Cognitive change and participation in training groups: a personal construct psychology approach to learning in training groups

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COGNITIVE CHANGE AND PARTICIPATION IN TRAINING GROUPS

A PERSONAL CONSTRUCT PSYCHOLOGY APPROACH TO LEARNING IN TRAINING GROUPS

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ABSTRACT

Four training groups were studied. The first called The Field Study was part of a company's training programme and took the form of a one week residential training group. The participants were 26 adults and 6 trainers. The training occurred in three small groups with two trainers each.

The remaining three groups called Experimental Training Groups, each comprised 10 students and involved 2 hours per week for 4 weeks with a total participation time of about 10 hours.

The field study was used to examine the feasibility of using Personal Construct Psychology to understand and measure cognitive change, and to isolate significant variables which required closer examination.

The experimental training groups were conducted in a laboratory setting where the processes could be closely measured by observation and video recording. Specific hypothesis suggested by the field study were examined in detail here.

Both processes and outcomes were measured. In the field study the process measures were obtained from trainer ratings of: verbal participation, influence, giving information, and seeking information. In the experimental groups the process measures were obtained from videotape recordings of the interactions coded with Bales' Interaction Process Analysis. Measures of cognitive change were obtained from content and structural analyses of two rating forms of the Repertory Grid. In the first grid, change was the difference between the structure with the individuals constructs before the training group, and the structure with these constructs rerated afterwards. The second grid contained fresh constructs.

Personality measures in the experimental groups were obtained using Caine & Foulds Hostility and Direction of Hostility (HDHQ), and a Test of Social Skills derived from Section 2B of California Test of Personality.

The aims were:

1. to investigate the impact of the experiences on the cognitions of the participants.
2. to unravel the interaction processes associated with any cognitive changes detected.

The importance of cognitive change and its relationship with interaction processes in the group is discussed. The uniformity assumptions were questioned and diversity in individual learning was searched for. Three distinct types of change in the participants' cognitions were identified and described. The nature of the interactions associated with each type are delineated.

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TABLE OF CONTENTS

TABLES

FIELD STUDY

EXPERIMENTAL TRAINING GROUPS

1 INTRODUCTION

This research is about individual cognitive change in training groups. The training group is a particular form of learning experience where the members examine their own behaviour and attempt to learn from it. Although there is some doubt about it, the proponents of training groups believe that the interactions in a typical group are qualitatively different from those which occur in people's day-to-day relationships. Their argument runs as follows: In day-to-day interactions there is a tendency for people to restrict the amount of personal information they exchange and limit the direct expression of emotion. The net result is that individuals have two blind spots. The first concerns behaviour which is known to others but relatively unknown to the individual, while the second concerns aspects which are known to the individual but relatively unknown to others. The consequences of such interactions are that interpersonal relationships at the best take a long time to develop or at the worst are ineffective. An additional facet of inadequate interpersonal relationships is that they can lead to ineffective problem solving on important tasks when these are loaded with feeling or emotion. Furthermore, when solutions are achieved they tend not to be lasting ones, and the problem recurs continually.

In contrast to this every day world the training group attempts to establish an environment where three basic interpersonal skills can be learned.

1 The skill of accurately perceiving how other people are reacting to one's own behaviour.

2 The skill of accurately perceiving the nature of relationships between other people.

3 The skill of producing behaviour appropriate to the situation.

A typical training group might contain between 7 and 12 people with one or two trainers. They usually meet for periods of up to 10 days in a residential centre away from day-to-day pressures and distractions. The principal focus is the behaviour of the individuals in the group. As a consequence the emphasis in learning shifts from the acquisition of abstract concepts, as in traditional learning, to an examination of the forces present in the group. Members might examine leadership, group structure, the individual's objectives in the group, the group standards to guide their conduct, how an individual's behaviour is influencing the group, and how the behaviour of other members is influencing their own behaviour.

At appropriate points in the interactions, the group pauses to study parts of the work of interest to them. The trainer articulates the forces that have been working up to that time and helps people to understand them. From time to time an individual may want to examine the effect his behaviour is having on others. He may ask for information and their reactions. The members try to help him to see himself as they see him in the group.

Although there have been a large number of evaluative studies of training groups, the phenomenon is still under examination.

From the outset most of the research has considered the training group as a kind of group Skinner box where the learning environment is provided by the styles of the trainers. Although it is known that people have individual differences when it comes to learning in the classroom, in training groups there has been a tendency to provide a trainer with a style that matches the objectives, regardless of the participants' particular needs. The behaviouristic tradition in research means that we tend to lump all the individuals together and examine the outcomes as if all were undergoing the one kind of experience. In

adopting such approaches the implicit assumption seems to be that the individual learning styles are overwhelmed by the environment provided by the group. This is questionable because there is still no clear-cut theory which explains the learning process in these groups.

The assessment of learning in training groups poses special difficulties. It is possible to take several viewpoints. Learning can be measured from the participant's viewpoint, from the leader's ratings, from co-participants' ratings and finally by descriptions of changes in the subject obtained from friends, relatives or colleagues. Generally, the strength of these reports diminishes as the distance from the participant increases. It is also evident that the participant's reports differ qualitatively from those obtained from others. The essential difference is emotional. Few participants are neutral about training groups: the majority express strong feelings either in favour or against. In attempting to meet the three learning goals, participants have been encouraged to express their emotions and feelings. In contrast, the cognitive aspects of individual learning have either been glossed over or given meagre consideration. Take, for example, Campbell and Dunnette's (1968) review of the literature and their view of cognition. In describing the action in a training group they mention that the primary focus is the current behaviour examined from a stance which includes feelings and emotions. In clarifying this they write "in fact the cognitive aspects of problems are ancilliary to this affect laden orientation" (page 75). This was not always so. In 1946 when Kurt Lewin was asked to conduct a workshop to train leaders to deal effectively with community inter-racial tension, the participants were assigned to small discussion groups to analyse the problems group members had experienced in their home communities. People in the groups kept records of the process for the subsequent staff meeting. Three participants

accidentally entered this meeting and for them the most significant event of the training was listening to the recorders giving a description of the processes in the group. Next evening all 50 participants attended the staff meeting. By change, a key process of receiving feedback by listening to the recorders had been discovered.

Others began to recognise the importance of cognition. Roethlisberger et al (1954) described his course on human relations training and incorporated chapters titled "Learning in a Multidimensional World" and "Training for a Multidimensional World". Recent research also indicates the importance of cognition. Harrison (1962, 1966) indicated that the cognitive aspects of training groups might not be so ancillary in long-term change as suggested by Campbell and Dunnette (1968). The work of Lieberman, Yalom and Miles (1973) confirms the importance of cognitive learning. They used a larger number of somewhat different measures and discovered the "unexpectedly important role that cognitive factors played in the personal learning in the encounter group" (page 153).

In this research the author attempts to examine the learning of individual participants. Although a conceptual distinction is made between the cognitive and emotional aspects of learning, both are incorporated within a framework described by Personal Construct Psychology.

If people do learn something in training groups, then the researcher is faced with the ensuing problem of examining this when they leave the group. Most training groups occur in somewhat artificial settings and when people go home they have to face their earlier social relationships and environments. The researcher not only needs a theory that will allow him to understand and explain any learning that might occur in a training group, but also one that will encompass learning in the outside world as well. Kelly's theory of Personal Constructs (1955) provides a possible explanation of both facets.

In addition the repertory grid provides a way of externalising the learning via personal constructs.

Two kinds of training groups were examined in this research. The first was a one-week residential laboratory which was part of a long term training programme in a company. It was set up for the benefit of the participants and not to provide data for research. From the outset it was evident that research would be difficult because the content and processes of the training group with their norms of flexibility and openness were patently different from the rigours of scientific research. In particular, it would be difficult to monitor the processes that actually occurred during the training period.

The back-at-home environment after the training group also posed a measurement problem. While it was possible to make global assessments of trainer styles and the nature of the interactions between the participants, such assessments were much more difficult in the person's normal social or working environment. This practical measurement problem after the group urged the author to seek a few selected, but key measures. The literature was sparse,and furthermore, the interactions that involved cognitive change in training groups had not been fully explored or understood. In view of this, it was decided to ignore the question of transfer of training in the second type of training group and focus on individual learning and its associated processes within groups.

These experimental training groups were set up in the laboratory where it was possible to closely monitor all conditions, albeit as unobtrusively as possible.

In essence, the principal question in this research concerned cognitive learning in training groups and the interaction process which supportsthis learning, examined from an individual viewpoint.

2 CHANGE IN TRAINING GROUPS AND RELATED THERAPIES

2.1 Introduction

Fifteen years ago it might have been possible to distinguish between the various forms of training groups and their clinical counterparts broadly labelled as group psychotherapy. Such a distinction would have eliminated clinical research but today this is not so. If one had asked the standard Kelly question (in what ways are two of these things alike which makes them different from the third?) with regard to group psychotherapy, training groups, and encounter groups, one could have paired the training groups and encounter groups and said they were for normal or superior people (in contrast to clients or patients) with goals of personal growth including increases in awareness of behaviour, sensitivity to various aspects of one's own and other's behaviour and various types of behaviour change (in contrast to alleviating psychological illness or problems). Further comparisons might suggest that these two groups might be conducted by sub-professional leaders in contrast to psychiatrists or psychologists. Another comparison might be that the pair exist for a fixed period while the group psychotherapies are terminated when the patient's problems are solved.

The assumption that training groups comprise well-functioning people has been challenged. Olch and Snow (1970) studied undergraduates who volunteered for training groups. Using the California Psychological Inventory, they found that students sought training groups for the same reasons that students sought counseling. These findings were challenged by Gilligan (1973) using the Omnibus Personality Inventory and the Personal Orientation Inventory, instead of the California Psychological Inventory. As no significant differences between groups at the social-emotional adjustment level were found, his findings supported the assumption that training groups were comprised of well

functioning individuals - in this case students. Gardner and Lieberman (1973) asked adults a broad range of questions about their motivations, perceptions, expectations and attitudes before training groups. They included measures of psychological disturbance to differentiate psychiatric patients from non-patients. First, they found that patients and participants had significantly higher stress and symptoms scores than normals. Further, the volunteers for training were more like the clinical population and less like the normal population. In looking at the clients of psychiatrists and psychologists there is anecdotal evidence that some of these people are not ill in the normal definition but undergo therapy for self development, relief of boredom and perhaps to be fashionable.

If the distinction between the non-clinical and the clinical forms of these groups was ever clear, it ceases to be so today. Furthermore, the common element in all these forms of human intervention lies not in the goals, the participants, the trainers, or the time period but in the focus on examining the behaviour of participants. It is for this reason that the clinical literature is included in the review.

2.2 Sources of Variation

Three broad sources of variation will be considered:

1 trainer variables

2 participant variables

3 group processes and outcomes.

Changes could be attributed to one or more of these sources.

2.3 Trainer Variables

There are three basic approaches to these variables. The first is static and examines such trainer characteristics as theoretical views, The second is dynamic and examines his behaviour in the group, for example, his style of intervention, the interactions that attract his attention

and the specialised techniques he uses for managing the group. The third approach is interactive. It considers the members' perceptions of the trainer and the mutual influence derived from these. This basic question is considered first.

One of the assumptions behind training groups is that what happens to the participants is heavily influenced by the trainer's behaviour. Lohmann, Zenger and Weschler (1959) tested this assumption. They gave the Gordon Personal Profile to three classes of students at the beginning and the end of their training group. The students completed the profile with reference to themselves and their trainers. The trainers completed the inventory with reference to themselves. The results showed that the students saw the trainers as more adequate at the beginning of the group than at the end. This was interpreted as a lessening of idolisation in a permissive learning environment. Despite this trend, it was found that the students at the end still tended to see the trainer as more adequate than themselves. It was also predicted that the group's final perceptions of their trainer would be closer to the trainer's self perception scores than their initial trainer perception scores. Their findings confirm a trend in this direction.

Convergence has also been noted in counseling and psychotherapy. Landfield and Nawas (1964) came to the conclusion from the studies they reviewed that convergence in therapy had potential importance not only as a dependent event but as a precursor of still other therapeutic events (p. 336).

If the trainer does have some influence, then the question has to be asked "what kind of influence?" Stemerding (1962) examined the indirect influence of trainers on the group development of two training groups. A content analysis of the tape recording of the trainer interventions showed that the first trainer used a group oriented approach, while the

second directed most of his interventions towards individuals. An analysis of the participants' experiences showed that the first group emphasised the group aspects of learning while the second group highlighted learnings about themselves and their daily work. The author draws the conclusion that ... trainer behaviour and ... group development are related.

While direct trainer influence is one possibility, another is that the trainer exercises his influence indirectly by the creation and maintenance of a normative pattern of behaviour within the group. Psathas and Hardert (1966) examined the effects of trainer interventions on the norms of seven two week training groups. A tape recording was made of the first three and last three sessions and a record kept of trainer interventions. Participants and trainers described the most significant trainer interventions after each session. Implicit norms were established by surveying the training group literature. They found that the trainer interventions could be classified into these implicit categories so they concluded that these interventions contained an implicit indication of appropriate participant behaviour. However, most of the trainer interventions fell into four of the seven categories:

1 analysing group process

2 analysing feelings

3 feedback - exchanging observations, opinions and impressions of behaviour, and

4 acceptance of one's self and others

Because these four categories were consistently high throughout the groups, the author suggests that this reflects the persistent trainer preoccupation with the establishment of these particular norms.

Luke (1972) also examined the participants' perceptions of internal normative structure of training groups. His participants came from the 1967 National Training Laboratories Higher Education Laboratory. He used

the seven normative statements developed by the previous author and three developed by Miles (1967). Participants responded to a five point Likert scale for each statement at the end of the second meeting, then the end of the first week and finally at the end of the penultimate meeting during the two week programme. Members also rated the degree to which each participant and the trainer influenced the development and maintained standards within the group. Over the three time periods for the 12 groups, the results show that the members perceived their trainer as more influential than themselves in establishing and maintaining group norms.

Although the averages of trainer influence were significantly different at each time period within the twelve groups, there were differences in their perceived relative influence and this suggests that some trainers had been more active than others in establishing the groups' normative structures. Using this information, the trainers were then placed into two categories:

1 high influence

2 low influence

The data was re-examined at each of the three time intervals over the 10 group norms. The results showed at first that the members of groups led by high influentials attributed significantly higher values to the norms of acceptance, awareness, feelings and feedback than did members of the group led by low influentials. Later, the significant differences occurred only for the norms of acceptance and feelings. Finally, there were no significant differences between the high and low influentials on any of the group norms. The author concludes that the internal normative structure of training groups is produced by the influence of the trainer and not by mutually accommodative learning. Once again however, there is this move towards the same final normative structure

or the convergence reported by the previous two authors.

Although Luke did not examine the learning from these training groups, he suggested that participants' interpersonal skills and awareness may increase after a training group which has new norms. On the other hand, interpersonal and action skills not associated with the four primary norms of acceptance, awareness, feedback and feelings would be unchanged in such a group. Luke therefore suggests that his study serves to underscore the need for the support of conceptual and action skills in groups which emphasize the kinds of norms he examined.

An essential assumption about training groups follows the behaviourist tradition and assumes that what happens to the participants is a function of the trainer's behaviour as well as the characteristics of the group. The studies discussed so far have shown the effect of the trainer in creating and maintaining the training group environment. The next step is to discuss the research which examines the other ways in which the trainer influences the participants.

Peters (1966) examined the relationship between participant-trainer identification and the participant's self percept at the end of six two-week training groups. He found that the participant's self percepts moved closer to their perception of the trainer and the trainer's self percept. Furthermore, the more sex and occupational similarities between the trainer and the members, then the stronger the relationship between the convergence and personal change. This study has two limitations. First, the measures used were obtained on completion of training. Second, the control group comprised graduate students in their early twenties, while the training group contained high status middle aged administrators from business, school, nursing, government and public administration.

Cooper (1969) also examined the relationship between trainer influence

and participant change. He used Kelman's (1961) concepts of: compliance, identification and internalisation. According to Kelman, the communication between people depends upon the credibility, attractiveness and power attributed to the initiator. In particular, he suggested that credibility would lead to attitude change by a process of internalization, while attractiveness would be associated with a process of identification and power would be associated with compliance.

Cooper hypothesised that participant learning would be based on a process of identification if the trainer was seen as attractive, and internalisation if the trainer was seen to be a trustworthy source of information.

Four measures of change were used:

1 attitudes - Fundamental Interpersonal Relationships Orientation Inventory for Behaviour. FIRO-B. Schutz (1958)

2 behaviour - obtained from tape recordings

3 changes in self concept

4 reports on behaviour by participants and work associates using Bunker's (1965) categories.

His findings were twofold. First, when the trainer was seen to be attractive (identification process), the participants became more like the trainer in their attitudes and behaviour. Second, when the trainer was seen to be congruent (internalisation process) the participant's mis-matches decreased between his self percept and his ideal percept; his self percept and the other participants' perception of him; and his self percept and his actual behaviour. The participant's work associates also reported the participants as having changed behaviour six to nine months after the training group.

Culbert (1972) deals with the unique role of the trainer and his capacity to act as a model and provide examples of behaviour, for example

self-disclosing behaviour, to facilitate participant imitative learning. Culbert (1968) examined the effects of trainer self-disclosure in two student training groups. According to Culbert, the importance of self disclosure had been established by previous research: Clark & Culbert (1965) found significant relationships between the number of perceived "therapeutic relationships" formed mutually between pairs of participants and the individual's increase in self awareness. In Culbert's (1968) study two training groups of ten subjects each (six women and four men) were formed from students. Pairs were matched from each of the groups, except that all the subjects who had previous experience with training groups were placed in the same group. The trainers were provided with job descriptions, specifying the behaviour to be exhibited. The only differences between the two descriptions was that one specified moderate self-disclosure: the other low disclosure. It is worth noting, however, that both had to promote member self-disclosure. The validity of these behaviours was checked by asking the participants to judge the trainer behaviour. Each group was able to successfully tell when their trainer was operating with moderate disclosure, and when with low disclosure.

In this case, participant self awareness was measured on the Problem Expression Scale, which was originally designed to measure process changes occurring in individual psychotherapy, (Van der Veen & Tomlinson, 1962). Tape recordings of the sessions were made and segments of these were coded onto this scale. Three judges worked on this data, but their reliability was not quoted. The data showed that the moderate disclosure group had significantly higher degree of awareness than the lower disclosure group in the earlier stages, although this diminished towards the end of the groups. According to Culbert, these results support the modelling theory of participant learning with a particular brand of trainer behaviour, self-disclosure. The clinical impressions of the two

trainers and the group observer supported this conclusion.

