baller (1968) interpreted the results to mean that sensitivity training was not a significant factor in changing students perceptions of teachers.

Harris (1970) employed a similar design and compared the classroom performance of 18 teachers who had discussed classroom problems in regular sessions over a 9 week period to the performances of 17 teachers in a control

group. Trained observers who recorded the main activity of the teacher every 15 seconds were employed in a time sampling design. Harris made a number of rather interesting conclusions, including the following:

1. The experimental group had a significant decrease in the amount of non-verbal observations of pupils, whereas the control group had a significant increase in this activity.

2. The change in proportion of time spent in formal instruction was significantly less for the experimental group.

3. The use of approval increased significantly for the experimental group.

(Harris, 1970, p.15)

In discussing the significance of the study, Harris concluded that observable behavior changes were apparent "as a result of the group experience." (p.18).

2. Simulation Studies

Studies using simulation situations to measure transfer of learning are particularly pertinent to the present report. In the present study video tape tests were designed to assess subjects abilities to observe, or respond to, a number of group situations. When responding to the Park-Matheson Human Relations Video-Tape Tests, subjects are actually asked to consider themselves as the sixth member of a video-taped group. The belief that performance in a simulated testing situation gives some correlated indication of a person's abilities in a spontaneous "real life" setting underlies the rationale for developing these video-tape tests.

Kelley and Pepitone (1952) are among the earliest reported studies to assess a human relations training course with simulated materials. The

college course which they evaluated was discussion oriented and focussed various psychological theories and concepts that were relevant to human relations problems. Subjects in the sample were 146 male college juniors. They were assigned into sections of approximately 20. The major hypothesis tested was that the course would deepen understanding of human relations and changes would be reflected in the application of various psychological principles in the analysis of social problem situations. To test this hypothesis three tests were devised which required the subjects to analyze a problem situation. The problems consisted of conflicts in managerial philosophies, a foreman-subordinate conflict, and an alcoholism problem. These tests were administered to various sections at different times during the year to determine some criteria of learning development. To assess subjects' responses a content analysis system was employed to categorize responses according to their level of psychological insight. Kelley and Pepitone found that subjects increased significantly ($p<.01$) in their ability to express insight into human relations problems. For instance, only 13 per cent of the students in three sections showed "deep" insight into the foreman-management problem at the start of the course, compared to 61 per cent of the students in two other sections at the end of the course.

Hall and Williams (1970) have reported some rather impressive findings using simulation techniques. They compared 30 groups who were trained in group dynamics,with 30 groups who had not received such training. To assess decision-making ability Hall and Williams had all subjects view 38 minutes of the film 12 Angry Men. Subjects were then asked to predict individually, and then as group members the order in which 11 jurors on the film would change their votes from "guilty" to "not guilty". Hall and

Williams report that on measures of decision quality, utilization of resources, and creativity, the trained groups performed consistently higher than the untrained groups.

In a pilot study which used simulation tests, Carkhuff (1969 b) examined the effectiveness of direct communications training for teachers. The basic modes of instruction included the use of didactic, experintial, and a modeling techniques to develop the communication and discrimination skills of eight teachers. To assess the effectiveness of instruction subjects were required to write responses to 16 client expressions on an audio tape. After completing that task the tape was replayed and S's were asked to rate 64 responses on a five point Carkhuff scale of overall functioning. Results on these tests were found to correlate highly and significantly ($p<.05$) with ability to counsel a "standard" client after six weeks of training. The present study utilized the Carkhuff Discrimination Scale as a pre and post test indice of ability to recognize a facilitative response.

A Rationale for Expecting Differences Between S's With and Without Bales Training

There seems to be limited evidence that the learning of an interaction process analysis system provides the trainee with a tool through which he can more effectively assess the impact of his verbal behavior. For example, Hough and Amidon (1963) found that student teachers who had been taught Flanders' system of interaction analysis (Flanders, 1960) were rated by their supervisors as being more effective in student teaching than student teachers who had not learned interaction analysis. Furst (1965) also found that student teachers who were taught interaction analysis scored more favourably on the Teaching Situation Reaction Test and used different verbal behaviors than student teachers who were not taught interaction analysis. In discussing the implications of her study Furst speculated that it would be interesting to see if similar results would be obtained if other systems of self-analysis were employed. In another study Hough and Ober (1966) found significant favourable differences in the verbal behaviors of student teachers who were taught Flanders' interaction analysis when compared with student teachers who had not learned Flanders' system. In discussing their results Hough and Ober (1966) stated:

> It may be assumed that when the skill of interaction analysis is learned, it gives the teacher a feedback mechanism in the form of a category system, that he may use to become more sensitively aware of his own teaching behavior (Flanders, 1961, 1963; Hough and Amidon, 1965). Interaction analysis seems to provide the teacher with a cognitive organizer to more accurately interpret the effects of his behavior on his students. In this way the teacher becomes more aware of his behavior. If interaction analysis, in fact, functions as a feedback mechanism then it has the potential to act as a mechanism for the reinforcement of behavior. If this is true,...,those students who had been taught interaction analysis had a more adequate cognitive organizer to aid them in interpreting and internalizing what they can happening to themselves and to other teachers. (p. 344)

It is interesting to note that as a direct result of the Hough and Ober study interaction analysis is now taught to all secondary education students at Ohio State University.

More recently two studies on the use of verbal interaction analysis as a training technique for assisting counselor trainees have provided interesting findings. Redding (1968) concluded that training beginning practicum counselors in Flanders' verbal interaction analysis has merit for the purpose of helping trainees attain higher levels of empathic understanding and communication of respect. Matuschka (1968) similarly suggested that interaction analysis is a technique which provides a useful feedback system for practicum counseling training. In that study Matuschka concluded that "those counselors who were given an in-service training program in verbal interaction analysis changed their verbal behavior patterns in a desired direction more than those counselors who did not receive this training program" (1968, 3834-A). The present researcher intuitively suspected that mastery of the Bales IPA system may be accompanied by similar favourable changes in verbal behavior and communication assessment.

It is also interesting to note that advocates of laboratory training believe that "the central focus of T-group training is to increase the level of accuracy with which persons discern the attributes, attitudes, opinions, feelings, and reactions of others in their social and work environments" (Campbell and Dunnette, 1968, p.79). In their critical review of T group literature Campbell and Dunnette went on to conclude that nearly all of the studies which have attempted to assess changes in sensitivity and accuracy of interpersonal perception have yielded negative results.

Egan (1970) is not surprised that accuracy of interpersonal perception does not increase as a result of laboratory training. Indeed, Egan is quite doubtful that predictive ability is the goal of interpersonal-growth-oriented laboratory training. He suggests that laboratory training should increase openness to the attributes, attitudes and feelings of others. According to Egan such increases in openness are not necessarily accompanied by similar increases in predictive accuracy. In view of Smith's (1965) suggestion that training in perceptual accuracy should be more direct, it is felt that observers with Bales' training might show evidence of becoming more perceptive observer and listeners. In light of Jecker's et. al. (1964) remark that "any method for substantially improving teacher accuracy in the interpretation of nonverbal feedback cues would be of value" (p.397), the use of Bales' training as an independent variable seems pertinent to the present study.

Vicarious Learning

An acquaintance with some of the work which has been done in the area of vicarious learning is important to the present study for at least four reasons. Firstly, it is apparent that vicarious learning is the main process through which observer subjects study group dynamics. Secondly, it is quite typical in groups that some members, for a variety of reasons, remain quite reticent and speak very little. It seems apparent that if these silent members learn certain skills, such as the discrimination of empathy, the learning has primarily taken place through vicarious channels. Thirdly, Carkhuff (1969a)has maintained that for participants to incorporate the various skills which are taught in direct communication groups, the trainer must serve as a high functioning model. Finally,

Gerst (1969) and Bandura et. al. (1966) have reported some rather interesting findings in studies investigating symbolic coding which may be pertinent to the acquisition of skills by subjects learning Bales' Interaction Process Analysis system. The most extensive review of vicarious learning process has been prepared by Bandura (1969) who reported the findings from over 200 studies in Chapter III of the book Principles of Behavior Modification.

The topics discussed by Bandura include various theories of observational learning (associative and classical conditioning theories, reinforcement theories, and affective feedback theory), the establishment of novel response patterns through modeling, vicarious conditioning of emotional responses, vicarious extinction, the inhibitory and disinhibitory effects of vicarious experiences, and a number of other themes. Indeed, it would be far beyond the scope of the present review to do even adequate beyond the scope of the present review to do evern adequate justice to the wealth of studies on vicarious learning experiments. For a more complete review of this topic the reader is referred to Bandura (1969).

In some relatively simple and well-known experiments Bandura has demonstrated the potency of vicarious learning. For example, several experiments (Bandura, 1962; Bandura et. al. 1963; Bandura and Menlove, 1967) reveal that responses of a model, and the consequences resulting from reinforcement of those responses, may have several different effects on behavior. An observer may acquire novel responses that he previously did not have; secondly, observation of the response consequence to the model may cause increases or decreases in inhibitory behavior, and thirdly, observation of another person's behavior may facilitate the occurrence of previously learned, noninhibited responses (Bandura, 1965).

Evidence of modelling effecs was also demonstrated in a series of experiments (Bandura, et. al., 1961, 1963a), in which nursery school children observed adult models display rather unusual forms of aggression, both physically and verbally. Other groups observed nonaggressive models, or had no exposure to any model. When tested after the exposure period, those subjects who had observed the aggressive model displayed a great number of identical aggressive responses, while those who had observed nonaggressive modesl or had no exposure to a model at all, rarely displayed the same patterns of aggression. The same experiments also showed that those subjects exposed to the aggressive model displayed more nonimitative aggressive acts, especially with regard to gun play. Another experiment by Bandura and Huston, 1961 was conducted in which nursery school children experienced a nurturant interaction with a model prior to imitative learning while other groups experienced a cold, nonnurturant relationship. Subjects performed a two-choice discrimination task with the model,who performed explicit but functionless behaviors during trials. The results of the experiment indicated that those subjects who had experienced a rewarding relationship with the model, reproduced behaviors resembling the model's, while those who had experienced the cold, and apparently nonrewarding relationship did not imitate the model's behaviors to such a great extent. From this experiment, Bandura and Huston suggested that when a person is confronted with the "examples" set by a reinforcing agent, these examples in effect condition him.

Bandura (1962) has suggested that social learning can no longer be adequately explained in terms of direct reinforcement principles. Apparently a person is able to acquire behavior repertoires by just observing other persons, even though the observer receives no direct reinforcement, or performs any overt responses-during the observation period. The prestige Bandura has for this form of learning is evident in the following statements:

> One of the fundamental means by which new modes of behavior are acquired and existing patterns as modified entails modeling and vicarious processes. Indeed, research conducted within the frame-work of social learning theory demonstrates that virtually all learning phenomena resulting from direct experiences can occur on a vicarious basis through observation of other persons' behavior and its consequences for them. Thus, for example, one can acquire intricate response patterns merely by observing the performances of appropriate models; emotional responses can be conditioned observationally by witnessing the affective reactions of others undergoing painful or pleasurable experiences; fearful and avoidant behavior can be extinguished vicariously through observation of modeled approach behavior toward feared objects without any adverse consequences accruing to the performer; inhibitions can be induced by witnessing the behavior of others punished; and, finally, the expression of well-learned responses can be enhanced and socially regulated through the actions of influential models. (1969, p. 118)

To studies cited by Bandura on symbolic coding and vicarious learning are of interest in the present discussion. Gerst (1969) had subjects observe a film model perform complex motor tasks which varied in the ease that they could be verbally coded. They had the task of coding items into vivid images, concrete descriptions of the motor task elements, or summary labels which described the tasks essential ingredients. In comparison to the performance of a control group who did not code symbolic mediators, all three coding operations assisted vicarious learning. The imaginal and summary labeling codes were equally effective in helping

immediate reproduction of modeled responses, both systems being superior to the concrete verbal form. In the present study the subjects who are practicing Bales' Interaction Process Analysis will in a sense be equipped with symbolic coding system.

It is envisioned that the use of symbolic mediators would enhance vicarious learning the more closely the system matched the concrete behavior observed. On the other hand the use of a coding system might create symbolizations which compete with the processing of vicarious materials. For example, Bandura et. al. (1969a) report a study wherein children were exposed to modeling behavior on film while they either watched attentively, verbalized the models' novel responses, or counted rapidly to prevent verbal coding of various cues. After the film, the children who verbally labelled the models behavior were able to reproduce significantly more matching responses than those who watched attentively or counted rapidly. Those children who were engaged in the competing symbolization of counting showed the lowest level of skill acquisition. It is conceivable that practice of the Bales IPA system, while increasing ability to categorize behavior, could interfere with the retention of observed skills.

To conclude this discussion on vicarious learning two other studies should be noted. Rosenberg (1952), is cited by Stock (1964) for having investigated the influence of role playing on three groups of people; role players, subjects asked to identify with the role players, and subjects who observed the role players. Stock reports that a variety of methods were employed to assess diagnostic perception, emotional involvement and behavioral change. The results of Rosenberg's experiment

indicated that role playing participants became very involved in the situation and had strong favourable and unfavourable feelings about it. These participants became quite biased in their observations and had particular difficulty in remaining flexible and objective with regard to their own roles. This group apparently showed the greatest behavioral change. Those subjects who were asked to "identify" with the role players were highly critical in their judgments and forwarded the "best" suggestions for alternative behavior. With respect to bias and involvement these subjects were lower than the participators, but higher than the observers. Rosenberg was apparently able to recognize two distinct subgroups in the observer group: passive watchers and active watchers. The "passive watchers" remained uninvolved and had few suggestions for alternative behavior, while the "active watchers" were more critical and made numerous suggestions.

Fikso (1970) reports the results of a study which investigated whether vicarious learning was a demonstrable variable in a group psychotherapy situation. The research question in that experiment was concerned with examining whether or not subjects in a vicarious condition would do better or worse than subjects in a regular group. Subjects were 30 college underachievers who were assigned to either a participant group or observer group.

Each group received 12 sessions of therapy over a six week period. Vicarious therapy was found to have a significant effect in raising grade-point-average over participant therapy. No significant changes in personality or values(as measured by the Thematic Apperception Test and the Prime Differential Values Inventory) were noted. Unfortunately

Fikso's abstract does not report what alpha level was set to determine significance, but the results do suggest that vicarious groups may for certain tasks, be more effective than participant groups.

CHAPTER III

DEFINITIONS AND RESEARCH METHOD

DEFINITIONS

Independent Variables

For the present study the following definitions were accepted for independent variables.

Self-Analytic Group - a relatively unstructured, face-to-face small group wherein the trainer intervenes in a neutral manner with interpretations of group behavior. The trainer's role is best described as 'non-directive.'

Direct Communications Group - a structured, face-to-face small group wherein the trainer quite actively employes didactic, modeling, and experiential activities to encourage the development of specific communication skills, and particularly the skill of empathic understanding.

Participants - are subjects who were either in a Self-Analytic or Direct Communications group.

Observers - are subjects who were either observing a Self-Analytic or Direct Communication group through a one-way screen.

Bales' Observers - are observers who attempted to develop an understanding of group dynamics while practicing and trying to learn Bales' system of interaction process analysis.

Clinical Observers - are observers who attempted to develop an understanding of group dynamics while attempting to view the group as a "patient" who exhibited symptoms described by Millon (1969).

Dependent Variables

For the present study the following definitions were accepted for dependent variables.

Personality variables - are 16 traits which are measured by Cattell's 16 Personality Factor (16 PF) Questionnaire (Form C).

Attitude Variables - are 30 educational opinion variables which reflect certain social, political, and educational attitudes, as well as personality attributes. A definition of each variable is included in Appendix A. Attitude is operationally defined here as scores obtained on the Cambridge Survey of Educational Opinions.

Dogmatism - is defined by Rokeach (1960) as:

(a) A relatively closed cognitive organization of beliefs or disbeliefs about reality (b) organized around a central set of beliefs about absolute authority which in turn (c) provides a frame-work for patterns of intolerance towards others (p.195).

In the present study dogmatism is operationally defined as a score obtained on the Rokeach Dogmatism Scale, Form E.

Group Dynamics - is defined here as the various forces (conscious, preconscious, and unconscious) which influence the needs and actions of ggoup members. Ability to identify various group dynamics processes is operationally defined by a score on the Group Process Analysis Test (GPAT).

Empathic Understanding - refers to one's ability to allow himself to experience the experience of another person (Carkhuff,1969a). Ability to communicate empathic understanding is operationally defined by a score on the free response version of Park-Matheson Human Relations Video-Tape Test of Empathic Understanding (HRVT). A multiple choice version of this testmeasures the ability to recognize responses which show high empathy.

Discrimination - is defined as the ability to rate, on a five point scale developed by Carkhuff (1969), the degree to which a response to a client shows empathy, respect, spontaneity, genuineness and various other qualities. Ability to discriminate the level of "helping" responses is operationally defined by a score on the Carkhuff Discrimination Test.

THE RESEARCH PROBLEM

The present study was part of a larger project that was directed by Dr. John McLeish. The comprehensive project included an extensive investigation of group processes and outcomes using a variety of sophisticated techniques to identify fundamental elements. To date, three doctoral

students have examined various portions of the research in detail. While the present report presents outcome effects, Matheson (1971) has investigated group process using Bales' Interaction Process Analysis system. Anderson (1971) examined the Direct Communications treatment by comparing the Bales IRA system with Flanders system of interaction analysis. Dr. McLeish is currently supervising other graduate students who are examining fantasy themes in groups, Mann's system for observing groups, and other related topics.

Although much promising work has been done in the area of group process, little systematic and carefully controlled evaluation in terms of outcome has been reported. The present study undertook to examine the following question: "What differential effects, if any, are associated with either participating in, or observing, a human relations training group? This question was examined by comparing observed differences between subjects who participated in, or observed, two kinds of human relations training treatments. The study was of an exploratory nature and therefore a variety of instruments were selected to investigate changes in personality and attitudes. In addition, three specially constructed video-tape tests were developed for evaluating understanding of group dynamics and empathic communication. The study was designed to examine (1) what participants actually learn through the medium of the group with respect to certain intended and secondary learning outcomes, (2) to what extent vicarious experience can act as a substitute for the "real" thing, and (3) whether or not systematic training in observation enhances or inhibits vicarious learning.

METHOD

Subjects

The subjects in the present study were 98 undergraduate students currently enrolled in various teacher education programs in the Faculty of Education at the University of Alberta. These students were invited to volunteer for two sections of a new "experimental", senior level Educational Psychology course which was concerned with human relations training and classroom dynamics. Prior to enrolling, the students were informed in a general way about the nature of the course. Emphasis was laid on its lack of formal content, the behaviors expected of them in terms of regular attendance, punctuality, completion of a battery of psychological tests, a commitment to the course shown by a determination to complete the series of meetings. The course was conducted over a three-and-one-half month period during which all subjects were required to attend four pre-testing and briefing sessions, 15 laboratory sessions, and four post-testing and course evaluation sessions. All sessions were 50 minutes in length. Early in the laboratory session period four subjects withdrew; two because of course requirements for graduation. The remainder, 34 males and 60 females saw the course through to completion, the attendance being of the order of 95%. All students were awarded credit for successful completion.

Instructors

The present researcher and another doctoral student, Wayne Matheson, "managed" both sections of the course. Our function was to serve as "front men", being responsible for administering all pre- and post-tests, marking class assignments, distributing proformas to observation groups, and assessing the students' final grades. Two trainers, with whom the students had had no previous contact, conducted the training groups. One of the trainers met the observer groups from another treatment, but neither had any encounters with their participant groups outside of the laboratory "hour".

In an attempt to isolate the effects of the treatments, all subjects were strongly discouraged from discussing their experiences with members in another treatment. While these instructions were followed in general, several isolated incidents of participant-observer collusion were evident in group dialogue.

Students in all treatments were initially told that their contacts with the instructors would be minimal as they would themselves be responsible for their own mastering of the task. However, this approach had to be modified somewhat in the light of apparent ambiguity which surrounded the observers' tasks - especially those involved in "clinical" observation. The course instructors therefore arranged three extra evening meetings with the observer groups to clarify the nature of their tasks. It also seemed expedient to suggest related readings as the course was offered as part of the normal program. Great care was taken to ensure that these readings were available to students in each of the treatments.

Grades were assigned on the basis of freely chosen, written term assignments, regular and punctual attendance, and the completion of all psychological tests. The term assignment was optional and was undertaken by those students who wished to receive more than the minimal standard pass awarded for completion of the group training. Everything was done to ensure that the only difference between groups lay in the kind of group "treatment" to which they were subjected during the experimental sessions.

The Research Design

The subjects in each section of the course were randomly allocated to one or other of six observer or participant treatments. Figure 1 depicts the treatment design. This basic design was used for both sections of the course and was drawn from McLeish's studies of the lecture (McLeish, 1968). The innovation he made was (a) to take small number statistics seriously by randomly allocating n's of 5-10 to different treatments and applying tests of significance. (b) to start with intact whole course groups: this insures that the small random groups are really similar to start with.

Students were required to attend the course on alternately scheduled days. On days when the self-analytic treatment was scheduled, subjects who were either viewing or participating in a direct communications group were asked to stay home (and vice versa).

Participant Treatments

Having chosen the participants in each section, they were randomly assigned to one of two types of human relations training groups. Each group was similar in composition with regard to the proportion of male

and female members. The participant treatments were:

(a) A Self Analytic Treatment (SAT).

In this treatment the trainer's function was to interpret, in a neutral manner, his perceptions of the group process, laying emphasis on "latent" content. The trainer explained at the first meeting that the task of the group was to observe and understand behavior as it happened: he was there to help them. At the beginning of each meeting, the trainer entered and sat down, without comment; after 50 minutes he promptly rose and left. This was the only-indication that the sessions had begun or ended. The decision as to what occurred in between depended largely on the student group. This treatment is, in effect, quite similar to that offered at the Tavistock Institute of Human Relations.

The rationale underlying the use of this model has roots in psychoanalytic theory and practice. Experience obtained in conducting groups has been written about by Bion (1959) and Foulkes and Anthony (1957). In his role the trainer offers himself to the group as a "blank screen" upon which members may project their feelings, especially those associated with authority figures. Presumably, this particular technique encourages a member to explode whatever residual conflicts may be holding him from personal development. Depending upon the perceived dynamics of the group interaction, interpretations of group dynamics may vary from common concrete statements to in-depth Freudian interventions.

With regard to this particular form of T-Group laboratory Campbell and Dunnette (1968) have stated:

Frequently, the trainer merely specifies the length of time the

> group will be meeting and that the major concern is with seeking to understand one's own and other's behavior. He then falls silent or otherwise refuses further guidance. The vacuum is often filled by feelings fof frustration, expressions of hostility, and eventual attempts by some members to impose an organized, and usually hierarchial (leaders, committees etc.) structure on the group. These initial attempts to assume a leadership role are usually resented by other members and, either spontaneously or because of the trainer's intervention, they begin to consider why the self-appointed leader has tried to force his will on the group. If events follow their proper course, the behavior of the other group members also becomes a basis for discussion such that every participant has an opportunity to learn how his own within-group behavior is perceived. (Campbell and Dunnette, 1968, p.76)

In attempting to assess the effects of the various treatments it was most desireable to emulate, as much as possible, the forms of training which are being carried out in other institutions. In particular, we had hoped to provide some form of training which resembled that given at the Tavistock Institute in London, England. While the trainer's interventions and behavioral postures (neutral) were based on what might be called a "Tavistock" model, it was not possible to replicate the features of that institute's training- in their entirety. There is no available evidence as to what effect the various testing procedures and observation room facilities disturbed what might have normally taken place in any of the training groups. It should also be noted that the term "Self Analytic" has often been associated with the type of training in group processes given by Professor Bales at Harvard in his Social Relations 120 course. A comparison of available transcripts of Bales' self-analytic groups with our own transcripts, and conversation with Bales,has indicated that the Self-Analytic treatment employed here is not to be equated with the Harvard groups; although some elements are similar.

The training groups described herein then are to be considered somewhat unique to the training situation. They do not represent any given school of training in particular, but the Self-Analytic treatment may bear some

distorted resemblance to a Tavistock group concerned with the development of understanding group dynamics. As well, the Direct Communications training group probably contained the central elements described in training based on the Carkhuff (1969a) model. A more complete description of the various processes involved for these treatments is described elsewhere (see Matheson, 1971 and Anderson,1971).

(b) A Direct Communications Treatment (DCT)

In contrast to the SAT group, the trainer in the Direct Communications (DCT) Treatment groups was actively attempting to blend didactic and experiential methods of instruction to develop specific communication skills. The trainer had the task of teaching the understanding of, and practice in, the communication of empathy, warmth, genuineness and various other skills. These are described by Carkhuff (1969a). Particular emphasis was given to the mastery of empathic understanding via various activities which included lecture, role play, paraphrase and group discussion techniques. Some attention was also given to discussion of use of interpersonal skills in classroom settings.

Training in the Carkhuff model involves teaching trainees to recognize the various levels of interaction in communication and encouraging them to express themselves at a higher level of functioning. For example, with regards to responding empathically Carkhuff has described the five levels for empathic responses as follows:

1. A level wherein verbal and behavioral expressions of a helper detract significantly from verbal and behavioral expression of a helper.

2. A level wherein the helper responds to a helpee's expressed feelings but subtracts noticeably from the affect of the helpee's communications.

3. A level wherein the expressions of the helper are interchangeable with thos of the helpee in the sense that they express the same effect and meaning.

4. A level wherein the helper adds noticeably to the helpee's expressions and thus encourages the helpee to express feelings at a deeper level.

5. A level wherein the helper's responses add significantly to the affect and meaning of the helpee's expressions which encourages deep self-exploration by the helpee.

A scale which was developed by Carkhuff for measuring empathic understanding is described in full in Appendix. A .

To teach the various direct communication skills the trainer offered considerable structure to the group. The earliest sessions were spent discussing the value of communicating in an empathic manner. To reinforce the idea that communication takes work some time was spent doing various paraphrase exercises. The middle sessions of the group were spent discussing various case materials and practicing role playing situations. The Carkhuff scales of respect and genuiness were also discussed. The final group sessions were spent evaluating the course materials and working at practicing rating of empathy levels of role play or case study materials. More complete descriptions of the various processes involved in the Direct Communications treatment are presented in Anderson (1971) and Matheson (1971).

These two treatments were chosen for comparison for a number of reasons. Firstly, there is a clear distinction in the role played by the trainer in each treatment, and the way in which they are perceived by the participants. The Self-Analytic trainer is usually perceived as negative, cold and rejecting, largely because he provides little structure. On the other hand, the Direct Communications trainer attempts to demonstrate and to develop warmth, empathy, positive regard; he provides considerable structure. Secondly, with regard to learning outcomes, both treatments have clear and unique primary goals in mind. While the Self-Analytic method emphasizes knowledge of group dynamics as the intended learning outcome, the Direct Communications treatment emphasizes the objective of development of greater sensitivity to expressed and latent feeling responses. Thirdly, both treatments seemed prima facie to be acceptable modes of instruction within even a conservative educational setting.

Observer Treatments

Subjects in the observation groups were randomly assigned to one of four treatment conditions. They viewed either an SAT or DCT group, receiving training in either Bales' Interaction Process Analysis or in a clinical method of observation.