Lieberman, Yalom and Miles (1973) also examined the effect of trainers on participant learning. They used 200 students and randomly assigned them to 17 groups representing 10 major styles of training groups. It was found that the yield of the groups was not related to the ideological label of the leader, for example: NTL, Gestalt, Transactional Analytic, Psychodrama, etc. - indeed, there were only a few similarities between the behaviour of leaders using the same ideological label. Seven types of leaders were identified from the cluster analysis of 27 of their behavioural variables. Although at the end of the experience each participant was classified as being a high learner, a moderate learner, relatively unchanged, a negative changer, a drop out or finally a psychiatric casualty, only the effect of trainers upon psychiatric casualties will be considered in this section because of the complexity of the indices used to differentiate the four types of learner.

The first four indices were based on a composite index of change that incorporated material from all the various viewpoints and the ratings used. It also included an important element of clinical but subjective judgment. On the other hand, the index of psychiatric casualties was straightforward - people who sought professional help, due to the experience.

It was found that leaders who had attacked or rejected the participants had the highest casualties. The authors mention that some people have the view that high risk goes with a high yield. Their evidence suggests exactly the opposite. They found that aggressive, stimulating challenging and confronting leaders who used emotional exposure did not produce high yield participants although they were associated with high casualty rates.

So far, the research described shows that when a trainer is present the participants view him as being more influential than themselves

as individuals, particularly at the start of the group. Although his influence declines, participants still view him as having more influence than themselves at the end of the group. Fransella (1970) has reported similar convergence between patients and therapist in group psychotherapy. But the exact mechanisms of trainer influence are unclear. There is a suggestion from some research that the trainer operates directly on the participants,while in others there is a suggestion that he operates on the interactions and these in turn influence the participants. The research of Lieberman, Yalom and Miles (1973) shows that the trainers impact on the number of casualties is direct. At least that research shows clearly the kind of behaviour that trainers should avoid in order to prevent casualties. Other researchers seem to be working on a two stage model. In the first stage, the trainer establishes trust and empathy which serves as a basis for further individual and group development. Friedlander (1970) examined this. He used a model in which the formation of trust has a pre-requisite to further group accomplishment. His results support the two stage model by implying that trust is an essential requirement for further group development.

A similar view was held by Bolman (1969) in regard to the congruence and empathy that the trainer had for the participants. Rogers (1957), Carkhuff (1971), Truax (1961 & 1963) and Truax and Wargo (1966) specify three essential ingredients in the psychotherapeutic relationship which they believe are applicable to other forms of change process as well. The three aspects are:

1 an ability to empathise with the person and communicate this understanding.

2 an ability to communicate a non-possessive warmth and acceptance of the person

3 an ability to communicate his own genuineness and authenticity.

Truax and Wargo (1966) believe that the ingredient common to these three aspects is the therapist's genuineness or authenticity. They say, "for a trusting relationship to occur the therapist must act as an authentic person. Theoretically, neither accurate empathy nor non-possessive warmth could function properly without the therapist himself being genuine." (p. 500). Little account seems to be taken of the possibility that genuineness may lead to possessive warmth.

Wahrman (1974) has given a rather blunt view of trainers: "As one reads through reports or studies one gets the feeling that trainers do not really know what they are doing. I do not mean that they are incompetent, but merely that they remind one of Skinner's pigeons. Skinner's pigeons, as you remember, are hungry, and frantically jump and flap their wings and turn around hysterically. They hit the button and out comes food. The bird does not know what it did right and apparently feels that if it does not reproduce everything it did earlier, it is not going to get any more food. You and I know that most of this behaviour was wasted and that only the button pushing was effective. One gets the feeling that some trainers feel that if they were aware of doing a number of things, and they seem to be successful, everything must have been necessary." (pp. 34-35). He goes on to say that this is only partially a research problem, the rest is due to the lack of the powerful theory. A good theory indicates what to look for in the research.

But training groups can operate without trainers. Lieberman, Yalom & Miles (1973) had leaderless groups with instruction tapes in their study. The interesting part about these groups is that although they contained 24 participants (roughly 12% of their total sample), there were no casualties although there were high and moderate learners. Although their index of change is a composite one made up of several measures and several viewpoints, it is hard to reconcile this outcome with their own data and

the views put forward above. Berzon and Solomon (1966), and Berzon, Reisel and Davis (1969) have shown that self-directed therapeutic groups using pre-recorded materials on audio tape are feasible. Kolb, Winter and Berlew (1968), and Vicino, Krusell, Bass et al. (1973) have shown similar approaches with training groups. In the first study, where the focus was on specific individual behaviour, it was found that self perceived change and the group leaders' ratings of change were significant. In the second study, participants improved their concept of themselves, were more able to see themselves as their peers did and were in favour of the overall experience.

2.4 Participant Variables

Two basic kinds of influences on participants are examined, sociological, and psychological. The sociological category embodies such variables as: middle class-lower class, union representative-manager and adult-student. The psychological category includes variables such as psychiatric illness, the initial expectations, the motivation for participating and personality differences.

Training groups have been run for black and white participants, Berzon, Pollard and Mermin (1971-72); community service workers and their recipients, Cutter, Dunham, Edgerton et al (1969); teenagers, Himber (1970); children, Pollack (1969); delinquents, Washburn (1970); Supervisors of adolescent offenders, Shapiro and Ross (1971); Africans, Doob (1970); Union representatives and managers, Blake, Mouton and Sloma (1965) and Truskie (1974).

The available research seems to be equally concentrated on groups comprising students, and their adult counterparts - managers and professional people.

The research from the clinical fields provides a useful contrast. Work has been undertaken with: psychiatric patients, Fransella (1970) and Fransella and Joyston-Bechal (1971); thought disordered schizophrenics, Bannister (1963, 1965a); Bannister, Adams-Webber, Penn et al (1975) and Stutterers and pyromaniacs, Fransella (1972).

In the research reviewed here, the author is attempting to examine the relationship between group composition and learning. In the training group literature, Harrison & Lubin (1965) and Harrison (1965) have claimed that groups with different types of people are more effective because they provide multiple learning opportunities. But before looking at their research which is solely concerned with psychological variables, the research on training groups comprising middle-class social workers and their lower-class clients requires examination.

Culver, Dunham, Edgerton, and Edgerton (1969) described a one week workshop made up of a training group and other more structured activities for 36 people (17 professionals, 11 sub professionals and 10 clients). The staff numbered seven. Three small groups were formed from the 36 participants with one trainer and one assistant trainer. Each group met for 12 two-hour sessions during the week. In addition, there were six skill groups with six members, but without any trainers. The workshop was evaluated by interviewing 10 participants towards the beginning and then towards the end. Six months after the workshops, short questionnaires were sent to all participants asking them to rate the workshop on a five point scale, ranging from definitely helpful to definitely harmful. The authors reported that social class differences were visible during the workshop but seemed to carry "neither more nor less impact than other demographic characteristics" (p. 519). The trainers believed the experience proved to be equally appropriate for the clients, sub professionals and professionals. Theyalso add that the clients did learn and did not feel exploited. If anyone was hurt it was the professionals. They report "the pain was usually in finding that the

impression one made on others was not consistent with one's own self image as helper" (p. 533).

Two articles describe components of training groups for participants from Unions and management. Truskie (1974) worked out a programme separately with the representatives of both the union and management. It contained three main areas: communication, human relations, and grievance handling. Eight groups comprising 18-23 participants of roughly equal numbers of union representatives and managers met for approximately 90 minutes per week, over a period of 18 consecutive weeks. Random observations of the groups indicated minimal group interaction during the first few sessions, but as the programme progressed, interaction within the groups increased significantly. At the last session the programme was evaluated by the participants completing survey questionnaires, which showed, for example, that 89% believed it to be of value in improving union/management relationships.

Blake, Mouton & Sloma (1965) described a Union-Management Inter Group Laboratory. The participants were nine men from various parts of the union hierarchy and nine people from various parts of the management hierarchy. The activities differed from those in a pure training group, if any training group could be described as pure, in that specific techniques were used to formalise the interactions. For example, prior to the joint meetings, each of the groups met separately to produce an image of how they saw the other group's behaviour. Two aspects contrast with the traditional training group: (1) the emphasis was on the group and not on the individual, (2) the two groups first met separately and then came together and presented the images of themselves and the other group to enable the perceptions to be shared.

The authors concluded that even after the laboratory, much of the tension and distrust still remained. They mention that correcting a long

term chronic hositility situation can take as long as five years.

One interesting aspect of this study is that a joint meeting of the 18 participants identified some of the aspects that clearly separated the two groups. One of these was lack of mutual trust and respect, and the other was ideological differences.

None of these studies evaluate individual or group learning like the studies of Harrison & Lubin (1968) and Harrison (1965). Although there could be considerable debate about the value of conducting training groups for union and management participants, where the differences can be political and ideological as well as psychological, it would certainly be a fertile field for examining the relationship between individual learning and the relative importance of psychological and non-psychological differences in participants.

Both of the studies mentioned are American. Although Blake, Mouton & Sloma (1965) refer to the great difficulty the union representatives had in understanding the task of mapping their own image and their perceived image of the managers, they attach little importance to this, except to say "their initial thinking pattern was so deeply ingrained on the content side that they, literally, did not have a process orientation." (p. 33). In contrast to the union, management had the process orientation and launched into the first task with a feeling of confidence. In view of the importance of communication within the laboratory and to observers and researchers, it is surprising that these elements were not examined in greater depth. In England, such an analysis has been provided by Bernstein (1958, 1960, 1961, 1964, 1971). His basic thesis is that although middle class and working class children use English words, they speak two languages with vastly different implications. These differences tend to continue into adulthood. Blake, Mouton and Sloma's findings might be explained in part by these class differences with their elaborated

and restricted codes.

The second part of this discussion on person variables examines the relationship between group composition according to psychological variables and learning. The basic proposition is that the relatively unstructured environment in a typical training group provides different learning opportunities to different kinds of participants. Participants with an orientation towards unstructured learning would find little challenge in a typical training group, but would accept it and perhaps enjoy themselves, whereas people who preferred to operate in a task-oriented environment would be confronted by an alternative and viable way of operating. Further, it has been suggested that groups with a wide range of styles help to shift learning from the training group to the back-home environment because they are a more accurate representation of that environment.

Six basic measures of similarity have been used.

1 The Reaction to Group Situation Test (RGST)

2 FIRO-B Schutz (1958)

3 Person Description Instrument (PDI) - an adaptation of the repertory grid by Harrison in Lieberman, Yalom and Miles (1973).

4 Group Assessment of Interpersonal Traits (GAIT), Goodman (1970)

5 Group Interaction Profile (GRIP), Getter, Korn and Anchor (1970)

6 The Killman Insight Test (KIT), Killman (1972).

In the first study, Lieberman (1958) used the RGST to make up two training groups. The groups were similar on four of Bion's (1961) five basic assumptions of group operation. The similarities were fight, flight, dependency, and counter dependency. Group 1 comprised individuals high on the pairing dimension and group 2 excluded these. Lieberman found that people who were high on counter dependency changed least in the group which excluded people high on the pairing dimension. The two

groups also differed in their pre-occupation with authority issues. The group without pairers was pre-occupied with authority issues, while the paired group was less concerned with these issues. Lieberman concludes that the pairers provided a model for those who were counter dependent and this enabled them to work in the group.

Schutz (1961) used FIRO-B to discriminate among participants and allocate them into homogeneous groups. (FIRO-B measures three aspects of behaviour: inclusion, control and affection; and the amounts that people believe they express in these categories and the amounts they want from others.) The groups were composed with respect to expressed behaviour and the behaviour wanted from others. These groups could identify their own characteristics. There were also marked behavioural differences between the groups. Each seemed to pursue its particular topics in depth rather than change from one topic to another and pursue them in general. From this evidence he suggests that the FIRO-B can be used to produce mixed groups with various blends of the interpersonal concerns, depending upon the particular purpose of the group. He did not measure participant learning.

Pollack (1971) continued this approach. He selected the control dimension of FIRO-B and divided his population of 150 students (77 males, 73 females) into 16 groups, such that 4 were similar with regard to control, and 12 were heterogeneous. The 4 similar groups were as follows:

(i) high expressed - high wanted

(ii) high expressed - low wanted

(iii) low expressed - high wanted

(iv) low expressed - low wanted

The 12 heterogeneous groups comprised individuals who were rated as high, moderate and low on expressed and wanted control.

FIRO-B and the Adjective Check List (ACL) were used to measure changes.

In line with the heterogeneity hypothesis, it was proposed that groups containing people who were different would show more positive changes than people in similar groups. In particular, they would show a closer balance between expressed and wanted behaviours in inclusion, control and affection. This hypothesis was supported for the combined areas but not when they were considered individually.

His second hypothesis that people in heterogeneous groups would show more changes on the ACL scales of: affiliation, nurturance, self confidence, succourance and defence was not supported. Furthermore, there were no differences in the changes shown by the homogeneous groups, the heterogeneous groups, or the groups as a whole.

Last of all, the participants rated their groups on: cohesiveness, attractiveness and effectiveness. The heterogeneous groups showed significantly greater increases than homogeneous groups.

Although he did not measure the confrontations,he suggests that his findings are consistent with the heterogeneity (confrontation-support) model of participant change examined by Harrison and Lubin (1965).

Their study began with a theory which had been presented and operationalised by Harrison (1962, 1966), which states that there is a close relationship between the individual's cognitive structure and his interpersonal behaviour. In particular, people with large components of interpersonal concepts in their cognitive structure would relate to interpersonal aspects in their environment and within a training group. The converse would apply for people with large components of task orientation.

Harrison and Lubin (1965) used the Person Description Instrument to classify people as person orientated or work orientated. They found that the person orientated group were more expressive of feelings than the task orientated group. Although this reached a satisfactory level

of significance from the participants' ratings, it was not significant from the trainer's viewpoint. Similarly, it was found that people in the person orientated group did establish closer and warmer relationships with others than the task orientated group. This was also significant according to the participants, but not the trainer.

Harrison (1965) briefly challenges the notion that homogeneous groups provide participants with increased learning opportunities because other participants reflect the individual's style. Although his data does not reach a statistically significant level, he suggests that homogeneous groups do not produce "learning" because the work-orientated participants received higher scores on learning than either the person orientated or participants in mixed groups. The homogeneous grouping probably had a negative effect on the learning of the person orientated members. The trainers' interpretations were that people in the person orientated group were with similar bedfellows and considerably less confronted than the task orientated members. As a consequence, their learning was an elaboration of their construct system rather than a basic change of it. In contrast, the work orientated participants had to acquire interpersonal concepts to deal with the relatively unstructured environment of the group. Consequently they were judged to have learned more.

Two modes of learning seem to be operating here. The first is that support for one's existing style leads to elaboration of individuals' present cognitive structure, while confrontation with an alternative and viable mode of operation leads to extensions and additions to a construct system and the appearance of new dimensions.

The second part of Harrison's (1965) paper examines this possibility. Interviews confirmed that the groups' styles did conform to their basic orientations. The high-structured members felt compatible, and the low

structured group felt compatible and each concentrated on their different areas of interest. In a mixed group, however, the situation was different. According to Stock & Luft (1960), the group was process centred, but there was a lot of fighting and they had a hard time getting down to anything. Harrison and Lubin (1965) believed that when the high and low structured participants were mixed, the group tended to polarise and so each member was confronted with an alternative set of behaviours, while receiving support from his colleagues with similar orientations.

Although Killman (1974) did not specifically investigate group composition, he examined the match between trainers and participants and participants and their Interpersonal Value Constructs (IVCs).

He found that in some cases, a match between the trainer's and the participant's interpersonal value constructs led to the participant reporting on more positive interpersonal experiences in his group and, on other occasions, a mismatch led to a more positive interpersonal experience. Similarly, both matches and mismatches between the participant and others led others to become attracted to him and develop respect towards him. For example, if a trainer was directive and oriented to boldness, then participants who valued interpersonal restraint (the opposite to boldness) were experienced by other participants in "positive" ways, for example, making the group a success.

D'Augelli, Chinsky and Getter (1974) tested 66 students (33 men and 33 women) on the Group Assessment of Interpersonal Traits (GAIT); Chinsky and Rappaport (1971); Goodman (1970) before their groups. Using observer ratings of understanding,openness and acceptance warmth, a composite score labelled therapeutic talents (TT) was obtained as an overall estimate of the interpersonal sensitivity. From the distribution of these scores, the subjects were separated into three groups:

1 high therapeutic talent (HTT)

2 low therapeutic talent (LTT)

3 mixed therapeutic talent (MTT)

each group had six participants (three men, three women).

Each of these groups participated in a leaderless, audio tape, training group called PEER (Berzon, Reisel & Davis 1969). Their results show that the sum of the personal and impersonal discussions of the mixed therapeutic talent groups exceeded the sums of both of the high therapeutic talent and low therapeutic talent group. The high therapeutic group, of course, had much more discussion in the personal area, while the low therapeutic talent group had less in the personal area. Although there is no statistical test drawn for this result, the direction is similar to that of Harrison & Lubin (1965).

So far, the question of group composition and participant behaviour has not yet been resolved. In the early days of training groups, it was considered that a training group comprising members of a natural work group would violate the principles of heterogeneity and the idea of a cultural island, and thereby inhibit participation. But there appears to be a trade-off between high learning in the training group and transfer of learning to the work situation. Smith (1969) collected data from 31 Leeds University training groups and found that the groups highest on verified change in subsequent job behaviour were not the same as those which were highest on change on the FIRO-B attitude questionnaire following their training group. In view of this, many practitioners prefer to work with natural work groups and teams rather than heterogeneous groups.

Participants come to a group with a history. Because the training group has tended to concentrate on the here-and-now rather than the there-and-then, the person's history has been relatively unimportant

and a minor variable to consider, except in so far as it is expressed as a predisposition to participating and working in a group. But history must have different implications for different types of groups. If the training group is a discrete event in the person's life, then it might loom large at the time, but would be separated from the other parts of the social system that he interacts with and be relegated to history after the experience. But if the training group comprises people who have lived together and will continue to do so, then it could occupy a salient position in the network of social relationships.

There is very little research which examines this facet of significance and its effect on participation in a training group. Instead, the research tends to examine the individual's predisposition to the learning experiences offered. For example, Harrison and Lubin (1965) who found that people with a process orientation took to the training group experience very smoothly because, according to the authors, it offered them a kind of psychic home. But the work orientated people experienced a shaking up and the group therefore represented a greater learning opportunity.

Initial measures of process or task orientation enable groups to be blended with various mixtures of similarity and dissimilarity and give some possible guide to the areas in which changes would take place and their relevance to the participant, but they overlook other contrasts which might also facilitate learning.

There is a body of research on the selection of clients for psychotherapy. In general, more attention has been paid to the intra psychic variables instead of social and environmental variables, except where the patient has to pay and then other factors come into consideration.

Strupp (1962) sums up the situation. "Therapists appear to have fairly definitive and probably valid ideas of what constitutes a promising

patient. In addition to being intelligent and reasonably well educated, such a person seems to possess a certain psychological mindedness (capacity for insight), the ability to communicate about his feelings, a more or less clear recognition that his difficulties are psychological and a willingness to be helped via psychological treatment. A number of these attributes appear to be linked to social class" (p. 460).

With the extension of psychological and psychiatric services in recent years, it has been found that one of the most significant shortcomings of contemporary psychotherapy is its consistent ineffectiveness with working-class and poor patients. Goldstein (1973) writes about psychotherapy: income and outcome and their relation to social class. He examines the failure of traditional approaches and suggests structured learning therapy involving a combination of modelling, role play and social reinforcement.

Another approach in psychotherapy has been to draw conclusions about the patients who continue by looking at the characteristics of the drop outs. Strickland and Crowne (1959) found that a patient's need for approval is one possible sign of early termination.

As already mentioned, the training group can be regarded either as a temporary system which, in due course, disbands or when a natural work group participates in training, it can be regarded as the temporary suspension of many demands on the permanent system. Eisenstadt (1967) examined the predispositions which influence a person's responses in a training group. She collected data from a three week National Training Laboratory's group at Bethel, Maine, between 1951 and 1952. Personality data were collected using the Krout Personal Preference Inventory.

She found that the response was governed in a large degree by the initial readiness to learn and initiate actions; and the perception of the potential for change in a back-home situation.

She also found that a person who sees the training group as being

relevant to the home situation has power to change this situation and a great degree of cognitive sophistication in describing the situation.

Two criteria can be used for relating the performance to predispositions. The first can simply be participation in the group, while the second can be outcomes. Lieberman, Yalom and Miles (1973) have examined the predispositions of their subjects in relation to the learning outcome (high, moderate and negative, drop-outs and casualties).

The first thing that is clear from their research is that the conclusions drawn by Eisenstadt (1967) in her brief report described above, are an over-simplification of the true picture. As mentioned earlier, the Lieberman, Yalom and Miles study comprised 206 students from Stanford University formed in 17 groups.

Their first overall conclusion is that the attributes that a person has when he enters the group indicates the kind of experience he will have. The authors examined five areas:

1 attitudes and expectations

2 personal value systems

3 psychological adequacy or pathology

4 personality traits

5 conceptions of others.

Overall, the eight scales comprising the first aspect, attitudes and expectations, did not significantly predict outcome. However, two aspects, the opportunity for open communication with peers and the anticipation of change, clearly differentiated the high learners from the unchanged and the negative changes from the unchanged. High learners' felt that their environment was deficient in opportunity for open peer communication and their anticipations for success were the highest of all participants. They were also the only group who saw encounter groups as slightly dangerous. In contrast, those who changed negatively

saw themselves as having many opportunities for open communication with their peers and anticipated little change from the training group experience. They also saw the encounter group as a safe environment. Their main finding was that drop-outs differed from those who were unchanged on two counts: they were more suspicious and had made fewer life decisions in the previous six months.

Two conceptions of others were tapped using forms of Semantic Differential and the Personal Description Instrument. Casualties had a particularly negative view of their best friend. High learners were not particularly different from the other outcome groups in this regard. The principle changes occurred in the attitude-value dimensions and the opportunity for open peer communication immediately after the experiences.

Overall, the most useful outcome would probably be the identification of casualties. They can be separated from those who are unchanged by the inadequacy of their coping strategies and their negative conception of their best friend. The authors suggest that letting the person know that he is in a high risk position might reduce his risk in the group. Two aspects were extracted from the measures of personal value systems. The first was the importance of experiencing and the second the importance of changing. The high learners differed from the other outcome group in that they under-valued experiencing and emphasised changing. In contrast, the negative changers emphasised experiencing and were not particularly concerned with change.

The initial stances of patients before they enter psychotherapy have been examined. It was found, in general, that patients who were psychologically healthier tended to benefit most from psychotherapy.

Lieberman, Yalom and Miles used six scales in the psychological adequacy-pathology dimension. Although they claim that the overall

level of psychological adequacy was a significant and powerful predictor of outcomes, the significance level was only .08 (p. 326, 316), the strongest dimension was the adequacy of coping strategies. This differentiated high learners from the unchanged and casualties from the unchanged. Both were low in adequacy of coping.

Prior to the experiences, the students completed standard personality inventories: the F scale, FIRO-B, and the Life Space Questionnaire. The authors found that the overall predictive power of these combined instruments was low.

It is the value system which clearly discriminates the various classes of learners from those who remain unchanged. It is the drop-outs who show significant differences across the growth, self orientation, external, academic, and inter-personal aspects of their space decisions. The authors conclude that it is not possible to formulate relationships similar to those formulated by Harrison & Lubin (1965) with regard to an individual value system and its potential for learning. In other words, it is not possible to say whether those individuals who enter into the training group with values which are different from the dominant values will be changed, partly because their groups did not stay long enough to have their learning classified. Overall, the authors conclude that although learning is a product of one's anticipations plus experiences in the group, there are no sharp differences in the experiences in the group and the various categories of learner.

Further studies of training groups relate other personality dimensions to the effects of training. Miles (1960) found that ego strength flexibility and the need for affiliation correlated with success in a training group. Steele (1968) divided participants into sensors and intuitors before their training groups and found that people who gained information from their tactile senses profited less from sensitivity training than those who used intuitive means. The intuitors gained much more from the training experience.

Joure, Frye, Meierhoefer, Vidulich (1972) examined the relationship between dogmatism and the outcome of the training experience. Rokeach (1960) suggested that people who were high in dogmatism or were prone to threats also had a poor conception of themselves. Therefore, it seems less likely that they would learn in the environment provided by a training group. The participants endured a 12 hour training group and the authors found that there was no change between the pre and post measures on the dogmatism scale; however, when the participants were classified as high dogmatics and low dogmatics and their changes on the Tennessee Self Concept scale examined, it was found that the self image of the low dogmatics decreased from pre to post test, while the self image of the high dogmatics increased over the same period.

Hoerl (1974) examined the effect of training groups on rigidity. It was found that the average scores of the flexibility and tolerance of ambiguity scales of the California Personality Inventory (CPI) did not increase significantly following group training. He concludes that this was due to the fact that those volunteering were a self selected sample and statistically more flexible than the normal population.

Haiman (1963) examined the effects on open mindedness. He developed his own open mindedness questionnaire which is a combination of scales from the F Scale Adorno Frenkel-Brunswick, Levinson et al (1950) and the dogmatism scale, Rokeach (1960). He found that the training group did produce changes in the open mindedness of subjects as measured by his scales, and that these changes were in part a function of the initial scores.

In psychotherapy, Cartwright and Lerner (1963) found that the patient's need to change is directly related to improvement with psychotherapy.

In summary, two aspects of the person variables have been examined.. First, the kind of initial dispositions that encourage participation

or interaction in a group and second, independently of any interaction, the kind of initial variables that lead to different kinds of outcome.

One aspect is clear. Long before the researcher can measure the attributes of the participants, many of the selection processes have filtered out people so that the remaining population is a select one. This is not particularly important when the preliminary information is being used to compose the group or predict the kind of training or psychotherapy needed and the possible outcomes, but it is a gross omission in the development of a theory. Argyris (1969, 1975) has written about the difficulties and dangers of deriving a comprehensive theory from groups which are samples selected from the normal population but not representative of it. Without these missing groups, the development of training group theory today might be likened to a Freudian theory with its Viennese middle class influence and emphases on sexuality or Kellian theory and its industrial middle-class influence from Ohio. As a consequence, both practitioners and participants embody theories which are not likely to have much validity beyond the situations from which they were derived. In psychotherapy, it has been reported that some institutions with sophisticated techniques and high reputations tend to select patients who match their techniques rather than change their techniques to match the needs of patients; Bergin and Garfield (1971).

In a training group situation, it was reported that the groups which comprised managers and representatives of the union still left the training group with unresolved problems, due to ideological differences. It appears that theoreticians and practitioners might have to take an open systems view of groups in the person's life, if the group focus is to be interpersonal variables and not other differences between participants.

Another major point concerns the relationship between group composition and learning. The basic proposition was that the relatively unstructured environment in a typical training group provided differential learning opportunities to participants, and that groups with a wide range of styles help the continuation of learning in the normal environment because they resemble it.

The picture that emerged from the multi-measure study of Lieberman, Yalom and Miles was not a simple one. Their results showed that in many ways the high learners and the casualties entered the groups with similar attributes. Differences between these two groups appeared in one or two indices at the most. In view of this, the authors recommended sharing the initial data with the high-risk participant to make him aware of the dangers in advance.

2.5 Group Processes and Outcomes

Kelly (1955) stated that any theory of human behaviour ought to be reflexive. By this he meant that it should be equally successful in explaining the behaviour of the experimenter as well as that of the subject. It is apparent that although the training group and its various derivatives began in 1947, the changes that have taken place (at least those reflected in the research and the literature), now point to a multiplicity of procedures rather than a single phenomenon, Lomranz, Lakin and Schiffman (1972). Perhaps it is only proper that a phenomenon which encourages growth in its participants should undergo growth and development in itself, as a consequence of the interactions between the involved parties, and the validation of theory and research. The development of research can also be interpreted as a cyclical process.

The initial step began with the pioneers, Lewin (1948), Stock (1949), Stock and Thelen (1958), Lippit (1949). The critiques of their work led to an elaboration of the previous literature, drastic revisions of it, and to entirely new directions. In this way, the cyclical process

of action and reaction lead to alternate stages of looseness and tightness in the construing processes and the subsequent research.

In the early reviews, Durham and Gibb (1967) covered the period between 1940 and 1960 and Knowles (1967) examined the literature between 1960 and 1967. This was followed by Campbell and Dunnette's (1968) extensive review. In general, it can be said that these three reviews contained research which concentrated on the processes within the group, paid little attention to outcomes and virtually no attention to the relationship between processes and outcomes. They were strongly theoretically orientated - they examined the emergence and disappearance of phases and the presence of conscious and unconscious processes within the group.

At about the same time, reviews were beginning to contain more extensive criticisms of the research methodology. Harrison (1967) was followed by more inclusive reviews: Gibb (1971), Cooper & Mangham (1971) and then Smith (1974).

Gibb paid little attention to the methodological aspect of the studies he reviewed, but Cooper & Mangham were particularly critical of studies without adequate control groups. Smith's review was particularly selective in that he only included studies which had control groups, repeated measures design, and lasted for not less than 20 hours. It is interesting to note that, in view of this selectivity, his review excluded nearly all the studies upon which Campbell & Dunnette (1968) had concluded that there were some lasting changes in the behaviour of the participants of training groups.

Although the methodological recommendations of Harrison (1967), the subsequent exclusion of certain research by Smith (1974) and his recommendation for a more coherent and thorough theory of sensitivity training, coupled with more stringent experimental designs, represents a tightening process in the research, there are other signs that these

developmental directions might be changed. Theoretical developments are urged by Argyris (1969., 1975), diversions in the search for a science of behaviour are articulated by Skinner (1975) and tacit knowing by Steinhauer (1973/74). Meanwhile, the methodological arguments are pursued by Rosenthal and Rosnow (1969), Joynson (1970), Harré (1971) and Burgoyne and Cooper (1975). Their suggestions might lead to "loose" research when judged by traditional, scientific experimental criteria.

In an earlier review of the effects of training groups, Smith (1965) concluded that participation did change behaviour and that these changes often extended into the work situation. But he noted that some of the research designs from which this conclusion was based, contained a major defect because they relied on the perceptions of people who were "not disinterested". It was recommended that such bias could be overcome by direct observations of changes in behaviour by disinterested people.

The second point was that researchers had pursued the evaluation of training while trainers had concentrated on the theories of the learning process, and there was little integration of the two approaches. He thought it was necessary for research to show the relationship between the outcomes (if any) and the learning processes.

Two years later, Harrison (1967) highlighted a number of design problems:

1 the need to use appropriate control subjects

2 the need to be aware of temporal changes in outcomes and take account of them in timing data collection

3 the possibility of different dimensions and directions of change

4 variability in the kinds of outcome and the training experience which destroys the notion of uniformity and makes comparisons meaningless without further data.

He also highlighted the conflict between the norms of the training group with the emphasis on openness, the sharing of problems, flexibility and the canons of experimental design with their secrecy, manipulation and standardised format. Despite these obstacles, he concluded that research was not to be discouraged but continued with improved research designs.

Campbell and Dunnette (1968) reviewed the published literature on training groups for people in organisations. They concluded that such training did induce behavioural changes in the work place, but the exact nature of the changes remained to be specified.

In addition to external criteria of evaluation, they mentioned the importance of internal criteria and although they reviewed more studies in this latter area, they regarded the evidence as even less conclusive. Furthermore, there was no evidence that changes in self perceptions were greater in training groups than any other kinds of experience.

Cooper and Mangham (1971) were particularly critical of the large number of studies without adequate control groups. They put forward a flow chart for research which satisfies the rules of experimental design.

Smith (1974) reviewed control studies of the outcome of sensitivity training groups lasting for more than 20 hours. Although his study excluded nearly all the studies reviewed by Campbell and Dunnette (1968), he concluded on the basis of external criteria that: "Campbell & Dunnette's conclusion remains tenable: behaviour changes subsequent to training are visible to those not present in training." On internal criteria he concludes: "the evidence indicates that the trainee does frequently change the way he perceives himself." (p.40).

Smith concluded his review by posing seven questions concerning the nature of the changes and a particular process which produced them.

He points to the future by writing: "What is required is a theory which explains:

1 why changes occur to trainees in sensitivity training which occur less frequently or not at all in other settings;

2 why these changes then extend into at least some non-training settings. Such a theory has no need to focus specifically upon sensitivity training and should be of equal relevance to other attempts at a prime behaviour change, such as counseling and psychotherapy." (p. 42)

Overall, the studies mentioned here form a mosaic which encompasses the following variables: process-outcome; specific measures-general measures; measures collected during training- follow-up; internal-external; measures obtained from the person-others.

Take, for example, the range and diversity of outcome measures examined in Smith's (1974) review:

1 Global measures of self concept
   (i) psychometric measures
   (ii) self-ideal match

2 Specific aspects of self concept
   (i) the self as a locus of causality
   (ii) prejudice and open-mindedness
   (iii) orientation towards participative behaviour
   (iv) other aspects of personality.

3 Perception of others inside and outside the group

4 Perception of the trainee's behaviour by others
   (i) performance tests
   (ii) observation of everyday performance

5 Organisational behaviour

In summary, it is evident that the diversity of measures used in outcome studies and the variety of interpretations of group processes and their measurement systems increases the possibility that the researcher

who seeks common, uniform and systematic effects of training groups, will find that they account for a small, but perhaps significant, part of the total variance. In view of this, it would also be worthwhile to examine the remaining variance not accounted for by error.

Such an approach would have a profound effect on outcome studies. Differences in outcomes associated with measures taken at different levels and from various perspectives would be treated as phenomena to be examined in their own right, and not an unfortunate finding to be blurred by the use of average or composite indices of change.

This is discussed in more detail in the next chapter, but before doing so, some implications for future research resulting from this review are considered.

2.6 Implications for Future Research

Three basic kinds of variables were examined in this review: trainers, participants, and group processes and outcomes.

There is no doubt that the trainer has a significant influence on group norms, participants and in some cases participant learning. When present, he is a significant variable to be accounted for. Although the clinical literature emphasises his warmth and genuineness, and the training group research matches this with evidence of the primary importance of trust, the research also shows that it is possible for people to learn in training groups without trainers by employing various forms of technology - assumed to be impersonal.

Perhaps the influence of each should be accepted from the evidence to date, allowing researchers to turn their attention to the kinds of processes and outcomes associated with each mode and their relative efficiency and comfort in producing participant learning. In view of the range of outcomes now being examined in groups, perhaps it is time to question the efficacy of the group as an agent of change in some of

these variables.

The review of participant variables indicates that non-psychological variables have not been given equal status with psychological variables. Researchers have been reluctant to directly deal with variables such as political ideology, class, or basic life styles. One particular variable discussed in this review was language. It is surprising that it has received such little attention in the literature on training groups.

In societies where language is so important, and where it can convey a vast amount of additional information (in some cases, identifying the place of one's childhood), it requires further detailed research. Such research could build on Bernstein's theoretical developments with children and examine whether or not middle-class and lower-class adults have elaborated and restricted systems, whether the middle-classes have access to both and whether these systems have effects on learning in training groups. It might also be worth examining what is lost by having a refined language system. One suggestion is warmth and concreteness; another is the loss of freedom to change.

Finally, the multiplicity of process and outcome variables in the research indicates that training groups are capable of producing diverse changes. The author's aim was to search for this diversity; Chapter three contains the reasons for this approach.

3 THE UNIFORMITY ASSUMPTIONS

Campbell & Dunnette (1968) and Smith (1974) in reviewing the literature on training groups, have used a dual approach. First, they made some criticisms of individual studies they reviewed and second, they scrutinised these studies and exposed the commonality.

Taking their criticism of individual studies: it is clear that many of the studies in the literature do not have an adequate description of subjects and trainers. In most cases there is no specification of the trainer's behaviour and his characteristics, nor of the subjects in either psychological or general terms prior to their participation in the training group.

The second criticism is that researchers and trainers lack a coherent theory with instrumentation matched to it. Where theories do exist, for example those in Bradford, Gibb & Benne (1964), they have not been operationalised. In psychotherapy, Kiesler (1971) has said "the point seems clear that most of our current theories can be of little use unless they are restated or renovated in more clearly operational directions." (p.41).

One solution to the criticism that many studies have inadequate control groups is to use the participants prior to their experience as a control group. Few authors have used this situation. In most cases, an equivalent group was selected and used as a control group. Since the equivalent groups were rarely fully matched, their selection glossed over a myriad of variables. To be precise, Friedlander (1967,1970) called them "comparison" groups.

Some studies have taken diverse measures, intercorrelated the results and attempted to interpret the relationships. While the researchers might have found significant correlation between one or two measures, in general there has been very little correlation between most of the measures. Likewise with the measures taken from various viewpoints.

The intercorrelations between the various perspectives have generally been low, and decrease as the distance from the person increases.