(a) Bales' Observation Treatment (BOT)

Interaction Process Analysis (IPA) is a system devised by Bales (1950, 1970) by which verbal and non-verbal 'acts' are coded and recorded in one of twelve categories. A record is made of both the individual initiating the act and the person to whom it is directed. Analysis of the record made by a skilled IPA observer yields a three dimensional personality profile as well as sociometric information for each group

member. Subjects who were designated to learn IPA skills were initially given a minimum amount of direction by the course instructors, being encouraged to read Bales (1970), to familiarize themselves with the task. The learning of IPA is a very demanding task, requiring considerable concentration and application over a period of time. Understanding this, the course instructors did not "pressure" the students to become immediately proficient. Instead, a series of graduated exercises, designed to ready the students for manipulation of the IPA system, were presented at each laboratory session. For example, in the earliest sessions, the observers were required to do only 10 minutes of tallying "who speaks to whom". By the eleventh session, over 30 minutes were being devoted to the analysis and recording of the total interaction, involving all twelve participants. To motivate these students, they were told that their term assignments should reflect familiarity with the IPA system as a guide to understanding group dynamics.

(b) The Clinical Observer Treatment (COT).

Students in this treatment were given only a few guidelines. They were told that they could use a holistic approach to understanding the group. For example, they could consider the group as a "patient". Their task would be to "diagnose" its behavior from one or other of possible frames of reference; otherwise they could consider what happened as material for a novel, or a play. Note taking of behavior in the participant groups was encouraged; at the same time as use of any system which involved analysis of the ongoing process was actively discouraged. A chapter on clinical analysis in the recent text by Millon (1969) was suggested as reading. Students in this treatment were told that their term assignments should reflect evidence of clinical understanding of

	Participants	Bales Observers	Clinical Observers
Self-Analytic Group	N = 23	N = 12	N = 11
Direct Communication Group	N = 24	N = 11	N = 13

Table 1 The Research Design -(cell frequencies indicate totals derived by summing N in the two sections).

group behavior, this being understood in the sense of a synthetic, holistic approach which did not imply abnormality in the behavior being observed.

Treatment Facilities

After the pre-tests were administered the basic design was implemented in the group training facilities of Clinical Services Division of the Faculty of Education. These facilities consist of two separate rooms, (see Figure 4) which are adjoined by a one-way screen. The training room is equipped with a television camera in one corner for video recording and four concealed microphones for audio recording. For the group treatments thirteen or so chairs were placed in a circle and group members were allowed to freely choose their seats. To create a warm, informal atmosphere, the trainer of Direct Communications treatment requested that a rug and a coffee table be brought in prior to each session. Before arrival of observers or participants for the Self-Analytic treatment, the rug and table were removed. Other than these variations, the training room environment was basically similar for each group.

In the observation room, the observers sat at regular student desks and were able to view the participants from three tiers. Two speakers, which were connected to the microphones in the training room, enabled the observers to hear group interaction. Unfortunately, a good deal of difficulty was experienced on several occasions with breakdown in the

amplifying system. The research team pressed continuously during the three month experiment to have the sound improved by technicians in charge. At best, the sound was audible, but could have been improved with more expensive equipment.

The two types of observers who watched each treatment were seated on different sides of the observation room. The two doctoral students in charge of these groups were responsible for occasionally encouraging observers to keep to their tasks. Equal attention was given to both types of observers, to decrease the probability of a Hawthorne effect.

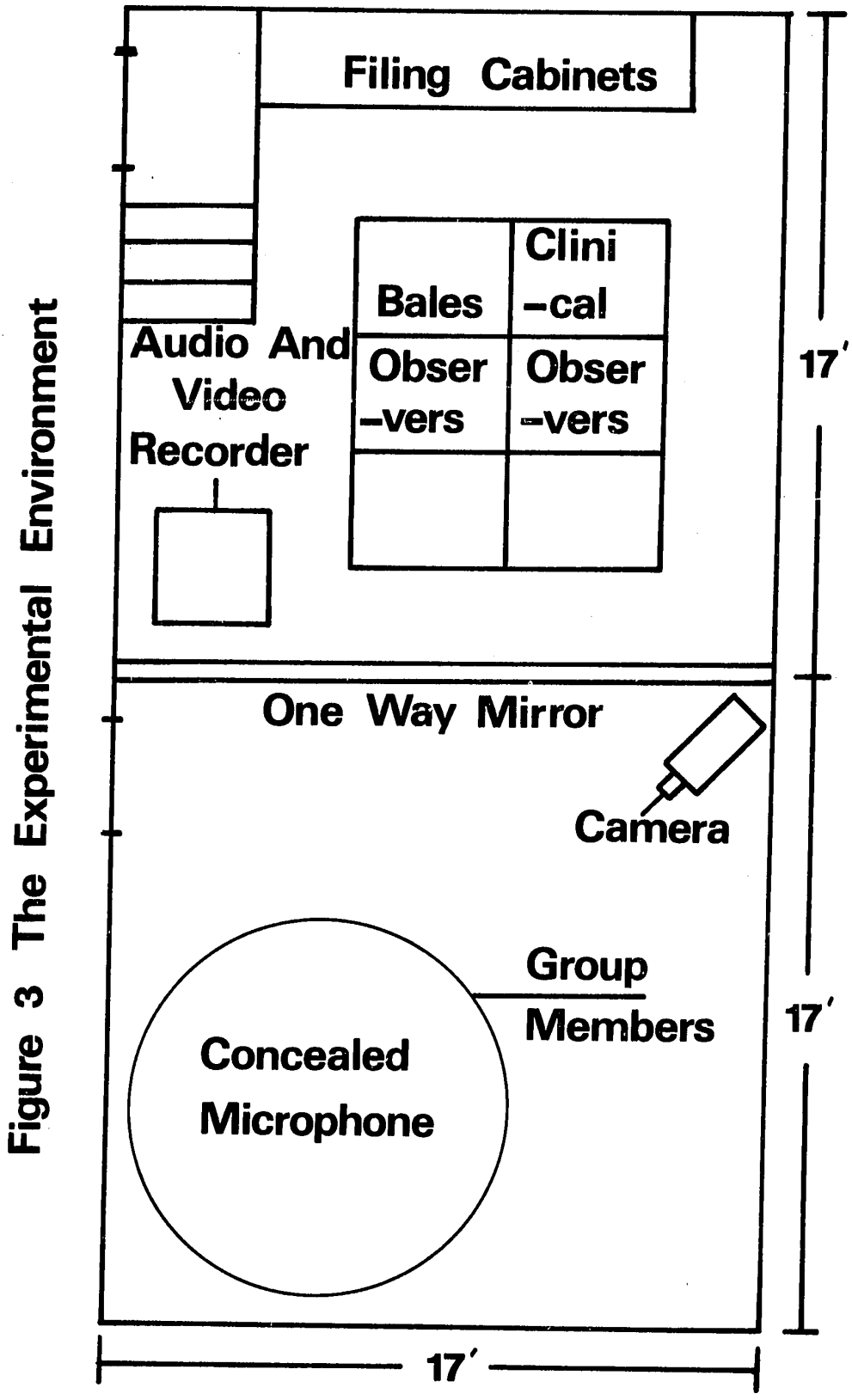


Figure 3 The Experimental Environment

Testing Instruments

In the pre and post test periods subjects were required to complete an extensive, not to say, exhaustive, battery of tests, (see TABLE 2). The results reported here include information from: (1) The 16 PF Questionnaire (Form A); (2) The Cambridge Survey of Educational Opinions; (3) The Rokeach Dogmatism Scale (4) The Carkhuff Discrimination Test; (5) The Park-Matheson Human Relations Video-Tape Test of Empathic Understanding (HRVT-Free Response and Multiple Choice Versions; (6) The Group Process Analysis Test (GPAT). The first four tests were taken home by the subjects for completion; the others were done in class. A brief description of the first four instruments is outlined below. As the HRVT and GPAT were specifically developed to assist in the evaluation of the present project, they will be described in the results section of this report.

Since the energies of a number of researchers were focussed to develop the clearest description possible of group process and outcome, a considerable amount of other information was also gathered. At periodic intervals during the experiment the subjects were asked to submit sociometric choice data, Bales' Questionnaire forms and empathy ratings of one another. Two trained Bales' observers also collected data for every session. Transcriptions of the group interaction are being copied from video-tapes of the sessions for further analysis.

The Sixteen Personality Factor Questionnaire (16 PF)

To assess personality change the Sixteen Personality Factor Questionnaire (16 PF), Form A, was administered before and after the group sessions. This instrument has been described by reviewers as reflecting a high technical order of skill and is the best factor-based personality inventory

TABLE 2 The Testing Instruments

	Instrument	Author	Variables	To assess differential changes in:
1.	16 PF Questionnaire (Form A)	R.B. Cattell	16 source traits	personality
2.	Cambridge Survey of Educational Opinions	J. McLeish	30 attitudinal variables	attitude
3.	Dogmatic Scale	M. Rokeach	1 dogmatism score	dogmatism ("open and closed mindedness")
4.	Park-Matheson Human Relations Video Tape Test (HRVT) a. free response b. multiple choice	J. Park W. Matheson	1 communication score 1 score	ability to write an empathic response ability to recognize an empathic response
5.	Carkhuff Discrimination Scale	R. Carkhuff	1 deviation score	ability to rate helpful responses
6.	Group Process Analysis Test	J. Park J. McLeish W. Matheson	1 knowledge of group process score	ability to recognize ongoing group process on a video tape.

available (Lorr, 1965). Cattell, the original author of the 16 PF questionnaire, has devoted over 30 years of research into its development. In addition, literally hundreds of studies across a variety of socio-economic levels and cultures have reported on the validity of this instrument (see Cattell et. al, 1970).

The 16 PF provides a researcher with information about a subject on the following 16 source trait dimensions: (A) Affectothymia, (B) Intelligence, (C) Ego strength, (E) Dominance; (F) Surgency, (G) Superego strength, (H) Venturesomeness; (I) Tendermindedness, (L) Suspiciousness, (M) Imaginativeness; (N) Shrewdness, (O) Guilt proneness, (Q_1) Radicalism, (Q_2) Self-Sufficiency; (Q_3) Control, (Q_4) Tension (see Appendix). These source traits were primarily identified by applying factor analytic techniques to questionnaire material. They are supposedly factors which affect large areas of overt personality behavior.Cattell et. al. (1970) claim that the instrument was constructed on a personality sphere concept - "to insure initial item coverage for all the behavior that commonly enters ratings and the dictionary descriptions of personality"(p.6). They have also stated that the 16 PF test represents "the quickest way of measuring primary personality factors yet worked out and have demonstrated comprehensiveness and good predictive capacity in relation to everyday life criteria in applied psychology". (p.8)

The 16 PF is intended for administration in either group or individual situations. Form A consists of 187 items which require approximately 45 to 55 minutes to complete.

The sets of items which contribute to the score on a given factor trait were chosen because they correlate significantly, but not necessarily with one another. Cattell et. al.(1970) report factor trait test-retest reliabilities ranging from .52 to .81 were found when the test was administered to 79 employment counselors and 67 undergraduate students. The test-retest period varied from 4 to 7 days. Over a two and one-half month period the test-retest reliability coefficients for a different sample (N=44) dropped considerably to range from .35 to .80 (Laforge, 1962). Cattell et. al. (1970) also present a considerable amount of information about the factor loadings of various items; population norms; sex, cultural and occupational differences; how to check for response sets, faking, etc., and detailed discussions about face, construct, and concrete validities of the various scales. A perusal of the information available thus indicated that the 16 PF would indeed provide a satisfactory measure of personality change in the present study.

The Cambridge Survey of Educational Opinions

The Cambridge Survey of Educational Opinions was developed by John McLeish to assess attitude changes for students in 10 Colleges of Education in the Cambridge Area. Full details on the development of this instrument are discussed in Student Attitudes and College Environments (McLeish, 1970).

This research instrument was chosen to assess the impact of the various training experiences on attitudes towards education for a variety of reasons. Firstly, it represents the most comprehensive survey of its kind and Dr. McLeish was also the principle investigator in the overall project (of which this study is a part). Secondly, the Cambridge Survey of Educational Opinions taps information about student attitudes on a wide variety

of matters. Thirdly, all scales on the instrument are considered to be reliable and valid (McLeish, 1970).

In actuality, the Cambridge Survey of Educational Opinions is composed of items which were chosen from eleven well-known tests including the CrowneWord Association List, Eysenck's Social Attitude Inventory, Eysenck's Maudsley Personality Inventory, Kissack's Opinion about Corporal Punishment in Schools, Steele's Classroom Method and Organization Wickert's Personal Values Test, Olive and Butcher's Opinions about Education, Olive and Butcher's Changes in Education, Olive and Butcher's Educational Motives, and two tests by Higson, Educational Values and Educational Activities. In the survey, eleven tests are of a paper and pencil nature which are done in one booklet. That test takes approximately 90 minutes to complete.

McLeish (1969) reports that by use of these measures it is possible to derive quantitative scores on 30 variables. The 30 variables are: anxiety, radicalism-conservatism; tendermindedness-toughmindedness, introversion-extraversion; neuroticism-stability, a corporal punishment attitude; formalism (subject centered vs. teacher directed), need for personal freedom; an attitude of helpfulness toward friends, the need for new experience for oneself; need for power over others, need for association with influential others; need for recognition by society for importance of one's work, need for social and financial security; need to be submissive, need for pride in workmanship; preference for sponaeity vs. adherence to norms in education, radicalism in education; toughmindedness in education; values placed on physical exercise, importance of aesthetic activities in everyday school life; importance of scholastic matters, religious attitude toward running a school; preference for utilitarian reasons for justifying education activities, expectations

of emotional satisfaction to be derived from working with children outside of the normal teaching setting; satisfaction with study activities designed for personal development, satisfaction expected from evaluating teaching activities; a "job satisfaction" score, a certainty score to measure degree of commitments to beliefs; and an uncertainty score.

McLeish (1970) presents 17 pages of research evidence summarizing correlational and factor analytical results which support the validity of the 30 survey scalses reported here. To distill McLeish's already concise summary even further would not do justice to the instrument. On the other hand, a discussion of the work which has gone into demonstrating each of the 30 scales validities is beyond the present discussion. The present researcher agrees with McLeish's conclusion that the scales are valid and reliable. Doubtful readers are referred to McLeish (1970), p.39-56).

The Dogmatism Scale (DS)

The procedure used by Rokeach to construct the Dogmatism Scale was essentially deductive. Various defining characteristics of open and closed systems were firts examined and then statements were designed to reflect those characteristics. Each of the statements were to be of a nature that would make them familiar to the average person and some of the statements were inspired by the spontaneous remarks of persons whom Rokeach intuitively thought were closed minded. In addition, each statement had to be designed to transcend specific ideological positions in order to penetrate the structural foundations of all positions.

In the present study Form E of the Dogmatism Scale is to be used. This scale consists of 40 items on which subjects indicate their degree of agreement or disagreement with each item on a scale ranging from

-3 to +3. The zero point is excluded to force agreement or disagreement. For scoring purposes the scale is converted into a 1 to 7 scale by adding 4 to each item. The total dogmatism score is the sum of the scores obtained on all items on this test.

A number of studies have examined the reliability and validity of the Dogmatism Scale. In one study Rokeach, Gladin and Trumbo (Rokeach, 1960, pp. 101-108) had graduate students in psychology select high and low dogmatic subjects from among their friends. The high dogmatic subjects scored considerably and significantly higher than low dogmatic subjects on the Dogmatism Scale.

With regard to reliability, Rokeach (1960) reports test-retest reliabilities ranging from .68 to .93 (p. 89). Ehrlich (1961) reports a test-retest correlation of .55 over a five year period. Vacchiano, Strauss and Hochman (1969) have reviewed a number of studies which used the Dogmatism Scale and report the reliability is "generally high" (p. 262) for adult and high school populations.

Several investigators have directed their energies to studying response-set bias to Dogmatism Scale items. Wolfer (1967) concluded that the Dogmatism Scale was not thought to be a test of the effects of social desirability. Similarly, Becker and Delio (1967, cited by Vacchiano et. al., 1969) did not find a significant relationship between Dogmatism Scale scores and performance on the Marlow-Crowne Social Desirability Scale.

Other investigators such as Katz and Katz (1967) have suggested that changes in college students' dogmatism scores may be attributed to the development of a "disagreement" response set. In his comments to those who have questioned the validity of the Dogmatism Scale, Rokeach

(1967) reiterates the substantive findings relating dogmatism scores to generalized authoritarianism. As well, Vacchiano, Schiffman, and Strauss (1967) performed a factor analysis on Dogmatism Scale items and concluded that the factors tended to group around Rokeach's conceptualizations (Vacchiano, Strauss, Hochman; 1969).

The literature review had indicated dogmatism was an important correlate of learning in some studies (Hough and Amidon,1967) and could be affected by human relations training (Haiman, 1963). It was anticipated that the Rokeach Dogmatism scale would provide a valuable variable for understanding differential treatment effects.

The Carkhuff Discrimination Scale

Carkhuff (1969a) reported a series of studies wherein a discrimination scale had been employed as a predictive indice of the effectiveness of communication training programs. The main rationale for the development of such a scale was based on the assumption that the best index of a future criterion is a previous index of that criterion. Carkhuff maintains that a certain amount of ability to discriminate between responses is essential if a counsellor is to accurately communicate empathy, positive regard, and so on. The development of a scale which would serve as a predictive index of training effectiveness thus was undertaken by Carkhuff with the hope that it would serve as a screening device for counsellor training programs.

The Carkhuff Discrimination Scale consists of 16 written client stimulus expressions which represent statements from live counselling sessions. Three dominant affect areas crossed with five dominant content areas are represented. They are:

A. Dominant Affect

1. depression-distress
2. anger-hositility
3. elation-excitement

B. Dominant Content

1. social-personal
2. educational-vocational
3. child-rearing
4. sexual-marital
5. confrontations of counsellor

Subjects taking this test are presented with four alternative counsellor statements which could be made to each client. The subjects' task is to rate each response on a five point scale with regards to whether a high or low facilitative level of interpersonal functioning is shown. A brief description of facilitative functioning is presented in the test directions (see Appendix C).

The test is scored by subtracting the subjects rating on each item from the ratings provided by two "experts" who are completely familiar with an reliable on each of the various Carkhuff scales (empathy, respect, genuineness, etc.). A mean deviation score for the 64 responses (16 expressions x 4 responses) is then caluclated. Carkhuff (1970) reports that the mean deviation score for various groups ranges from 1.5 to .4. For example, parents (N=20) $\bar{x}$ = 1.4; college freshmen (N=330) $\bar{x}$ = 1.1; teachers (N=10) $\bar{x}$ = 1.0; experienced counsellors, not systematically trained (N=20) $\bar{x}$ = .6; experienced counsellors, systematically trained (N=10) $\bar{x}$ = .4.

While the Carkhuff Discrimination Scale is successfully able to differentiate between trained and untrained groups, its use as a predictive index for individual performance has not been as successful. Indeed, Carkhuff (1969b)found virtually no correlation between pre-training discrimination ability and post-training communication ability on several criteria. Carkhuff has reported that high "communicators" are high discriminators, but the reverse is not necessarily true. Thus, he suggests that discrimination and communication abilities are independent for low functioning communicators.

Other than the results cited above for differences between groups, no further evidence of reliability or validity is presented. This scale was employed in the present study to identify changes in ability to recognize helping level responses. Increase in this ability was an intended learning outcome of the Direct Communications Treatment. It was also used to assist in determining the validity of the multiple choice version of the Park-Matheson Human Relations Video-Tape Test (HRVT).

Data Preparation and Analysis

To undertake an exploratory study such as the present one without the assistance of computer facilities would indeed be a difficult, if not foolhardy task. Thus, upon collecting the data, it was necessary to transfer important variables to computer cards. Most of the testing instruments including the 16 PF, the free response version of the HRVT, the Carkhuff Discrimination Scale, the GPAT (weighted format), and the Dogmatism Scale were scored by hand. Scores on the various scales were then transferred to IBM computer cards. The HRVT multiple choice test and an "unweighted" version of the GPAT were scored by an optical scoring facility. The present researcher, however, suspected the accuracy of the cards punched by this method. Upon checking the data sheets by hand

no less than 40 errors were found on 564 cards. These errors were of a great enough magnitude to raise doubts about the use of such a scoring facility.

The various statistical analyses reported in Chapter V were done on the University of Alberta's IBM 360/67 computer. After reviewing various arguments about how change scores should be measured (see Cronbach and Furby, 1970; Harris, 1963; Kirk, 1969), it was decided that comparison of differential effects could best be handled by analysis of covariance procedures. A program entitled ANOV 35 was used for that comparison. Various other programs were also used, but to a lesser extent in the data analysis.

CHAPTER IV

RESULTS

The basic aim of the present study was to examine the differential effects, if any, associated with either participating in, or observing, a human relations training group. A rather large net was used to trap measures of a wide range of variables. This section presents the results observed for changes in personality, attitude, dogmatism, ampathy, and understanding of group dynamics. The question of who learned what? is tackled. The development of three videotape tests is described. In addition, a brief report on a second study which combined observational and participational learning is described. A discussion of the various results has been placed in Chapter VI along with implications for future research.

Increase of Cell Frequency

In this kind of research on the effects of small groups, the investigator who wishes to employ sophisticated statistical techniques experiences difficulties in obtaining cell frequencies large enough to provide for statistical sensitivity and yet small enough to preserve the quality of the small group. For the present study, it would have been most desirable to obtain large groups of observers. Due to cramped observation room facilities, however, this was not possible. The different observer groups usually had only 5 to 7 members, with two observer groups watching a participant group of 11 to 13 members. To increase power in the present experiment, the data were analysed by several different methods to insure that no differences which are statistically significant are obscured. In actual design, the experimental set up was 2 by 3. This was replicated insofar as there were two groups involved in each kind of treatment, cor-

responding to the two sections of the course.

To increase the power of the various statistical analyses, cell frequencies were increased by suppressing "time of treatment" as a treatment factor. In effect, the results obtained from corresponding groups in different sections were combined "as if" they had been in one section of the course. In most instances the effect of suppressing the time variable did not hide critical differences in outcome.

Personality Change

The first variable examined here is change in personality variables, as represented by Cattell's 16 Personality Factor Test (16 PF), Form A, administered before and after completion of the treatments by all students taking part. To ensure that there were no significant differences between the replicated groups equivalent treatment in each section of the course were compared on the 16 PF test by means of the "t" statistic. No significant differences beyond those expected by chance were found.

Campbell and Stanley (1963) have suggested that one can have an implicit faith in the use of post-test measures only, in measuring treatment differences, if one makes use of proper randomisation procedures. The present researcher would have like to have had this faith, but decided to obtain pretest measures as well to assist in determining the direction of significant changes. However, it was possible early in the experiment to check the effectiveness of the randomization procedures, using multiple discriminant analysis. This technique generates a minimum number of dimension vectors onto which the various treatment groups are projected for comparison purposes. An F ratio indicates whether or not the differences between groups along the vectors are significant. In this instance, the

TABLE 3

Results of Pre-test and Post-test: 16 PF Mean Scores

Factor Name	Rel.	Self-Analytic Treatment						Direct Communications Treatment						Grand Mean N=94		Standard Deviation N=94	
		Participants N=23		Bales' Obs. N=12		Clinical Obs. N=11		Participants N=24		Bales' Obs. N=11		Clinical Obs. N=13					
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. Outgoing	.59	10.9	10.9	10.8	11.8	10.2	9.9	11.1	11.7	12.1	11.6	10.2	10.8	10.9	11.2	2.8	3.0
2. Intelligent	.60	9.3	9.3	9.3	8.4	8.9	9.1	9.8	9.8	8.8	8.6	9.5	9.2	9.3	9.1	1.7	1.7
3. Stable	.68	15.6	15.2	13.4	12.6	16.5	16.9	15.2	15.3	14.2	13.2	14.4	13.1	15.0	14.6	3.7	4.3
4. Assertive	.71	12.5	13.3	10.6	12.0	11.9	11.7	12.1	11.6	12.6	13.1	12.2	12.9	12.1	12.4	4.2	4.2
5. Happy-Go-Lucky	.75	15.4	14.4	14.8	13.2	13.9	14.6	15.6	15.2	13.7	14.6	17.0	15.4	15.2	14.6	4.2	4.3
6. Conscientious	.68	12.7	11.3	12.3	12.9	13.3	12.7	13.3	13.1	11.6	10.8	12.7	11.5	12.7	12.1	3.7	3.8
7. Venturesome	.78	12.7	13.0	12.3	13.5	11.2	12.5	13.4	13.2	12.1	11.4	12.6	13.4	12.6	12.9	5.3	5.2
8. Tender-Minded	.60	11.4	11.2	11.7	11.6	11.7	12.0	11.3	10.9	11.9	12.3	9.6	10.8	11.3	11.4	2.8	2.7
9. Suspicious	.57	8.0	9.0	9.3	7.7	7.6	7.5	8.0	8.2	9.8	9.2	9.3	8.5	8.5	8.4	3.1	3.2
10. Imaginative	.53	12.7	13.3	13.8	13.9	12.2	13.7	11.8	12.2	13.8	15.5	12.5	14.2	12.6	13.5	2.8	3.3
11. Shrewd	.36	9.8	9.3	9.7	9.8	9.0	9.2	9.6	8.6	9.1	8.4	9.3	9.3	9.5	9.1	2.5	2.9
12. Apprehensive	.77	9.8	10.3	12.5	11.8	8.5	8.0	10.6	12.3	10.5	10.7	12.0	11.2	10.6	10.9	3.4	4.1
13. Experimental	.46	10.7	10.6	11.1	10.8	9.6	9.5	10.7	10.5	10.5	9.7	10.3	10.6	10.5	10.4	2.3	2.5
14. Self-Sufficient	.71	11.9	12.0	12.3	12.5	12.6	12.9	11.4	11.1	12.0	11.2	11.0	12.6	11.8	11.9	3.4	3.3
15. Controlled	.60	9.5	9.0	9.3	9.4	11.6	9.8	11.0	10.6	9.5	9.2	9.8	8.9	10.1	9.6	3.1	3.0
16. Tense	.69	11.9	13.2	13.4	12.7	9.1	12.1	13.2	14.5	13.2	14.2	13.2	15.0	12.4	13.7	4.3	4.4

F ratio (F = 0.86, d.f. = 80/356) from all pre-test 16 PF data turned out to be non-significant (p .05). This lent credence to the randomization procedures employed, and belatedly brought a convert to Campbell and Stanley's persuasion.

To examine differences between the six groups, discriminant function analysis was again used on the post-test data. Again, the F ratio was non-significant (F=.39, d.f.=80/356). To determine whether or not any pre-to-test changes were significant a number of other comparisons were also performed using discriminant function analysis to aid in visualizing change. For example, the pre and post scores of the participants, Bales' observers, and clinical observers were examined. The discriminant function analysis generated five vectors which separated the groups in space. The first two vectors can be used to provide a visual aid (not reproduced here) from which it appears that although none of the movement of the groups in this two-dimensional space are significant statistically, in all instances the groups (Bales' observers, clinical observers and participants) move in similar directions. But as indicated, the F ratio being only 0.11 (p .35) it is not worth speculating on possible reasons for this. Other similar analyses were used to examine differences between pre and post self-analytic and direct communications groups; and all subjects pre vs. all subjects post. All observed F ratios were non-significant. Consequently, it was decided to make use of a more powerful statistical test by eliminating as much of the error variance (resulting from the randomisation process and the individual differences between student participants in the experiment) as possible.