Other criticisms relate to the timing of measures and the possibility that development in a group is cyclical, so that the result depends upon the point at which the measurement is taken. Multiple longitudinal measurements are therefore recommended. There is also the problem of phase differences between the various measures. It is possible that several types of measures taken at one particular time will be uncorrelated due to time delays between the properties they examine. But the big problem in drawing conclusions from the mass of research on training groups is the uniformity assumption. In the search for common effects, the key assumption is that the training group is a systematic process which is more likely to produce similarity than diversity or fragmentation. Kiesler (1971) claimed that within this generalistic framework, researchers have come up with little emphasis on the individual differences, either between participants or trainers. Furthermore, none of the theories used to explain the action in training groups explicitly emphasise individual difference variables. If the researchers, theorists and practitioners have so many divergent views of the learning process in training groups, it seems highly probable that the participants, although less sophisticated and psychologically more naive, have as many views.

An alternative approach is to begin with the assumption that the process of change is not uniform but is multi-factorial. Although this is obvious and simple, it has profound implications for research and practice. It means that the participants embody divergent dimensions of the training group. It urges the researcher to shift from the "patient" to the "agent" framework and seek the divergent processes of change that might take place within the participant as a result of his experiences.

Furthermore, the measures that are used should be able to tap both external and internal aspects of change. One example of this in psychotherapy is Malan, Bacal, Heath et al (1968) and Malan, Heath, Bacal et al (1975). In group psychotherapy, Kelman and Parloff (1957) found no evidence for the assumption that the changes on three different measures in psychotherapy go together. The three measures of improvement were comfort, effectiveness and self awareness. Hobbs (1962) supports this finding. In training group research, Smith (1964) found low correlations between internal and external measures of change. Similarly, Lieberman, Yalom & Miles (1973) found essentially zero order correlation between the ratings from four different scores: leaders' ratings; self report; co-participants' ratings, and descriptions of changes in the subject's behaviour obtained from three to five friends or relatives named by each participant. That was one of the reasons for the authors' composite index of change.

In view of these findings, the search for a unitary phenomenon and single experience should be postponed - unless researchers and theorists can tackle the problem at a sufficiently high level of generality.

Furthermore, where differences in outcome or perspective are discovered, they ought to be examined and not merged into a composite index of change. Differences might be indicating the differential effects of training groups. In studies of friendship formation, Duck (1973a) has suggested that people use an active filtering process to determine the characteristics of their friends. In the early stages, superficial concerns are settled and do not manifest themselves in the dynamics of the more developed relationship.

If the effect of training groups is not uniform, an alternative is to search for diversity or fragmentation and begin with the hypothesis

that the experience affects different individuals in different ways. This is the author's approach.

4 APPROACH, THEORY, MEASUREMENT AND METHODOLOGY

4.1 Approach

This author's approach is to assume that people attempt to make predictions about the nature of their interaction with the environment. It is almost as though they have a mental road map to anticipate, plan, and execute behaviour and which is updated when inappropriate behaviour shows the map is faulty. In psychology, this emphasis reflects itself in a new model of man which admits that it is possible for man to be active and seeking, in contrast to being passive and mechanical. In some theories it goes so far as to say that motion and activity are normal states for man (Kelly 1955).

Man can execute a wide range of complex activities which can be extended over long periods of time and involve actions which take into account the current situation plus history. This leads us to believe that there must be some kind of infrastructure or organisation within the individual that organises and controls, collects and stores the current and historical information and can bring it together in such a way that it can be used to integrate subsequent behaviour. Such processes are what the author means by cognitive processes and the infrastructure which ties them together is a cognitive system.

4.2 Theory

A cognitive approach was adopted by Bruner and Goodman (1947), and Bruner (1957) and became known as the "new look" in perception. It contained two corner stones, the first that perception is organised and the second, that this organisation aims to control surprise. A person selects from new experiences and incorporates these into a system, along with his prior experiences, so that they have meaning and can help him to predict and control the demands and boundary transactions that he faces in his life.

Bruner's approach was not really new at all. Piaget (1926), for example, had focussed on the intellectual aspects of the acquisition of knowledge and the development of logic in children. He was also concerned with the structural and functional properties of cognition.

The key theory underlying this research is Personal Construct Theory, Kelly (1955). He would have been the first to say that personal construct theory was not a theory of training groups or psychotherapy, but a theory of living man which could be applied to those phenomena. The theory was subsequently developed by Landfield (1971) in America and Bannister and Mair (1968) in England.

Personal Construct Theory emphasises individual differences. The term personal means that the individual is the fundamental unit of psychology. Although experiences and language are common to many people, the theory argues that the interpretation and meaningfulness of these common experiences is very individualistic and unique. A comparable cognitive approach has been articulated by Frank (1961). Frank put forward the notion of the "assumptive world" of the person. He was referring to a complex set of images, values and expectations, closely related to the individual's emotional states. It is a belief system that has a set of internal relationships related to the significant factors that occur in the individual's daily behaviour in interactions. In turn, it can be used to direct the emotional and behavioural components of the individual's interaction in that world.

Although Kelly's Personal Construct Theory has been used in research on training groups, it has been more adequately articulated by researchers in the field of group psychotherapy, Fransella (1970), Fransella and Joyston-Bechal (1971). In training groups, Harrison (1962, 1966) described briefly the importance of having events in the interpersonal domain such as feelings and behaviour incorporated into

the individual's conceptual system so that he could relate to people. Harrison used content analyses of personal constructs to examine the kind of descriptions people used to describe fellow participants and others after a training group. He did not mention either the fundamental postulate or any of the corollaries. A similar approach was suggested by Hampden-Turner (1966). It is the psychotherapists and their researchers who have tied the theory to the practice and to the research. Since Kelly (1955) articulated and described his practice in group psychotherapy, one focus in Britain has been with the serial invalidation processes in thought disordered schizophrenics, (Bannister, 1963, 1965) and (Bannister & Salmon (1966), and the final results of a two year study of serial validation with thought disordered schizophrenics, (Bannister, Adams-Webber, Penn et al (1975).

The formal aspects of the theory on which this research is based are:

1 the fundamental postulate of personal construct theory. A person's processes are psychologically channelised by the ways in which he anticipates events.

2 Construction corollary: A person anticipates events by construing their replications.

3 Individuality corollary. Persons differ from each other in their construction of events.

4 Organisation corollary. Each person characteristically evolves, for his convenience in anticipating events, a construction system embracing ordinal relationships between constructs.

5 Choice corollary. A person chooses for himself that alternative in a dichotomised construct through which he anticipates the greater possibility for the elaboration of his system.

6 Range corollary. A construct is convenient for the anticipation of a finite range of events only.

7 Experience corollary. A person's construction system varies as he successively construes the replication of events.

It is possible to view the training group as an experience which has the capacity to validate and invalidate people's constructs. It seems that the trainer (or the technology used instead), shapes the group climate and encourages people to interact and thereby express and test their constructs.

At this particular period in society, the emphasis is in the interpersonal areas of functioning - the warmth and feeling people express, the extent to which they communicate their thoughts and feelings about themselves and others.

Although people can learn vicariously, constructs are more amenable to revision when they are immediately tested on an experimental basis. According to Kelly (1955), people actively engage with their environment by building construct systems based on past experience and use them to control surprise and predict the nature of future events.

When people participate in a training group, it could be expected that they would use their constructs to explain and predict the events which take place. Some would find the explicit and implicit norms different from their own thoughts, cognitions and behaviour. They might change their views by movement within a construct, for example, by changing the classification of certain events from dangerous to safe, or by rearranging the association between constructs and perhaps their relative importance.

On the other hand, if people simply don't have the concepts to cope with the situation, they might withdraw, or become hostile and extort validation for the existing system, or change. This last choice is one of the major goals of training groups. During the experience, the concepts or constructs required for greater control or prediction over events would be acquired and incorporated into the existing construct organisation, most likely as a new entity or dimension. In this case the personal change is enormous. Instead of making changes within existing

boundaries by using current constructs in a different way or elevating some to new positions, the newly acquired constructs offer new responses and suggest new ways of engaging with the environment. It is a process in adults which is analagous to Piaget's descriptions of children's acquisition of concepts and the new operations associated with them.

The constructs and their system of organisation are shaped by a consistent process of serial validation and invalidation.

4.3 Measurement

As well as providing a theory of personal constructs, Kelly (1955) has developed a procedure for identifying them and studying the relationship between them.

The aim of the procedure is to tap the subject's relations to particular people. This is done by the use of a Repertory Grid. The basic components of a grid are constructs and elements. A construct is a bipolar abstraction (for example, strong-weak) which a person uses to anticipate events and to give meaning to them, while an element may be an event, an object or a person.

The grid can be seen as a sorting task in which three elements are placed together and the subject makes discriminations by pairing the two which are similar and describing the similarity. This label and its opposite are then used to classify the rest of the significant elements in the person's environment.

Although the labels produced can be interpreted in terms of common usage, it is also possible to understand the degree of similarity or difference between these constructs by examining the ways they are used in the person's environment. In this last case, the subject does not directly say which constructs are similar: the relationship is inferred from the similarity of usage over the elements - usually people.

Two forms of the repertory grid were used in this research. In the first form, the subjects were provided with triads which comprised

themselves and other members of the group. In the case of the field study, some of the names belonged to people who were in the small groups, while the remainder were people they interacted with on odd occasions during their small group or outside of the groups during intergroup activities and social activities. The subjects were presented with 15 triads and asked the standard Kelly question "in what way are two of these people alike which makes them different from the third." They then listed the characteristic and its "opposite" and rated themselves and the other participants on a five point scale with an option to use 'don't know' or 'not applicable' where appropriate. Two basic analyses were performed on each grid, first a construct categorisation and second, a structural analysis (Product moment correlations with Principal Components solutions).

The same basic procedure was used with the present experimental study except that subjects were presented with 12 triads and asked to use a 7 point rating scale. These grids were analysed by categorisation of constructs and several forms of structural analysis (Product moment correlations and Cluster Analyses). These modified grids differ from the usual approaches. First, constructs were not provided by the experimenter. Second, the elements were not ranked and third, subjects had the opportunity to indicate that the construct was not applicable or that they didn't know.

The first reason for these modifications is theoretical. Although Kelly (1955) had emphasised the personal and unique nature of personal constructs, many researchers have provided their subjects with a standard list of constructs. One procedure has been to do a pilot study and extract representative constructs from the list and give them to the subject. Another has been to give the subject the list and ask him to select the relevant constructs. Fransella (1970), Fransella & Joynston-

Bechal(1971), Bannister, Adams-Webber, Penn et al (1975), Harrison (1966), Harrison & Lubin (1965) and Lieberman, Yalom and Miles (1973).

The problems with this approach have been cogently expressed by Livesley & Bromley (1973): "Subjects have been asked to form judgments using information they do not normally use, and their responses have been determined, not by typical psychological processes, but by the constraints of the situation as, for example, in experiments by Asch (1946) on trait centrality. Subjects have rarely been provided with relatively unstructured situations and allowed to select the information they think relevant, or to respond in their usual manner. A "naturalistic" approach may seem to run counter to current attitudes and methods in psychology, but, in the absence of developed theories about the way we perceive and understand others, it is an obvious approach and a legitimate one from a philosophy of science point of view. The use of fairly natural and unstructured situations minimises the risk of our being misled by false assumptions or experimental artifacts, and it allows us to identify the key variables which can be studied subsequently under more closely controlled conditions." (p. 67). Their solution to these problems was to generate constructs in a free and easy way and then categorise them.

There has been some research to examine the meaningfulness of provided versus elicited constructs. The issues have not yet been resolved. Cromwell & Caldwell (1962) found that people used more extreme ratings on their own constructs than when using provided constructs. Landfield (1965) supported this finding. Isaacson & Landfield (1965) also confirmed this result. Kuusinen & Nystedt (1972) compared individual with provided constructs against criteria of cognitive complexity and extremity of ratings. In general, their results failed to support the notion that an individual's personal constructs facilitate more differentiation than provided constructs. Their results were also

dependent upon the criterion chosen to contrast the two types of constructs.

In the end, it seems that the decision to use provided constructs or to permit the subject to elicit his own has to be based on the experience that the subject is subsequently undergoing. After a training group, the author would expect some subjects to use more human constructs and it is likely that spontaneous constructs would reveal the changes more clearly.

There is an added complication in using provided constructs: that of internal theoretical consistency. The basic process of change in the construct system is one where hypotheses are checked against reality. Kelly also makes the business of validation of constructs a matter of construing, either at a different level from the original construction or by employing different but systematically related constructs. This is an additional reason for allowing the subject to articulate his own constructs which may include constructs concerned with process of change as well as the content.

In this experiment, the subject generated and used his own constructs with the additional feature that constructs used before the training group were also rated afterwards. Once the procedure for producing the constructs has been decided, the next step is to give the subject a choice in his response. Although Kelly (1955) used a binary scale, subsequent investigators have allowed subjects to use ranking or rating procedures. Bannister & Mair (1968) and Landfield (1967). Although constructs are bipolar, the subjects in these cases have been given the opportunity to decide whether or not they wish to use them in this way.

Harrison (1962, 1966) used a list form of the grid to examine people's changes in concept preferences following participation in a training group. The elements construed were participants and co-workers who did not participate. The constructs were then placed into six basic

categories and two major categories as follows:

concrete-instrumental

1 observable-concrete

2 structural relationships

3 instrumental (work orientated)

inferential-expressive

4 inferrable

5 relationship processes

6 expressive (feeling orientated)

In each case, the label attached to the emergent and implicit poles was used to categorise the constructs. The subject did not rate others on the construct. Harrison later developed a rating form of his grid - the Person Description Instrument [illegible] and used this to study the effects of training groups, Harrison & Lubin (1965). In this case, the constructs were provided and the ratings were carried out on a seven point scale.

Bannister & Fransella have used a ranking form of the grid with provided constructs. Bannister (1960) derived two measures from the correlation matrix. First was a measure of intensity which showed the extent to which the constructs in the grid were functionally related. The second measure of consistency showed the extent to which the patterns in the first grid were repeated on a second occasion. People who are cognitively complex will show extremely low intensity, while thought disordered schizophrenics will show extremely low intensity coupled with inconsistency.

The problem with the ranking approach is that the repertory grid is essentially a two-way classification of data. One route leads to a correlation matrix for constructs, while the other leads to a correlation matrix for the elements (people in training groups or psychotherapy).

However, the act of ranking causes the element similarity matrix to lose nearly all its meaning. The reason for this is that the instruction to rank forces equal discrimination of all elements (people) on all the constructs and consequently, any information about the actual element differences is lost. An additional requirement in this grid is that the subject must allocate all elements to each of the constructs. Although, given the opportunity, he might wish to declare an element outside the range of convenience of a particular dimension, he doesn't have the facility to do so. Landfield (1967) has shown that people will do this if they have the opportunity to do so. Milgram (1974) has shown what subjects can do in response to an experimenter's instructions.

Landfield has avoided the controversy around notions of cognitive complexity by deriving an index which bears a resemblance to it but is called Functionally Independent Construction (FIC). FIC is defined as the total number of separate construct units employed by a person on a particular repertory grid. While some constructs might be highly inter-related and form one particular cluster, others might simply be isolates or paired. The FIC score is the sum of all these separate sub units. One advantage of this score is that it refers directly to Personal Construct Theory and does not imply anything about cognitive complexity. At the same time, it recognises that complex behaviour to some extent must be organised behaviour.

In summary, this author's approach is this. Subjects were asked to generate constructs in response to triads. No restriction was placed on the kind of constructs generated, the subject was allowed to generate psychological or non-psychological constructs to describe the pair. After generating the emergent pole, he was asked to name the implicit one. He was also given the opportunity to indicate that the construct was not applicable or he didn't know. Elements were rated on a seven point scale with the emergent pole at one end and the implicit pole at the

other.

Constructs were categorised using Harrison's (1966) categories. Product moment correlation coefficients were produced from the rating scales and the matrices were factor analysed (principal component analysis) for the Field Study and cluster analysed for the Experimental Training Groups. In the field study, components were retained for all eigenvalues greater than or equal to the arbitrary, but widely accepted value of 1.0. In the experimental study, both construct and element (persons) matrices were analysed. One point is worthy of note. Because constructs were bipolar, construct reversals were counted as synonymous in the cluster analysis.

Outcomes were measured in ways which allowed people to express their individual views of the training group experience, although individual responses were analysed and classified in ways which permitted comparisons between subjects. The next requirement was to assess the nature of the interactions in the group.

At this point, the approach diverges from that of Kelly. Behaviour in the groups was observed and recorded. In the field study, trainers made notes and after the group rated each individual's participation. In the experimental training groups, behaviour was recorded, broken down into units and coded according to a set of strictly defined categories from Bales (1970). Overall estimates of interaction were obtained by assuming unit equivalence and summing the units in each category.

Although the validity of the Bales System for assessing the range of interpersonal interactions in psychotherapeutic groups has been questioned by Lorr (1966), it was chosen for this research because it contained graded shades of interaction from task categories of: information, opinion and suggestion through to positive and negative socio-emotional categories for: agreement, dramatic behaviour and friendliness. It was

comprehensive and took into account the earlier criticism that the more mundane interactions in groups might be just as significant as the emotionally loaded interpersonal ones.

4.4 Methodology

Although methodology is discussed in detail in each experimental situation - the field study and the experimental training groups - some basic requirements are considered here.

At the present time, people have more confidence in results obtained from experiments conducted in accordance with the traditional rules of experimental psychology. Cooper and Mangham (1971) provide such a framework (p. xiii). It has four key features: First, objective measures taken before, during, and after the training group experience. Second, measures that encompass the possible depths of change ranging from surface variables to deepest personality change. Third, an appropriately matched control group and fourth, strategies for controlling the contamination of results by the experimenter and his instruments.

In this research, change was measured by obtaining measures in a stable period prior to the experience and subtracting these from the measures obtained afterwards. Although cognitive change was of primary interest, other measures were used to cover other possible changes. Furthermore, an assessment of the environment was required so that its characteristics could be related to any changes detected.

5 FIELD STUDY

5.1 Design

This training group was part of an organisation's training program whereby every one would have the opportunity to participate. 26 men with various forms of working relationships spent $4\frac{1}{2}$ days and nights at a residential training centre. The stated aims were:

1 to explore working relationships

2 to become more aware of how relationships develop between individuals and groups and

3 to broaden understanding of the processes of communication and the individual as a communicator.

5.1.1 Subjects

The 26 participants and the 3 internal trainers worked with each other or nearby. Most knew each other. All were men, some were colleagues, some worked for each other (superior or subordinate relationships), while others were unrelated except for common organisational membership.

All subjects were volunteers. Trainers and participant representatives agreed that people could withdraw either before the training group or during it, if they wished to. There was, however, a moderate norm that attendance would be worthwhile.

5.1.2 Trainers

Three experienced trainers and three assistants (trainers in training) were provided. Two of the experienced trainers came from outside the organisation while the other came from within. Two of the assistants were personnel specialists and the other was a training officer. Having formulated and accepted the articulated aims of the laboratory, these people were free to use whatever intervention strategies they thought appropriate and suitable to their style of working.

5.1.3 Group Formation

Before the training group, participants were given two typed sheets containing domestic details and the aims and purposes of the training group. They were also told that it was up to them to make use of the learning facilities provided. They could come and go as they pleased. They could change groups if they thought fit or go and walk in the park, or return to work if appropriate.

At the first residential session of the training group, three initial groups were formed by trainer pairs writing their names on a blackboard. The participants then selected their first group by writing their names beneath the chosen pair - the only constraint was that the groups should have approximately the same numbers so that people would get an opportunity to participate and the trainers could manage the situation. Thereafter the groups were changed by negotiation with the constraints provided by the participants' needs and the dynamics of leaving and entering groups.

5.1.4 Assessment Procedures

Prior to the training group, the researcher had two discussions with the group of 26 participants and 6 trainers. In addition, there were three meetings with participant representatives and trainers. Their purpose was to determine the key variables to be measured in the research. The discussions indicated the different norms of the researcher and the trainers. The general view was that the researcher would not have access to the groups, nor should the measures devised interfere with the aims and processes of the training group. There was already a general belief that the content of the instruments would change the nature of the training experience by sensitising people to certain aspects of the training. But overall, some form of evaluative research was thought to be useful provided it was unobtrusive.

At a full meeting of participants and trainers, the researcher put forward the following proposal: first in general terms, it was necessary to have some objective measures at two levels: (1) behaviour and (2) thought processes. To achieve this, interviews were to be conducted with every participant and trainer one week before the training group, one to three weeks after and then again after an another three months. Two basic changes would be sought.

1 changes due to the training group and

2 changes due to the training group which became evident, continued or abated in the three months of subsequent interactions at work.

Specific data would be:

1 information from participants

- i degree of knowledge of other participants
- ii personal constructs
- iii understanding of self and others
- iv quality of interpersonal relationships
- v clarity of communications and
- vi quality of business-type meetings

2 information from others not attending the training group.

- i participants' behaviour (one week before, one to three weeks after and then again after another three months).

3 information from a "comparison" group

The instruments used to assess participant learning would need to be tested with a comparable group of subjects not participating in the training group and undergoing normal day-to-day interactions in a comparable working environment, to determine if any changes were due to completing repertory grids.

4 Samples of the interactions

Finally, it was proposed that recordings of samples of the action in the groups would be useful to the researcher so that the interactions between people could be categorised and related to their learning at the training group.

Proposals two, three and four were rejected by the participants, largely because they held the view that the training group was a private affair and they would judge the benefits for themselves and convey this to the researcher. There was also a general belief that the benefits would be too subtle and diverse to be measured by standardised instruments or questionnaires. Participants also believed that any changes due to the experience could be adequately articulated by participants after the training group without any need for preliminary measures. Initially, the notion of eliciting personal constructs was also rejected because "you couldn't have subordinates comparing bosses with subordinates and commenting on the differences", or junior people commenting on seniors.

5.1.5 Instrumentation

The participants' degree of knowledge of other participants was measured on a five point scale ranging from "not at all" to "very well".

Participants were also asked to list their aims and objectives and the criteria they would use to evaluate their achievement.

Personal constructs were elicited using 15 triads comprising self and two others in the training group and the standard Kelly question "in what way are two of these people alike which makes them different from the third." The 15 triads were evenly distributed with regard to the members' status and union or staff functions.

After generating as many constructs as possible, these were then taken one at a time and self and participants were rated on a five point scale with the implicit pole at one end (one) and the explicit pole at the other (five). Participants were given the opportunity to use "don't know" or "not applicable" responses.

On the second administration following the training group and the third three months later, the sequence was identical except that new constructs were first generated and rated. Then, the constructs generated

in the first interview were re-rated. At the third interview, each participant was also asked about the changes which had occurred at work. Although this was an open ended discussion, information concerning four aspects was sought.

1 the understanding of oneself and others,

2 the quality of relationships

3 the clarity of communications

4 a global judgment of business-type meetings.

5.1.6 Trainer Interventions

The design of this particular training group provided many research problems. First, the freedom to change groups and the natural differences of the trainers added additional sources of variation in measuring the learning outcomes. Prior to the training group, each trainer received a questionnaire on trainer styles, Group Leadership Questionnaire (GTQ-C) - Pfeiffer and Jones (1972). This questionnaire has 21 situations which might be encountered in a training group: for example, distressed person, late arrival, the silent member. There are 19 possible responses to each situation - each represents a particular style, for example, Silence, Group-Directed, Reassurance-Approval, etc. The trainer records: (1) the interventions he might consider making and (2) the one which is most important. This questionnaire was completed and scored before the training group. It was suggested that the trainers share the results among themselves, agree to a general form of intervention and write a job description for it as suggested by Culbert (1968).

Timing of measures. Baseline measures were obtained in the week before the training group at the participant's place of work.

Between one and three weeks after the training group, participants were again interviewed in their workplace. After three months back at work, this data was again collected over a period of 3 weeks.

Process measures. Trainers rated participants on four global indices of group participation. Appendix I, Table 2. They were:

1 verbal participation in the group

2 influence on others

3 giving information

4 seeking information

5.2 Hypotheses

1 As a result of participation in the training group, participants would get to know more people in depth.

2 The increase in the number of people in this category (well known) would be related to ratings of increased participation in the training group.

3 Participants would become more oriented to the interpersonal and intrapersonal processes in relationships and use more constructs in the inferential-expressive category.

4 Participants' increased use of constructs in the inferential-expressive category would be related to ratings of their increased participation in the training group.

5 Participants' cognitive systems would become more complex. In particular, their number of factors would increase and the proportions of common variance and eigenvalues on the first factor would decrease.

6 These increases in complexity would be related to ratings of increased participation in the training group.

5.3 Results

Table I shows the changes from pre-training to post-training, post-training to a point three months later and from pre-training to the three-month point.

F ratios were calculated and the distributions checked. When the probability associated with this was less than .05, then the difference

between the means was tested with a t test and a two-tailed distribution. Values exceeding a probability of .05 were considered not significant.

The increase in the number of people known well immediately after the laboratory was not significant. Although there was a slight increase in the number of people known well during the three-month period back at work, this increase was not significant.

After the training group, the average number of constructs in the inferential-expressive category increased by 6.181, but it then decreased by roughly the same amount during the following three months. The significance of these two changes could not be tested with the ordinary t test because of the wide variation in the results on each occasion ($F = 8.3353$ and 15.7899 respectively, $p < .001$). There was no significant change in the number of constructs in the concrete-instrumental category following participation in the training group. There was, however, a significant decrease in the use of such constructs in the ensuing three month period while the participant was back at work ($p < .05$).

An alternative way of looking at the person's orientation towards interpersonal and intrapersonal processes is to examine the relationships between the construct ratings of other participants. In this case, three indices were derived to represent cognitive complexity: the number of construct factors, and the proportions of common variance and eigenvalues on the first factor. If people become more oriented towards interpersonal and intrapersonal processes, one would expect to see these human constructs embodied in new factors in the factor analysis, together with decreases in the proportions of common variance and eigenvalues on the first factor. (Although the proportion of common variance is usually used to assess cognitive complexity, the proportion of eigenvalues was also used in case the error variance changed).

There was a slight increase in the number of factors used after the

training group. This increase was highly significant ($p < .001$). There was also a slight increase in the number of construct factors in the ensuing three months back at work. This increase was also significant ($p < .01$). There was a decrease in the proportion of common variance, and eigenvalues on the first factor following participation in the training group. These were also significant ($p < .05$ for both). There were, however, no significant decreases in the ensuing three months back at work, although there were decreases between the 3 months measure and the pre-training proportions, and these were both significant ($p < .01$ and $p < .05$ respectively).

While these changes in themselves might offer some support for the notion that participants changed as a result of their experience in training groups, a further test was undertaken. This examined the relationships between the changes and the trainer's ratings of the individual's participation. Their reliability is shown in Appendix I, Table 4.

These results are shown in Table 2. One-tailed tests were used to estimate the significance of the correlation coefficient. Coefficients with a probability exceeding .05 were considered to be not significant.

As mentioned above, there was a significant decrease in the number of constructs in the conrete-instrumental category during the ensuing three months back at work. In examining the relationship between this decrease and participation during the training group, it was found that there were no significant relationships between this decrease and the four measures of participation. The relationships between the increases in use of inferential-expressive constructs immediately after and in the ensuing three months were not significantly related to participation.

The increases in the number of construct factors immediately after the laboratory was positively correlated with influence in the laboratory, but not significantly. Although there were decreases in the proportions

of variance and eigenvalues on the first factor immediately afterwards, these were not correlated with the trainer ratings of participation in the training group. However, the decrease in common variance from pre-training to measures taken after three months back at work, showed significant positive correlations with the trainer's ratings of the participant on giving and seeking information ($p < .05$ and $p < .001$, respectively).

Although each participant was given the opportunity to generate 15 constructs prior to the training group, few participants were able to do so. The changes in the inferential-expressive categories were converted to percentages and the relationships between the percentage changes and the four measures of involvement in the training group were examined. Table 6 shows that there were no significant relationships between any of these changes in percentages and the four measures of participation. Furthermore, table 7 indicates that the increase in the percentage of inferential-expressive constructs immediately afterwards correlates with construct productivity before and immediately after the training group ($p < .05$, two-tailed test).

5.4 Discussion

There is no solid support for the hypothesis that people use more inferential-expressive constructs following participation in a training group. Although an increase was detected immediately afterwards, the wide range of responses, rendered the ordinary t test invalid. This increase was followed by a corresponding decrease in the ensuing three months but once again, the ordinary test was invalid. Furthermore, the approximate methods of Cochran and Cox (1950) indicates that the differences are not significant at $p = .05$ for a two-tailed test.

The additional measures, derived from ratings of the constructs, do however, change significantly. In particular, the proportions of common

variance and eigenvalues on the first factor decrease immediately afterwards and from pre-training to a point three months after training.

Although this research was designed to replicate Harrison's (1962 and 1966) findings, practical restrictions on the methodology make comparisons difficult.

It might be recalled that Harrison carried out the 1966 study because the findings from the first were ambiguous. In particular, the middle managers used more interpersonal constructs in their descriptions of coworkers who were not trained, whereas senior managers only changed their perceptions of others who had been trained with them. In the second study, he resolved this ambiguity by increasing the length of training and taking longitudinal measurements. He found that the perceptions of coworkers increased slightly after training and rose to significance three months later to confirm the durability of the changes. Furthermore, the increases were related to ratings of participation in the training group.

In my study, the people appearing as elements in the grid were participants in the training programme, although some remained in the one group for the whole week and did not interact with others except during intergroup meetings and social activities. Overall, however, the participants knew that the people being rated were either participants in their group or another. The acid test of rating coworkers who did not participate was not carried out.

There were other experimental differences. In my study there were big differences in the number of constructs produced on each occasion. The procedure of using triads might account for some of this difficulty. Some experimenters have overcome this problem by giving a list of constructs to people and asking them to select a fixed number or by requesting a fixed number of constructs to be generated on each occasion. Participants in

this study were asked to produce 15. Most refused to do so. Various reasons were given: "These are the words I use to pair many people in this list", "it's too difficult" and it's not relevant anyway". The fact that they had to rate 26 participants on each scale also dampened their enthusiasm for producing the required number.

In an attempt to overcome this productivity problem, the numbers of inferential-expressive constructs were converted to percentages and changes computed. The increase immediately after, however, was significantly related to construct productivity before and immediately after the training group ($p < .05$). This means it was invalid. Marsden, Katter and Ericson (1974). Changes in percentages of inferential-expressive constructs in the three month period after the group and between pre-training and this three month point were valid but were not significantly related to any process variable.

It is also possible that the training group examined in this field study was different from the ones examined by Harrison (1966). Harrison's participants were adults and the trainers most likely used a style of intervention approved by NTL. There was no control over the styles of intervention in this study, although they were measured before the training group. Table 8 shows the styles based on the one most important response to each situation, while Table 9 shows the styles based on all possible responses. Tables 10 and 11 show some overlap between trainers but the styles are certainly not in unison. Furthermore, there is no evidence that the trainers actual behaviour in the group coincided with his preliminary estimates of what he might do.

Lieberman, Yalom and Miles (1973) had students in their groups and eight trainer styles but they did not find changes in interpersonal complexity or any evidence of "late-blooming".

It was suggested that any new constructs acquired could possibly

change the cognitive structure. While the number of factors did increase and the proportions of variance on the first factor decreased immediately afterwards, they were not related to participation. However, the change between pre-training and a point three months after training was significantly related to the two processes of giving and receiving information.

Since the ratings of participation remained constant, the move from significant change without significant process relationships to significant relationships at the end of three months, tends to suggest that some people were "late-bloomers". Their cognitive development might have continued in these three months with the information they had exchanged during the training group.

Although the comparable relationships with the proportions of eigenvalues follow these trends, they do not reach significance. Perhaps the proportion of common variance is not the appropriate measure because it omits the possibility of changes in error variance.

Construct productivity was examined at each stage. The total number of constructs produced immediately afterwards was not significantly related to participation in the training group, but when divided into the two broad categories of concrete-instrumental and inferential-expressive, the picture became clearer. Although the number of inferential-expressive constructs produced after the training group was positively correlated with all measures of participation, none reached significance. On the other hand, there was a significant positive relationship between the number of inferential-expressive constructs produced beforehand and giving information in the training group (Table 4). In other words, people who were relatively open before the group, tended to display this in the group.

The differences in productivity were examined by separating the

subjects into two subgroups: union and staff. (Table 5). Prior to the training experience, union participants produced, on average, half as many constructs as the other participants. But in examining the two broad categories of the constructs (concrete-instrumental and inferential-expressive), it was found that following the training group, the union representatives increased slightly their use of concrete-instrumental constructs, whereas their use by the other group decreased slightly. Following the experience, both groups generated more constructs in the inferential-expressive category. However, the staff group was generally more productive.

There are two possible explanations. Despite the concern with activities within the group, the training group could be described as a middle-class activity. Most of the action occurred while people were sitting and talking; there was very little physical work to do. The participants who were union representatives were rather uncomfortable in this environment. The staff participants were more at home, although they were used to dealing more in ideas and less in feelings. Under those circumstances, it could be expected that the training group was less incongruent for them because it had some elements which were common to their daily working lives - sitting around and talking. At the same time, however, they were confronted by the less intellectual and more concrete stances of the other participants.

A second possibility is the differential use of language. Bernstein (1958, 1961, 1964) has suggested that working-class and middle-class children have learned two different forms of English. It is possible that the subgroups of staff and union participants in this study had retained some of these differences as adults.

Although the author had not anticipated gross language differences between participants, it was thought that some subjects might have large

vocabularies so the rating form of repertory grid was used to take account of this.

Although vague constructs were explored, in the end the subject was permitted to use the words he thought appropriate (single words or combinations of words) to describe the implicit and emergent poles. Kelly (1955) suggested that superficial constructs required further questioning, but Shubsachs (1975) has tentatively found that repeated constructs are more important and not just a sign of superficiality.

Correlation matrices were produced from the ratings and analysed with the method of principal components. This displays both the organisation and the independence of the construct system. It also compensates for verbal productivity. Different words with the same function (that is, which produced statistically similar discriminations of the elements) become incorporated under the one factor. Changes in this and related indices were correlated with the trainers' ratings of participation in the group.

The reliability of these ratings was checked. The intercorrelations between trainer ratings for each of the four scales were positive (except for one case) and reached the .05 level of significance 12 times. Appendix I, Table 5. Trainers two and six were similar in their perceptions on verbal participation, influence on others and giving information. Trainers two, three, four and six were congruent on the influence scale. Trainers two and six, however, were inversely related, but not significantly, on the scale of seeking information.

The accuracy of trainer perceptions of participant change was discussed by Lieberman, Yalom & Miles (1973). They found that trainers were not very accurate judges of outcomes. Co-participants tended to be more accurate than trainers, particularly in judging casualties.

In this field study, most of the inter-correlations were positive, but two were close to zero and one was negative. To conclude, [illegible],

however, that there was little indication of complete agreement between trainers on the participation of people in these groups.

These ratings were global measures and suffer from several disabilities. First, trainers did not have access to all the behaviour of the participants - they may have observed them participating in social activities or in inter-group activities and based their ratings on this evidence. The data are possibly based on different perceptions of people in different situations. The process scores used were derived from average trainer ratings of participation. One trainer did not rate participation and another made so few ratings that it was not possible to include his figures. The insignificant relationships between changes and participation might have been due to these factors.

5.5 The Importance of Language Differences

5.5.1 The Evidence

The evidence is slim. It comprises impressions and some description of the kinds of constructs generated by participants. It was not the prime focus of this research. It does, however, have implications for future research where the participants come from different classes and culture (in England).

In collecting the data, the researcher found that the union participants' responses were direct, spontaneous and concrete. They tended to see issues as black or white. On the other hand, the staff participants' responses were thoughtful and ponderous. They seemed to turn things over in their mind before pairing the elements in the triads and naming the explicit and implicit construct poles.

In some ways these impressions were confirmed by the participants' constructs. Approximately 12 per cent were concerned with language. Staff participants used : incoherent-easy to understand, articulate-inarticulate, vague-lucid, inability to express themselves-able to,

thoughtful presentation-explosive presentation; repetitive, irrelevant speech-economic disciplined speech, etc. Union participants used: speak our mind-hold something back, straight speakers-mumblers, comes straight to the point-skates around it, sensible and straight to the point-not...., talks sense-talks rubbish etc.

Staff participants generated nine percent of these constructs and union participants three percent. My first impression was that the staff participants found difficulty in listening to the less articulate union participants and extracting the contents. It was almost as though the dialogue broke some linguistic rules and this devalued the content. On the other hand, some union participants considered that the detail and complexity of the staff participants' dialogue obscured issues which were clear, or complicated them more than necessary and was an evasive strategy.