The results of the discriminant function analysis portended that there would be no significant outcome differences between treatments. However, the use of covariance analysis, using pre-test scores as covariates, provided a more appealing, because more powerful, statistical test.

Table 3 reports the pre and post 16 PF means obtained from subjects in each of the treatment conditions. The Pearson reliabilities over the experimental period are also shown.

To determine whether any of the treatment conditions were associated with personality change, a two-way multivariate analysis of covariance was employed. The application of this technique involves a number of matrix manipulations which are only possible through the use of advanced computing facilities. In this particular instance, it enabled the present researcher to examine whether any significant differences were evident between the personality score points in all 16 dimensions taken separately or thrown together on the basis of any system of weighting whatever. This answer is obtained in a comparison of the six treatment groups when pre-test scores are rendered equivalent for all groups.

This particular statistical technique generates adjusted post scores which reflect raw residual gain. Up to the present, the best description of this most complex analysis has been provided by Bay (1971).

The results of the multivariate analysis of covariance indicated:

1. No significant differential effects were observed between subjects in either the Self-Analytic treatment and the Direct Communications treatment ($F=.11$ $p=.41$).

2. No significant differential effects were observed between participants, Bales' Observers, and Clinical Observers ($F=.79$ $p=.77$).

3. No significant differences due to an interaction effect between being a subject in either human relations treatment and the participant or observer treatments ($f=.10$, $p=.40$).

Since all the F ratios obtained were non-significant, further comparisons using univariate covariance analyses or gain scores as indicators of change would be superfluous. The only other differences which appeared were between men and women on both pre-and post-test. On pre-test men scored significantly higher than women on Factor 4 and lower on Factors 1, 8, 10, and 16. On post-test they scored lower than women on Factors 1, 5, 8, 10, 12 and 16 (see Appendix E, Table E1). This is in accordance with expectation according to Cattell's norms.

Failure to find any significant systematic changes in personality was anticipated as the literature review had suggested the basic characteristic traits do not seem to be affected by human relations training. It was hoped, however, that personality variables would help solve the question of what type of individual learned from the experiment as measured by the HRVT and GPAT.

Attitude Change

To measure attitude change, McLeish's Cambridge Survey of Educational Opinions (CSED) was administered prior to and immediately after the group treatments. Table 4 reports the pre-test and post-test mean scores obtained by the subjects on 30 variables measured by that instrument. Pre-test and post-test Pearsonian correlations are also presented in Table 4.

As a further check on randomization procedures a one-way analysis of variance was performed on the pre-test scores which compared the groups in the six treatment conditions. Of the 30 variables examined, only one, Tender-mindedness, yielded a large enough F to indicate significant differences between groups ($F=2.38$, $p<.05$). Inspection of Newman-Keuls comparisons indicated that while the Direct Communication Bales' Observers and Self-analytic Clinical Observers were more tenderminded than the Direct Communication Clinical Observers, the differences were not significant. Thus, the randomization procedure was once more judged to be sound.

To determine whether or not any of the treatments generated differential effects an analysis of covariance (2 x 3) was performed for each on the 30 CSED variables. Pre-test scores were used as covariates and post-test scores were criteria. The F ratios obtained from those analyses showed none of the differences in TABLE 4 are significant ($p<.05$). The complete absence of significant differences strongly suggests that there were no differential changes in attitude, as measured by the CSED, associated with either participating in, or observing, the human relations training groups in the present study.

Since no statistically significant differences were observed between the various groups, it was decided that the 94 subjects could be considered

as one group for examining change. A correlated test was used to determine which of the differences between the pre-test grand means and post-test grand means were significant. During the test-retest interval significant changes were observed on Toughmindedness in Education ($t=2.13$, $p<.05$); Physical Value ($t=2.3$, $p<.05$), and Scholastic Value ($t=2.8$, $p<.01$) for the total group ($N=94$). The decrease in the grand mean over the test-retest period, shown in Table 4, indicates the subjects became less accepting of developing high standards of discipline and morals in education. In effect, the subjects decreased in utilitarian attitude toward the curriculum. This result may reflect some annoyance with the instructors for insisting upon punctuality, completion of test assignments, and so on. It is interesting to note in Table 4 that with the exception of one group of self-analytic participants (SAT 9) whose mean scores rose slightly, all groups in both sections decreased on this scale.

Table 4 also shows that the subjects increased by almost 1 point on the Physical Value scale. This increase showed that the subjects became more in favour of games, fresh air, and exercise, in education activities rather than more academic pursuits. The decrease reported in Table 4 for Scholastic Value also reflects declining interest in academic values. This decrease was noted across nearly all groups in both sections, except the SAT 9 Bales' observers. That group's mean score increased almost 1 point. The increase in Physical Value and the accompanying decrease in Scholastic Value raises the possibility that an appreciation was being developed for courses of an experiential nature, like the one present experiment. Without the benefit of the results of another section to serve as a control, it is, of course, only possible to speculate that these changes may have resulted

TABLE 4

Results of Pre-test and Post-test: Cambridge Survey Mean Scores

Variable	Rel	Self-Analytic Treatment						Direct Communications Treatment						Grand Means		Standard Deviation	
		Participants N=23		Bales'Obs. N=12		Clinical Obs. N=11		Participants N=24		Bales'Obs. N=11		Clinical Obs. N=13		N=94		N=94	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. Anxiety	.71	8.8	8.5	8.6	7.8	9.5	9.3	7.9	7.7	6.4	7.6	10.0	9.3	8.5	8.3	4.5	5.1
2. Radicalism	.52	7.4	7.1	7.8	7.8	7.0	7.2	7.4	7.3	8.4	7.9	6.1	7.3	7.3	7.4	2.4	2.5
3. Tender-mindedness	.51	6.3	6.6	6.3	6.3	7.8	7.7	6.1	6.3	7.9	7.2	5.9	6.5	6.6	6.7	2.1	1.8
4. Extraversion	.75	12.3	13.0	13.4	13.0	12.5	13.5	13.6	13.9	13.9	14.1	13.3	13.8	13.1	13.5	4.2	4.4
5. Neuroticism	.65	7.6	7.5	7.1	7.3	6.4	7.2	7.4	7.2	6.9	7.9	8.3	7.4	7.3	7.4	2.9	3.3
6. Punishment	.60	3.5	3.5	3.7	3.7	4.0	3.7	3.9	3.8	3.9	3.5	3.8	3.5	3.8	3.6	1.7	1.7
7. Formalism	.57	9.3	9.9	8.7	8.3	11.2	9.9	9.4	9.3	9.6	7.9	10.5	9.0	9.7	9.2	3.9	4.1
8. Freedom	.49	8.9	9.4	7.7	9.0	8.5	8.6	8.5	8.1	9.8	9.4	8.2	9.2	8.6	8.9	2.8	3.0
9. Helpfulness	.16	12.1	11.4	11.9	12.1	11.0	10.7	10.9	11.8	11.1	11.4	11.2	11.8	11.4	11.5	1.7	2.0
10. Experience	.60	10.3	10.4	11.1	10.9	9.9	10.6	10.4	11.5	10.7	11.2	10.5	11.3	10.5	11.0	2.3	2.6
11. Power	.39	4.4	4.4	3.8	4.1	5.5	6.2	5.3	3.9	4.5	5.0	4.7	4.7	4.7	4.6	2.3	2.4
12. Recognition	.35	6.8	6.3	5.4	5.2	5.5	6.5	5.6	5.9	5.3	4.5	6.5	5.8	6.0	5.8	2.4	2.4
13. Response	.57	6.1	6.7	7.5	6.8	6.5	7.2	6.4	6.8	5.9	6.5	6.4	6.2	6.4	6.7	2.2	2.1
14. Security	.54	9.0	8.6	9.1	9.2	8.5	7.5	8.8	8.5	8.5	8.8	9.7	9.7	8.9	8.7	2.4	3.0
15. Submission	.34	6.0	5.9	6.5	5.8	6.3	6.2	6.2	6.1	7.0	5.9	6.7	5.9	6.4	6.0	1.9	1.9

TABLE 4 (Continued)

Results of Pre-test and Post-test: Cambridge Survey Mean Scores

Variable	Rel	Self-Analytic Treatment						Direct Communications Treatment						Grand Mean N=94		Standard Deviation N=94	
		Participants N=23		Bales' Obs. N=12		Clinical Obs. N=11		Participants N=24		Bales' Obs. N=11		Clinical Obs. N=13					
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
16. Workmanship	.39	9.3	8.8	10.2	10.0	10.1	11.0	10.4	9.6	9.4	9.5	10.1	7.9	9.8	9.4	2.5	2.4
17. Naturalism in Ed.	.61	10.1	10.4	10.1	10.3	9.7	9.5	10.1	11.1	10.5	10.4	10.2	10.4	10.1	10.4	2.7	3.0
18. Radicalism in Ed.	.51	49.0	48.6	47.6	47.7	48.3	49.3	50.1	48.6	47.5	48.9	48.4	49.8	48.8	48.8	7.5	8.2
19. Toughmindedness in Education	.34	13.6	12.9	11.9	10.2	14.5	12.9	11.8	10.9	11.5	11.2	12.8	11.5	12.6	11.6	3.7	4.2
20. Certainty	.48	43.6	41.2	55.3	48.4	44.8	37.5	41.7	43.4	44.8	50.8	39.8	47.5	44.4	44.3	21.1	22.2
21. Uncertainty	.56	19.5	15.6	18.9	17.8	9.0	16.3	22.1	17.0	16.3	14.2	19.5	19.8	18.5	16.7	13.3	12.6
22. Physical Value	.49	26.1	27.8	27.7	26.9	26.1	26.6	26.4	28.0	25.2	25.7	26.8	27.7	26.4	27.3	3.4	3.9
23. Aesthetic Value	.69	28.9	30.4	31.1	30.0	31.5	30.0	29.6	28.7	28.8	29.4	30.1	28.8	29.8	29.5	5.1	4.8
24. Scholastic Value	.45	34.6	32.4	34.1	33.9	33.8	33.5	35.1	34.1	34.0	33.3	36.2	34.9	34.7	33.6	3.5	3.7
25. Religious Value	.61	28.6	27.9	26.1	27.0	29.0	28.8	26.6	27.4	29.3	29.5	27.5	27.1	27.7	27.8	4.8	4.7
26. Utilitarian Value	.49	21.2	21.7	23.3	22.9	20.3	21.4	22.4	21.8	22.7	22.5	21.5	21.4	21.8	21.9	3.7	3.5
27. Emotional Satisfaction	.46	14.1	13.8	13.4	14.1	13.9	13.2	13.1	13.5	13.5	13.8	13.5	13.4	13.6	13.6	2.1	2.2
28. Personal Study	.33	14.7	13.9	16.3	15.8	14.3	13.0	14.9	15.0	14.7	14.5	14.9	15.0	14.9	14.5	2.1	2.7
29. Professional Development	.21	16.9	16.0	18.1	18.8	24.4	16.5	18.0	18.4	18.4	17.1	17.2	17.2	17.6	17.3	2.5	3.1
30. Job Satisfaction	.41	8.9	7.4	10.6	11.3	8.9	7.7	8.7	9.4	8.9	8.5	8.3	8.8	9.0	8.8	3.5	3.9

from the experimental situation.

There has been some indication in the literature (Olch and Snow) that subjects who volunteer for human relations training courses differ from others who do not volunteer. While a comparable group of subjects was not available to examine that hypothesis, McLeish (1971) has provided norms for incoming Faculty of Education students. In comparison to the freshman group (N=562) in the McLeish report, the attitudes of the students in the present study were, in general, quite similar. Both groups were tested in September 1970. The experimental group was lower in Anxiety, Extraversion, Formalism in Education, and higher in Radicalism and Naturalism in Education than the freshmen group. In most instances these differences were between one-half to one and one-half points. These differences, however, are likely due to the experimental group having more experience at university.

McLeish (1971) also reported the norms for incoming education students (N=177) who had degrees from other faculties. When the experimental group was compared with that group, only three scales showed differences of more than one-half point. The means of the experimental group were higher than those of the after-degree students on the Neuroticism scale and Naturalism in Education, but lower on the Aesthetic Value scale. These results imply that the students who volunteered for the experiment, held attitudes and values which were similar to those of other education students in the faculty.

Change in Dogmatism

The review of the literature indicated that dogmatism, or closed-mindedness, might be an important variable to examine when investigating differential effects of human relations training. The literature had suggested that dogmatism could be pertinent for at least two reasons. Firstly,

one of the originalgoals of T-group as listed by Bradford et. al., (1964) was to enhance values of democracy. Egan (1970) stated that human relations training should make one more open to their experiences. Indeed, to successfully become truly empathic implies that one must suspend critical judgments about another person to truly attempt to view the world the way he sees it. Thus, it was suspected that decreases in dogmatism might be associated with the various forms of training.

The second reason for attaining a measure of dogmatism was to determine whether or not it is related to learning, as measured by gains on the HRVT or GPAT instruments. Hough and Amidon (1967) had reported that pre-test to post-test changes on the Teacher Situation Reaction Test were positively related to dogmatism (r=.38).

To obtain measures of dogmatism, the Rokeach Dogmatism Scale (Form E) was administered as a take home test before and after training. The results of the pre- and post-test administrations are reported in TABLE 5.

The wide range of scores of the various groups is particularly noticeable on TABLE 5. This range is primarily due to the large dispersion of scores on the test. The lowest score observed was 89, while the highest was 208. The standard deviation for the whole group was 23 for the pre-test and 34.5 for the post-test. The Pearson correlation observed between both administrations was .54.

Since rather large differences in mean dogmatism scores were observed between corresponding groups in the two sections of the course, it was felt that some statistical justification should be sought before increasing the cell frequency by combining sections. T-tests on both the pre-test and post-test data which compared corresponding groups in the two sections were calculated. For instance, SAT 9 and SAT 11 participants scores were

TABLE 5

Results of Pre-tests and Post-tests: Dogmatism Mean Scores

	Participants n=47		Bales Observers n=23		Clinical Observers n=24		Total n=94	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Self-Analytic Treatment								
n=46								
SAT 9	132.6	138.9	126.0	127.3	125.8	114.5	129.2	129.9
SAT 11	152.4	136.6	133.2	138.7	141.2	149.2	144.6	140.0
Combined	142.0	137.8	129.6	133.0	132.8	130.3	136.5	134.7
Direct Communications Treatment								
n=48								
DCT 9	146.8	152.2	131.5	131.7	130.6	135.1	138.6	142.5
DCT 11	133.8	138.2	164.6	153.4	128.7	128.0	139.1	138.8
Combined	140.3	145.2	146.5	141.3	129.7	131.8	138.8	140.7
	141.1	141.6	137.6	136.9	131.1	131.0	137.7	137.8

compared. No significant t statistics were observed and thus the corresponding groups were combined to increase cell frequency.

To determine what, if any, differential changes were present for groups in the six treatment conditions a 2 x 3 analysis of covariance procedure was employed. Pre-test dogmatism scores were used as a covariate and post-test dogmatism scores were the criterion. The results of that analysis are presented in TABLE 6.

TABLE 6

Analysis of Covariance of Dogmatism Scores

Source	df	Mean Square	F	p
A (SAT vs. DC)	1	81.3	.21	.64
B (Part. vs. Bales' Obs. Clin. Obs.)	2	298.1	.78	.46
A x B	2	714.2	1.87	.16
Error	87	380.2		

As can be observed in TABLE 6 none of the F ratios obtained from the analysis of covariance are significant. These results suggest that no differential effects on dogmatism scores are noted for subjects who participated in, or observed, the human relations training groups in the present study.

No comparative group was available to determine how representative the dogmatism scores are of the experimental group in relation to other students in the Education faculty. However, in an earlier study Sawatzky (1968) reported that a mean of 140.7 was observed on the Dogmatism Scale (Form E) for 15 fourth year educational psychology students in that faculty.

Change in Discrimination Ability

The main intended learning outcome of the Direct Communications Treatment was to develop understanding about the processes of facilitative communication, with special emphasis on empathic communication. With that outcome in mind, the DC trainer's task was to (1) increase the subjects' abilities in recognizing various levels of empathy, and (2) increase subjects' abilities in communicating at a higher level of empathy. To assist in outlining the position of empathy in helping processes, the trainer also spent several sessions discussing other dimensions. The discussions included practice with rating of respect, genuineness, confrontation on various scales developed by Carkhuff (1969a).

The Carkhuff Discrimination Test was employed to determine which, if any, of the groups had increased in ability to rate "facilitative" responses. Subjects taking this test rate response to 16 client stimuli expressions on a 1 to 5 scale. These ratings are then subtracted from the ratings of experts and a mean deviation score is calculated for each subject. Low mean deviation scores such as .4 or less are considered as evidence of being able to show expertise in recognizing facilitative responses.

For the groups in the present study the pre-test and post-test mean deviation scores obtained by the various groups are reported in TABLE 7. By examining TABLE 7 it was observed that the self-analytic groups showed virtually no improvement in ability to discriminate on the Carkhuff Discrimination Test over the treatment period. All direct communication groups, however, showed considerable improvement in lowering their mean deviation scores from a pre-test average of 1.01 to a post-test average of .72.

TABLE 7

Results of Pre-test and Post-test: Carkhuff Discrimination Scores

	Participants n=47		Bales Observers n=23		Clinical Observers n=24		Total n=94	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Self-Analytic Treatment								
n=46								
SAT 9	.96	.92	.91	.91	1.00	1.01	.96	.94
SAT 11	1.07	1.11	1.14	1.01	1.02	.98	1.07	1.05
Combined	1.01	1.01	1.02	.96	1.01	1.00	1.01	.99
Direct Communications Treatment								
n=48								
DCT 9	,97	.63	1.14	.78	1.13	.82	1.05	.72
DCT 11	.94	.66	1.07	.88	.98	.67	.96	.71
Combined	.96	.64	1.11	.83	1.07	.75	1.01	.72
	.98	.82	1.06	.89	1.04	.86	1.01	.85

For the statistical analyses the corresponding groups in both sections were combined. A 2 x 3 analysis of covariance was performed on the data. The results of that analysis are reported in TABLE 8.

TABLE 8

Analysis of Covariance of Carkhuff Discrimination Scores

Source	d.f.	Mean Square	F	p
A (SAT vs. DCT)	1	1.26	15.02	$<.001$
B (Part. vs. Bales' Obs. vs. Clin. Obs.)	2	.008	.10	.91
A x B	2	.11	1.33	.27
Error	87	.084		

The highly significant F ratio of 15.02 ($p<.001$), shown in TABLE 8 for the training factor (A), indicated that the DC groups did show strong evidence of learning to rate facilitative responses, while the SAT groups did not improve in this skill. Within the Direct Communication Treatment, the DC participants were better at discriminating response levels at the end of the experiment. However, a Newman-Keuls test for simple main effects indicated that the differences between these groups gains in discrimination ability are not statistically significant.

Intended Learning Outcomes: The Development of Three Tests

It is rather unfortunate that despite the amount of energy which advocates of human relations programs have spent developing various approaches to training, very little creative effort has been devoted to developing valid measures of specific intended learning outcomes. Prior to the present study an exhaustive search of the literature was undertaken to find

evaluation instruments which could be used to measure (1) improvement in communication ability, (2) improvement in understanding of group dynamics. The absence of instruments which could assess those intended outcomes was quite disappointing. The research team was thus faced with either forgetting about the measurement of learning and focussing only on process variables, or developing suitable criterion instruments. This latter alternative was chosen. In the major project, the present researcher was charged with the responsibility of developing these instruments, but required considerable assistance from Dr. McLeish and Wayne Matheson. The development of the two versions of the Park-Matheson Human Relations Video-Tape Test (HRVT) and the Group Process Analysis Test (GPAT) are thus a product of our attempt to investigate the differential effects of the groups described herein.

The Park-Matheson Human Relations Video-Tape Test

In the summer of 1970, Park and Matheson had been working with E.L. Eberlein, an associate professor at the University of Alberta, and a number of graduate students trying to develop a video tape test for measuring "helpful" responses to a group member. Upon administering that test in a pilot-study, it became apparent that this first test was inadequate for the present project. The instructions were not specific enough, the interval between scenes was too short, too many members on the tape spoke, and so on. With the benefit of knowledge acquired producing that video-tape, Park and Matheson produced a second video tape which was designed to measure increases in empathic understanding (using Carkhuff's Empathy Scale for rating purposes).

In brief, this test now contains 16 scenes, each of which show 5 individuals in a group situation. Twelve scene are from the second video-tape, four are from its prototype. The viewer is instructed to consider

himself as the sixth member of the group. Each scene lasts approximately one minute and shows one or more the group members expressing their personal feelings about some problem or situation. At the end of each scene the screen goes blank for one minute while the subject taking the test responds to a designated group member. The test has been developed so as to allow the respondent to follow two kinds of instructions (see Appendix A):

1. The viewer is asked to write responses which show a high degree of communication of empathic understanding; subsequently,
2. The viewer is asked to select from five alternatives the response which shows the highest degree of empathic understanding.

In this investigation the subjects were first required to complete the free response version. They were then re-shown the videotape and completed the multiple choice version. This procedure was followed for both pre- and post-treatment administrations of the HRVT.

Change in Communication of Empathy: HRVT-Free Response Version

To determine whether or not any of the subjects had indeed increased in their ability to communicate empathic understanding the 2908 written responses obtained from the pre- and post-testing sessions were typed individually on 5 x 8 sheets. This procedure was adopted so as to reduce the possibility of raters being influenced by handwriting differences. As raters on the Carkhuff rating scale of empathic understanding were in short supply, two trained members of the research team undertook a blind analyses of the data. These raters were chosen from a larger group on the basis that they demonstrated previously that they

showed considerable agreement in using the empathy scale, and that their ratings were valid. One of the raters had taught the scale to an experiential group in a pilot run before the present study. Both raters deviated less than the accepted 0.4 points from Carkhuff's expert raters on his pencil and paper discrimination instrument.

After each rater had scored each of the pre- and post-treatment responses comparison of their ratings were made. The initial correlation for their ratings of 2,908 items was .76. Prior to this initial rating the raters agreed that they would re-score items where they differed by more than 0.5 points. Less than 10% of the items fell into this category, 220 in all, 122 of these disagreements being contributed by responses to scene 12. After further discussion of the nature of the scale, the raters evaluated these 220 items independently. After this second round they differed by more than 0.5 points on only approximately 40 responses. These were again re-examined independently. Finally a third rater was consulted to settle the 10 or so cases where discrepant items could not be agreed upon. In this way, the inter-rater reliability was increased to 0.95 for the 2908 responses, with the two raters virtually in 100% agreement on the scale-value of each response, to within 0.5 points. The split half reliabilities were .88 and .92 for the pre- and post-tests, respectively, without applying a Spearman-Brown correction for length.

Table 9 reports the means observed for subjects in the six types of treatment groups for pre- and post-treatment administrations of the Park-Matheson Human Relations Videotape Test of Empathic Understanding.

The results show distinct gains for all groups from pre- to post-treatment. In particular, impressive gains are noted for all three types

of groups in the direct communications training sessions. According to Carkhuff, the minimal level for facilitative empathic communication is a 3.0 rating on a given response. In this 16 scene HRVT test this would mean that an average score of 48 is required to demonstrate that the "average" member had reached the minimally facilitative level. In this experiment the post-treatment average response level for subjects in the Direct Communications situation was approximately 2.4 while the average for the Self-Analytic group subjects was only 1.6. What is particularly interesting in Table 9 are the gains made by the DC observers who showed evidence of learning the empathy skills in spite of the fact that their task was defined as either learning a system of interaction analysis or sharpening their clinical awareness of ongoing group processes.

It is also interesting to note in Table 9 that all groups in the Self-Analytic Treatment improved their scores over the experiment. Subjects in that treatment showed an average gain of 5.6 points. This increase was not a primary intended learning outcome of the Self-Analytic Treatment. Three possible explanations of this phenomenon are discussed in the next chapter.

By combining corresponding groups and carrying out a two way analysis of covariance on the HRVT free response data using pre-test scores as covariate, and post-test scores as criterion measure, it was possible to determine whether the effects of any particular treatment were significant. The results of that analysis are reported in Table 10.

The analyses reveal that the subjects in the two types of training situations (SAT or DC) differed very significantly on their performance on the Free Response version of the HRVT. The Direct Communications groups scored significantly higher than the subjects in the Self-Analytic groups

TABLE 9

Results of Pre-test and Post-test: Mean Scores on the Park-Matheson HRVT (Free Response)[1]

	Participants n=47		Bales Observers n=23		Clinical Observers n=24		Average Gain
	Pre	Post	Pre	Post	Pre	Post	
Self-Analytic Treatment n=46							
SAT 9	21.5	27.2	20.0	27.0	23.0	29.0	
SAT 11	20.5	25.1	20.3	27.1	20.9	24.4	
Combined	21.0	26.2	20.2	27.4	22.1	26.9	+5.6
Average Gain	+5.3		+6.9		+4.8		
Direct Communications Treatment n=48							
DCT 9	20.1	43.2	18.5	33.0	20.8	35.2	
DCT 11	24.9	39.3	22.2	35.8	22.2	34.1	
Combined	22.9	41.2	20.2	34.3	21.4	34.7	+15.9
Average Gain	+18.3		+14.1		+13.2		

[1]To obtain average level of response divide each score by 16.

TABLE 10

An Analysis of Covariance of Park-Matheson HRVT Scores (Free Response Version)

Source	df	Mean Square	F	p
A (SAT vs. DC)	1	1948.4	32.38	.001*
B (Participants vs. Bales Obs. vs. Clinical Obs.	2	61.9	1.03	.36
A x B	2	91.2	1.52	.23
Error	87	60.2		

* $p < .05$ is level for significance in present study

(gaining three times as much). While the participants in the DC group showed the greatest increases in development of ability to communicate empathic understanding, their gains were not significantly greater than either of the observer groups.

Change in Ability to Recognize Empathic Responses: HRVT-Multiple Choice Version

For the multiple choice version of the HRVT the video tape was replayed and subjects were asked to select from five alternatives the response which shows the highest level of empathy to a designated group member in each scene. The alternatives for each scene were selected from the responses of various individuals who volunteered to preview the tape. These individuals included professional counsellors, professors, graduate and undergraduate students. An inspection of their responses to the test indicated that items showing various levels of empathy were available for each scene. Due to time considerations only 10 of the 16 scenes were used in the pre-test situation, however, the post-test was lengthened to 16 items.

In its current stage of development the multiple choice version of the HRVT is a "best" answer test which is scored on an "all or nothing" basis. That is to say, subjects receive "1" if they are able to choose the response which shows the highest degree of empathic understanding to the designated group member on video-tape. The choice of any other alternative receives a "0" mark. The maximum possible score was 10 on the pre-test, and 16 on the post-test.

The results of the HRVT multiple choice test for pre- and post-treatment administrations are shown in TABLE 11. The trends reported in that Table are somewhat similar to thos found on the Free Response Version

TABLE 11

Pre-test and Post-test Results: Mean Scores on the HRVT-Multiple Choice Version

	Participants n=47		Bales Observers n=23		Clinical Observers n=24		TOTAL	
Self-Analytic Treatment	Pre	Post	Pre	Post	Pre	Post	Pre	Post
N=46								
SAT 9	3.9	6.9	3.3	5.8	4.3	7.5		
SAT 11	3.4	5.9	4.5	5.8	2.8	5.0		
Combined	3.7	6.4	3.9	5.8	3.6	6.4	3.7	6.3
Direct Communications Treatment								
N=48								
DC 9	3.6	6.7	3.0	6.8	3.6	6.9		
DC 11	3.6	8.1	3.8	7.0	3.2	6.7		
Combined	3.6	7.4	3.4	6.9	3.4	6.8	3.5	7.1

of the HRVT. Once again the subjects in the Direct Communications Treatment generally outperformed subjects in the Self-Analytic Treatment. Their overall mean was 7.1 in comparison to the SAT overall mean of 6.3. What is quite surprising in TABLE 3 are the healthy performances shown by the SAT 9 participants and the clinical observer group who observed them. The post-test mean scores of these two groups is higher than several of the DCT groups. TABLE 11 also shows the mean scores of the DCT participants as higher than either of the two kinds of observer groups who witnessed that training.