5.5.2 Language Differences within the Training Groups

It is possible that some of the union participants in this field study had a restricted language system, while most of the staff participants had an elaborated system. If this was the case, then the experiences in the training group would have had different orders of relevance for each group. The emphasis on behaviour in the group would have suited the union participants' skills of dealing with concrete aspects of behaviour, but the requirement to verbalise their feelings in increasing detail would have been difficult and frustrating. It is possible that some union participants had two problems in the group, first acquiring an elaborated system to enable them to learn and second, learning the content. According to Bernstein, the middle-class child has some access to the restricted language system so it might be expected that the middle-class adult participants would have access to both.

5.5.3 Language Differences: Data Collection and Construct Labelling

The different language systems also have implications for the data

collection process. When some participants were responding to the triads on the repertory grid, they tended to respond with words which referred to broad classes of contents, rather than to specific attributes of the triad. It seemed to be very difficult for these people to break down their macroscopic labels into microscopic elements. So they were producing a global label and trying to rate a multi-dimensional phenomenon on a single scale. For example, both subgroups used constructs with explicit poles: on the same wavelength, have the same outlook, share a common background and use a common approach. When asked for the attributes of these similarities, staff participants responded with more details, while union participants looked slightly stunned but produced synonyms or resorted to role descriptions, such as tradesman (versus manager) and unionist (versus staff). A few cluster analyses of constructs were carried out to examine this. One in particular showed the second cluster with the following constructs: like a shop steward, treating people as people, and being considerate. It appears that this role description contains two implicit meanings for this person.

In contrast, the participants who used elaborated codes produced constructs with microscopic elements which differentiated between the people in the triad. Their ratings on the scale and the subsequent correlations produced a measure which was at a different level to that produced by the participants with a restricted system. But a common measure was derived from principal component analysis - the number of factors. Differences in the elaboration of the constructs would also pose problems for the productivity indices used by this author. In general, the productivity indices would appear lower for the union representatives because of their use of global constructs.

5.5.4 Language Differences: Evaluation of Outcomes

These language systems also have relevance to the evaluation of

appropriate behaviour following the training group. Bernstein (1961) claims that a person with a restricted system is more likely to focus on the act and its consequences rather than the processes underlying the act. Although the continuation of these language systems into adult life is debatable, in this field study participants' views of the behaviour in the subsequent three months of work were also collected.

In general, it was found that the union representatives tended to focus on the outcomes of meetings and discussions. The staff participants, on the other hand, were more concerned with the processes of sharing information, ideas and feelings, considering alternative solutions and coming to a decision. (Perhaps the outcomes during the ensuing three months benefited these staff participants and not the union representatives).

These views are tentative. They should be the topic of further research. The problem was avoided in the experimental training groups by employing students. These were conducted in the laboratory.

6 EXPERIMENTAL TRAINING GROUPS

6.1 Introduction

It is this author's view that it is most important to unravel the person-to-person interaction in the small group, not only so that the learning in that group may be understood, but so that the same basic process can be understood when the person returns to the normal environment. If the researcher can determine the interactions which influence the various parts of the individual's construct system, then people (including the person himself) can be taught and encouraged to validate some parts of the individual's system and invalidate others. The expectation that learning from the training group should carry over to other people not present, as suggested by Smith (1965), underestimates the reciprocal nature of interactions and seems to assume that participants would completely abandon their caution and normal processes of developing relationships after participating in a training group. It would, however, be expected that new social skills would allow people to obtain appropriate interactions from others by their active involvement in relationships.

To unravel the basic interaction processes, training groups were set up in the laboratory. Previous research had indicated the importance of the trainer and his particular style of intervention (Lieberman, Yalom & Miles, 1973) so technology in the form of video equipment was used to carry out part of this role - giving feedback to the participants. The other part of his role, providing support to the participants, was carried out by co-ordinators in the experiment. Berzon and Solomon (1966) had also shown the feasibility of conducting leaderless groups with taped instructions and exercises to provide feedback. Furthermore, leaderless groups were without casualties in the study of Lieberman, Yalom & Miles (1973). This was a very important consideration in this experimental situation. In brief, it was considered that the possibility of casualties would be minimized if the co-ordinator provided continuous support to the participants and did not have the opportunity to behave in any way which might be interpreted as an attack.

The field study had also shown some problems with subjects from different backgrounds. The researcher has raised the possibility that the working-class subjects used a language system which was different from that of the middle-class subjects.

There were also differences in the attitudes with which these field study participants took to research. They were not in favour of having their behaviour during the training group observed, nor were they readily amenable to psychological measures. The laboratory study bypassed these questions of participant resistance by employing psychology students who were used to being observed and measured in controlled situations.

6.2 Design

6.2.1 Experimental Groups

Subjects were obtained by advertisements on departmental notice boards. Participants were invited to learn about training groups by:

1 participating in a group

2 using Bales' system for interaction process analysis.

The participants were 30 students of psychology, 10 males and 20 females with a mean age of 19.8 years. These were divided into three experimental training groups as follows:

Group 1 4 males, 6 females mean age 19.2

Group 2 3 males, 7 females mean age 20.7

Group 3 3 males, 7 females mean age 19.7

The three groups were conducted in sequence. Each group had one two-hour session per week for four weeks. With additional exercises the total participation time was about 10 hours. Training group two started after the end of group one's programme. Training group three followed.

The training groups took place in a room which had been specially designed for the observation of children and equipped with a large one-way viewing panel. Each training group was divided into two small groups on

each occasion and five participants remained in the interacting room where all of their behaviour was recorded on a ½" video equipment using a fish eye lens for close detail. The remaining five subjects acted as observers behind the one-way screen. The observers used Bales' IPA and listened to the interacting group members via a sound system.

The period of interaction lasted approximately 30 minutes. At that point, both groups were brought together in the interaction room to view a 10 minute replay of the videotape. Each member of the interacting group was then instructed to use the Bales' system to score his own behaviour for approximately 10 minutes. The group of observers had the opportunity to check the reliability of their scores.

Following this replay, the two groups changed roles and the above procedure was repeated.

6.2.2 The Role of the Co-ordinators

Two students acted as co-ordinators. One was present in the training group, while the other was behind the one-way screen with the observers.

The role of the co-ordinator in the training group had been determined by previous research on training groups. In this experiment the traditional trainer's role was split into two parts. Confrontation and feedback were provided by the video equipment and the instruments used, while support was supplied by the co-ordinator. He also arranged the seating so that participants were viewed properly, supervised the video equipment, and played a relatively minor but helpful and supportive role in the interactions. He did not lead the interactions or repair gaps in the conversation, although he attempted to respond in a helpful way to any questions raised. He did not confront the participants.

This role was agreed by both co-ordinators prior to the training groups. After several sessions, the role within the interacting room was taken over by one co-ordinator. The co-ordinators' interactions were also categorised to assess their contributions.

6.2.3 Measures

Two basic kinds of measures were obtained -

1 process

2 outcome

Bales' IPA was used to measure the interactions between participants in the group. One record of the interactions was obtained from one co-ordinator observing interaction through the one way screen and the other record was obtained from later viewing of the videotape by the other co-ordinator. In training groups two and three, a sound recording was used to provide a transcript.

Although all the interactions were recorded on video tape, the process measures obtained from group one consisted of sequences of 10 minutes each per session. The samples were taken at random. In training groups two and three, the interactions were sampled on the basis of five two-minute samples.

The co-ordinator working behind the one-way screen recorded all the interactions over the half hour period. Details of the reliability appear in Appendix I, Table 6.

6.2.4 Outcomes

Two kinds of measurements were taken, one at the personality level and the other at the cognitive level. The personality measures consisted of the Hostility and Direction of Hostility Questionnaire (HDHQ) and section 2B of the California Test of Personality (1953) as a test of social skills.

Cognitive measures were obtained from repertory grids by producing correlation matrices for constructs, and elements and subjecting these to cluster analysis. The number of clusters was a measure of organisation, the number of items not clustered was a measure of differentiation, and their sum was the FIC score.

The Hostility and Direction of Hostility Questionnaire examines aggression, hostility and punitiveness. It consists of five scales:

1 urge to act out hostility (AH)

2 criticism of others (CO)

3 projected delusional hostility (PH)

4 self criticism (SC)

5 guilt (G)

The hostility score is the sum of five scales, hostility = AH + CO + PH + SC + G. The direction of hostility is equal to (2SC + G) - (AH + CO + PH).

The California Test of Personality - Section 2B. Fifteen questions of this test were used to examine the participants' social skills. The questions estimate the extent to which the person is interested in the problems and activities of others. Previous research has shown that personality measures are relatively stable across groups. Personality measures were therefore taken prior to any participation. However, because of the researcher's experience with the low productivity of constructs in the field study, participants in the laboratory were given the opportunity to meet with each other for one session before completing any grids. The first grid was completed immediately after the first session. Both personality and cognitive measures were then completed again after the last session.

The repertory grid contained 12 triads with self and two other participants (including the co-ordinators). Subjects were asked the standard Kelly question and to produce the emergent and implicit poles of each construct. They were then asked to rate all participants including themselves on a seven point scale. Responses of "don't know" and "not applicable" could be used as appropriate. After the last session of the training group, participants were given a fresh grid with the same triads and asked to generate new constructs. These were again rated. Subjects

were then given their initial grids minus the ratings and asked to re-rate the elements (participants) using their initial constructs.

6.2.5 Comparison Group

Fifteen students who could not be accommodated into the existing groups acted as comparison subjects. The sole criterion for their inclusion was that they were interested in training groups. Eight were students of psychology (three males, five females) and seven were students of business (six males, one female).

The Comparison group was assembled in two parts because its task was to view a video tape obtained from one of the experimental training groups. The time interval between the first and last measures was three weeks - the same as the time period between cognitive measures of each of the experimental training groups.

Participants were told that the researcher was interested in examining what happened to repertory grids completed by people who view others in a training group. The reference group was then shown the video tape of one of the experimental training groups. Its task was to view the tape and then complete the grid. There was to be no interaction between the participants during the session. They could complete the grid when they felt competent to do so and after the tape had run for the half-hour period it was re-wound and incidents were replayed where necessary. Three weeks later the two groups were assembled again and given a fresh grid. The same tape was replayed and people generated new constructs, and rated the elements (training group participants) on the seven point scale. Following this, they were given their initial grids minus the ratings and asked to re-rate the elements.

Following this, any questions were answered.

Their task of viewing a training group (without interacting themselves) was chosen because it is possible to do both in an ordinary training group.

Comparing the changes in the training group with the changes in the comparison group (with the same instruments over the same period of time) might help in the assessment of learning due to interactions - the main

facility provided by a group.

6.3 Analysis

6.3.1 Process

Both verbal and non-verbal behaviour was coded using Bales' categories. In each case the sender and recipient were identified. With this coding system, the researcher has to decide how to code behaviour which goes to several members of the group. The choice is whether to score each recipient with one unit or to give each recipient no score. In this case, unless the recipients were clearly identified in multiple interactions, the score was given as one unit for the sender and zero units for the recipients. In this way, the received behaviour is under-estimated but specific. The interaction between two participants on each category is the sum of the sent and received units. The reliability is discussed in Appendix I, Table 6.

6.3.2 Outcomes

The personality tests were scored using the manuals and group means and standard deviations derived. Hostility, and Direction of Hostility from the HDHQ and Social Skills from the CTP.

Cognitive change. Two basic measures were derived from the grids. The first examined the content of the construct produced and the second examined the structural relationships between constructs (or elements). The content analysis was performed by writing the constructs on coded computer cards and sorting these into the six categories derived by Harrison (1962, 1966). Categories and examples of the constructs are shown in Appendix I, Table 1. One week after the first categorisation, the researcher shuffled the coded cards and categorised the constructs again. The reliability is reported in Appendix I, Table 5.

Change scores (last minus first) were produced for each of the six sub-categories and the two main categories: concrete-instrumental, and inferential-expressive.

Each grid was analysed in two ways. First, the relationships between constructs were obtained by producing a correlation matrix and subjecting this to cluster analysis. Second, the grid was turned through 90^{o} and the relationships between elements (participants) were examined by producing a correlation matrix and subjecting this to cluster analysis.

The OSIRIS III (1971) cluster analysis procedure searched the correlation matrix for the pair of constructs (or elements) with the highest correlation co-efficient and placed these in the one cluster. The procedure then searched for the next construct which was most highly related to the preceding two and placed it with them. This procedure continued until the limit of the correlation co-efficient set was reached or no more constructs could be fitted into the cluster. At this point, another cluster was started. Constructs which had high but negative correlations were reversed and fitted into the cluster. Constructs (or elements) which did not fit into any cluster were indicated. Landfields FIC score is the sum of the number of clusters and the number of constructs (or elements) not clustered.

Although participants were asked to generate 12 constructs and rate 12 elements, in a few cases, less than 12 constructs were generated and less than 12 elements were rated. The researcher had the choice of keeping the level of significance constant at .05 and changing the correlation coefficient to match this, or retaining a constant correlation co-efficient. Because structure was being examined, the correlation coefficient was set at the .05 level of significance for each individual at time 1 and maintained at the same value throughout the six analyses of the individual's grids unless the degrees of freedom changed significantly.

Three basic types of change score were obtained (last minus first) - number of clusters, number of items not clustered and the FIC score. These were obtained for both constructs and elements (participants), from the

differences between the first grid and the first grid re-rated after the last session, and from the differences between the first grid and the new constructs generated and rated after the last session.

The differences between the first and final measures were computed and t tests calculated. Throughout this research a significance level of .05 was used with one-tailed tests for directional hypotheses, two-tailed for all others.

The initial values of the outcome variables were correlated with the change scores and both of these were correlated with the Bales' process variables.

6.4 Hypotheses

1 There would be no significant differences between the pre- and post-measures on the personality variables (Hostility, Direction of Hostility and Social Skills) for the participants as a whole.

2 There would be no significant changes from the first grid taken beforehand to the second grid taken afterwards in the six measures of cognitive change when the participants were considered as a whole and compared with a comparison group of non-interacting people.

3 The effects of the experimental training groups would not be uniform. Several sub-groups of participants would appear when classified according to the six measures of cognitive change.

4 The cognitive changes in each sub-group would be related to different processes within the experimental training group.

6.5 Results for All Participants

Since the three experimental groups received comparable treatment, the groups were combined to see if any general changes occurred.

6.5.1 Personality Changes

Before the training groups, the mean scores for the personality measures were: Hostility 17.4, Hostility Direction +2.0333, and Sociability

9.1667. The changes following these training groups were minute. However, the measures of dispersion (standard deviation) associated with these three personality measures were high. For example, the initial mean hostility score of 17.4 had a standard deviation of 6.0492.

6.5.2 Structural Measures of Cognitive Change

The changes on the six structural measures derived from grid one and the six structural measures derived from grid two were compared with the changes produced by the controls. Two of the differences were significant (Table 12). Both of these were derived from the element analysis of the second grid. The change in the number of clusters of people decreased for the participants in the experimental training groups and increased for the controls. Similarly, the number of people not clustered, that is the number of people appearing as individuals, increased for the experimental training group and decreased for the control group.

6.5.3 Relationship between Cognitive Changes and Interaction Processes

The two structural measures which distinguished the combined groups of participants from the controls were isolated and related to the processes within the group. In examining the relationship between the number of people clusters and the processes within the group, none of the relationships exceeded .361 which was the value of correlation co-efficient required at a .05 level of significance for a two-tailed test. Six process variables were related to the number of people not clustered. Three of these are concerned with agreement, two with giving opinions and the last is an estimate of the total behaviour initiated by the participant. In all cases, the relationships between changes in the number of people not clustered and the process variables were negative.

Table 12 shows the comparisons between the participants and controls on these six grid measures. Table 13 shows the correlation between the

structural changes on the two significant difference measures derived from the grid and the processes in the training group.

6.6 The Search for Diversity

So far the results indicate two possibilities. One is that the experience affected everyone in a small but uniform way, and the other is that it affected them differently and selectively. If people were not being affected at all, one would expect to find small differences between pre and post measures, associated with small measures of variability.

However, if the experience was affecting people selectively, one would expect to find large measures of variability associated with change measures. In view of this, groups of different types of learners were sought.

It is possible to classify people according to a number of outcome criteria. In this research, the six structural measures derived from the second grid were used:

1 number of construct clusters

2 number of constructs not clustered

3 FIC (constructs)

4 number of element clusters

5 number of elements not clustered

6 FIC (elements)

People were grouped according to the similarity of their change patterns on these six indices. Cluster analysis identified three large groups, one small group and two individuals. The first three groups comprised 9, 9 and 8 people. The analyses which follow refer to these three large groups (Table 14).

An analysis of variance confirms that the three groups are different according to the six variables selected on this occasion (Table 15). The three derived groups were compared with the comparison group and then

with each other. Table 16 shows the comparison between the participants and the controls.

6.7 The Identification of Types of Cognitive Change

The participants differ from the controls in: the change in the number of people clusters derived from the first grid and four change measures derived from grid two - the number of constructs not clustered, the FIC (constructs), the number of clusters of people, and the number of people not clustered. The participants also differ from the controls in the initial value of the number of people who are not clustered. Initially, the controls rated more people as individuals than did participants.

The differences between the three derived groups and the comparison group were examined with two-tailed tests (Table 17). Derived group one differs from the comparison group in one respect only - the number of people not clustered initially. Derived group two also differs from the comparison group on this variable but it also differs from it on four measures of change derived from grid two. Group three differs from the control group on all six measures. In all but one respect, group one resembles the control group.

An examination of the differences between each of these three derived groups covered 96 variables. 39 process variables, and the initial values of: the construct content categories, personality variables and the structural measures derived from the grids. The remaining variables were the change measures of: construct content, personality and cognitive structure. Table 18 shows an analysis of variance for each variable taken one at a time and table 19 is a summary of the significant differences obtained with two-tailed t tests.

Derived group one differs from group two in one measure of change derived from the first grid and five measures of change derived from grid

two. It also differs from group two in process variable No. 17, suggestions (received). Groups one and three differ on one change measure from grid one and five from grid two and on the process variable No. 21, asks for opinion (received). Groups two and three, however, differ on two of the change measures derived from the grid two; the number of constructs not clustered and the FIC for constructs. They also differ on two process variables, No. 17 and No. 22, asks for suggestion (received). Derived group one was no different from controls on the measures of change but they had a much lower initial value of the number of people who appeared as individuals.

Its members also displayed a greater organisation of people than either the second or third groups since their number of people clusters increased following the training group, whereas those for the second and third groups decreased. Derived group one showed a corresponding decrease in the number of people they saw as individuals following the training experience.

Derived group one's constructs were slightly less isolated after the experience but their number of Functionally Independent Constructions showed a small increase. Groups two and three were quite different.