The pre-test and post-test means were 3.6 and 6.7, respectively. Scores ranged between 0 and 7 on the pre-test, and 0 and 11 on the post-test. The K-R_{20} reliability for the pre-test was .54. This statistic increased slightly to .58 probably due to lengthening of the test.

To determine which, if any, of the differences reported in TABLE 11 are significant a 2 x 3 analysis of covariance was carried out. The results of that analysis are reported in TABLE 12.

The statistically significant F ratio reported in TABLE 12 indicates the presence of a differential effect between the two basic human relations treatments on the HRVT multiple choice test. In general, subjects in the DCT groups improved significantly more in their ability to recognize a highly empathic response than subjects in the SAT groups. While the DCT participants earned higher scores than the observer groups who watched them, these differences were not statistically significant.

The results of the two HRVT tests it can be said were quite consistent. They are summarized as follows:

1. the DCT groups learned significantly ($p<.05$) more than the SAT groups, although some learning was evident for the latter treatment.
2. the DCT participants earned higher scores than either of the two kinds of observer groups who watched them. This trend was also noted on the results of the Carkhuff Discrimination Scale. Differences between these groups, however, were not significant.

The Assessment of Understanding of Group Dynamics

One of the prime goals of human relations training courses is to improve understanding of the processes clustered loosely under the title "group dynamics". While advocates of training programs claim that their treatments increase one's sensitivity to group processes, there appears to be only limited or no evidence that such claims are valid. Except for scattered attempts to develop an increased understanding of group-decision making strategies using as "treatments" such instruments as "The Twelve Angry Men" film, there has been little or no attempt to construct viable instruments designed to assess the cognitive understanding of behavior in groups, prior to the present experiment.

During the several pilot runs which preceded this experiment, members of the research team expressed a yearning for the day when someone would develop a sensible approach to assessing cognitive understanding of group process. A rather simple solution to this difficult assessment problem was proposed during a "brain-storming" session. It was hypothesized that if group members really do acquire cognitive understanding during human relations training, they should be able to demonstrate this understanding by correctly categorizing the ongoing behavior of a similar group. Starting from this premise, it was decided that it should be possible for "experts" (in group dynamics) to view the video-

TABLE 12

Analysis of Covariance of HRVT-Multiple Choice Scores

Source	df	Mean Square	F	p
A (SAT vs. DC)	1	25.99	6.32	.01*
B (Participant vs. Bales Obs. vs. Clinical Obs.)	2	1.28	.31	.73
A x B	2	255.46	62.12	.46
Errors	87	4.11		

*$p < .05$ level of significance for present study

taped interaction of a group and to reach a consensus about prevailing behavior patterns and the ongoing dynamics. The extent to which relatively more naive subjects, viewing such a video tape, choose from a number of alternatives the same description as the experts would be indicative of their cognitive understanding of group process.

To implement this plan, two self-analytic training groups in a summer pilot project were video-taped. Each group was video-taped for one hour, the subjects being summer school undergraduate teachers-in-training, very similar to the subjects of the present experiment. Of the two video-tapes, one in particular seemed quite rich in displaying various interaction themes, including what would be termed scapegoating, fantasy, projected aggression, and so on. This tape was therefore chosen for further development as a group process test.

A preliminary analysis was made by combing through the tape six or seven times, looking for what might be considered natural or logical break-points. Having provisionally decided on these, seven doctoral students and a professor from this Department were asked to assist in providing interpretations of the scenes isolated between the defined logical break-points. Most of this group had extensive experience in human relations training groups and/or therapy groups; they professed to represent several schools of thought about group processes. The video-tape was played to this group and stopped at the various breaking-points. Each member of the group was asked to write a short description of each segment; these were then discussed. A remarkable amount of agreement was expressed in the discussions after each segment. Bearing the suggestions of this group in mind, it was possible to identify eleven distinct segments

and to develop seventeen four-item multiple choice questions. This test was called the Group Process Analysis Test (GPAT).

After deliberation and a preliminary trial, it was decided that the GPAT would be quite difficult for most undergraduate students. The answers to the questions depended upon keen detection of verbal clues, sometimes quite minute, provided in the group interaction dialogue. In addition, it was thought possible that some subjects might spend a good deal of time viewing the segments in an overwhelmed condition, possibly even in a state of trepidation. As we were concerned with obtaining a valid assessment of group understanding, it was thought that, ideally, the test should be administered twice. For the present experiment time limitations made it impossible to do this in one session, the GPAT taking 40 minutes to administer. To bypass this difficulty, a transcript of the video-tape was given to each subject during the test session. This transcript was to be used for two purposes: (1) to assist subjects to pick up verbal clues and cues which might normally be missed owing to distractive noises in the classroom; (2) after viewing the videotape and doing the test in the classroom, each subject was to retake the GPAT at home, alone, using the transcript.

This procedure was followed in both administrations of the GPAT (pre- and post-test). Thus scores are available for each subject for four GPAT administrations, (1) the pre-GPAT in class; (2) the pre-GPAT at home; (3) the post-GPAT in class; (4) the post-GPAT at home.

The first procedure in scoring the GPAT data was to assign a weight of <u>one</u> to the "best" of the four alternatives on each question, and a weight of "0" to each of the remaining alternatives. In effect, subjects whochoose an alternative designated by the experts (in this instance the research team) would receive a score of 1. As the GPAT has 17 items, a

maximum score of 17 is possible with this scoring system. The results obtained for the groups in the six different experimental treatment conditions in the present experiment were calculated (see Appendix E, Table E2).

The mean scores indicated that most groups improved their performance on the GPAT after each administration of the test. However, the observer groups watching the SAT treatments showed the greatest gains in performance. The clinical observers who had witnessed the SAT treatments showed an average gain of +3.2, while their counterpart Bales' observers gained +2.6. Other subjects who noticeably increased their scores were the clinical and Bales' observers watching the DCT treatments; these increased their scores by +1.7 and +1.3 respectively. While the gains shown by the SAT observer groups are hardly impressive, they do suggest that these groups of observers were slightly more capable at observing a video-taped SAT group than any other group. Over the entire testing period all six groups showed some, if only slight improvement. While the mean of the pre-in-class scores for all subjects was only 6.9, the post-at-home mean for all subjects was 7.7. These results can be summarized, as follows:

GROUP DYNAMICS GAINS (unweighted scores)

SAT Groups	Participants do not learn	($\bar{X}p = 0.1$)
	Clinical Observers learn most	($\bar{X}c = 3.2$)
	Bales' Observers also learn	($\bar{X}_B = 2.6$)
DCT Groups	Bales' Observers do not learn	($\bar{X}_B = 0.3$)
	Participants and Clinical Observers learn about half as much as SAT Bales' Clinical Observers respectively	($\bar{X}p = 1.3$) ($\bar{X}c = 1.7$)

Separate item analyses on each set of data from the four GPAT administrations were performed. As was to be expected, low Kuder-Richardson reliability coefficients were obtained. The KR_{20} coefficients for each of the four sets of data were as follows: Pre-in-class KR_{20} = .22; Pre-at-home KR_{20} = .16; Post-in-class KR_{20} = .19; Post-at-home KR_{20} = .52. It thus became apparent that only the post-at-home test had acceptable, but not encouragingly high, reliability.

The first task was therefore to improve the reliability of the GPAT test. For this purpose, the pre-in-class and pre-at-home results were combined; the post-in-class and at-home results were also combined. Doubling the test in this way had the effect of increasing KR_{20} coefficients of the pre and post GPAT's (in class + at home) to .36 and .54, respectively.

Using these pre- and post-test scores, it was observed that the subjects in the observer groups viewing the SAT treatment gained more than any of the other groups, with the Clinical SAT observer groups showing the greatest gains (see Appendix E, Table E2). A 2 x 3 analysis of covariance however, using pre-test total scores as covariate and post-test as criterion revealed that none of the treatment groups showed significantly greater gains than any other group. Since the interaction effect yielded an F ratio which approached significance, it was thought that significant gains might be masked by small cell frequencies. Therefore, another analysis was performed combining the Bales and Clinical Observers groups in both SAT and DC treatments. The results of that analysis showed a significant interaction effect ($p < .02$).

The combined SAT Bales and Clinical Observer groups clearly showed the greatest improvement with an average gain of 2.9, the DC participants and observers both gained approximately 1.3, while the SAT participants dis-

played the least evidence of improvement with a 0.1 gain.

The Development of A Weighted System for Scoring the GPAT

As was mentioned earlier, the one-zero system of scoring the GPAT test did not yield acceptable reliabilities on the pre- and post-administrations. It seemed desirable to develop an alternate system of scoring to yield more reliable results. A scoring scheme which awarded points on a differential basis to each of the multiple-choice test alternatives should increase the split-half reliability since four times as many items would contribute information about the individual's knowledge of group process.

After considerable thought, and after examining several alternative scoring systems the following scheme was deemed to be the most useful. In preparing the one-zero scoring format three of us had reached consensual agreement about the rank of each item on a "best to poorest" basis. We reasoned that what we considered to be the best answer to each item should receive a weight of 4, the second best 3, the third best 2 and the poorest would receive 1. In addition, we also felt that the "collective" vote of the subjects themselves as indicated by their choices on the (final) post-at-home administration was worthy of consideration. At this point, understanding should have been maximal. Thus we assigned each item a 4,3,2 or a 1 score from item-analysis information. Similarly, it was decided that the vote of those subjects who had received the highest final scores on the post-at-home GPAT should also be considered. Using the choices of the 18 students who had received final scores of at least one point above the mean, each item was again assigned a 4, 3, 2, 1 rating.

In effect then, every item had been assigned a rank or score of 4, 3, 2, 1 according to three systems. These scores were then summed for each item and the resulting weight was assigned as the value for that item. For example, if a particular item had received a 4 from the research team, a 3 from the "collective" group, and a 3 from the top scoring student group, a person who chose that item in the test would be credited with 10 towards his total score. By this method the score on any item varies from 12 points to a minimum of three. The maximum score on the GPAT is therefore 195, in comparison to the maximum of 17 using the one-zero format. By summing the in-class and at-home scores, however, the maximum score is 390. The mean scores obtained by each of the six treatment groups using this method of weighting are presented in Table 13.

The results in Table 13 reveal that all six kinds of treatment groups made gains between the pre-in-class and pre-at-home administrations of the GPAT, an average increase of 4.6 being noted overall. After the training period the scores of the SAT participants and the DC Bales' observers actually decreased on the post-in-class test. On the other hand, the Bales' and Clinical observers viewing the SAT training sessions showed the greatest gains on the post-in-class test, while the DC participants and the DC Clinical Observers made smaller gains. In contrast, the scores of the SAT Observer groups and the DC Participants decreased slightly on the post-at-home administration, while the DC observer groups made impressive gains. The summed in-class + at-home mean was 315.3 for the pre-test (standard deviation = 21.7) and 323.3 for the post-test (standard deviation = 22.0). The average increase for the 94 subjects was thus 8.0 and a correlated t-test indicated that the chance of such a gain happening by chance was quite small ($t=3.1$, $p<.005$).

TABLE 13

Mean Scores and Average Gain Scores of

Six Treatment Groups on GPAT (weighted scoring)

	Self-Analytic Treatment			Direct Communications Treatment		
	Parti-cipants	Bales Obs.	Clin. Obs.	Parti-cipants	Bales Obs.	Clin. Obs.
n =	23	12	11	24	11	13
Pre-in-class	155.7	152.7	153.3	158.6	155.1	152.2
Pre-at-home	161.7	159.9	156.7	164.3	157.6	154.5
Pre-Total	317.4	312.6	310.0	322.9	312.7	306.7
Post-in-class	157.3	164.8	163.9	167.0	151.7	156.7
Post-at-home	160.0	162.3	161.0	166.3	161.7	161.7
Post-Total	317.3	327.1	324.9	333.3	313.4	318.4
Gain Scores						
Pre-IC to Pre-AH	+5.0	+7.2	+3.4	+5.7	+2.5	+2.3
Pre-AH to Post-IC	-4.4	-4.9	+7.2	+2.7	-5.9	+2.2
Post-IC to Post-AH	+2.7	-2.5	-2.9	- .7	+10.0	+5.0
Average Gains (Post Total-Pre Total)	-0.1	+14.5	+14.9	+10.4	+0.7	+11.7

To determine which, if any, of the treatments yielded significantly different effects with regard to the ability measured by the GPAT test, a two way analysis of covariance was carried out. Table 14 displays the results of that analysis.

The results of Table 14 suggestthat neither the SAT nor DC treatments, nor the participant and observer groups generated significantly different treatment outcomes. The interaction affect ($p<.05$), however, shows that certain groups differed significantly in the various treatment conditions. To determine which gained more significantly than the others, Newman-Keuls comparisons were made after using analysis of variance on the gain scores (see Kirk, 1969, p. 487). This analysis however did not uncover any significant differences between the groups. To examine the interaction effect by visual means a geometric plot of the gain scores for each of the groups was made (see Fig. 3). The interaction was disordinal. Contrary to expectations based on intuitive statements in the literature, it became clear that participants in the DC group learned more about group dynamics (as measured by the GPAT) than participants in the SAT group, while observers (Bales and Clinical) watching SAT groups learned more than observers viewing DC groups. These results were surprising but can be explained. While the SAT clinical observers gained the most on the GPAT it should be noted that this group was actually formed from two smaller groups. One of these groups actually had an average gain of 23.2 on the GPAT, while the other only gained 5 points. Differential effects were also observed between the two Bales groups which were observing DC groups. While one group had an average gain of 14.5 the other lost 15.7 points.

TABLE 14

Analysis of Covariance Comparing Six Treatment Groups on GPAT Weighted Post Total Criterion; Pre Total Covariate

	Source	df	MS	F	p
A	SAT vs. DC	1	43.15	.10	.75
B	Part vs. Bales Obs. vs. Clin. Obs.	2	73.09	.18	.84
	A x B	2	1744.57	4.2	.018*
	Error	87	415.26		

* $p < .05$ significance level

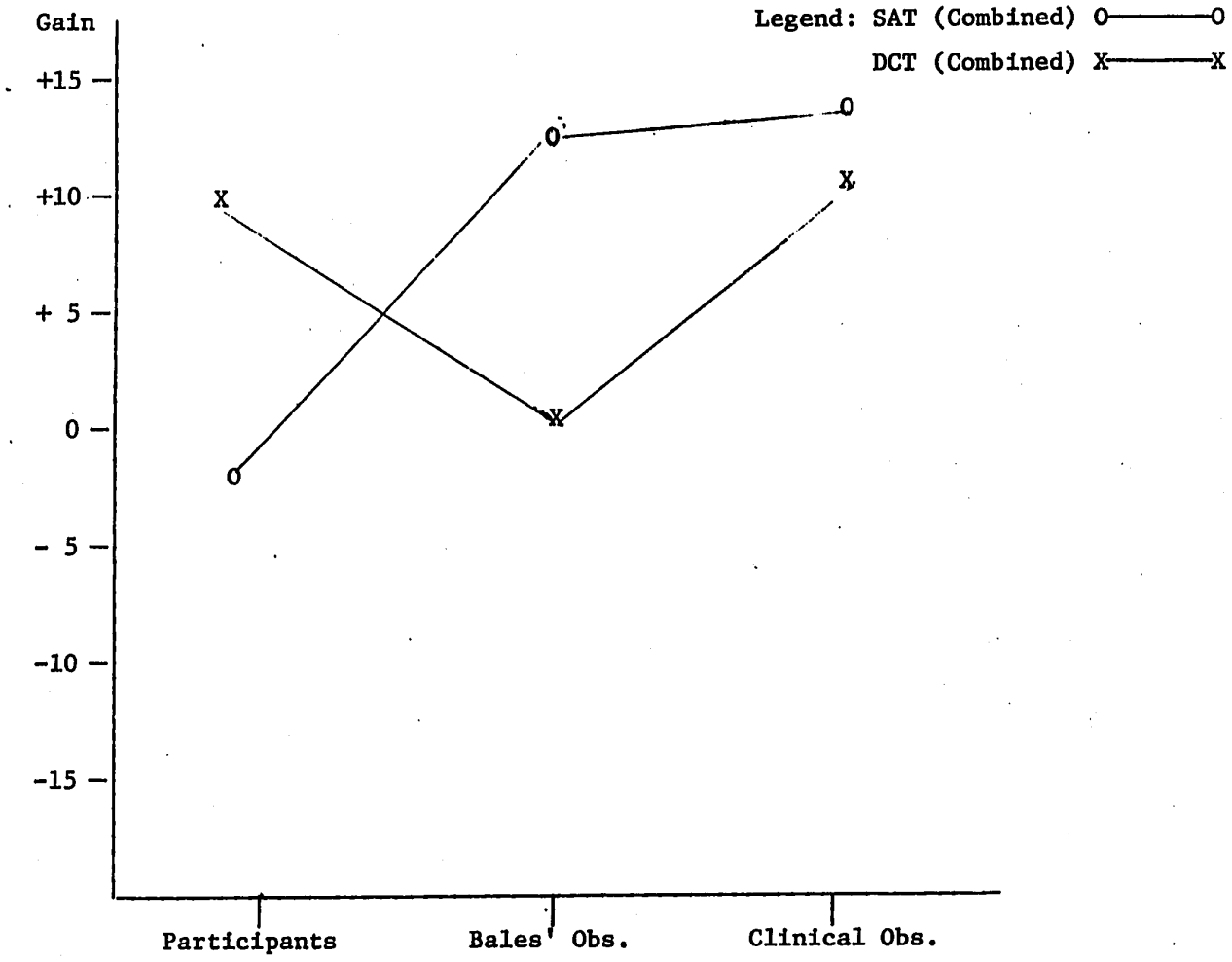


FIGURE 5: Geometric Plot of GPAT Gain Scores (Weighted Format) Post Total - Pre Total

TABLE 15

Contingency Table Showing Distribution of
Pre-test to Post-test Gain Scores on "weighted" GPAT

	Self-Analytic Treatment			Direct Communications Treatment			
	Participants	Bales Obs.	Clin. Obs.	Participants	Bales Obs.	Clin. Obs.	Total
Increased on GPAT	11	9	9	13	5	7	54
Decreased on GPAT	12	3	2	11	6	6	40
Total	23	12	11	24	11	13	94

In summary, in terms of understanding group dynamics, as measured by the GPAT, the different treatment groups can be placed as follows:

SUMMARY: GROUP DYNAMICS GAINS (weighted scores)

SAT Groups:	Participants do not learn	($\bar{X}$ = -0.1)
	Clinical observers learn most	($\bar{X}$ = 14.9)
	Bales' observers learn about as much	($\bar{X}$ = 14.5)
DC Groups:	Bales' observers do not learn	($\bar{X}$ = 0.7)
	Clinical observers learn most	(X = 11.7)
	Participants learn almost as much	(X = 10.4)

These results are quite similar to the previous summary using the unweighted gain scores. Two results are extremely surprising: (i) that participants in the self-analytic group seemingly learn nothing about group dynamics; (ii) participants and clinical observers in the direct communications training groups learn almost 80% as much about group dynamics as do the observers of the self-analytic groups.

To further examine the gain scores of individuals in the group a contingency table was constructed. Table 15 presents the distribution obtained. An examination of Table 15 makes it quite clear that some individuals in every group were capable of learning something about group dynamics, while others could not. What is also impressive in Table 15 are the number of SAT Bales' and Clinical Observers who increased their scores. Approximately 80 per cent of subjects in those groups showed improvements on the GPAT in comparison to slightly over 50 per cent of the individuals in the other groups. To obtain an estimate of the probability of such a distribution occurring by chance a chi square statistic was calculated. In order to use this statistic the Bales' and Clinical observers were considered together to avoid cell frequencies of less than 5. The χ^2 obtained equals 5.99 which is just significant for

an alpha level of $p < .05$. These results suggest that observers who watch a self-analytic group are more likely to increase their understanding of group dynamics (as measured by the GPAT) than subjects in any of the other treatments reported in this study.

Characteristics of "Learners"

The results obtained on the HRVT and GPAT tests indicated that some subjects did indeed profit from the training program. The question of "who learns?" is an important one and should be of central concern in a serious evaluation of human relations training. In order to tackle this question it was felt that an examination of the various personality and attitudinal profiles of subjects who had shown different levels of achievement on the HRVT Free Response Test and the GPAT (weighted) would be of value. It was assumed that learning was reflected by the gain scores earned on these instruments.

The first step in attempting to answer this problem involved plotting the gain scores of all subjects on a graph which used HRVT Free Response gain as the X coordinate and GPAT (weighted) gain as the Y coordinate. That plot indicated that individuals from both SAT and DCT treatments were represented in the highest, middle, and lowest (negative) gain levels of the GPAT. On the other hand, the highest gain group on the HRVT was primarily represented by subjects from the DCT groups, while the subjects with the lowest gains were from the SAT groups. Thus, it was decided that no attempt could be made to compare individuals who were high on both

tests or low on both tests. Similarly, it made little sense to compare the personality and attitudinal characteristics of high, medium, and low learners on the HRVT treating all subjects as though they were from one larger group. Earlier comparisons of the DCT subjects (high HRVT "learners" and the SAT subjects (Low HRVT learners) had already been done and virtually no significant differences were found.

Who Learned about Group Dynamics?

An examination of the various personality and attitude scores obtained from the pre-tests and post-tests for subjects in high, medium, and low gain groups on the GPAT seemed sensible. First, all 94 subjects were ranked according to their gain scores on the GPAT. They were then divided into three approximately equal groups: a high learner group (gain scores between +20 and +70), a medium learner group (-3 to +19), a low learner group (-4 to -48). The latter group was totally composed of subjects who showed declines in understanding of group dynamics over the treatment period. A one-way analysis of variance was then employed to examine differences observed between those three groups on the 16 PF, the Cambridge Survey of Educational Opinions, and the Rokeach Dogmatism Scale.

The analyses of variance turned up several interesting differences between the three kinds of learners. Table 16 presents a summary of those variables for which significant F ratios were observed. The Pearson correlations between those variables and gain on the GPAT are also shown.

The results presented in Table 16 depict the high learner group as being somewhat more stable, or "better adjusted", than either of the other two groups. Scheffe. contrasts revealed that the most significant differences were between the high and low learner groups in every instance.

TABLE 16

Summary of Analysis of Variance F ratios Comparing Scores for Three Types of Learners on the GPAT on Various Personality and Attitude Variables n=94

Variable	r	Learner Group: High $\bar{X}_H$	Medium $\bar{X}_M$	Low $\bar{X}_L$	F	p
Pre-test 16 PF						
3. Stable	.23	16.2	15.2	13.6	4.02	.021*
9. Suspicious	-.25	7.3	8.6	9.6	4.79	.010*
12. Apprehensive	-.22	9.5	9.6	10.6	9.30	<.001*
16. Tense	-.18	11.2	11.7	14.3	4.98	.008*
Post-test 16 PF						
3. Stable	.30	16.6	14.2	13.0	6.40	.002*
9. Suspicious	-.32	7.5	7.3	10.3	10.46	<.001*
12. Apprehensive	-.20	9.8	9.9	12.9	6.95	.001*
16. Tense	-.27	11.8	13.6	15.6	6.53	.002*
Pre-test Camb. Survey						
5. Neuroticism	-.25	6.5	6.8	8.7	6.07	.003*
Post-test Camb. Survey						
5. Neuroticism	-.17	6.6	6.7	8.9	5.39	.006*
28. Personal Study	.23	15.6	14.8	13.3	6.15	<.003*
30. Job Satisfaction	.30	10.2	8.8	7.3	4.72	.011*

* $p<.05$

In comparison to the low learner group, whose scores actually declined over the testing period, the high learner group is characterized on the 16 PF as being more emotionally stable, more able to face reality, less suspicious, more self-confident, and less frustrated. The Cambridge Survey scores provide support for those descriptions. On that instrument the high learners are described as being less disturbed emotionally and more interested in activities leading to personal improvement than subjects in the low learner group.

These results seem to strongly suggest that the learning of group dynamics is facilitated by stable personality. It seems quite likely that subjects who cannot face reality have difficulty maintaining objectivity about either positive or negative group forces. The recognition of such forces in others, ultimately leads to the confession that similar forces govern one's own behavior. This acceptance of reality may be too much of a threat to insecure persons. The discovery of this relationship between stability and learning of group dynamics is considered to be an important breakthrough.

"Who Learned in the Two Human Relations Treatments?"

After determining what were the characteristics of high, medium, and low learners on the GPAT, other questions were left to be answered: "What are the characteristics of subjects who learned about group dynamics in each of the two human relations training treatments?" To answer this question, the SAT subjects and then the DCT subjects were ranked from highest to lowest according to their GPAT gain scores. A one way analysis of covariance was again used to determine which, if any, of the differences observed between the mean scores of the high, medium, and low learner groups were significant.

TABLE 17

Summary of Analyses of Variance F Ratios Comparing
Three types of GPAT "Learners" on Personality and Attitude Scales

Variable	Learning Group: High	Medium	Low	F	p
Self-Analytic Treatment					
16 PF (pre)					
12. Apprehensive	9.1	9.0	12.3	4.07	.023*
16 PF (post)					
9. Suspicious	7.3	7.8	9.7	3.31	.045*
12. Apprehensive	8.6	9.3	12.3	3.70	.032*
16. Tense	10.4	12.4	15.4	5.34	.008*
Cambridge Survey (pre)					
5. Neuroticism	5.8	6.7	8.8	4.29	.020*
Cambridge Survey (post)					
5. Neuroticism	6.3	6.5	9.1	3.51	.039*
28. Personal Study	15.9	14.3	12.4	5.63	.006*
30. Job Satisfaction	10.7	8.8	6.1	6.59	.003*
Direct Communications Treatment					
16 PF (pre)					
3. Stable	16.1	16.0	12.1	5.8	.006*
9. Suspicious	7.6	8.1	10.6	4.1	.022*
12. Apprehensive	10.3	9.8	12.8	5.9	.005*
16. Tense	12.1	11.9	15.6	4.9	.011*
16 PF (post)					
2. Intelligent	9.9	8.4	9.8	4.65	.015*
3. Stable	16.4	13.4	12.3	4.34	.018*
9. Suspicious	7.3	7.3	10.9	7.27	.001*
12. Apprehensive	11.1	10.2	13.6	3.94	.027*
13. Experimental	11.4	10.6	9.1	3.02	.058

* $p<.05$ significance level.

Table 17 reports the results of those analyses. An examination of Table 17 indicated that learners in both groups are quite similar. That is to say, in both the SAT and DCT experimental groups the subjects who made the most impressive gains on the GPAT were more stable, more self-assured, less suspicious and less frustrated than subjects who showed no evidence of improving their ability in understanding group dynamics. No significant differences were observed between the three learner group scores on the Cambridge Survey for subjects in the Direct Communications Treatment.