In process terms, group one received very few suggestions when compared with group two. In general, they could be labelled as "organisers".

Group two saw very few people as individuals prior to the training group when compared with controls. Their organisation of constructs increased in complexity afterwards. The number of people they saw as similar decreased and the number who appeared as individuals increased - compared with controls.

Compared with group one, their number of isolated constructs decreased with a corresponding decrease in FIC, while the number of people who appeared as individuals increased.

Their changes in construing people were not very different from those of group three but their construct organisation increased after the training group and fewer constructs appeared as unclustered items.

In process terms, they received more suggestions than either group one or three and they were asked for suggestions more often than group three.

Overall, people in this group increased their organisation of constructs and increased, albeit slightly, their differentiation between people.

Derived group three were initially much lower than the control group in terms of the number of people they saw as individuals.

Following the training group, this increased significantly, while their number of people clusters decreased and the number of people who appeared as individuals increased.

There were corresponding increases in the complexity of organisation of their constructs compared with the controls and the other derived groups, particularly group two.

But compared with group two, there were no significant changes in their construing of people. However, compared with group one, they saw significantly more people as individuals following the training group.

People in this group were given fewer suggestions and received no requests for suggestions; however, their opinions were sought more often than people in group two.

6.8 The Relationship between Processes and Outcomes for the Derived Groups

The attributes associated with the three kinds of participant learning have been described. In attempting to trace the origins of this learning it was apparent that some measures of cognitive change were not significantly related to the process variables within the groups. The analysis used here is based on recorded interactions and it explores the

relationships between the individual's learning and his overt transactions with others. Vicarious learning cannot be described by this method.

The relationships between the significant cognitive changes and the process variables are shown in tables 20, 21 and 22. In all cases, relationships not exceeding the value of correlation co-efficient for a two-tailed test with $p < .05$ were excluded.

6.8.1 Derived Group Number One

Two cognitive changes, a decrease in the number of single or isolated constructs and an increase in the number clusters of people were related to the process interactions.

The decrease in isolated constructs was related to increases in initiated agreement, the friendliness, dramatic behaviour and the information received. It was also related to all the behaviour initiated, received and interaction in general, as well as the specific areas of agreement and information.

6.8.2 Derived Group Number Two

The picture with this group was complex. Five cognitive measures of change were related to the interactions.

The decrease in the number of isolated constructs was related to their increased receipt of: friendliness, opinions, requests for information, tension and unfriendliness. It decreased with their increased initiation of dramatic behaviour, increased information exchanges and requests for suggestions.

The decrease in their FIC score was related to their initiation of: dramatic behaviour, giving information, giving suggestions, and asking for suggestions. It is similarly related to their total transactions of dramatic behaviour and information.

Their increased differentiation of people was associated with their increased initiation of disagreement, and unfriendliness coupled with

their receipt of unfriendliness. These relationships can also be described at another level. It is here for the first time we see significant correlations between cognitive change and negative social-emotional behaviour.

Changes in group one were related to the positive behaviour they initiated, but unrelated to either their receipt or initiation of negative behaviour. On the other hand, the cognitive changes in group two were related to their initiation and receipt of tension and unfriendliness, and their disagreement. Their total interactions were also characterised by negative reactions (disagreement, showing tension and seeming unfriendly).

6.8.3 Derived Group Number Three

Their increases in the number of independent constructs and the FIC score were related to their initiation of friendliness but the increase in FIC was related to decreases in their requests for opinions and their interactions in general.

Bales' IPA also shows problem areas in a group. It was found that groups one and two had problems distributed across aspects of communication, evaluation, control, decision, tension reduction and re-integration. In group three the problems were confined to the areas of evaluation and re-integration.

6.9 DISCUSSION

The major hypothesis to be explored via the experimental training groups was that participants would not change uniformly, but would change selectively according to the nature of the interactions they initiated and received in their training groups.

In the field study, the author had explored the major hypothesis that participants in training groups would become more oriented to the interpersonal and intrapersonal processes in relationships. In this

earlier study, it was expected that people would change their constructs. They were expected to use fewer constructs dealing with the physical and concrete aspects of behaviour and more concepts dealing with the feelings, attitudes and emotions in interpersonal relationships.

There were two ways of collecting the evidence to verify this proposition, one was to categorise the constructs produced and the second was to ask the subjects to rate others on the constructs and examine the statistical relationships produced.

In this experimental study, the principal hypothesis concerned the change in constructs examined from the point of view of the complexity of the systems they produced rather than the changes in the construct content.

6.9.1 Changes Experienced by all Participants

Since the three experimental training groups were subjected to almost identical external experimental treatments, they were grouped to see if the participants experienced any uniform changes. For this purpose the mean change scores on the six indices derived from grid one and the same indices derived from grid two were compared with a comparison group of 15 comparable subjects. Significant differences were found between participants and controls on two mean change scores: number clusters of people and the number of people not clustered (grid two). But close examination revealed that the mean change scores for the participant group on these two indices was small and that the significant differences between the participant and comparison groups were largely due to the fact that they changed in opposite directions.

The comparison group, for example, increased the average number of people clustered by .667 and decreased the number of people not clustered by .600. Whereas the respective figures from the experimentals were a decrease of .039 and an increase of .423.

Their task of examining a videotape obtained from one of the

experimental training groups without interacting themselves needs to be examined in more detail, but Bannister, Fransella & Agnew (1971) found that subjects tended to increase their intensity scores from the first to the second grid and that these were significant. Although they used a fixed size of ranking grid with provided constructs and did not carry out an element analysis (because ranking produces equal element discrimination) their intensity score provides a measure of the degree of the relationship between constructs. The higher the score the closer the relationships.

Their intensity score increased so they concluded: "that the articulation of construing necessary to complete a grid initiates a tightening process in itself" (page 147).

Since the participants in these experimental training groups showed smaller changes but in the opposite direction to the comparison group, one might assume that participation in the training group changes an individual construction system and facilitates the completion of a repertory grid.

It is worth noting, however, that the construct measures derived from the second grid which should most closely match the intensity score of Bannister showed no significant differences between participants and controls. Furthermore, these changes were in the same direction.

Since the changes in the construct categories had also been calculated, it was possible to examine the relationships between changes in construct content and the changes in grid structure. Table 23 shows these relationships. Briefly, the number of clusters of people and the number of people not clustered were significantly related to one content change variable. The number of people clusters for the total group decreased between pre and post measures and this change was negatively related to change in the expressive category. In other words, the decrease in the

number of people who were seen as similar corresponded to an increase in constructs dealing with expression and feeling. The number of people appearing as individuals increased and this increase was negatively related to production of constructs dealing with relationship processes. This author would have expected this to be a positive relationship, but since a fixed number of constructs were generated on each occasion, an increase in one construct category automatically means a decrease in another. For example, the categories of relationship processes and expressive (feeling) were negatively related at .2555 which is not significant at .05. Table 24 shows the significant intercorrelations of construct categories ($p < .05$).

One of the major aims of training groups has been to increase participants' awareness of interpersonal and intrapersonal processes. This increased sensitivity could be expressed in terms of the concepts or constructs used by the participant following the experience or in terms of increased differentiation of the participants. In general, one would expect the training group participant to see others more as individuals following his participation in a training group. This was certainly true for the participants in these experimental training groups.

In this study participation was measured by Bales' categories. The relationships between the change in the number of people not clustered and the processes within the groups for all participants were significant. The interactions of agreement and giving opinion were significantly related to the outcome along with the initiated units of agreement and the received units of agreement. The opinions initiated were also significantly related to the outcome. All the relationships, however, were negative, which suggests that decreases in agreement lead to increased differentiation of other participants in the individual's cognitive system. It seems plausible that too much agreement hides the differences between participants

and inhibits their exploration.

Harrison & Lubin (1965) found that the learning in heterogeneous groups was greater because participants found some support for their existing forms of behaviour and were confronted with viable alternatives from the others.

If decreases in the amount of agreement were related to increasing differentiation in an individual's cognitive structure, then one could pose the question: were increases in disagreement related to increasing differentiation? The answer is no. The initiated disagreement (process variable 10) and the interactions in the area of disagreement (variable 36) were virtually uncorrelated with the change in the number of people not clustered. If initiating disagreement did not have any significant effect upon the sender, then one might ask whether or not it had any effect on the recipient. The correlation with variable 23 - disagreement received was minus.2405 and not significant. Overall, it suggests that receiving increased disagreement might lead to a decrease in the differentiation of other participants.

An examination of the group climate (Table 26) shows that there was quantatively more agreement than disagreement. The mean units of agreement per person initiated over the sample period of 10 minutes was approximately 21 units; disagreement was approximately seven units. The mean units for received agreement and received disagreement were 20 and six respectively. In general, the group atmosphere could be described as supportive rather than hostile. It is also of interest to note that the units coded in the initiated and received categories here were almost equal, indicating that nearly all of this behaviour was specifically directed towards another individual in the group - according to the observer.

Positive interactions which enhance feelings of psychological safety and reinforced selective behaviours have been reported as an

important factor contributing to personal growth. Truax (1963) and Truax & Carkhuff (1967), and Campbell & Dunnette (1968) noted the importance of therapist or trainer behaviours of accurate empathy and unconditional positive regard.

6.9.2 Individual Differences in Cognitive Change

The absence of any strong uniform change in all the participants and the small number of significant relationships between processes and outcomes for this group may have been due to a number of factors. First of all, the non-confronting but supportive behaviour of the co-ordinators. Although it is possible to conduct groups without trainers using instead taped instructions, Berzon and Solomon (1966) and Seligman and Desmond (1973), the crucial importance of the psychotherapist has been indicated by Truax (1961), (1963), Rogers, C. R. (1951) and Truax and Carkhuff (1967) and that of the trainer in training groups by Lieberman, Yalom and Miles (1973).

In my experimental groups, the trainers were described as co-ordinators and played a relatively minor and self-effacing role. They provided support and the confrontation came from feedback by other participants and the video equipment. A brief check of the co-ordinators contributions, however, shows that their contributions were not uniform over the three experimental groups. In group one they contributed 16% and of the total interaction, in group two 8.7 and in group three 5.2. Despite the agreed role description for co-ordinator behaviour, it is evident that the co-ordinators also learned in the groups. Their contributions to group one were high because two co-ordinators participated for the first two sessions. Thereafter, the role was occupied by one co-ordinator and his contributions towards the group steadily decreased.

The small cognitive change in all participants may have been due to the nature of the measures used and the selectivity of the participants in their learning. It is argued from construct theory that changes in

the structure and content of an individual's construct system are a function of the varying validational fortunes he undergoes in the training group. Furthermore, a construct is essentially a prediction about someone's subsequent behaviour and because of its position in the individual's system, it may play a relatively important part in the prediction process. One could expect that a person would be reluctant to change his core constructs however those at the periphery of his system might easily be used differently, modified or given up in the face of contrary evidence.

In the extreme case of thought-disordered schizophrenics, it is considered that they have gone out of the people predicting business because of their failure in it. Similarly the development and failure of friendships can be viewed as an active process, Duck (1973).

No matter how strong the leadership function is in a training group, one would expect some individual variation in the learning process. By reducing the importance of the trainer and splitting his role in these experimental training groups, the author increased the chances of finding individual variation. Three separate and distinct groups of participants changing in different ways were found. In their groups, Lieberman, Yalom and Miles (1973) found that one third showed a positive gain, one third had some form of negative outcome and one third no change.

In my study, in contrast to the above study, indices for separating the participants into three groups were derived from six measures of structural change from a repertory grid and did not rely upon a composite index of change incorporating both objective and subjective data. In addition, the derived groups were obtained by a clustering procedure which was wholly objective.

However, four subjects did not fit into any of the three large groups of nine, nine and eight respectively.

People in the first derived group could be described as 'organisers'. Their grids showed a slight but significant decrease in the number of unrelated constructs, an increase in the number of clusters of people and a decrease in the number of people who were not clustered and appeared as individuals. They were not significantly different from the control group although their initial value of the number of people not clustered was significantly lower than that for the control group (3.67 compared with 5.93, $p < .05$).

In terms of interaction processes, people in this group received less suggestions from others than the members in the second derived group.

One of the advantages of Bales' (1970) system was that behaviour in the task area is capable of being classified into three distinct areas of information, opinion and suggestions. Murray and Jacobson (1971) have criticized people for placing too much emphasis on the critical incidents in psychotherapy, while neglecting the more mundane conversations between people which carry snippets of important information as well as opinions and suggestions. The people in derived group one were the recipients of information, but this may have encouraged them to put constructs which were previously isolated into their existing categorization system. Their receipt of dramatic behaviour and friendliness also may have accomplished this. In general terms, the receipt of all types of behaviour by this group may have reduced the number of isolated constructs they used.

Initiating agreement might have further added to the reduction in isolated constructs, while requesting opinions and suggestions from others might have enabled them to form more groups of similar people. It also appears that interaction in general and specific interactions in the area of information, asking for opinion and asking for suggestion might have increased their cognitive organisation.

Derived group two was quite different from the comparison group. In contrast, it organised its construct into the existing structure, but slightly decreased its organisation of people with a corresponding increase in the number of people who appear as individuals.

Once again the role of information appeared to be important. It appears that people in this group were asked for information, they gave it and their number of isolated constructs decreased. They initiated and received behaviour in a large number of specific areas. It is here for the first time that cognitive changes were specifically related to the initiation and receipt of negative social-emotional reactions. Perhaps this is why they appear to have seen more of the other participants as individuals.

The third derived group comprised people who increased in complexity. Their construct systems became more diverse and the way they used them increased in differentiation. Their increase in Functionally Independently Constructions of constructs was related to their initiation of friendly behaviour, their request for opinion. Their total initiated behaviour was negatively related to this. It is possible that this group has a negative relationship between initiated behaviour and increasing complexity because of its selective emphasis on critical incidents. This could be linked to the finding that increased friendliness was related to a decrease in the number of people seen as similar and an increase in the number of people seen as individuals.

The distinction between critical incidents in the group and the equivalent units of behaviour used to categorise the interaction poses theoretical and practical problems.

6.9.3 Critical Incidents

As stated earlier, the behaviour in the group was categorised using Bales' system. Each incident or unit of behaviour was categorised

according to the observer's point of view. It was apparent from subjects' reports that the valence for the observer was not the same as for the participant. One would expect this to depend upon the content or structure of the individuals' construct system. In some cases, subjects reported they were slightly shaken after having seen themselves on video tape or having had some feed back on a specific aspect of their behaviour.

Although all the group interactions were recorded on video tape and coded on a time scale, data have been summarised so that it is not possible to look at the sequential steps of action and reaction.

The valency problem is illustrated by the reliability check on the Bales IPA. It was found that the ratings obtained from direct observation of the group by this author showed a bias towards negative social-emotional categories when compared with another judge's ratings of a transcript obtained from a sound recording and a video recording. This transcript was categorised by regular reference to Bales' (1970) definitions.

Although the studies by Talland (1955) and Psathas (1960) indicate the inherent limitations of Bales' system for monitoring interactions in group therapy, this author found no difficulty in categorising units of behaviour in these particular training groups, Lorr (1966) has developed a more comprehensive system for evaluation of interactions in self-analytic therapy groups. Although this represents a viable and alternative categorisation system for psychotherapy, there seems to be no adequate external answer to the question of the importance of specific interactions to individuals. One approach might be to use video tapes and ask the individuals to categorise the interactions for themselves and indicate the relative importance of various units or events. This could be compared with the external observers' records.

But the practical problem of measurement is overshadowed by the

theoretical aspects of the learning. Although Kelly (1955) articulated the processes of validation and invalidation, he gave no indication as to whether or not these are once-off processes or processes requiring a continuous and persistent history. According to Bannister (1962, 1963, 1965) disorder in schizophrenia is the result of a long historical process. In contrast, Seligman (1975) has reported that some phobias are acquired by very rapid learning. Lieberman, Yalom and Miles (1973) reported that their high learners used vicarious learning. Furthermore, these onlookers were particularly skilful in using the experience of others.

Kelly (1955) has argued that people who change effectively experiment with their construct systems by changing the relationships between constructs: strong ones are weakened, new groupings are formed and some constructs are tried on their own. They move between tight and loose construing in a continuous cycling movement - loosening, tightening, loosening and so on. He asserts that any attempt to change directly from one tight construction to another is likely to be frustrated by the prescriptive nature of the initial construction. In training groups, similar notions described as unfreezing, change and refreezing have been put forward by Shepard and Bennis (1956), Miles (1960) and Schein and Bennis (1965) and in existential terms by Hampden-Turner (1966). Comparable notions at the group level have been articulated by Bales (1970), Bales and Strodtbeck (1951) and Dunphy (1968).

The importance of this cyclical learning process is that it is possible for individuals within the one group to be at different stages of development at the same point of time.

Kelly's (1955) particular strategy for group psychotherapy may give an indication of the dominant phases occupied by the members of these experimental training groups. Although the experience might be regarded as intensive, particularly with clear-cut video feedback, the total time of ten hours is approximately one quarter of the time of a standard

residential training group - in so far as time comparisons are valid.

Kelly proposed six main stages in the evolution of a therapy group. The first involves mutual support. This is the opening part of the group where the person is feeling his way around and is particularly vulnerable. Phase two is concerned with primary role relationships and this involves the exploration of face to face relationships with other members of the group. In phase three the initiation of mutual primary enterprises, the group is starting to use its combined understanding to experiment with ideas and behaviour. Primary simply means that the group is concerned with events and interactions within the group. In phase four (exploration of personal problems) the participants examine personal problems which have their origin outside the group. The next phase involves the exploration of the secondary roles, and the sixth and final phase is the exploration of secondary enterprises.

Since the author did not have grids taken after each session, alternative methods for estimating the evolutionary stages will have to be sought. Bales' system provides a possible solution. His system is organised in such a way that particular pairs of categories are related to particular group concerns. For example, the innermost categories of: information, opinion and suggestion are in the task area. Furthermore, these categories can be paired, then nested in that each set of category pairs is salient in the group in a predetermined order. The tendency is for the group to move from the central and emotionally neutral task categories to the extreme category of positive or negative social-emotional behaviour. Heinicke and Bales (1953) have confirmed this but Dunphy (1968) has not. McLeish, Matherson and Park (1973) concluded that the overall phase movement hypothesis had not been adequately verified at this stage.

The evaluative process variable: gives opinion (31) was dominant in

each of the three experimental training groups with tension reduction: dramatises (28) ranked second in groups one and three. Group two, however, had agreement (29) as its second mode of operation with dramatises (28) third. It appears from modes of operation and the range of participants in each of the three experimental training groups that the participants have undergone a similar group experience. The dominant mode of operation in each group was around giving opinion - an emotionally neutral task area. The second or third mode of operation - agreement is in the positive social-emotional area. This assessment of group phases over three sessions may be obscuring shifts within the sessions of individual groups or alternatively the phases may be similar in each group and the learning would have to be accounted for in the terms of particular interactions between specific individuals.