As a double check that the significant differences observed between the personality and attitudinal variable due to sex differences, the data was reanalyzed. The personality and attitude scores of male and female high, medium, and low learners were examined. The results obtained from an analysis of variance procedure indicated the same trends. Males in the high learner group were in general, more and less power oriented than males in the low learner groups. The high learner female group was less neurotic, more enthusiastic about their work, more power oriented, more outgoing and warm hearted, more emotionally stable, more uninhibited, less suspicious, and less insecure than females in the low learner group.

A one way analysis of variance was used to determine which, if any, of the differences observed between the learner groups on the 16 PF, The Cambridge Survey, and the Dogmatism Scale were significant.

Table 18 summarizes the results obtained from those analyses. Interestingly enough, more significant F ratios were observed between the learner groups in the Self-Analytic Treatment than for the Direct Communications Treatment. The mean scores of the SAT high learners suggest that they were more tenderminded and sensitive, somewhat more spontaneous, more concerned with introducing educational innovations, and more permissive with regards to children, than the low learner group. The DCT high learner group is depicted as less favourable to punishment in schools, less interested in exercising authority over others, and places a higher regard on the spontaneous and unforced development of children than does the low learner group.

Although it seems quite likely that different processes accounted for the learning of empathic communication ability in the DCT and SAT groups, the results in Table 18 strongly suggest that the learning of such a skill is somewhat value bound. It appears that those who hold certain attitudes and values have an easier time developing empathic skills. In a sense though the learning to be empathic implies that one must incorporate new values to other people. Thus, it should have perhaps been expected that attitude or value systems of some subjects would interfere with the acquisition of this skill.

"Who Learned to Communicate Empathy?"

In both of the main human relations treatments some subjects learned empathic communication skills more than others. The range of gain on the HRVT Free Response Test was quite large (-8 to +36) for both groups. While the DCT subjects gain scores were normally distributed around a mean of 15.9, the mean of the SAT subjects' gain scores distribution was skewed with mean of 5.6. Therefore, it was decided that the personality and attitudes of the high, medium, and low learners should be examined separately for each group.

To make the necessary comparisons between the various learner groups, subjects in both main treatments were ranked according to their gain scores on the HRVT. They were then classified into three groups (in both the DCT and SAT) of learners high, medium, and low. These learner groups were approximately equal, with the lowest group having one extra subject.

The division points for the DCT groups were gains of up to approximately 11 for the lowest group, and up to 21 for the medium group. The highest group were those subjects who gained more than 21 points on the HRVT. The approximate division points for the SAT subjects were +2 and +5.49. The highest group ranged between 5.5 and 21.75.

TABLE 18

Summary of Analyses of Variance F ratios Comparing Three Types of HRVT "Learners" on Personality and Attitude Scales

Variable	Learner Group High	Medium	Low	F	p
Self-Analytic Treatment					
16 PF (pre)					
8. Tenderminded	12.7	11.5	10.5	3.12	.054*
15. Controlled	7.7	11.5	10.6	6.97	.002*
Cambridge Survey (pre)					
17. Naturalism in Education	11.4	9.5	9.3	2.82	.071
18. Radicalism in Education	48.1	45.1	51.4	3.41	.040*
Cambridge Survey (post)					
7. Formalism	6.7	10.3	11.3	5.84	.006*
15. Submission	4.9	5.7	7.1	4.68	.014*
19. Toughmindedness in Education	9.9	12.0	14.4	5.07	.010*
Direct Communications Treatment					
Cambridge Survey (pre)					
6. Punitiveness	3.4	3.6	4.6	2.69	.080
Cambridge Survey (post)					
6. Punitiveness	3.3	3.1	4.6	3.68	.033*
11. Power	3.3	4.5	5.3	2.74	.075
17. Naturalism in Education	11.8	10.9	9.4	3.19	.050*

*$p \leq .05$ significance level

Characteristics of High Scorers

A question which is related, but not equivalent, to "Who learned the most?" is "Who scored the highest?" This question asks what type of person can be expected to show the highest performance on the post-tests. To answer this question the post-test GPAT (weighted) total scores and the post-test HRVT free response scores were examined. The HRVT distribution was bimodal, with SAT subjects representing one peak and DCT subjects the other. Therefore, it was decided that the achievement groups in those treatments should be examined separately. However, it was possible to combine subjects from all groups together for an examination of the personality and attitude profiles of high, medium, and low scorers.

The same approach to analyzing the data was taken as had been chosen in answering the earlier question "Who learned?" GPAT scorers on the post-test were ranked and divided into three approximately equal groups. A one-way analysis of variance was used to examine differences between scores observed on the 16 PF, The Cambridge Survey, and the Dogmatism Scale. The results of those analyses are presented in Table 19. Only those variables for which significant F ratios were calculated are presented in that table.

The differences between the three groups, and in particular the high and low groups, noted in Table 19 are quite informative. High performers on the GPAT tend to be more intelligent, less interested in acquiring power over others, more certain, and not particularly concerned about helping others in various relationships, than the low performers. On some variables curvilinear relationships were observed. For instance, the medium performer group is more tenderminded, more helpful in social relationships, and places more value on matters of personal freedom than either of the other two groups.

TABLE 19

Analysis of Variance: Significant Differences between High, Medium, and Low Scorers on the Group Process Analysis Test (post-test; N = 94)

Variable	Performance Group				
	High	Medium	Low	F	p
16 PF (pre)					
2. Intelligence	9.9	9.1	8.9	3.24	.042*
16 PF (post)					
2. Intelligence	9.9	8.8	8.9	4.17	.018*
Cambridge Survey (pre)					
8. Freedom	8.8	10.0	7.9	4.00	.022*
11. Power	3.7	4.4	5.6	5.05	.008*
21. Uncertainty	14.3	18.3	22.8	3.31	.041*
25. Religious Value	25.8	28.9	28.4	3.90	.023*
Cambridge Survey (post)					
3. Tendermindedness	6.6	7.2	6.6	3.21	.045*
9. Helpfulness	10.8	12.0	11.3	3.44	.036*
21. Uncertainty	14.2	21.4	22.6	3.42	.037*

* $p<.05$ indicates significance

Performance on the GPAT by SAT and DCT Subjects

The question which then needed to be investigated was "What are the characteristics of high performers (scorers) on the GPAT in the SAT and DCT groups?" In a manner similar to that already described for earlier analyses the high, medium, and low scorers on the GPAT were sorted for each section. F ratios calculated from a one-way analysis of variance were again used to determine whether or not any statistically significant differences were present on the various personality and Attitude variables. Tables 20 and 21 report the results of those variables for which significantly high F ratios were observed.

It is interesting to note on those tables that significant F ratios were found on different variables for each of the two types of human relations treatments. For instance, high scorers in the SAT groups were more intelligent, more resourceful, and more interested in a variety of activities than either of the other two groups who earned lower scores. In some cases the trends which appeared were curvilinear. The "medium" performance group was higher in religiosity, and maintaining standards of discipline in education than either of the high or low performance groups.

High scorers in the GPAT in the DCT groups were somewhat more stable, more confident, more interested in individual freedom, and less suspicious than the low performance group. The medium performance group is depicted as being more committed to certain values and more interested in personal development than the other two groups.

TABLE 20

Summary of Analysis of Variance F ratios Comparing Three Types of SAT Subjects Classified by Performance on GPAT (weighted) n=46

Variable	Performance Group High	Medium	Low	F	p
16 PF (pre)					
2. Intelligence	9.7	9.7	8.3	4.26	.020*
14. Self-Sufficient	14.1	11.3	11.3	4.94	.012*
16 PF (post)					
4. Assertive	10.5	12.9	14.2	3.95	.027*
14. Self-sufficient	14.0	11.9	11.3	3.21	.050*
Cambridge Survey (pre)					
13. Response	7.1	7.3	5.4	3.72	.032*
25. Religious Value	24.9	31.2	27.9	8.18	.001*
30. Job Satisfaction	11.1	7.5	9.4	4.24	.021*
Cambridge Survey (post)					
3. Tendermindedness	7.2	7.4	5.8	4.11	.023*
19. Toughmindedness in Education	12.0	14.3	10.3	3.86	.029*
26. Utilitarian Value	20.7	21.3	23.6	3.39	.043*
27. Emotional Satisfaction	15.4	12.8	12.9	8.35	.001*
28. Personal Study	15.1	14.9	12.6	3.15	.038*

$p<.05$ indicates significance

TABLE 21

Summary of Analysis of Variance F ratios Comparing Three Types of DCT Subjects Classified by Performance on GPAT (weighted) n=48

Variable	Performance Group: High	Medium	Low	F	p
16 PF (pre)					
3. Stable	15.8	15.1	11.8	4.75	.013*
9. Suspicious	6.8	8.6	10.2	4.25	.020*
16 PF (post)					
3. Stable	15.8	16.1	12.3	4.87	.012*
Cambridge Survey (pre)					
8. Freedom	7.6	9.9	8.4	3.23	.048*
16. Workmanship	9.6	8.9	11.1	3.30	.045*
20. Certainty	45.1	48.1	32.7	3.32	.045*
28. Personal Study	14.8	15.9	13.9	5.42	.008*
30. Job Satisfaction	8.3	10.4	7.1	4.23	.020*
Cambridge Survey (post)					
9. Helpfulness	12.4	11.8	10.8	3.88	.027*
17. Naturalism in Education	11.6	11.3	9.3	3.77	.031*

* $p<.05$ indicates significance

Although different variables were significant in Tables 20 and 21, it seems apparent that the subjects who scored highest on the GPAT post-test are characterized as being more stable and perhaps more capable of facing reality than lower scoring subjects. This finding is consistent in both the SAT and DCT sections.

Performance on the HRVT for SAT and DCT Subjects

Having uncovered a number of statistically significant differences for high, medium, and low scorers on the GPAT, similar analyses were carried out with the HRVT-free response (post) data. High, medium, and low groups of subjects were determined for both the SAT and DCT subjects. Those variables for which significant F ratios were obtained are reported in Table 22.

The profiles obtained for subjects in the SAT groups who received the highest scores suggest that they are less anxious, less in favour of punishment and formal control of children, more tenderminded, and are higher in aesthetic appreciation than the two lower groups. Table 21 also shows that the highest scorers on the post-HRVT are somewhat more tense, more inhibited, and less in favour of changes in education than the lowest scoring group. An interesting curvilinear trend is noted for the DCT subjects on Variable 16 of the 16 PF. The medium performance group is characterized as being more frustrated and tense than either the high or low performance group.

Relationships Between Various Indices of Learning

Table 23 presents the Pearson product moment correlations which were calculated for the various indices of learning. The signs for the relationships between the Carkhuff Discrimination Scales and various other variables have been reversed. In actuality, high discriminators receive a low deviation score on that instrument. Thus, if performance on that scale is

TABLE 22

Summary of Analysis of Variance F ratios for Three Types of Subjects in SAT and DCT Groups Classified by Performance on HRVT (weighted)

Variable	Performance Group: High	Medium	Low	F	p
Self-Analytic Treatment					
16 PF (pre)					
8 Tenderminded	12.6	12.0	10.2	4.2	.022*
Cambridge Survey (pre)					
1. Anxiety	6.6	8.9	11.1	4.19	.021*
23. Aesthetic Value	32.4	30.8	27.3	3.91	.027*
Cambridge Survey (post)					
6. Punitiveness	2.5	4.2	4.1	5.54	.007*
7. Formalism	6.7	9.9	11.6	6.06	.005*
19. Toughmindedness in Education	10.1	12.3	14.1	3.79	.031*
23. Aesthetic Value	32.6	31.1	27.2	6.71	.002*
28. Personal Study	12.6	15.6	14.3	3.76	.031*
29. Professional Development	14.8	18.1	17.6	3.85	.029*
Direct Communication Treatment					
16 PF (pre)					
16. Tense	13.6	14.8	11.3	3.46	.040*
Cambridge Survey (post)					
6. Punitiveness	3.4	2.9	4.6	4.00	.025*
11. Power	3.8	3.5	5.8	5.05	.010*
17. Naturalism in Education	11.9	10.8	9.5	3.30	.045*
18. Radicalism in Education	46.4	46.9	53.8	3.26	.047*

*$p < .05$ indicates significance

positively related to performance on another measure a negative correlation would be calculated.

Most of the relationships reported in Table 23 are positive with the exception of some negative correlations between GPAT (weighted) gains and certain other variables. The only significant negative correlation reported is for the relationship between GPAT gains and scores on the GPAT pre-test (-.56). This significant negative correlation indicates that subjects who scored high on the pre-test were able to gain the least over the treatment period. This could suggest the presence of a "ceiling" effect. The relationship between the GPAT gain and post-GPAT score is positive (+.57), which indicates that subjects who gained the most also tended to receive the highest scores on the post-test.

The number of moderate, but significant, positive correlations noted in Table 23 for the various measures of empathic understanding are not too surprising. Carkhuff (1969 a) suggested that pre-treatment measures of empathic ability should be the best predictor of post-treatment performance. The positive relationship noted between the post-tests of the HRVT free response and multiple choice versions and the Carkhuff Discrimination Scale offer encouraging support for the validity of these scales.

Further Studies Using the HRVT and GPAT

As the research team intensely wanted to discover the "truth" about learning groups, three further studies were undertaken after the main experiment. The first study attempted to examine the effect of pre-testing and post-testing a group of graduate students (N=14) with the GPAT over a two week interval. These students were told that the research team suspected that subjects might learn about group dynamics by just doing the GPAT.

TABLE 23

Correlation Matrix of Various Indices of Learning

		1	2	3	4	5	6	7	8	9	10
6	1. HRVT-Free Response (pre)	-	.48	.04	.44	.33	.38	.24	.27	.20	-.07
	2. HRVT-Free Response (post)		-	.85	.48	.56	.34	.53	.33	.24	-.07
	3. HRVT-Free Response (gain)			-	.30	.41	.20	.44	.24	.16	-.06
	4. HRVT-Multichoice (pre)				-	.62	.48	.32	.23	.21	-.02
6	5. HRVT-Multichoice (post)					-	.34	.42	.17	.15	-.01
	6. Carkhuff Disc. (pre)						-	.33	.20	.28	..06
	7. Carkhuff Disc. (post)							-	.10	.11	.00
	8. GPAT Total-weighted (pre)								-	.35	-.56
	9. GPAT Total-weighted (post)									-	.57
	10. GPAT (weighted) post-pre gain										-

Unfortunately, a good deal of resistance was encountered. After viewing the test once and doing the transcript at home a number said that they were not interested in doing it again. In the post-test session there was some evidence that the subjects had collaborated about the pre-test. Full returns for all four administrations on the GPAT were only available from five subjects; four of these were foreign students who had considerable difficulty with English.

Another study was undertaken using psychiatric nurses as subjects. Two participant groups were to be trained: a DCT group of seven nurses and an SAT group of eight. Both groups were pre-tested on the GPAT and the HRVT (free response). The major aim in this study was of a twofold nature: (1) to improve the Direct Communications Treatment so that 10 sessions would be sufficient for developing empathy skills., (2) to examine the effects of a different trainer on each of the participant groups.

Several techniques were experimented with in the first three sessions of the DCT group including the introduction of a "client" from outside of the group to practice empathy skills with and the use of video tape feedback for rating role playing with the client. Unfortunately, due to staff holidays and sickness, or perhaps disinterest, the DCT group dwindled to only two members in the fourth session and thus remaining sessions were cancelled. Interested DCT members were allowed, if they wished, to join the other group until the termination of treatment. The attendance in the SAT (nurses) group was sporadic. A pattern seemed to develop where members came on alternate nights, despite being told that they were expected to attend every session. It was the research team's intuitive impression that this SAT group development was being inhibited by the inconsistent attendance of key group members. In an attempt to salvage

that group, the research design was scrapped and various graduate students were introduced as group members. Thus, no attempt was made to post-test any of the nurses on either the GPAT or the HRVT.

The third study undertaken after the main experiment was somewhat more successful. Thirty-eight summer school students enrolled in a senior educational psychology course (Ed. Psych. 411) served as subjects. These subjects were divided into two groups (1) an SAT participant group which would have the benefit of observing a DCT group, (2) a DCT participant group which would observe the SAT group. In addition, these subjects were to be told in the occasional lecture-seminar what to watch when observing groups. The course's instructor, Dr. McLeish, was to provide material for the lecture-seminar periods. Wayne Matheson conducted the DCT group, while the present author was the trainer in the SAT group. All subjects were to be allowed to discuss the course freely with one another. Audio-tapes were available for their use after every session to help in preparing a term paper. The only pre-test and post-test measures were the GPAT and the HRVT (free response). The Carkhuff Discrimination Scale was also given as a post-test. The course ran only three weeks. Ten sessions of each treatment were held, the remaining sessions were used for the lecture seminars, testing, and evaluation of the course.

The results obtained from this study are presented in Table 24. What was particularly surprising was the fact that the mean scores of both groups dropped considerably on the GPAT over the testing period. The SAT participants lost 5 points while the DCT group which observed them dropped 10. This decrease in ability to assess group dynamics after such an intensive effort had been put forth to increase their scores on that instrument was, at first, shocking and raised doubts about the validity of the GPAT.

In a post-treatment evaluation discussion with all subjects it became apparent that the students were reacting to being put through such a concentrated experience in such a short period of time. Some expressed the concern that while they had recognized unconscious forces in replaying the audio tapes, anything which smarted of "Freud" was difficult to accept. It seemed then that some contrasuggestibility phenomenon had set in to protect the ego-systems of the various subjects.

The scores on the HRVT and Discrimination Scale were in the expected direction. Both groups increased significantly ($p < .05$) over the training interval. The DCT participants learned the empathy skills better than the SAT participants who observed them, but not significantly so. It is interesting to note that the DCT trainer was capable of increasing the average scores of the subjects even more than the DCT trainer in the main experiment and in five fewer sessions.

TABLE 24

Pre-Test and Post-Test Results: Experimental Summer Study 1971

Group	HRVT-free response		HRVT	GPAT (weighted)		GPAT	Discrimination
	Pre	Post	Average Gain	Pre	Post	Average Gain	Post
Self-Analytic Participants	20.4	37.8	+17.4	316.9	311.9	-5	.73
Direct Communications Participants	21.0	43.0	+22	312.9	302.9	-10	.66

CHAPTER V

SUMMARY AND DISCUSSION

SUMMARY

The study reported herein was part of a larger project which was directed by Dr. John McLeish and was concerned with investigating the impact of various forms of group training as an educational innovation. Major research emphases were placed on evaluating process and outcome changes. The specific purpose of the present study was to determine whether or not any differential effects on personality, attitude, communication ability (behavioral change) and understanding of group dynamics would be observed for teacher-trainees who either participated in, or observed, a human relations training group.

Subjects were 94 teacher-trainees who volunteered for two experimental sections of a senior educational psychology course (Ed. Psych 421) at the University of Alberta during the 1970 fall semester. Two forms of human relations training treatments were employed; a self-analytic treatment (SAT) and a direct communications treatment (DCT). Two types of observer groups were to view each treatment, a Bales' observer group and a clinical observer group. Subjects were randomly assigned to groups in the six treatment conditions, after blocking according to sex, to insure that the groups weren't homogeneous.

Each treatment consisted of 15 sessions over a three month period. A number of tests which were designed to assess changes in personality, attitude, communication ability, and cognitive understanding of group dynamics were given before and after the treatment sessions. While no changes of a systematic nature were observed on the personality and attitude measures,

differential effects on the learning of communication skills and group dynamics were evident. Further analyses identified personality and attitudinal characteristics which significantly differentiated various groups of learners and non-learners. Table 25 presents a summary of the results obtained for pre-treatment to post-treatment changes on the various criterion indices.

DISCUSSION

Limitations of the Study

Before discussing the specific results which were obtained on the various evaluation instruments, it is pertinent to recognize that, despite representing one of the most rigorous attempts to evaluate human relations training, a number of limitations undoubtedly increased the experimental error. For instance, the study is largely self-contained. No suitable control group was available for comparison. It had been hoped that groups in different treatments would have served as adequate controls. However, the small increases noted on the HRVT tests by subjects in the Self-Analytic Treatment (SAT) raise questions as to whether or not they were caused by the treatment, a practice effect, or discussion with subjects in the other treatment. A control group, which was not contaminated by training related to human relations issues, would have helped answer such questions.

Another limitation of the study may have been the short time period available. It is conceded to critics that one would not normally expect many behavioral or personality changes to occur over fifteen 50 minute sessions. The research team has come to believe, however, that while the actual in session time was twelve and one-half hours, the subjects spend

TABLE 25

Summary of Changes on Personality, Attitude, and Learning Measures*

Measure	Self-Analytic Group			Direct Communication Group		
	Participants n=23	Bales' Obs. n=12	Clinical Obs. n=12	Participants n=24	Bales' Obs. n=11	Clinical Obs. n=13
16 PF	0	0	0	0	0	0
Cambridge Survey	0	0	0	0	0	0
Dogmatism Scale	0	0	0	0	0	0
Carkhuff Discrimination Scale	0	0	0	+	+	+
Park-Matheson HRVT						
1. Free Response	+	+	+	++	++	++
2. Multi-Choice	+	+	+	++	++	++
Group Process Analysis Test (GPAT)	0	++	++	+	0	+

*legend: 0 virtually no change
+ some increase
++ major increase

a lot of their between session time working over material which is generated in the sessions. Indeed, we have come to suspect that the course became a dominant feature in the subjects' lives over the three month period. Thus, the length of treatment is viewed as only a minor limitation.

Other factors undoubtedly affected the treatments. The presence of observers, hidden microphones, and a television camera may have dampened the quality of interaction on occasion. In general though, most of the participants seemed to forget about the presence of hidden eyes and ears (electronic and human) early in the training sessions.

It would have been most desirable from a research viewpoint to obtain subjects who were only enrolled in the experimental course. With an increasing number of university instructors using small group situations in their classes, it is conceivable that a good number of the subjects were participating in other groups. It was hoped the contaminating effects of other groups would be somewhat equalized across treatments by the randomization procedures.

Perhaps the most major limitation of this report is the absence of indices of learning which had been used in previous studies. Since there were virtually no well-validated instruments available for assessing changes in either the empathic ability or group understanding, the research team constructed three tests. These tests are still of a rudimentary nature and some improvements are to be made to increase their precision. It should also be noted that the HRVT free response test requires markers who have demonstrated expertise in rating responses according to the Carkhuff Empathy Scale. In the present experiment this rating was undertaken by two members of the research team, as other raters could not be obtained. To decrease the possible effects of experimenter bias, all responses were typed on single

sheets and scored using a "blind" analysis procedure.

Changes in Personality, Attitudes, and Dogmatism

The absence of major changes on the various personality, attitude, and dogmatism scales had been somewhat anticipated. The major reason for their inclusion as experimental variables was to help determine who learns what, if anything, in any of the treatment conditions. Some previous researchers, however, had suggested that changes on such variables might be expected. For instance, Haiman (1963) reported that subjects became more 'open-minded' as a result of human relations training. Egan (1970) suggested that attitude change is "a modest and realistic goal" (p.103) for human relations training, but surprisingly few studies had examined such changes.

Virtually no studies had reported changes on standardized personality measures (Campbell and Dunnette, 1968). Thus, it seemed unlikely that changes on dimensions measured by the 16 PF would be observed. However, reviewers such as Gibb (1970) still suggest that the goals of intensive group experiences are to produce changes in behavior and personality.

Previous experience had also suggested that changes in personality and attitude may be more manifest for observers than participants. Therefore, it seemed pertinent to examine changes on these various instruments.

This study used a large "net" approach in examining changes on various personality and attitudinal measures. Two diverse, yet representative, human relations training treatments and two diverse observational treatments were examined. With the limitations of the present study considered, the evidence obtained from the various statistical comparisons suggests that human relations training, direct or vicarious, is likely to have little systematic influence

on changing deeper personality source traits, educational attitudes, or openness-of-mind. It is more plausible that when such changes occur, they are unique to a particular individual and they may or may not be for the better.

Change in Understanding of Empathy

Empathic understanding refers to one's ability to allow himself to experience the experience of another person (Carkhuff,(1969a). In the present study the main intended learning outcome of the Direct Communications Treatment (DCT) was to have subjects increase their ability to understand and employ "facilitative" communication skills, and in particular the communication of empathic understanding. The results obtained from the Carkhuff Discrimination Scale and on the free response and multiple choice versions of the Park-Matheson HRVT suggest that the DCT trainer had some success in bringing about this intended learning outcome. In comparison to the various groups which either participated in, or observed, the Self-Analytic Treatment (SAT), the DCT groups scored significantly higher ($p<.05$) on those three tests which were designed to assess learning of empathic understanding. The evidence gathered here suggests two basic conclusions:

1. In the teaching of empathic understanding, considerably more success is likely to be obtained by using a direct approach to training than other less directive approaches. This conclusion is in line with Carkhuff's earlier findings.

2. It is possible to learn empathic understanding without actually having first hand experience in a group by learning through vicarious processes. This learning apparently occurs in spite of the fact that the vicarious learners were instructed to pay atention to group processes rather than instructional content.

Indeed, this learning even occurs when the observers are spending over fifty per cent of their time attempting to code behavior according to an interaction process analysis system. This finding supports Bandura's (1970) claim that "virtually all learning phenomena resulting from direct experiences can occur on a vicarious basis through the observation of other persons' behavior and its consequences for them. (p. 118)"

It must be conceded, however, that on all three evaluation instruments (the Discrimination Scale and the two HRVT tests) the participant groups earned better scores than either of the two groups who observed them, but the differences were not significant. Similar results were also obtained in the summer following study. What remains to be determined is whether or not this pattern would hold true if the observer groups were not given any directions other than simply being told to sit back and watch. At this time it is only possible to speculate that if the experiment were repeated a number of times, a similar pattern would occur. This seems to be a reasonable hypothesis in view of the fact that the various relationships found between learning (gain) on the HRVT test suggest that the acquisition of empathic skills is somewhat enhanced (or inhibited) by a person's value system. In actuality, to be truly empathic implies that one must take on, wittingly or not, values which are probably based in Christian doctrine. As Rosenberg (1952) has already observed, without an opportunity to interact and debate these values first hand, some observers might become somewhat disinterested and allow their attentions to wander. The opportunity to pay attention to other more interesting concerns is limited for participants who, on the surface at least, usually pretend to be following the discussion. Further research might consider a modification of Bandura's hypothesis, that virtually anything which can be learned directly can be learned vicariously, however,

the level of interest generated by a trainer or topic will likely have a greater effect on vicarious learning than direct learning.

Carkhuff (1969b) has claimed that communications training is successful if the group average moves up to 2.5 on his evaluation indices. The DCT participant groups average response levels on the HRVT post-test were 2.4 and 2.6. It should be pointed out, however, that Carkhuff normally obtains final training ratings from the audio tapes of the trainee working with a live client. To date, there is no evidence that the ability to write an empathic response to a group member on the HRVT has any transfer value to other settings. It is suspected, however, that performance on the free response version of the HRVT would be positively related to rated performance in a live setting.

If one accepts Carkhuff's standard for successful training, then the evidence gathered here suggests that the DCT trainer did manage to bring about the intended learning outcome. On the other hand, Carkhuff has stated that a level 3.0 response represents the minimal level to be facilitative. Only three of the participants in the main experiment were able to achieve an average response level above 3.0 on the free response post-test. In the summer follow-up study the second DCT trainer was able to raise six of the participants to that level and in fewer sessions.

Carkhuff (1969b) has maintained that the teaching of the communication of empathy it is essential that the trainer act as a high functioning model. On the trainer's level of functioning Carkhuff has made the following remarks:

> Again, the counselor-trainer's level of functioning is critical. In general, the results are consistent with those in which high level trainers effect the most and greatest changes in the trainers. However, while the relatively moderate functioning trainees (above 1.75 may gain most from a high-level trainer, there is evidence

> to indicate that in interaction with low-functioning trainers the higher the trainee's initial level of functioning the greater is the probability that he will deteriorate or terminate training. (1969, p.270).

The subjective impression of the course instructors was that both DCT trainers only demonstrated higher than level 3.0 response levels for empathy on a few occasions. Data gathered with both Flander's Interaction Analysis system (FSIA) and Bales' Interaction Process Analysis (IPA) system suggest that the DCT trainer, in the main study, did not serve as a high functioning model with respect to the empathy dimension. Anderson (1971) has analyzed the data available from those systems and has concluded the following about the DCT trainer in the main experiment:

> FSIA data would indicate that the instructor did not act as a model for interpersonal communication skills. He was to demonstrate empathy, yet only 0.2 per cent of his verbal behavior was in Group One (Accepts Feeling) and 0.1 per cent of his verbal behavior in Group Two (Praises, Encourages) was categorized as accepting feeling. These are extremely low percentages considering the criteria for instructional behavior.
>
> (Anderson, 1971, p. 163).

Anderson also concluded that the Bales IPA data indicated that the social-emotional climate of the DCT participant groups was predominantly negative and a large number of acts of negativism were received by the instructor from every student. The FSIA data also indicate that this DCT treatment was actually a lecture oriented seminar with some exercises. The observers in the 592 course and those responsible for designing the experiment were impressed with the amount of negativism generated during the Carkhuff training - at times it seemed to reach, and even surpass, the level of negativism in the SAT group. This seems not so much to be a function of the trainer as of the situation, since similar negative affect has been observed with two other DCM trainers under similar conditions.

In the face of negativism to his sincere attempts to teach empathy skills, there were some sessions in which the DCT trainer would fall silent and be somewhat non-reactive. It was on these occasions, in particular, that he appeared to the instructor through the glass to be unconsciously emulating the role of a self-analytic trainer.

The DCT trainer in the follow up study had the benefit of knowing some of the pitfalls of training from viewing the main experiment. It should be noted that his plan was to accelerate the DCT training by "managing" the group by increasing student participation in various role play exercises and decreasing the time spent lecturing. There are no data available from the interaction analysis systems, but impressionistic data hinted that this trainer was functioning on a higher empathy level for the first few sessions than the previous trainer. After about the fourth session or so, he also became somewhat reluctant to demonstrate responses about level 3.0. Considering that the trainers did not serve as high functioning models, the fact that several subjects did achieve average responses higher than 3.0 on the HRVT and lower than .40 on the Discrimination Scale contradicts Carkhuff's claim that a high functioning model is a necessity.

A few comments about the Park-Matheson HRVT tests are relevant. These tests have demonstrated that they can differentiate clearly between training groups which have "learned" skills associated with empathic communication. The free response version of the HRVT, when rated by expert raters, more precisely differentiates the trainees with regard to successful learning of the task. More work on the multiple choices test will be required for several items which have low point-biserial correlation values to raise its value for individual precision.

The major weakness of the free response version of the HRVT is that being a video-tape test the communication responses must be evaluated on a

"one-way" basis. That is to say, there is no opportunity to observe the group members' reaction to the response given by the subject. In scoring the items the rater must take the place of the member on the video tape to whom the response is directed. This procedure undoubtedly increases experimental error. A second major weakness may be "phoniness" which is apparent in some scenes. The authentically empathic person may sense that the scenes are ingenuine and thus will not accept a phoney role to give back an ingenuine but apparently empathic response.

Despite those weaknesses the Park-Matheson Human Relations Video Tape Test probably represents the finest instrument of its nature which has been developed to date. Present efforts are being made by Park and Matheson to develop a manual for this instrument before release to the public domain. Further work should be directed to determining whether or not the skills measured by this instrument have any transfer value. For instance, do student teachers who score high on this instrument also employ empathy skills in their teaching? Perhaps it would be possible to employ a design similar to the Miles' (1960) and Bunker's (1965) studies mentioned in the literature review and determine whether teachers who learn empathy skills over a summer session demonstrate significant change "back-on-the-job." Indeed, unless the skills which are taught in the DCT groups, and are measured by the HRVT, have transfer value to other settings then such training is more-or-less for nought.

Change in the Understanding of Group Dynamics

The Group Process Analysis Test (GPAT) was designed specifically to measure increases in the understanding of group dynamics. That test is still in a rudimentary stage of development and generalizations drawn from

this preliminary work in virgin soil should be regarded as tentative. Nevertheless, the GPAT has helped uncover some rather significant findings with regard to the effectiveness of treatments and the type of person who is capable of learning group dynamics.

The results obtained on the GPAT in the main study indicated that with regards to the learning of group dynamics, the SAT observers learned the most (as defined by gain scores) while the SAT participants learned virtually nothing. The DCT participants and DCT clinical observers learned approximately 80 per cent as much as the SAT observers. In the summer follow-up study the mean GPAT scores of both the SAT participants and the DCT group which observed them actually declined over a three week period. A closer examination of the scores obtained by subjects in each of the groups indicated that certain persons in each group were capable of developing their understanding of group behavior. When the personality and attitudinal profiles of high learners were compared with two groups of low learners some rather significant differences were found. The high learner group was found to be "better adjusted" on a number of traits than the low learner groups.

At first glance, the results obtained from the main study were somewhat surprising. The main intended learning outcome for the SAT participants was to achieve an increase of group understanding. On the other hand, the DCT participants were not expected to increase in their understanding of group-dynamics as that was not at all supposed to be an intended learning outcome for that group. In retrospect, however, these results are perhaps not so astonishing. It has been the research team's subjective impression that individuals participating in the self-analytic treatment tend to become very ego-involved with other group members. Despite the trainer's attempts to offer "objective" interpretations of "reality" to the group, most of these

members become more interested in giving or receiving individual feedback rather than trying to learn about the various preconscious or unconscious forces which operate in groups. It would appear that those individuals who are able to study group dynamics, while being subjected to the very strong group forces which develop in self-analytic groups, are in a minority.

Matheson (1971) has carefully analyzed the group interaction in the four participant groups and matched the personality types obtained from Bales Interaction Process Analysis profile with the gain scores obtained on the GPAT. Matheson reports that in the SAT group only one of seven top interactors showed both positive directionality and gain on the GPAT. In contrast, in the DCT group three of four "positive" members showed gain. In discussing these results, Matheson suggests that the positive members are placed under a strain in self-analytic type groups as they are forced to reorganize their perceptions of reality. In the DCT group they are encouraged to maintain positive perceptions of reality and thus denial mechanisms are not as manifest.

In contrast to the SAT participants most DCT participants did not seem to become as ego-involved. The task of systematically learning various empathy skills through a variety of techniques, such as role playing, paraphrsing and so on, usually prevented them from delving into more personal concerns. If their performances in the group were poor, it was possible to place blame on the exercise, or the trainer's inability to teach the skill.

In the main experiment a considerable amount of hostility to the various tasks and the trainer emerged over the DCT sessions. There were times during the experiment when behavior of the DCT participants strongly resembled the Self-Analytic participants. It is plausible that the combination of

direct practice by the participants in attempting to listen for latent cues in developing empathy skills and the occasional eruption of group negativism may have offered peculiar assistance in understanding group dynamics. The fact that three of the four observer groups who watched the DCT groups had similar gains lends credence to this explanation.

It is still somewhat of a mystery as to why one DCT Bales' Observer group showed an average loss of almost 16 points over the training period, while the corresponding group in the other section gained almost 15 points. A rough sample of their ability to handle the Bales' system taken in session 14 indicated that the average rater in the group which showed the large loss was only coding 11 acts per minute. The group which gained was coding 16 acts per minute. These rates also matched with the course instructors' perceptions that the slower group tended to be somewhat confused and frustrated over struggling with learning Bales' IPA system on their own.

The finding that the Bales' and Clinical Observers who viewed the self-analytic treatment groups showed the greatest gains on the GPAT might have been anticipated. Their post-total scores were almost 15 points higher than the corresponding pre-total scores. Most of the post-total gain comes from an improved performance on the GPAT which was taken in class. This result suggests that these groups were more familiar with the material presented on the video-tape. It is also suspected that little learning about group behavior can be achieved until feelings toward the trainer can be resolved. As the trainer on this videotape test was the same trainer who conducted the SAT sessions in the experimental course, the possibility exists that the SAT participants performances on the GPAT may have been impaired by

unresolved transference feelings. While many of the participants continued to perceive the trainer's comments as being negative throughout their group's life, most of the observers came to realize after four or so sessions that the trainer's comments were neutral. Even one volatile female Bales observer who claimed that she was going to "jump through the glass" and attack the trainer changed her scoring of the trainer's remarks from negative to information before termination.

The summer study allowed the research team to examine changes in the learning of group dynamics using a different trainer. A prime intended learning outcome was to increase post-test scores on the GPAT without actual overt teaching of test materials. The treatments of the main study were somewhat confounded by allowing SAT participants to view DCT observers (and vice versa) and allowing subjects to intermingle, listen to audio-tapes, and so on. The decline of the mean scores over the training period cast some doubt on the validity of the GPAT. In discussing this result with the various participants, however, the research team came to believe that the confounding factor of contrasuggestibility interfered with the subjects' performances. The main evidence for this is that although large gains were made by some subjects, other subjects made even larger losses. Similar large losses were observed for some participants in the main study.

It is rather difficult to explain why some of the SAT participants gained and others dropped drastically. Two explanations are plausible. Either the losses are due to some random movement associated with the Gaussian distribution or they reflect resistance to declared group dynamics explanations in terms of unconscious processes. The latter alternative seems more plausible.

The decline of subjects over the summer course, suggest that three weeks in far too short a time to expect general gains in learning about complex beharioral processes. It would seem that in a longer time period trainees are able to slowly acclimatize themselves to the threatening chill that unconscious forces are really more than words on a page or vibrations on an eardrum. Indeed, the situation is analogous to being dragged from Plato's cave and finding the light too blinding.

The number of significant differences observed on the 16 PF and Cambridge Survey of Educational Opinions between subjects who gained on the GPAT and subjects who declined were quite impressive. The subjects who showed the greatest ggains on the GPAT are consistently depicted on a number of scales as being more emotionally stable, more able to face reality, more self-confident, and less frustrated than those subjects who showed no evidence of learning. These results hold true for both male and female subjects be they members of SAT or DCT sections. Similar characteristics were also found for subjects who were classified into high, medium, and low performance groups according to their scores on the GPAT post-test. These findings are considered to represent a breakthrough in increasing the present knowledge about who is able to profit from human relations training with regard to learning to recognize group dynamics. It is suggested here that only those individuals who are relatively well-adjusted are able to cope with the discomfort which accompanies an increase in recognizing the usually blurred forces which govern human behavior in groups. For to recognize that others are capable of shaping one another's behavior for reasons which are usually egocentric, despite alterocentric claims, sooner or later leads to the realization that one's own behavior is subject to the same laws.

Critics of the GPAT's validity are conceded a foothold, but no more. The KR-20 reliability is only 0.61 for the post-test. An item analysis revealed that several items need to be either improved, or replaced completely as their point-biserial correlations are too low (if scored with the 1,0 format). Before this test is employed again many of the scenes should be shortened and the number of items increased. The mechanical manipulations required by the best administrator to stop and start the test for each scene should be removed. Consideration should be given to having the tape converted into a kinescope film.

This study has demonstrated that the concept of measuring ability to understand group dynamics is possible by having subjects choose between explanations of a video-taped group's behavior. It should now be possible to move toward the development of a refined instrument which might be used to compare a number of techniques for teaching group dynamics.

Viewed from a total perspective the research evidence presented here suggests that: (1) the learning of group dynamics is a rather difficult process which is not likely to occur in "crash" courses of say three weeks, but (2) can occur in observer groups who are viewing a self-analytic group over a three month period. (3) To a lesser extent, participants and certain observer groups who are involved with a direct communications treatment are also able to increase their ability in understanding group dynamics. These increases may be due to increased sensitivity to the latent messages in conversation. (4) In contrast, participants in the type of self-analytic groups examined in the present study, are not likely, as a group, to show

significant gains. (5) It is apparent, however, that certain individuals in all of the groups studied here do benefit considerably by demonstrating an ability to increase their understanding of group dynamics. These individuals are likely to be as a group, better adjusted and more able to cope with reality, than subjects who cannot or do not learn about group dynamics. (7) Interested researchers would likely find it profitable to use a videotaped group to investigate changes in understanding of group dynamics. The development of a more refined videotape test for assessing that ability would be a desirable and significant contribution.

Two Evaluations:

To close this discussion, two evaluations are necessary. At a micro-cosmic level we are concerned with individual comparisons between the various groups-How well did they do? Secondly, we were also concerned with finding out whether or not such courses are worthwhile. In reading these evaluations the reader should keep in mind that these treatments are unique to the training setting described and do not duplicate exactly work elsewhere.

Comparison of Treatments

To make definite comparisons of the different treatments at this time would certainly be unfair. The traditional caveat of the need for further research with different subjects, trainers, and environments is in order. However, until further evidence is brought forth the following tentative comparisons are made. With regard to the learning situations examined in the present study it would appear that:

1. A direct communications treatment is likely to be more beneficial for helping teacher trainees than a self-analytic treatment. The learning indices employed here showed that the Self-Analytic Treatment participants, in general, learned virtually nothing about group dynamics and increased in the communication of empathy only slightly. From a subjective viewpoint, the SAT groups are usually considerably more exciting to observe and there is some evidence that some of the participants do make personal changes in their lives as a result of participating in such a group. But these changes do not at all seem to be systematic in nature (or predictable). It may well be that in a three month period is too short to evaluate participant learning. At the end of the sessions some members were just starting to "face" reality. Since the participants and observers in the Direct Communications Treatment made, in general, significant systematic gains in the communication of empathic understanding and ability to recognize group dynamics, it must be

suggested that the data support Carkhuff's (1969a) claim that:

> We can do anything in training that we can do in treatment - and more. Training in interpersonal skills strikes at the heart of most difficulties in living. Systematic training in interpersonal skills affords a means of implementing the necessary learning in progressive gradations of experience which insure the success of learning. In making explicit use of all sources of learning - the experiential, the didactic, and the modeling-systematic group training in interpersonal skills provides the most effective, economical, and efficient means of achieving the individual growth of the largest number of persons (p.131).

2. There would appear to be basically no significant difference between participants and observers in the learning of direct communications skills. However, the various indices employed showed that the DCT participants earned superior scores, in general. With regard to developing understanding of group-dynamics it would appear that observers of self-analytic groups would likely profit most, while participants in such groups learn the least. Participants in self-analytic groups are probably in the best position to learn about their personal performance in groups. But no measure of so-called personal growth (or deterioration) was taken.

3. There appears to be virtually no important differences in the learning acquired about empathy and group dynamics between observers who are developing the skills required for Bales' IPA coding and observers who are developing clinical skills. However, it is strongly believed by this researcher that 15 sessions is just not sufficient time for undergraduate teacher trainees to acquire even minimal proficiency in Bales' system. In the fourteenth session a sample of their coding of ongoing interaction was taken and it was immediately apparent that several would never be able to master this skill. The average number of acts coded by each group was less than one-half of the acts coded by the "expert" Bales' observers (the instructors) in the same time period. After the treatments ended several of these observers gave

indications that they had just began to appreciate the complexity and accuracy of work in the Bales' system. In effect, they had just began to "see the light" as they prepared their term assignments.

It must be concluded then that it was not possible to examine with care the claim advanced by Bales in the following remarks:

> Once having learned to observe for a given kind of behavior or type of content - having tried to capture it by a definition, having seen it in many variations, having had to decide definitely whether it is seen at a given point or not by putting down a score of some kind; after these experiences, one finds that he sees things differently. For better or for worse, he sees and hears things which were comfortably blurred before. (1970, p.20).

The present researcher now believes that the learning of Bales' IPA system interferes with symbolization of other material until one becomes proficient with the system. Once coding skill has been acquired it assists in the recognition of forces which are present in social situations.

Future research on differences between two types of observational training should pay closer attention to physically separating the two types of observer groups. The clinical observers in the present study were actually given little assistance finding models of group learning. They were simply told to employ the principles of diagnosis described in Millon's (1969) textbook on abnormal psychology. Despite discouragement from the instructors, it was apparent that many of these observers had sought out information from various references on interaction or content analysis.

Evaluation of the Course

In general, whether they actually learned or not according to the criterion measures, many of the subjects claimed that it was the "best" course that they had ever taken. Most were able to make several new acquaintances and most found the treatments somewhat unique. Anonymous responses to the question "Would you like to take this course in the second semester if credit could be obtained?" showed the course's popularity. Eight-five subjects said they would re-enroll if the course were offered again. Four subjects said they would like to take the course again, but had to take other courses for a degree. Five subjects said that they would definitely not re-enroll.

Among a number of fantasies which develop in courses of this nature, was the predominant wish by subjects in all groups that they could have been in another treatment. That is to say, participants fantasized about becoming observers, SAT subjects wanted to be DCT subjects and so on. The grass-is-greener theme was noted in the course from the earliest sessions. It was indeed quite interesting that despite the claims of hardship of being in a particular treatment and complaints about doing the various tests, so many subjects were keen to return for more. It must be concluded that this type of course appears to satisfy some emotional thirst which is not quenched in most other courses.

With regard to individual changes which were perhaps not detected by the various personality and attitude measures, there was some evidence in most groups that the course had some powerful effects on some individuals. For instance, several of the Bales' observers complained in the middle sessions of the treatment that they were afraid of becoming too sensitive to what was going on in their personal lives. In fact, one Bales' observer broke off with his girl friend after noticing the number of acts which she emitted that would

be scored in Category 11 (Tension). Several DCT participants gave testimonials in the group that the course had improved their relationships at home. One of these participants showed up several weeks after the termination of treatment at the instructors' offices and told the instructos how the course had helped him to communicate with his wife. One participant in a self-analytic group said that she realized for the first time in 40 or so years how she had lost her true identity to others who forced various roles on her.

The present study assessed the changes in participants over the experimental period, but in retrospect the trainers should have been tested as well. In particular, the effect of being observed while giving the Direct Communications Treatment seems to place heavy stresses on the interpersonal relationships of the trainers' daily lives. As Mackie and Wood (1968) have noted the observers may be perceived as hostile critics and subsequently the trainers become extremely sensitive to criticism. In the three experiments which have investigated this treatment each trainer has simultaneously encountered difficulty with either colleagues or family. It may well be that in attempting to pass on the values of empathy, honesty, respect and so on, that one begins to be aware of discrepancies in personal behavior which observers and instructors are also aware of, while participants remain spellbound.

A Final Comment

The research presented herein represents an energetic attempt to examine a number of aspects of direct and vicarious human relations training. While it is conceivable that some of the findings may discomfort those readers whose close to the heart beliefs have been found to be in error, the conclusions have been drawn from the best evidence available to date. If it is any consolation, the present researcher confesses that the data trampled on a number of his own cherished myths.

References

Abercrombie, M. L. The Anatomy of Judgement, New York: Basic Books, 1960

Adams, J. S., and Romney, A. K. A functional analysis of authority, Psychological Review, 66, 1959, 234-251.

Anderson, R. M. A Comparison of Bales and Flanders. System of Interaction Analysis as Research Tools in Small Group Instruction, Unpublished doctoral dissertation, University of Alberta, 1971.

Argyle, M. The Psychology of Interpersonal Behavior. London: Penguin Books, 1967.

Argyris, C. Exploration in interpersonal competence. Journal of Applied Behavioral Science. March 1965, 58-83.

Bales, R. F. Interaction Process Analysis; a Method for the Study of Small Groups, Reading, Mass: Addison-Wesley Pub. Co., 1950.

Bales, R. F. Personality and Interpersonal Behavior. New York: Holt, Rinehart, & Winston, 1970.

Baller, R. E. Relationship Between Change in Student Perceptions of Teachers and Sensitivity Training of Teachers, Unpublished doctoral dissertation United States International University, 1968.

Bandura, A. Social learning through imitation. In M. R. Jones (Ed.) Nebraska Symposium on Motivation. Lincoln: University of Nebraska Press, 1962, 211-269.

Bandura, A. Vicarious processes: No trial learning. In L. Berkowitz (Ed.) Advances in Experimental Social Psychology. New York: Academic Press, 1965, 1-55.

Bandura, A. Principles of Behavior Modification. New York: Holt, Rinehart, & Winston Co., 1969.

Bandura, A., and Huston, A. C. Identification as a process of incidental learning, Journal of Abnormal and Social Psychology. 1961, 63, 311-318

Bandura, A., Ross, D., and Ross, S. A. Transmission of aggression through imitation of aggressive models, Journal of Abnormal and Social Psychology. 1961, 63, 575-582.

Bandura, A., Ross, D., and Ross, S. A. Imitation of film-mediated aggressive models, Journal of Abnormal and Social Psychology. 1963, 66, 3-11.

Bandura, A., Grusec, J. E., and Menlove, F. L. Observational learning as a function of symbolization and incentive set, Child Development. 1966, 37, 499-506.

Bandura, A., and Menlove, F. Factors determining vicarious extinction of avoidance behavior through symbolic modelling, Journal of Personality and Social Psychology. 1967, 8, 99-108.

Bay, K. Applications of multivariate analysis of variance to educational and psychological research, Multivariate Behavioral Research. In press 1971.

Becker, G., and Delio, D. T. Scores on Rokeach's Dogmatism Scale and the response set to positive social and personal image. Journal of Social Psychology. 1967, 71, 287-293, (cited by Vacchiano et. al., 1968).

Benne, K. D. History of the T-group in the laboratory setting, In. Bradford, L. P., Gibb, J. R., and Benne, K. D., (Eds.) T-Group Theory and Laboratory Method. New York: Wiley, 1964, 216-247.

Benne, K. D., Bradford L. P., and Lippitt, R. The Laboratory Method, In Bradford, L. P., Gibb, J. R., and Benne, K. D., (Eds.) T-Group Theory and Laboratory Method. New York: Wiley, 1964, 15-44.

Bindrim, P. Nudity as a quick grab for intimacy in group therapy, Psychology Today. 1969, 3, 24-28.

Bion, W. R. Experience in Groups. London: Tavistock Publications, 1961.

Bradford, L. P., Gibb, J. R., and Benne, K. D., (Eds.) T-Group Theory and Laboratory Method. New York: Wiley, 1964.

Brook, R. C. Self-Concept Changes as a Function of Participation in Sensitivity Training as Measured by the Tennessee Self Concept Scale, Unpublished doctoral dissertation, Michigan State University, 1968.

Brown, J. A. C. The Social Psychology of Industry. Middlesex, Penguin, 1954.

Brown, J. A. C. Techniques of Persuasion. Middlesex, Penguin, 1963.

Buchanan P. C. Evaluating the effectiveness of laboratory training in industry, In. Exploitations in Human Relations Training and Research. No. 1, Washington, D.C., National Training Laboratories, 1965.

Bunker, D. R. Individual applications of laboratory training, Journal of Applied Behavioral Science. 1965, 1, 131-148.

Bunker, D. R., and Knowles, E. S. Comparison of behavioral changes resulting from human relations training laboratories of different lengths, Journal of Applied Behavioral Science. 1967, 3, 505-523.

Burke, W. W. Social perception as a function of dogmatism, Perceptual and Motor Skills. 1962, 9, 329-334.

Burke, R. L., and Bennis, W. G. Changes in perception of self and others during human relations training. Human Relations. 1961, 14, 165-182.

Cabianca, W. A. The Effects of a T-group Laboratory Experience on Self-Esteem, Needs and Attitudes of Student Teachers, Unpublished doctoral dissertation, Washington State University, 1967.

Campbell, D. T., and Dunnette, M. D. Effectiveness of T-group experiences in managerial training and development, Psychological Bulletin. 1968, 70, 73-104.

Campbell, D. T., and Stanley, J. C. Experimental and Quasi-Experimental Designs for Research in Teaching in Gage, N.L. Handbook of Research on Teaching. Chicago, Rand McNally & Co., 1963, 171-246.

Carkhuff, R. R., Helping and Human Relations, Vols. I & II. New York: Holt, Rinehart, and Winston Co., 1969a.

Carkhuff, R. R. The prediction of the effects of teacher-counselor education: The development of communication and discrimination selection indexes, Counselor Education and Supervision. Summer 1969b, 265-272.

Carkhuff, R. R., and Berenson, B. G. Beyond Counseling and Therapy. New York: Holt, Rinehart, and Winston Co., 1967.

Cattell, R. B., Eber, H. W.,and Tatsuoka, M. M., Handbook for the Sixteen Personality Factor Questionnaire. Campaign: Institute for Personality and Ability Testing, 1970.

Cecere, G. J. Change in Certain Personality Variables of Counselor Education Candidates as a Function of a T-Group, Unpublished doctoral dissertation, Rutgers State University, Dissertation Abstracts Int., 1969, 1427-1428.

Cientat, V. J. Surreptitious modification of verbal behavior during class disscussion, Psychological Reports. 1959, 5, 648 (cited in L. Krasner and L. P. Ullman (Eds.) Research in Behavior Modification. New York: Holt, Rinehart and Winston Co., 1965.

Crockett, W. H., and Meidinger, T. Authoritarianism and interpersonal perception, Journal of Abnormal and Social Psychology. 1956, 53, 378-380.

Cronbach, J. and Furby, L. How we should measure "change" - or should we? Psychological Bulletin. 1970, 74, 68-80.

Dymond, R. R. A scale for the measurement of empathic ability, Journal of Consulting Psychology. 1949, 13, 127.

Edwards, A. L., and Cronbach, L. J. Experimental design for research in psychotherapy, In Psychotherapy Research. Stollak, G. E., Guerney, B. G., Rothberg, M. (Eds.) Chicago: Rand McNally Co., 1966.

Egan, G. Encounter: Group Processes for Interpersonal Growth. Belmont: Brooks-Cole, 1970.

Ehrlich, H. J., and Lee, D. Dogmatism, learning, and resistance to change: A review and a new paradigm, Psychological Bulletin. 1969, 7/1, 249-271.

Fikso, A. Vicarious vs. Participant Group Psychotherapy of Underachievers, Unpublished doctoral dissertation, Illinois Institute of Technology, 1970, (see Dissertation Abstracts Int., 1970 Vol. 3162-B, 912).

Flanders, N. Interaction Analysis in the Classroom: A Manual for Observers. Ann Arbor: University of Michigan, 1960.

Flanders, N. Analysing Teaching Behavior. Reading, Mass.: Addison-Wesley, Publ., 1971.

Foulds, M. L., Wright,J. C., and Guinan, J. F. Marathon Group: A six-months follow-up, Journal of College Student Personnel. 1970, 11, 426-431.

Foulkes, S. H., and Anthony, E. J., Group Psychotherapy: The Psychoanalytic Approach. Baltimore: Pelican Books, 1957.

Friedlander, F. A comparative study of consulting processes and group development, Journal of Applied Behavioral Science. 1968, 4, 377-395.

Furst, N. The effects of training in interactions analysis on the behavior of students teachers in secondary schools, A paper read at AGRA, Chicago 1965, In Amidon, E. J. and Hough, J. (Eds.) Interaction Analysis: Theory, Research, and Application. Massachusetts: Addison-Wesley, 1967.

Gerst, M. S. Symbolic Coding Operations in Observational learning, Unpublished doctoral dissertation, Stanford University, 1969.

Gibb, J. R. The effects of human relations training, In. A.E. Bergin and S.L. Garfield, Handbook of Psychotherapy and Behavior Change. New York: Wiley and Sons, 1971.

Haiman, F. S., Effects of training in group processes on open-mindedness, Journal or Communication. 1963, 13, 236-241.

Hall, J. The use of instruments in laboratory training, Training and Development Journal. 48, 1970.

Hall, J. and Williams, M. S. Group dynamics training and improved decision making, Journal of Applied Behavioral Science. 1, 1970, 39-67.

Hampden-Turner, C. M. "An existential learning theory" and integration of T-Group research, Journal of Applied Behavioral Science. 2, 1965, 367-386.

Harris, C. W. (Ed.) Problems in Measuring Change. Madison: University of Wisconsin Press, 1963.

Harris, R. C. Group counseling with teachers: An effective in-service education technique, Unpublished manuscript, York University, 1970.

Harrison, R. and Lubin, B. Personal style, group composition and learning, Journal of Applied Behavioral Science. 1965, 294-301.

Hastorf, A. H. The "reinforcement" of individual actions in a group situation, In. L. Krasner and L. P. Ullman (Eds.) Research in Behavioral Modification. New York: Holt, Rinehart and Winston, 1965.

Hough, J. B., and Amidon, E. J. The relationship of personality structure and training in interaction analysis to change during student teaching, Paper read at the annual meeting of the American Educational Research Association, Chicago, 1965.

Hough, J. B., and Amidon E. J. Behavioral change in pre-service teacher preparation: An experimental study, Temple University, Philadelphia, cited in E. J. Amidon and J. B. Hough (Eds.) Interaction Analysis: Theory, Research, and Application. Reading: Addison-Wesley, 1967.

Hough, J. and Amidon, E. J., (Eds.) Interaction Analysis: Theory, Research, and Application. Massachusetts: Addison-Wesley, 1967.

Hough, J. and Ober, R. The effect of training in interaction analysis on the verbal behavior of pre-service teachers, In. Hough, J. and Amidon, E. J. (Eds.) Interaction Analysis: Theory, Research, and Application. Massachusetts: Addison-Wesley, 1967.

House, R. J. T-group education and leadership effectiveness: A Review of the empirical literature and a critical evaluation, Personnel Psychology. 1967, 20, 1-32.

Insko, C. A. Theories of Attitude Change. Appleton-Century-Crofts, New York, 1967.

Jecker, J., Macoby, N., Breitrose, H. S., Rose, E. O, Teacher accuracy in assessing cognitive visual feedback from students, Journal of Applied Psychology. 1964, 48, 393.

Jones, E. E. Authoritarianism as a determinant of first impression formation, Journal of Personality. 1954, 23, 104-111.

Jordan, D. L., A comparison of the effects of didactic and experimental training on accurate empathy, non-possessive warmth, and genuineness, Unpublished doctoral dissertation, University of Colorado, D.A., 3487-B, 1969.

Mc Leish, J. Teacher Attitudes: A Survey of National Differences. Cambridge Institute of Education, 1969.

Mc Leish, J. Characteristics of the Edmonton Faculty of Education Intake 1970, Report to the Dean of Education, Unpublished manuscript, University of Alberta, 1971.

Mc Leish, J., Matheson, W. E., Park, J. The Psychology of Learning Groups. Hutchinson, in preparation 1971.

Mc Nair, D. M. Reinforcement of verbal behavior, Journal of Experimental Psychology. 1957, 53, 40-46, (cited in L. Krasner and L. P. Ullman Eds.) Research in Behavior Modification. New York: Holt, Rinehart, and Winston, 1965.

Miles, M. B. Human relations training: Processes and outcomes, Journal of Counseling Psychology. 1960, 7, 301-306.

Miles, M. B. Human relations training: Current status, In. I.R. Weischler and E.H. Schein (Eds.) Issues in Training, Washington: National Training Laboratories, 1962, 3/13.

Millon, T. Modern Psychopathology: A Biosocial Approach to Maladaptive Learning and Functioning. Philadelphia: W.B. Saunders, 1969.

Moscow, D. The influence of interpersonal variables on the transfer of learning from the T-group to the job situation. Proceeding of the International Congress of Applied Psychology, Amsterdam, 1968.

Nadler, E. B., and Fink, S. L. Impart of laboratory training on sociopolitical ideology, Journal of Applied Behavioral Science. 6, 79, 1970.

National Training Laboratories, Theory and method in laboratory training, In I. R. Weschler, E. H. Schein, Issues in Training. Washington: National Training Laboratories, 1962, 14-32.

Olch, D.,and Snow, D. L. Personality characteristics of sensitivity group volunteers, Personnel and Guidance Journal. 1970, 48, 848-850.

Paley, D. T. The Effects of Human Relations Training on Empathic Accuracy and Dogmatism, Unpublished Masters Thesis, University of Alberta, 1969.

Payne, P. A. and Gralinski, D. M. Effects of supervisor style and empathy on counselor perceptions in stimulated counseling, Journal of Counseling Psychology, 1969, 557-563.

Rand, L. P.,and Carew, D.K. Comparison of T-Group didactic approaches to training undergraduate resident assistants, Journal of College Student Personnel, 1970, 11, 432-438.

Redding, A. J. The Relationship Between Training in Verbal Interaction Analysis and Selected Counseling Process Variables, Unpublished doctoral dissertation, University of North Dakota, D.A. 3840-A, 1969.

Katz, C. N., and Katz, F. M. Panel studies and response set, Psychological Reports. 1967, 20, 803-806.

Kelley, H., and Pepitone, A. An evaluation of a college course in human relations, The Journal of Educational Psychology. 1952, 43, 193-206.

Kemp, C. G. Comparison of educational groups, group counseling, and group therapy, In. C.G. Kemp (Ed.) Perspectives on the Group Process. Boston: Houghton-Miflin, 1970.

Kernan, J. P. Laboratory human relations training: Its' effect on the personality of supervisory engineers, Dissertation Abstracts, 1964, 665-666.

Kirk, R. E. Experimental Design: Procedures for the Behavioral Sciences. Belmont, Brooks-Cole, 1968.

Krafft, L. J. The Influence of Human Relations Laboratory Training upon the Perceived Behavioral Changes On Secondary School Seminar Instructors, Unpublished doctoral dissertation, Michigan State University, 1967.

Laforge, R. A correlational study of two personality tests: The MMPI and Cattell 16 PF, Journal of Consulting Psychology. 1962, 26, 402-411.

Lewinsohn, P. M, Shaffer, M., Libet, J., A behavioral approach to depression, Unpublished manuscript, University of Oregon, 1969.

Lorr, M. A review of the 16 PF Questionnaire, In. O. K. Buros (Ed.) The Sixth Mental Measurements Yearbook. Highland Park: Gryphon Press, 1965.

Mackie, R.,and Wood, J. Observations on two sides of a one-way screen, The International Journal of Group Psychotherapy. 1968, 18, 177-185.

Massarik, F. and Carlson, G., The California Psychological Inventory as an Indicator of Personality Change in Sensitivity Training. Master's thesis University of California (L.A.), cited in M. Dunnette, Personnel Management, The Annual Review of Psychology. 1962, 285-314.

Matuschka, E. P. The Use of Verbal Interaction Analysis as an Inservice Training Techniques for Counseling Practicum Students, Unpublished Doctoral Dissertation, University of N.D., D.A., 3834-A, 1968.

Matheson, W. E. The Structure of Small Learning Groups, Unpublished doctoral dissertation, University of Alberta, 1971.

McLeish, J. The Lecture Method, Cambridge Monograph Series, No. 1, Cambridge Institute of Education, 1968.

McLeish, J. Students' Attitudes and College Environments. Cambridge: Heffer & Sons, 1970.

Reddy, W. B. The Effects of Immediate and Delayed Feedback on the Learning of Empathy, Unpublished doctoral dissertation, University of Cincinnati, D.A., 1849-B, 1968.

Rogers, C. R. The process of the basic encounter groups, In J.F.T. Bugental (Ed.) Challenges of Humanistic Psychology. New York: McGrard-Hill, 1967, 261-276.

Rokeach, M. Political and religious dogmatism: An alternative to the authoritarian personality, Psychological Monographs, 70, 1956.

Rokeach, M. The Open and Closed Mind: Investigations into the Nature of Belief Systems and Personality Systems. New York: Basic Books, 1960.

Rokeach, M. Authoritarianism scale and response bias: Comment on Peabody's paper, Psychological Bulletin. 1967, 67, 349-355.

Rokeach, M., Gladin, L., and Trumbo, D. A. Two validation studies with high and low dogmatic groups, In Rokeach, M. The Open and Closed Mind. New York: Basic Books, 1960.

Rosenberg, P. P. Experimental Analysis of Psychodrama, Unpublished doctoral dissertation, Harvard University, 1952.

Rubin, I. The reduction of prejudice through laboratory training, Journal of Applied Behavioral Science. 3, 29, 1967.

Sawatzky, D. D. The Relationship Between Open-Mindedness and Accurate Interpersonal Perception, Unpublished Masters Thesis, University of Alberta, 1968.

Schein, E. H. Management development, human relations training, and the process of influence, In. I. R. Weschler and E. H. Schein (Eds.) Issues in Training. Washington: National Training Laboratories, 1962.

Schein, F. N., and Bennis, W. G., (Eds.) Personal and Organizational Change Through Group Methods. New York: Wiley, 1965.

Schmuck, R. A. Helping teachers improve classroom group processes, Journal of Applied Behavioral Science, 1968, 4, 401-421.

Scodel, A., and Mussen, P. Social perceptions of authoritarians, Journal of Abnormal and Social Psychology. 1953, 48, 181-192.

Skinner, B. F. Science and Human Behavior. New York: MacMillan, 1953

Skinner, B. F. Cumulative Record. New York: Appleton, 1959.

Slavson, S. R. Analytic Group Psychotherapy With Children, Adolescents, and Parents. New York: Columbia University Press, 1950.

Smith, H. C. Sensitivity to People. New York: McGraw-Hill, 1966.

Smith, P. B. The effects of T-group training, in Whitaker, G. (Ed.) T-Group Training, Group Dynamics in Management Education. London: Basil Blackwell Pub., 1965.

Smith, P. B., and Pollack, H. B. The participants learning style as a correlate of T-group learning, Proceeding of the International Congress of Applied Psychology, Amsterdam, 1968.

Spearman, C. The Abilities of Men: Their Nature and Measurement. New York: MacMillan, 1927.

Staats, A. W., and Staats, C. K. Complex Human Behavior. New York: Holt, Rinehart and Winston, 1964.

Stock, D. A survey of research on T-groups, In L.P. Bradford, J.R. Gibb, and K.D. Benne (Eds.), T-Group Theory and Laboratory Method. New York, Wiley, 1964, 395-441.

Truax, C. B., and Carkhuff, R. R. Toward Effective Counseling and Psychotherapy: Training and Practice. Chicago: Aldine, 1967.

Vacchiano, R. B., Schiffman, D. C., Strauss, P. S. Factor Structure of the Dogmatism Scale, Psychological Reports. 1967, 20, 847-852.

Vacchiano, R. B., Strauss, P. S., Hockman L. The open and closed mind: A review of dogmatism, Psychological Bulletin, 1968, 7, 261-278.

Whiteman, R. M. Psychodynamic principles underlying T-group processes, In L. P. Bradford, J. R. Gibb, and K. D. Benne, (Eds.) T-Group Theory and Laboratory Method. New York: Wiley and Son, 1964, 310-335.

Valiquet, M. J. Individual change in a management development program, Journal of Applied Behavioral Science. 1968, 4, 313-325.

Washburn, R. W. Human Relations Training for Confined Delinquents, Unpublished doctoral dissertation, Colorado State University, 1968.

Wolfer, J. A. Changes in dogmatism scores of high and low dogmatics as a function of instructions, Psychological Reports. 1967, 20, 947-950.

Zimet, C. N.,and Fine,H.J. Personality changes with a group therapeutic experience in a human relations seminar, Journal of Abnormal and Social Psychology. 1955, 51, 68-73.

Appendix A

1. The Park-Matheson Human Relations Video-Tape Test of Empathic Understanding (HRVI)
   a) Free Response Version
   b) Multiple Choice Version

2. Carkhuff's Scale for the Measurement of Empathic Understanding

The Park-Matheson Human Relations
Video Tape Test of Empathic Understanding

For a number of years psychologists and educators have suggested that "empathic understanding" may be a key variable in determing successful performance in the helping professions (teaching, counselling, etc.) As used here, empathic understanding refers to a "helpers" ability to allow himself to experience the experience of another person and communicate understanding that he is "tuned in" to the person who requests help. Empathic understanding implies an ability to "get with" another person to such an extent that you understand almost exactly how he thinks, feels, and acts. In effect, to empathically understand another person involves trying to see his world and his problems through his eyes. Such understanding can be communicated through both talk and action.

A scale for rating helper responses in terms of communication of empathic understanding is outlined below. With this scale it is possible to rate a given response between 1 and 5 on half point intervals. For example a response can receive a score of 2.5 if it is judged to be between 2.0 and 3.0 (levels).

Level 1 - the response given to the person requesting help either does not attend to, or detracts significantly from (or even ignores) behavioral and verbal expressions. No awareness of even the most obvious surface feelings is communicated.
Level 2 - the helper cummunicates some awareness of obvious surface feelings but his response subtracts from the meaning and feeling being expressed.
Level 3 - the expressed feelings of the helper are essentially interchangeable with those of the other person.
Level 4 - the helper communicates his understanding of the other persons expressions and thus enables him to express feelings that he was unable to express previously.
Level 5 - the helper responds accurately to all of the other person's deeper as well as surface feelings and becomes "tuned in" on the other person's wavelength.

In a few minutes you are going to be shown scenes of various individuals who are expressing their feelings on a number of topics. Each scene shows a group of five (5) members. You are to consider yourself as the sixth. (6th) member of the group. Each scene lasts approximately one (1) minute. A one (1) minute period of blank videotape separates each scene. After each scene, YOU as the sixth member of the group, are asked to respond AS EMPATHICALLY AS YOU CAN to a designated group member. Your responses are to be written in the spaces provided. The seating position of the group member to whom you are to respond is listed on the left side of you answer sheet. The name of the individual who you are to respond to is listed. Other group members are designated by number.

To be certain that you understand the instructions, let's try two examples to see what the task involves.

Example 1 The person in this scene that you are to respond to is in seating position number 1. Her name is Cheryl. The names of the other group members are not given and are not likely to be needed to complete the task. (Please ignore the number on the upper-right portion of the screen.)

```
          3
        2   4
Cheryl (1)    5
```

An example of what might be a level 1 or 1.5 response to Cheryl would be "He's right you know. Time heals all wounds. You can do it."

An example of a response which might be rated between 3.5 and 4.0 is "So many things are happening to you Cheryl. I guess you're feeling kind of lost with nowhere to turn."

Example 2 Write response in this space:

```
          3
  Glen (2)   4
1              5
```

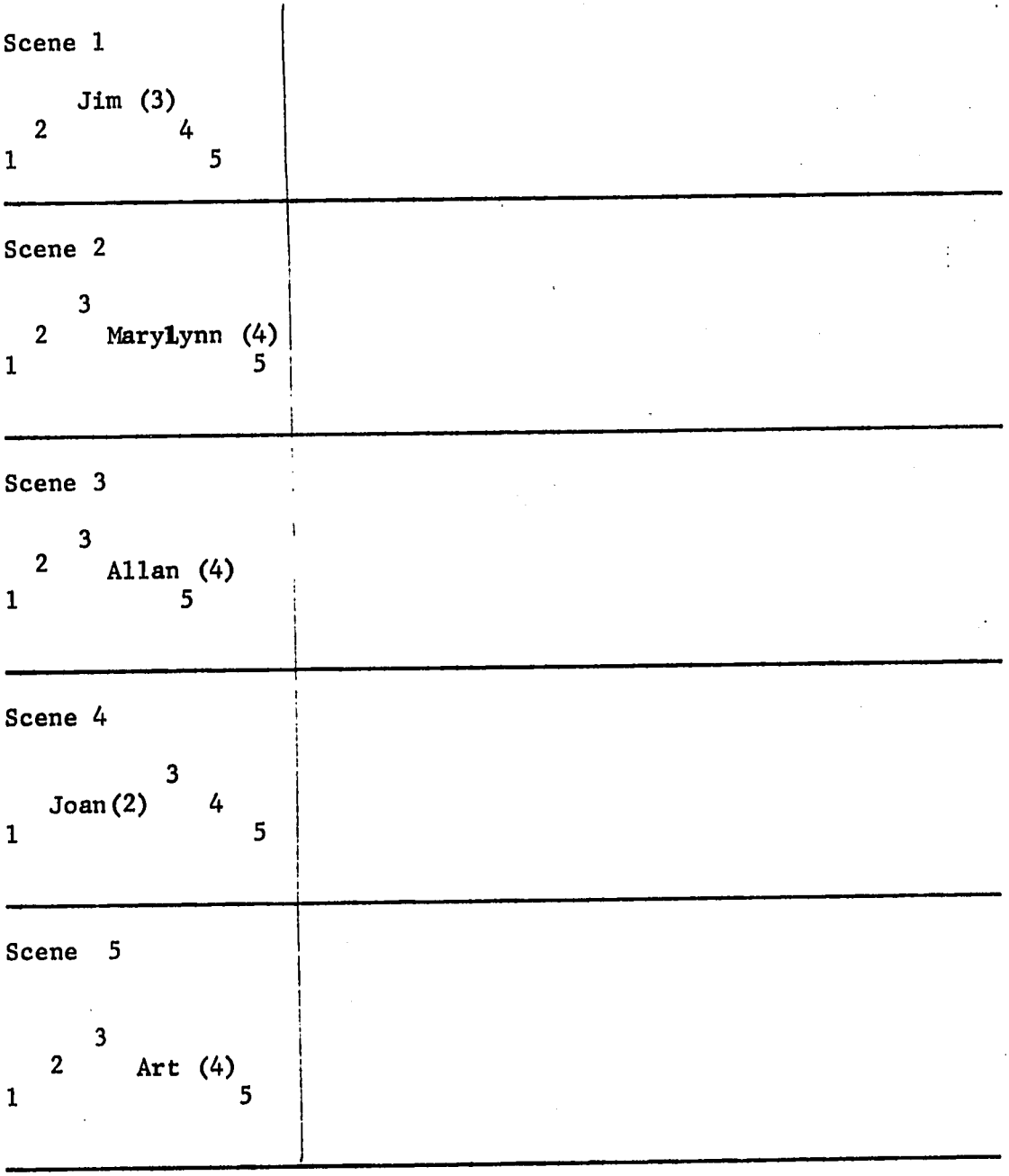
Level 1.5 "Glen, I'm really glad that you quit that tapping. It was annoying everyone, so you really were given good feedback."

Level 3.0 "Glen, you really seem uncomfortable about what has just happened."

Level 3.5 "Glen, I can't help but feel that your really annoyed and bothered and even ashamed by being bawled out. Could you tell us about it?"

Level 4.0 "Glen, you seem annoyed - even humiliated by what's happened. Kinda ashamed like a little boy with his hand in the cookie jar."

Sample Response Sheet for the HRVT Free Response Version



Similar response forms are employed for items 6 through 16. (See the multiple choice test for seating arrangements.)

The Park-Matheson Human Relations
Video Tape Multiple Choice Test (HRVT-MC)

For a number of years psychologists and educators have suggested that "empathic understanding" may be a key variable in determining successful performance in the helping professions (teaching, counselling, etc.). As used here, empathic understanding refers to a "helper" ability to allow himself to experience the experience of another person and communicate understanding that he is "tuned in" to the person who requests help. Empathic understanding implies an ability to "get with" another person to such an extent that you understand almost exactly how he thinks, feels, and acts. In effect, to empathically understand another person involves trying to see his world and his problems through his eyes. Such understanding can be communicated through both talk and action.

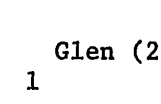
A scale for rating helper responses in terms of communication of empathic understanding is outlined below. With this scale it is possible to rate a given response between 1 and 5 on half point intervals. For example, a response can receive a score of 2.5 if it is judged to be between 2.0 and 3.0 (levels).

Level 1 - the response given to the person requesting help either does not attend to, or detracts significantly from (or even ignores) behavioral and verbal expressions. No awareness of even the most obvious surface feelings is communicated.
Level 2 - the helper communicates some awareness of obvious surface feelings but his response subtracts from the meaning and feeling being expressed.
Level 3 - the expressed feelings of the helper are essentially interchangeable with those of the other person.
Level 4 - the helper communicates his understanding of the other person's expressions and thus enables that person to express feelings that he was unable to express previously.
Level 5 - the helper responds accurately to all of the other person's deeper as well as surface feelings and becomes "tuned in" on the other person's wavelength.

In a few minutes you are going to be shown scenes of various individuals who are expressing their feelings on a number of topics. Each scene shows a group of five (5) members. You are to consider yourself as the sixth (6) member of the group. Each scene lasts approximately one (1) minute. A one(1) minute period of blank videotape separates each scene. After each scene, YOU, as the sixth member of the group, are asked to choose from five alternatives which response you consider to show the HIGHEST DEGREE OF EMPATHIC UNDERSTANDING toward a designated group member. Indicate you choice in the space provided on the right hand side of the answer sheet following each scene.

Response Sheet:
Human Relations Video Tape Multiple Choice Test

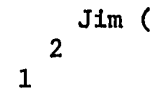
Example 1 The response showing the highest degree of empathic understanding to Glen is:



a. "Glen, he's right. It's about time you quit that silly tapping."
b. "Glen, you seem annoyed- even humiliated by what's happened. Kinda ashamed like a little boy with his hand in the cookie jar."
c. "Glen, I can't help but feel that your really annoyed and bothered and even ashamed by being bawled out. Could you tell us about it?"
d. "Glen, you really seem uncomfortable about what has just happened."

Answer _____

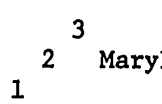
Scene 1 The response showing the highest degree of empathic understanding to Jim is:



a. "Don't think that leaving the group won't solve anything?"
b. "You feel that you are forsaken and all alone with your problems."
c. "Sure the group understands how you feel. Would you like to tell us more or would you rather just wait?"
d. "You feel like an aching shell of a person."
e. "Why don't you get hold of yourself and tell us what your problem is? Then we'll see if we can help you."

Answer _____

Scene 2 The response showing the highest degree of empathic understanding to Mary Lynn is:



a. "You will just have to face the music with your mother."
b. "Why don't you just let things happen as if there wasn't a problem. Your mother will probably understand."
c. "Your deeply concerned that your mother will be disappointed in you."
d. "Mary Lynn don't think that you're really a good person in spite of the present condition. Your mother will understand."
e. "You're feeling like a pretty bad person, afraid you're letting her down and wondering if she cares enough to care after she finds out."

Scene 3

The response showing the highest degree of empathic understanding to Alan is:

a. "I hear you saying that you feel we really care for you and it feels great."
b. "You're really happy that you're part of this group."
c. "I think that you feel that the group has really changed you."
d. "Alan you seem a lot more confident than when you started. Is it really the group though?"
e. "You say that you think it is the group?"

Answer _____

Scene 4

The response showing the highest degree of empathic understanding to Joan is:

a. "You say uninvolved?"
b. "This happens to everyone when they join groups until they become involved. You'll overcome your shyness too."
c. "You came for help and somehow I sense we've failed."
d. "I can see how much this loneliness could bother you and we haven't been much help."
e. "You can't feel totally accepted here and it's hard to share with us. You're really disappointed in yourself."

Answer _____

Scene 5

The response showing the highest degree of empathic understanding to Art is:

a. "If your wife loves and trusts you she will seek to understand your actions. Withholding your guilty feelings can hurt you."
b. "You feel that you failed your family and yourself and you don't know which way to turn."
c. "Art, I don't think that you should let it bother you because no one is perfect. Mistakes are bound to happen and you, at least, recognize your mistake."
d. "Art, if you really love your wife and have a mutual bond of understanding with her you'll tell her about your mistake."
e. "Why did you get involved in the first place."

Answer _____

Scene 6

The response showing the highest degree of empathic understanding to Vi is:

a. "After going steady with the guy for awhile you must have some ideas about whether marriage would be successful. Could you tell us about them ? "
b. "You really are the only one who can be sure. I think that you must search your emotions."
c. "You don't know if you can trust your feelings and that makes it pretty hard for you because if you make a mistake it could be a catastrophe."
d. "You're really mixed up, afraid you'll make a mistake."
e. "This feeling of emptiness when he's not there,what's that."

Answer _____

Scene 7

3
Alan 2 4
1 5

The response showing the highest degree of empathic understanding to Alan is:

a. "Gee Al, this group is almost as much as you can take right now."
b. "I think I know how you feel Al and I'm just wondering why you don't tell this guy to f--- off."
c. "Alan what is it that overwhelms you and makes you cry?"
d. "Alan all of us have problems. You're just going to have to bring yours out into the open for the group to help you."
e. "Alan you're coming across as spineless. Shape up and we'll hear you out."

Answer _____

Scene 8

Mary 3
? 4
1 5

The response showing the highest degree of empathic understanding to Mary is:

a. (say nothing- just put an arm around her shoulder.)
b. "You're really feeling hurt Mary. Go ahead and cry."
c. "I get the feeling that you really cared for him."
d. "Could you tell the group why you think he left Mary?"
e. "You've got to accept the fact he's gone Mary. Let us help you start anew again.

Answer _____

Scene 9

Corrine 3
2 4
1 5

The response showing the highest degree of empathic understanding to Corrine is:

a. "You've got a very common problem Corrine. A lot of housewifes feel exactly like you do."
b. "Perhaps you shouldn't worry about it and by being less tense maybe your difficulties will clear up."
c. "Maybe you and your husband should see a doctor together."
d. "You're unsure because you really don't know what the problem is."
e. "It makes you feel like you're not much of a woman."

Answer _____

Scene 10

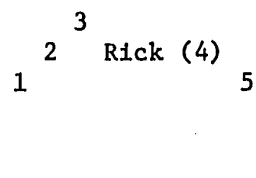
3
2 Stu 4
1 5

The response showing the highest degree of empathic understanding to Stu is:

a. "Come off it Stu. You're communicating right now."
b. "Would it help if you just went away somewhere so you could get straightened out in your head what you want to communicate."
c. "Nobody really knows what's going on inside of you and you kind of wonder if they'd still care if they knew you."
d. "Don't let your feelings lead you away Stu. You know that you'll be able to get involved here."
e. "You want to get close to us, but it seems awfully hard. You want someone to really touch you and you - them."

Answer _____

Scene 11

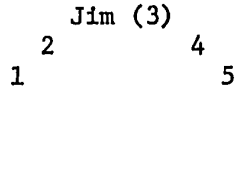


The response showing the highest degree of empathic understanding to Rick is:

a. "You have given her a rock garden. I think you're entitled to your boat!"
b. "Was this the same before you got married?"
c. "You feel so alienated from your wife that you can't communicate effectively with her."
d. "It's rough when no one understands you isn't it? And it's frustrating when your wife just can't see life the way you do."
e. "You're saying I love my wife, but I'm angry about how she's so hard to please. I wish she could really understand me."

Answer _____

Scene 12

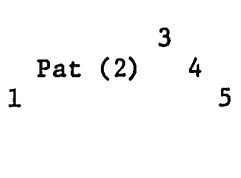


The response showing the highest degree of empathic understanding to Jim is:

a. "People really need people, don't they Jim. And it's reassuring to know people care and want to communicate with you."
b. "Thanks, Jim. Words can't express the warmth I feel. We're close to one another."
c. I'm happy I was able to help, Jim. You helped me too, so don't feel too in debt."
d. "I sense that you feel that we've helped you overcome a situation and you're a little ashamed about it."
e. "I wished I could really help you, but only you can be sure. Maybe you should wait and see if time changes anything.

Answer _____

Scene 13

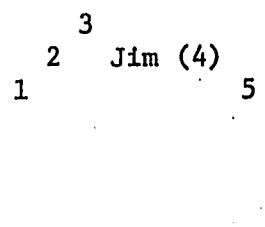


The response showing the highest degree of empathic understanding to Pat is:

a. "Pat, do you think maybe it's been kind of a shield for you and now your trying to break through it?"
b. "Pat, you feel empty, like you want to give more but you can't. You want more meaningful interactions in your life."
c. "Deep inside you're wanting to shout "I'm an individual, not a bloody object!"
d. "Right. Why don't you try not wearing make-up and sharp clothes. You've proven yourself physically attractive. Now play it down."
e. "You haven't met the right kind of person yet, that's all. Men want more than a face."

Answer _____

Scene 14

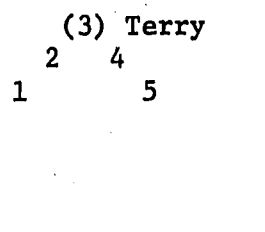


The response showing the highest degree of empathic understanding to Jim is:

a. "You feel rotten and useless and with no one to turn for help."
b. "Why don't you talk or is it that you just don't want to talk?"
c. "You want to talk to us. I think we can help because it's kind of tough to face these things alone."
d. "It hurts deeply, Jim ...We're here... We're with you."
e. "Jim, I hope that you won't let this thing eat at you. I'm sure after you talk about it you'll feel better."

Answer _____

Scene 15

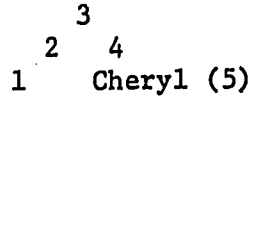


The response showing the highest degree of empathic understanding to Terry is:

a. "Terry, you shouldn't be so dependent on other people's feelings. A lot of people just can't say "I like you", even if they do like you.
b. "Well, do you think you are the way you say you are?"
c. "You feel as though you've been rejected by the group, don't you?"
d. "You've been giving, but never receiving. You need love like the rest of us ... but no one has expressed their care for you."
e. It hurts to feel rejected,... to feel ignored, not cared for. Way in there's even anger."

Answer _____

Scene 16



The response showing the highest degree of empathic understanding to Cheryl is:

a. "Hey, Cheryl! You're really steamed up at us."
b. "It's hard to communicate with others who just won't express themselves."
c. "You shouldn't get so upset. We just aren't ready to get too involved yet. Give us time."
d. "What do you want me to say if I really have nothing to say?"
e. "Wowie! You're really bugged by us. Like some of us have tried, but most of us haven't."

Answer _____

SCALE 1
EMPATHIC UNDERSTANDING IN INTERPERSONAL PROCESSES: A SCALE FOR MEASUREMENT

Level 1

The verbal and behavioral expressions of the first person either do not attend to or detract significantly from the verbal and behavioral expressions of the second person(s) in that they communicate significantly less of the second person's feelings than the second person has communicated himself.

Examples: The first person communicates no awareness of even the most obvious, expressed surface feelings of the second person. The first person may be bored or uninterested or simply operating from a preconceived frame of reference which totally excludes that of the other person(s).

In summary, the first person does everything but express that he is listening, understanding, or being sensitive to even the feelings of the other person in such a way as to detract significantly from the communications of the second person.

Level 2

While the first person responds to the expressed feelings of the second person(s), he does so in such a way that he subtracts noticeable affect from the communcations of the second person.

Examples: The first person may communicate some awareness of obvious surface feelings of the second person, but his communcations drain off a level of the affect and distort the level of meaning. The first person may communcate his own ideas of what may be going on, but these are not congruent with the expressions of the second person.

In summary, the first person tends to respond to other than what the second person is expressing or indicating.

Level 3

The expressions of the first person in response to the expressed feelings of the second person(s) are essentailly interchangeable with those of the second person in that they express essentially the same affect and meaning.

Example: The first person responds with accurate understanding of the surface feelings of the second person but may not respond to or may misinterpret the deeper feelings.

In summary, the first person is responding so as to neither subtract from nor add to the expressions of the second person; but he does not respond accurately to how that person really feels beneath the surface feelings. Level 3 constitutes the minimal level of facilitative interpersonal functioning.

APPENDIX B

1. The Group Process Analysis Test
2. Example of GPAT Transcript
3. Weighted Scoring Key for GPAT

The Group Process Analysis Test

You are about to be shown a video tape of a group which is experiencing a form of human relations training. This particular group is meeting for the last time after having met for eleven previous sessions. The first six sessions were led by another trainer and were concerned with various case study discussions. You will be shown approximately one half of the sixth (and last) session with the present trainer.

The seating arrangement for the group is shown below:

	Trainer (1)	
Colleen (13)		Shirley (2)
Jim (12)		Fred (3)
Lorette (11)		Evie (4)
Margynne (10)		Mike (5)
Marianne (9)		Virginia (6)
Bill (8)	Myron (7)	

The trainer is facing the camera; Myron and Bill have their backs to the camera.

This test consists of two (2) parts:

1. a multiple choice test in class with help of videotape and a transcript of group interaction
2. multiple choice test at home with help of transcript of group interaction, but no videotape.

The video tape will be shown in class by the instructor and stopped at appropriate points. After each segment of tape you will be asked to identify the BEST answer to one or more multiple choice questions. (Each multiple choice question contains alternatives which might be used to describe the interaction of the previous segment. Choose the alternative which best describes the group process you have just viewed or read.) You will ge given another copy of the same multiple choice test to take home. You are asked to re-take the multiple choice test by examining segments from the written transcript provided for the group interaction which you have viewed. To help you identify questions and segments, the segments have been outlined on the left hand side of the transcript.

Questions for the GPAT Videotape

Segment 1 - begins with general talk about being on television and ends with Mike's comment "This might be a restricted film. I don't know."

1. The group is attempting to :
   a. familiarize itself with new surroundings.
   b. identify a task.
   c. develop cohesiveness by deliberately seducing the trainer.
   d. find a leader who will develop a task.

2. The comment "What do you think of violence on TV?" represents:
   a. an attempt to make the presence of various studio apparatus more acceptable to the group.
   b. a joke to reduce anxiety about being on TV.
   c. a veiled message to some authority figure about being annoyed with being placed in a televised group situation.
   d. an attempt to introduce a common conversation topic which would be of use as a task for the group to consider.

3. The group is
   a. starting to uncover hidden resentments between various members towards one another.
   b. starting to discover that new rules apply in this situation.
   c. searching for a leader.
   d. denying the presence of interfering anxiety which is delaly ing their movement toward some defined task.

Segment 2 begins with the trainer's comment "I'm sorry, I didn't hear that." and ends with Colleen's remark "Why Terry?"

4. The group has
   a. resolved its anxiety about the television situation.
   b. ignored a theme suggested by Lorette, to mourn the absence of a missing member.
   c. began to realize that agreement on a common topic of concern may be difficult ot achieve.
   d. decided that even if Terry was present she wouldn't listen anyway.

Segment 3 begins with Myron's remark "I don't know.. and ends with Colleen's remark "I think she's (Terry) very task oriented."

5. The group is involved in:
   a. establishing a pecking order of behavior to determine who will lead an attack on the missing member next session.
   b. scapegoating a missing member.
   c. searching for an idol to represent motherliness in the group.
   d. establishing the norm that members will be allowed to introduce irrelevant information if they wish to do so.

Segment 4 begins with Mike's remark "It was pointed out to me..." and ends with Evie's comment "We just can't sit here and talk about the weather..."

6é The group is attempting to :
   a. avoid confronting shy members for fear of hurting their feelings.
   b. avoid confronting more verbal members for fear of counter-attack.
   c. define a realistic task.
   d. examine motivations for not being able to attack present members.

Segment 5 begins with Lorette's comment "There's also part of the action during the last few minutes between Fred and Mike..." and ends with Myron saying "Yea, but why?"

7. The group has requested Lorette to :
   a. bring forth qualities of motherliness so that anxiety will be reduced.
   b. act in place of the trainer to bring up hidden latent conflicts.
   c. lead the discussion.
   d. introduce a hidden agenda which involves pitting Mike against Fred.

8. The group is conscious of the fact that:
   a. Fred is not willing to honest feedback.
   b. Fred is being hurt by Myron's aggressiveness.
   c. Fred will have to receive honest feedback and change his behavior before various members will be able to encounter one another openly and honestly.
   d. an attempt has been made to attack Fred and Donna as "trainer substitutes" rather than confronting the trainer.

Segment 6 begins with Fred's remark "Another thing Myron..." and ends with Fred's remark "Nobody would be willing to make any suggestions as to what it was..."

9. In the group Myron's attack actually represents
   a. a message to the present trainer that the previous trainer more closely matched their expectations.
   b. a message to Fred that he should be helping the group draw other members out instead of trying to cool the discussion.
   c. a message to Fred that abdication of responsible leadership will not be tolerated.
   d. a message to all group members that there is a need to become more personal in helping one another.

10. The group has:
    a. nominated Mike to reveal his inner feelings.
    b. nominated Mike to depose Fred as leader.
    c. divided into camps which have dual feelings about who should lead the group.
    d. nominated Mike to seize control of the direction of the group and avoid present issues by indulging in fantasies about previous group accomplishments.

Segment 7 begins with Marianne's comment "I think Mike was really quite ready to " and ends with Bill's remark "This can't be a one-way exchange."

11. The group is:
    a. developing a pattern of feeling sorry for a member "on the spot."
    b. denying that it is responsible for Mike's behavior last day.
    c. attempting to define limits of involvement for getting personal.
    d. attempting to tell Mike that it does not want him to get personal.

Segment 8 begins with Mike's remark "I'm going to reveal something about me om relationship to the group." and ends with Evie's comment "Yea, probably,I feel that there are certain things."

12. The group has :
    a. encouraged Colleen to be more personal and deal with here concerns.
    b. backed away from Colleen's request to work through her feelings.
    c. not allowed any members to send out "feelers" about whether or not it is safe to get personal in this particular group.
    d. subtly encouraged Colleen to draw Mike out.

Segment 9 begins with Mike's statement "I think its a general thing..." and ends with Myron's comment "You know, its how you come across to somebody else."

13. The group members are:
    a. attempting to deny the presence of the "here and now."
    b. telling one another that there is no way that anyone is going to be allowed to be honest in this situation.
    c. telling one another that there is nothing to fear about revealing matters of personal concern.
    d. defining limits within which they will be comfortable in dealing with matters of personal concern.

Segment 10 begins with Lorette's statement "Do you mean that we as a group are kind of reassuring one another?" and ends with Myron's remark "No, I'm not putting total blame on Fred..."

14. In the group, Lorette's function seems to be one of:
    a. subtly encouraging various members to battle one another.
    b. helping Fred cope with Myron's attack.
    c. preventing confrontation between Fred and Myron.
    d. focussing the discussion on whatever points of interest arise.

15. In the group, there is conflict between:
    a. the trainer and Fred.
    b. a camp of members who are asking the trainer for structure versus a camp of members who would reject structure imposed by the trainer.
    c. Myron and several other members in the group.

Segment 11 begins with Colleen's statement "Don't you think you are, Myron?" and ends with Myron saying "Individual tasks, not a group task..."

16. In the group, Myron has tried to:
    a. show the other members that Fred is not capable of leading.
    b. project hostility that he has for himself on to Fred.
    c. scapegoat Fred rather than directly confront the trainer.
    d. goad Fred into a counter-attack.

17. Throughout the group, in addition to the silent members, two noticeable subgroups have emerged. They are composed of:
    a. Fred, Myron, Colleen vs. Lorette, Jim , Mike.
    b. Fred, Lorette, Mike vs. Myron, Colleen, Bill.
    c. Fred, Colleen, Lorette vs. Myron, Mike, Jim.
    d. Fred, Colleen, Jim vs. Myron, Mike, Lorette.

An Example of Interaction on the GPAT

The following segment of interaction is from the GPAT transcript. Question 4 on the GPAT refers to this segment.

Segment 2

Trainer : I'm sorry, I didn't hear that.

Fred: I think the rules are the same.

Mike: I think they are too, but they don't feel the same.

Lorette: Do you miss the other room?

(Group mumbles about other room, briefly)

Myron: Let the imagination play its role.

Lorette: Going back to last day, it seems kind of interesting.., last day,...just before the end.., do you remember?

Virginia: Notice Terry isn't here?

Fred: It could be because there's no place to sit.

Virginia: Yea, could be,...but..

Myron: Could be that she didn't want to be here.

Colleen: Why, Terry?

End of Segment 2.

Weighted Scoring Key for GPAT

The weight indicated for each alternative is shown below. For example, if a subject were to choose alternative c in item 1, he would receive 5 points towards his total score.

	a	b	c	d
1.	12	9	5	4
2.	4	10	10	6
3.	3	9	7	11
4.	8	12	7	3
5.	9	12	3	6
6.	3	6	12	9
7.	3	12	8	7
8.	5	6	8	11
9.	8	10	4	8
10.	6	6	12	6
11.	4	5	12	9
12.	10	11	5	4
13.	4	9	5	12
14.	9	8	4	9
15.	4	12	9	5
16.	9	6	12	3
17.	3	6	9	12

APPENDIX C

The Carkhuff Discrimination Scale [1]

---

[1] Two example excerpts from the Carkhuff Discrimination Scale are provided herein. To view the complete test, the reader is referred to Carkhuff (1969 a) pp.115-123.

Carkhuff Discrimination Scale of Helper Responses

Directions

The following excerpts involve a number of helpee stimulus expressions and in turn a number of helper responses. There are 16 expressions by helpees of problems, and in response to each expression there are four possible helper responses.

The helpees can be considered to be helpees in very early contacts. They may not be formal helpees. They may simply be people who sought the help of another person in a time of need. In each example the same helpee and helper are involved.

You may rate these excerpts keeping in mind that those helper responses which the helpee can employ most effectively are rated the highest.

The facilitator is a person who is living effectively himself and who discloses himself in a genuine and constructive fashion in response to others. He communicates an accurate empathic understanding and a respect for all of the feelings of other persons and guides discussions with those persons into specific feelings and experiences. He communicates confidence in what he is doing and is spontaneous and intense. In addition, while he is open and flexible in his relations with others, in his commitment to the welfare of the other person he is quite capable of active, assertive, and even confronting behavior when it is appropriate.

You will read a number of excerpts taken from therapy sessions. Rate each excerpt 1.0,1.5,2.0,2.5,3.0,3.5,4.0, or 5.0, using the following continuum:[1]

1.0	2.0	3.0	4.0	5.0
none of these conditions are communicated	some conditions communicated, and some are not	all conditions are communicated at minimally facilitative level	all conditions communicated, some fully	all of the conditions communicated fully

[1] The reader is referred to p. 115 of Carkhuff (1969 a) for a complete description of the continuum which was used in the actual experiment described in this report.

Two excerpts from the Carkhuff Discrimination Scale (The reader is referred to pages 115 - 123 of Carkhuff (1969 a) for the complete instrument reported herin.)

Excerpt 2

I'm really excited the way things are going at home with my husband. It's just amazing! We get along great together now. Sexually, I didn't know we could be that happy. It's just marvelous! I'm just so pleased, I don't know what else to say.

_____1. It's a wonderful feeling when things are going well maritally.

_____2. It's really exciting to be alive again, to feel your body again, to be in love again.

_____3. Is your husband aware of these changes?

_____4. Now don't go overboard on this right now. There will be problems that lie ahead and during these periods that you have these problems I want you to remember the bliss you experienced in this moment in time.

Excerpt 9

I'm so thrilled to have found a counsellor like you. I didn't know any existed. You seem to understand me so well. It's just great! I feel like I'm coming alive again. I have not felt like this in so long.

_____1. Gratitude is a natural emotion.

_____2. This is quite nice but remember, unless extreme caution is exercised, you may find yourself moving in the other direction.

_____3. That's a good feeling.

_____4. Hey, I'm as thrilled to hear you talk this way as you are! I'm pleased that I have been helpful. I do think we still have some work to do yet though.

APPENDIX D

1. Description of 16 PF Variables

2. Description of Cambridge Survey of Educational Opinions Variables

Sixteen (16) P F Variable Descriptions

Variable Number	Low Score Description	High Score Description
1	reserved, detached,	outgoing,warmhearted
2	less intelligent, concrete thinking	more intelligent, abstract thinking
3	affected by feelings, less stable, easily upset	emotionally stable calm, faces reality
4	humble, mild, accommodating	assertive, aggressive, stubborn
5	sober, serious	happy-go-lucky
6	expedient, disregards rules,	conscientious, moralistic
7	shy, timid	venturesome,bold
8	tough-minded, self-reliant, realistic	tender-minded, clinging
9	trusting, free of jealousy,	suspicious, hard-to-fool
10	practical, careful	imaginative, bohemian
11	forthright,natural	shrewd, calculating
12	self-assured, confident	apprehensive, self-reproaching
13	conservative, tolerant of traditional difficulties	experimenting, liberal, free-thinking
14	group dependent	self-sufficient
15	follows own urges, undisciplined self-conflict	controlled, socially precise
16	relaxed, tranquil	tense, frustrated

Survey of Educational Opinions Variables

The 30 variables employed in the present study are described briefly below. For a more complete description of each variable, the reader is referred to McLeish (1970).

Variable	Brief Description
1. Anxiety	This is assessed by counting responses on a word connection list selected by the subject which discriminates between a normal and a neurotic population. Neurotic subjects tend to choose responses which represent a particular worry or anxiety.
2. Eysenck's Radicalism (Test II)	This is a measure of radical or conservative views towards defined social issues. Subjects are asked whether they agree or disagree with certain opinions. The scale is intended to be a basic measure of attitudes on political issues.
3. Eysenck's Tendermindedness (Test III)	This test measures the degree to which an individual is concerned about individual cases rather than absolute standards of behavior or social legality.
4. Eysenck's Extraversion (Test III)	This variable measures the extent to which an individual is oriented toward social relationships rather than individual solitary activities.
5. Eysenck's Neuroticism-Stability (Test III)	This variable represents the extent that the individual accepts statements about himself which are also accepted by individuals who are mentally disturbe
6. Attitude to Punishment (Test IV)	This variable represents a measure of attitude towards the punishment of others, and in particular children.
7. Formalism (Test V)	This variable is a measure of the tendency of an individual to accept the necessity of standards of achievement and good behavior by children in a teacher-centered classroom where the program of studies is carried on in a systematic and formal manner.

Variables 8-16 inclusive are measured by Test VI of the Survey. They are considered to be measures of personal values.

Survey of Educational Opinion Variables (cont.)

Variable Number	Brief Description
8. Freedom	This variable is defined as an attitude which expresses the desire to make independent judgements in the use of recreational activities.
9. Helpfulness	The respondent's concern with the helping of others in social, family, and friendship relationships is represented by this variable. This is an "other-directed" value in contrast to the rather"self-directed" value of Freedom.
10. Experience	This variable measures the extent to which the individual expresses an interest in a variety of interesting experiences for oneself. It is considered to be of an ego-centered value.
11. Power	This variable signifies the extent to which an individual is interested in exercising authority over others.
12. Recognition	The extent to which the respondent values social approval and admiration from others is included under this variable.
13. Response	This variable represents a measure of having concern for others and placing value on putting others at their ease.
14. Security	The extent to which the respondent is concerned with social and financial security is represented by scores on this variable.
15. Submission	This variable measures the extent to which an individual is interested in and values strong leadership and good advice.
16. Workmanship	This variable signifies the extent to which an individual values skill and quality workmanship in others above certain other values such as self-confidence and helpfulness.
17. Naturalism in Educ. (Test VII)	Scores on this variable represent the extent to which one favours the spontaneous and unforced development of children, in contrast to the ideal of forcing children to accept external standards of order.

Survey of Educational Opinions Variables (cont.)

Variable Number	Brief Description
18. Radicalism in Education (Test VIII)	This variable attempts to assess a number of changes in education which the individual accepts as desireable. Scores on this scale are based on strength of agreement,or disagreement, with 20 proposed changes.
19. Toughmindedness in Education (Test IX)	This variable measures the extent to which the respondent accepts the desireability of developing attitudes towards standards of spelling, discipline, and morals in the education of children.
20. Certainty (Tests II,V,VIII,IX)	This variable represents a measure of the degree of commitment to various expressed values on certain tests.
21. Uncertainty (same as tests for certainty)	The score on this variable is calculated by adding all the questionmarks, omissions, and ambiguous responses in four tests. It is suspected that very high or very low scores on the Certainty and Uncertainty tests give indications of personality qualities which are relevant in teacher education.
22. Physical Value (Test X)	The score on this variable indicates the degree to which the individual favours games, fresh air and good health over other educational values such as scholarship, aesthetic values and so on.
23. Aesthetic Values (Test X)	A score on this variable indicates the degree to which a respondent stresses interest in various cultural activities.
24. Scholastic Values (Test X)	A high score on this variable reflects interest in various academic pursuits such as the development of a logical mind, the desire to excel in mathematics and science and so on.
25. Religious Value (Test X)	This variable intends to provide a measure of the degree to which a respondent values moral tone, sobriety, and "true faith."
26. Utilitarian Value (Test X)	High scores on this variable represent an interest in developing concrete and pragmatic approaches to living.

Survey of Educational Opinion Variables (cont.)

Variable Number	Brief Description
27. Emotional Satisfaction (Test XI)	This variable is a measure of the extent to which the respondent could be expected to obtain satisfaction from contacts of a non-intellectual nature from young children.
28. Personal Study (Test XI)	The score on this variable is a weighted score which is obtained by counting the number of activities on Test XI which the respondent expresses great, little, or average interest. For example, two of the activities listed are reading to improve general knowledge, and keeping up to date on a special subject.
29. Professional Development (Test XI)	This is a measure of interest in improving one's professional competence by taking teacher education courses, carefully examining test materials, and so on.
30. Job Satisfaction (Test XI)	The score on this variable represents expressed satisfaction with educational activities and is obtained by counting the number of activities which the respondent claims to be of great interest.

APPENDIX E

Additional Tables

TABLE E 1

T-Tests on 16 PF Mean Scores: Male and Female Subjects

	Males	Females		Males	Females	
	Pre(N=34)	Pre(N=60)	t	Post(N=34)	Post(N=60)	t
1. Outgoing	9.7	11.6	3.14**	9.9	11.6	3.03**
2. Intelligent	9.2	9.4	.61	8.9	9.4	1.17
3. Stable	15.7	14.6	1.49	15.2	14.2	1.09
4. Assertive	13.4	11.3	2.36*	13.3	11.9	1.54
5. Happy-go-lucky	14.2	15.8	1.82	13.4	15.3	2.07*
6. Conscientious	13.1	12.6	.68	12.5	11.9	.81
7. Venturesome	12.1	12.9	.69	13.1	12.8	.28
8. Tender-minded	10.2	11.9	3.03**	10.2	12.1	3.37**
9. Suspicious	8.9	8.3	1.01	8.7	8.3	.60
10. Imaginative	11.5	13.3	3.19**	12.7	14.0	1.93*
11. Shrewd	9.4	9.6	.34	8.6	9.4	1.29
12. Apprehensive	9.7	11.1	1.87	9.6	11.6	2.38*
13. Experimental	10.5	10.6	.04	10.7	10.2	.96
14. Self-sufficient	11.6	11.9	.51	12.5	11.6	1.26
15. Controlled	10.9	9.7	1.86	10.0	9.3	1.02
16. Tense	11.2	13.2	2.20*	12.4	14.5	2.26*

* indicates $p<.05$

** indicates $p<.01$

TABLE E 2

Group Process Analysis Test - Gains Made

(Scoring Scheme: 1 = correct; 0 = wrong)

	Self-Analytic Treatment			Direct Communications Training		
	Participants	Bales Obs.	Clinical Obs.	Participants	Bales Obs.	Clinical Obs.
Pre-test (in class)	7.2	6.6	6.7	7.1	7.0	7.2
Pre-test (at home)	7.7	6.9	6.8	7.8	7.2	6.7
Pre-test (total)	14.9	13.5	13.5	14.9	14.2	13.9
Post-test (in class)	7.4	8.4	8.9	7.9	6.9	7.6
Post-test (at home)	7.6	7.7	7.8	8.3	7.6	8.0
Post-test (total)	15.0	16.1	16.7	16.2	14.5	15.6
Gain (in class)	0.2	1.8	2.2	0.8	-0.1	0.4
Gain (at home)	-0.1	0.8	1.0	0.5	0.4	1.3
Average Gain	0.1	2.6	3.2	1.3	0.3	1.7

TABLE E 3
Results of Pre-test and Post-test:
Mean Scores of GPAT (IC+A4)-Weighted Scoring

	Participants n=47		Bales Observers n=23		Clinical Observers n=24		Gain
	Pre	Post	Pre	Post	Pre	Post	
Self-Analytic Treatment n=46							
SAT 9	319.0	317.5	298.8	316.8	303.5	326.7	
SAT 11	315.2	317.1	326.3	336.7	317.8	322.8	
Combined	317.4	317.3	312.5	326.8	310.0	324.9	+7.2
Direct Communications Treatment							
DCT 9	323.8	333.1	302.7	317.2	303.7	322.9	
DCT 11	321.8	334.2	324.8	309.0	310.3	313.2	
Combined	322.8	333.6	312.7	313.5	306.7	318.4	+8.8

TABLE E 4

Contingency Table Showing Gains and Losses on GPAT (Total Weighted) N=94

	Self-Analytic			Direct Communications			Total
Gain	Part.	Bales' Obs.	Clin. Obs.	Part.	Bales'Obs.	Clin Obs.	
+50	1	0	0	2	1	1	5
+40	0	2	1	1	0	0	4
+30	2	2	2	3	0	1	10
+20	3	1	2	3	1	2	12
+10	1	3	2	3	0	2	11
0	4	1	2	1	3	1	12
-10	4	1	1	7	3	5	21
-20	0	0	0	1	1	1	3
-30	6	1	1	2	1	0	11
-40	1	0	0	1	0	0	2
	1	1	0	0	1	0	3
N=	23	12	11	24	11	13	94

TABLE E 5

Contingency Table Showing Gains and Losses on Park-Matheson HRVT (Free Response) N=94

	Self Analytic			Direct Communications			Total
Gain	Part.	Bales' Obs.	Clin. Obs.	Part.	Bales'Obs.	Clin Obs.	
+30	0	0	0	1	0	1	2
+25	0	1	0	3	0	0	4
+20	1	0	0	7	4	2	14
+15	3	0	1	6	2	4	16
+10	0	2	1	4	2	1	10
0	6	2	3	2	0	1	14
-10	4	0	2	0	0	1	7
N=	23	12	11	24	11	13	94