6.10 Summary

This experimental study focused on individual cognitive change in students following their experiences in experimental training groups.

The field study had indicated that cognitive change might be less uniform than previously assumed, so the author began the experimental study with hypotheses that cognitive change would not be uniform. Instead, it would be individual although several subgroups might be identified.

When all participants were compared with a comparison group, two significant changes were detected and one of these, the increase in the number of people seen as individuals was negatively related to the processes of agreement and giving opinions. Over their lives, the experimental training groups had contained more agreement than disagreement so this finding was interpreted as a sign that participants in general were beginning to reveal their differences and see people as individuals against a backdrop of agreement and support.

But when all participants were classified according to the similarity of their patterns of change on six cognitive measures, three distinct large groups of people were found - each characterised by a different kind of cognitive change when compared with the comparison group and each other. Furthermore, they were different in process terms. Although most of the interactions were similar for all participants, one group of people received significantly more suggestions than the others, while another was asked for its opinions more often than the third group. The patterns of the relationships between the cognitive changes in each of these groups and the group processes were also different. These findings offer some tentative support for the notion that people selectively attend to particular interactions in their groups because they had some meaning - where meaning was defined with reference to the organisation of the personal construct system.

The measures of cognitive change used were derived from the rating forms of the repertory grid. Although there have been many notions of cognitive complexity such as those of Bieri (1955, 1961), Bonarius (1965) and the Bannister and Mair (1968) measures of intensity and consistency, Landfield's (1971) Functionally Independent Construction (FIC) score was used here. It has very little meaning outside the theory of personal constructs. It bears a resemblance to the complexity measure used by Bieri (1955) but it doesn't carry the same name because Landfield believed that complex behaviour was also organised behaviour.

Although Harrison (1966) found a significant increase in the use of interpersonal constructs after three months, Lieberman, Yalom and Miles (1973) reported no changes in interpersonal or instrumental complexity immediately following their training groups or three months later. And yet at the same time, they emphasised the importance of cognitive learning. They drew this conclusion because 30% of their subjects' responses to critical incidents contained some reference to cognitive

learning. Half of these were attributed to insight and the other half to deriving information. Furthermore, since very few information responses came from events containing strong emotions, the authors suggest these two types of cognitions are psychologically distinct (page 366).

Their definition of cognition based on the components on insight and information differs from that used in this author's study. Since the constructs produced in this study were also classified according to Harrison's (1962, 1966) categorisation system, it was possible to examine the convergent validity by correlating the content and structural indices. While the majority of relationships were not significant, three were. First, increasing use of constructs in the expressive (feeling) category corresponded to a decrease in the number of people clusters. An increase in the number of constructs in the category of relationships processes corresponded to a decrease in the number of people not clustered and the FIC score for people. Although this author would have expected the last two relationships to be positive instead of negative, Duck (1973) in studies of friendship formation, found that they were independent at a certain stage of the relationship. Furthermore, in the early stages of interpersonal relationships, it is the content which is directly accessible and if one is examining the extent to which constructs are validated, then content measures are more important than structural ones. Livesley and Bromley (1973), for example, used free description and content analysis of constructs. They claim that their categorisation of central versus peripheral is roughly equivalent to abstract versus concrete in cognitive psychology. A quick examination of the inter-correlations between the content change measures reveals that the two broad categories of concrete-instrumental, and influential-expressive are inadequate representations of the two broad classes of constructs. Although these two broad categories are negatively related, as expected,

within the broad category of influential-expressive, two elements, inferrable and expressive (feeling), are negatively related. Thus it is possible for change to occur in the content of the constructs within the inferential-expressive category by interchange between the inferrable and the expressive categories. In this study, the author concludes that the procedure for categorising content of constructs produces a measure which differs from the structural indices derived from the grids.

Similar problems were found by Lieberman, Yalom and Miles (1973). They found low correlation among the ratings obtained from the four different sources (leaders, self ratings, co-participant ratings and friends or relatives). Attitudes showed significant changes but interpersonal, and instrumental complexity did not. Garfield, Prager and Bergin (1974) put forward similar evidence for observer disagreement in psychotherapeutic improvement.

Lieberman, Yalom and Miles overcame the problem by using a composite index of change, while the second group of authors emphasised the importance of using a variety of different criteria in assessing outcome in psychotherapy, as it is possible that different aspects of the change process are being observed and reported from differing vantage points.

In this author's view, the agreements and disagreements between observers and various measures used should constitute an important aspect of any study in the effects of training groups on their participants. Composite measures might provide useful labels but they blur important differences between the kinds of changes participants experience.

The integration of theory and method in Personal Construct Psychology partially overcomes these problems. The rating form of the repertory grid is a useful instrument to understand the changes in a participant's construct system as a result of experiences in a training group. Since personal construct theory emphasises the individuality of constructs, the subjects in this study were permitted to generate their own.

Comparisons were then made using a content classification system and Landfield's structural indices.

Although the reliability of the categorisation system was checked, it might be limited by the range of convenience of the categoriser's construct system since he imposes this on others' constructs. Structural indices are less dependent on the categoriser but they require construct ratings which do not invalidate statistical rules. Although subjects can be instructed (indirectly) to produce normal or rectangular distributions so that parametric procedures can be used, this tends to gloss over the possibility that they might not perceive things according to these rules. This could be the topic of further research with repertory grids. There are other problems with Personal Construct Psychology.

Although Kelly (1955) acknowledged the existence of non-verbal constructs and their importance on behaviour, it is not clear as yet how such constructs can be measured or elicited. Rogers (1956) has described Kelly's approach as 'intellectualized psychotherapy'. Rogers writes 'an overwhelming impression is that for Kelly therapy is seen as almost entirely an intellectual function, a view that should be comforting to many psychologists. He is continually thinking about the client, and about his own procedures, in ways so complex that there seems to be no time or room for entering into an emotional relationship with the client.'(p. 64)

7 SUMMARY AND GENERAL CONCLUSIONS

Although researchers have used a wide range of instruments rather like a blunderbuss in their examination of training groups, and produced results which show that the experiences have affected individuals in different ways, particularly when viewed from several perspectives, many writers still describe the aims of training groups as increases in sensitivity, diagnostic ability and action skills.

An analysis of previous research revealed an overemphasis on the emotional aspects of the group experience and a virtual neglect of the cognitive and intellectual aspects of the learning process. Another problem was the lack of an operationalised theory to explain and measure the action in training groups. There was no reason why any theory used should be limited to training groups since the changes in groups were ultimately evaluated by their influence in the world outside the group. Kelly's (1955) theory of personal constructs suited these specifications. It encompassed emotional and cognitive behaviours with an emphasis on the latter, it was integrated with instruments, primarily the repertory grid and it was capable of explaining behaviour both inside and outside the training group.

It was used to explore participant learning in a four and a half day residential training group. The principal hypothesis concerned the increased use of inferential-expressive constructs and their relationships with group processes. No significant increase was found, either immediately afterwards or three months later. Previous research with this specific variable had indicated that the increase was slight immediately afterwards, but rose to significance three months later to support the notion that the changes were thorough, gradual and not superficial.

Other measures of cognitive change were derived from principal component analyses of the grids. One measure, the proportion of common

variance on the first factor did show significant change after three months and this was related to ratings of giving and receiving information in the training group, thus supporting the notion of late-blooming. This measure of cognitive complexity is not necessarily the same as increased use of inferential-expressive concepts since no attempt was made to define the characteristics of the first factor and the factors that the variance had shifted towards following the training group experience.

This study of an ongoing training group was complicated by practical problems. Five subjects did not produce sufficient data to be included in the baseline measures and another five had to be excluded for the same reasons afterwards. Flexibilities within the training group also posed research problems. People were allowed to change groups and although trainer styles were measured beforehand and revealed differences, this variability remained and was not reduced. Trainers could have done this by writing a job description and acting in accordance with it. There was no data to examine actual trainer behaviour in the groups. Although the trainers rated participation in the group, this was done afterwards, it lacked objectivity and covered a limited range of behaviours (verbal participation, influence on others and giving and seeking information). In addition, the research design lacked a control group.

The analysis of constructs was further complicated by the suggestion that some basic cultural, educational and class differences in the participants generated different kinds of constructs over and above the experiences in the training group. In particular, it was suggested that the elaborated system of the middle-class participant might enable him to readily express feelings and detailed logical relationships and meanings. Some working-class participants would not possess this system. Their communication would be limited by their restricted system which is heavily

burdened with implicit meanings that do not have to be made fully explicit, relies on non-verbal emphasis for expressing feeling and contains words that refer to broad classes of events rather than details.

But overall, the striking effect was the variability associated with the outcome measures. This suggested that the effects were not as uniform as had been assumed. A second study was set up to examine cognitive change and the individual directions it might take.

In doing this, two major research changes were made. First, the definition of cognition was clarified. Although some authors include vicarious and direct learning in their definitions of cognition, in this case it was decided to link the definition to Personal Construct Theory and say that cognitive change meant changing one's constructs by expressing and testing them. Second, the practical difficulties of the field study were controlled by returning to the laboratory and setting up experimental training groups with students. The traditional trainers role was split so that a co-ordinator provided support and the video equipment provided feedback as well as a record of the interactions. Afterwards these were coded with Bales' IPA. A comparison group of non-interacting students, matched on the basis of an interest in training groups, was also set up.

The first hypothesis for these experimental training groups was that when the participants were considered as a group, no general effects would be detected. Although there were no changes in the three measures of personality (Hostility, Direction of Hostility and Social Skills), two measures of cognitive change were significant and one of these - the increase in number of people seen as individuals - was significantly, but negatively, related to six process variables, three of which described agreement. This change and the relationships suggested that participant differentiation was increasing with decreasing agreement. Furthermore, since each experimental training group contained much more overall agreement than disagreement, there was some tentative support for the two

stage model which postulates that supportive and trusting kinds of behaviours are the launching pads of further change. It also lines up with the first stage of Kelly's six stage model and the clinical views of Carkhuff, Rogers, Truax and Wargo.

Despite the appearance of some group changes, the uniformity assumptions were questioned and three smaller groups were obtained by clustering six measures of cognitive change derived from the second grid. Three concerned construct organisation and individuality, while three concerned element organisation and individuality. They were not the only variables that could have been used, although five discriminated between subgroups representing the various types of change and one - the number of construct clusters, did not.

The three subgroups accounted for 26 of the 30 participants. Each of these groups was compared with the others over the 39 process variables, the initial values of personality and cognitions, and the change measures for personality and cognitions. The significant relationships between the six measures of cognitive change and the process variables were isolated. Overall, these results suggested that participants had selecively attended to the environment in their group. In particular, their cognitive changes were different, possibly because they had focussed on particular types of behaviour and these had different meanings for them. For example, the second derived group had quite a complex change pattern which was significantly related to 22 process variables. This tends to suggest that these people had scanned a wide range of activities in the group and were influenced by them. In contrast, cognitive changes in the third derived group were significantly related to four process variables, two of which were concerned with friendliness. This tends to suggest that the experiences had a different meaning for them.

Caution must be exercised in the interpretation of these results. They are correlations, not causal relationships. But overall, they tend

to indicate that the effects of these training groups were much less uniform than anticipated, particularly when participants were provided with a relatively leaderless framework and video equipment which enabled them to explore for themselves.

But the validity of both experiments is open to question. The field study with the real training group had a weak experimental design with uncontrolled contaminating variables, while the experimental training groups operated in a highly controlled laboratory situation where participation was limited to 10 hours. If time comparisons are valid, the experimental training groups represent the opening (but important) phases of an ordinary training group. Although the leadership role was diluted, the video replay provided clear and undistorted feedback.

Although practical questions like the incidence and kinds of casualties need to be answered, this author's research suggests that more attention needs to be paid to individual differences and the possibility of different kinds of cognitive change within a single training group. The processes associated with particular learning styles also need to be explored. Incorporating video equipment into a natural training group would enable the participants to use it for feedback and the experimenter to categorise behaviour. But it could also be used to establish causal relationships. Participants could view the recording and specify the incidents and behaviour which influenced them.

Other questions, at the boundary between research and practice also need consideration. Is the training group a place where the participants' learning is shaped by the trainer and limited to interpersonal and intra-personal foci or is it a special kind of learning environment where the participant can learn for himself? Bennis (1962) seemed to capture this last possibility when he wrote that there were "meta-goals" (or values) which transcended and shaped the articulated goals published in the promotional material associated with training groups. For Bennis, the training group was a

place where the participant could expand his consciousness, recognise the choices available to him and the consequences of choosing one of these. In personal construct terms, the learning process involves the creation of an environment which enables the individual to elaborate, modify, or change his construct system instead of being trapped by it. Furthermore, the only way to modify a construct system is by experimenting with it and thereby subjecting it to varying validational fortunes.

FIELD STUDY

TABLE: 2 CORRELATIONS BETWEEN OUTCOMES AND PROCESS VARIABLES

1 NUMBER OF PEOPLE KNOWN WELL

PROCESS: CHANGE:	VP	INFL	GI	SI	
1 - 2	-.2327	-.1298	-.1096	-.4726*	(N=21)
2 - 3	-.2020	-.3303	-.2649	-.2593	(N=14)
1 - 3	-.5499*	-.3953	-.4251	-.4259	(N=14)

2 NUMBER OF CONSTRUCTS PRODUCED

PROCESS: CHANGE:	VP	INFL	GI	SI	
1 - 2	.1798	.1879	.1746	-.1490	(N=21)
2 - 3	.0476	.2909	.0435	.0745	(N=15)
1 - 3	.1113	.2471	-.0376	-.6562**	(N=15)

3 NUMBER OF CONSTRUCTS IN CONCRETE - INSTRUMENTAL CATEGORY

PROCESS: CHANGE:	VP	INFL	GI	SI	
1 - 2	-.0776	.1436	-.0531	-.3571	(N=21)
2 - 3	-.0300	-.1145	.0872	.2076	(N=15)
1 - 3	-.2525	.0315	.0723	-.1129	(N=15)

4 NUMBER OF CONSTRUCTS IN INFERENTIAL - EXPRESSIVE CATEGORY

PROCESS: CHANGE:	VP	INFL	GI	SI	
1 - 2	.1923	.1941	.0616	.1543	(N=21)
2 - 3	-#3194	-.1971	-.2855	-.1220	(N=15)
1 - 3	.2743	.2447	-.2226	-.2739	(N=15)

5 NUMBER OF CONSTRUCT FACTORS

PROCESS: CHANGE:	VP	INFL	GI	SI	
1 - 2	.0447	.3796	-.2128	-.0548	(N=15)
2 - 3	.2295	.1082	.1287	-.2042	(N=12)
1 - 3	.1506	.3785	-.1648	-.3854	(N=12)

6 PROPORTION OF COMMON VARIANCE ON FIRST FACTOR

PROCESS: CHANGE:	VP	INFL	GI	SI	
1 - 2	-.0125	-.4153	.3904	.2968	(N=15)
2 - 3	1.0895	.1916	.2920	.4321	(N=12)
1 - 3	.1096	-.2508	.6400*	.7243***	(N=12)

7 PROPORTION OF EIGENVALUES ON FIRST FACTOR

PROCESS: CHANGE:	VP	INFL	GI	SI	
1 - 2	-.1991	-.3645	-.0227	.0869	(N=15)
2 - 3	.3879	.2928	.5353*	.6089*	(N=12)
1 - 3	-.0636	-.2154	.2954	.4390	(N=12)

CHANGE TIME 1 - 2 =VARIABLE AT TIME 2 - VARIABLE AT TIME 1
*=.05, **=.01, ***=.001 ONE-TAILED TEST
VP IS VERBAL PARTICIPATION INF IS INFLUENCE
GI IS GIVING INFORMATION SI IS SEEKING INFORMATION

FIELD STUDY

TABLE: 3 CORRELATIONS BETWEEN NUMBER OF CONSTRUCTS PRODUCED AND PROCESS VARIABLES

PROCESS: NUMBER OF CONSTRUCTS:	VP	INFL	GI	SI	
TIME 1	.1798	.1879	.1746	-.1490	(N=21)
TIME 2	.0476	.2909	.0435	.0745	(N=15)
TIME 3	.1113	.2471	-.0376	-.6562**	(N=15)

TABLE: 4 CORRELATION BETWEEN NUMBER OF CONSTRUCTS PRODUCED IN EACH CATEGORY AND PROCESS VARIABLES

PROCESS: NUMBER OF CONSTRUCTS	VP	INFL	GI	SI	
CONCRETE - INSTRUMENTAL					
TIME 1	.0169	.0635	-.0755	.3709	(N=21)
TIME 2	-.0290	.2704	-.1748	-.2780	(N=15)
TIME 3	-.0773	.2419	-.1405	-.1395	(N=15)
INFERENTIAL - EXPRESSIVE					
TIME 1	.1510	.0403	.4074*	.2721	(N=21)
TIME 2	.4356	.2162	.3960	.2464	(N=15)
TIME 3	.2165	-.1875	.1734	.1915	(N=15)

PROCESS VARIABLES:
VP IS VERBAL PARTICIPATION
INFL IS INFLUENCE
GI IS GIVING INFORMATION
SI IS SEEKING INFORMATION

ONE-TAILED TESTS
* = .05
** = .01

FIELD STUDY

TABLE: 5 CONSTRUCT PRODUCTIVITY OF UNION AND STAFF PARTICIPANTS

		NUMBER OF CONSTRUCTS PRODUCED			
		UNION		STAFF	
CATEGORY:		CI	IE	CI	IE
TIME					
1	MEAN	1.2222	1.4444	3.5000	2.0000
	SD	1.0929	1.0138	2.4309	1.8091
		(N=9)		(N=12)	
2	MEAN	2.3333	5.3333	2.5833	8.0833
	SD	2.7839	3.6742	1.6214	3.4499
		(N=6)		(N=10)	
3	MEAN	1.3333	1.6667	1.4000	3.2000
	SD	1.7512	1.4720	1.6465	2.6998
		(N=6)		(N=10)	

CATEGORIES: CI IS CONCRETE-INSTRUMENTAL
IE IS INFERENTIAL-EXPRESSIVE

FIELD STUDY

TABLE: 6. CORRELATIONS BETWEEN CHANGES IN PERCENTAGE OF INFERENTIAL-EXPRESSIVE CONSTRUCTS AND PROCESS VARIABLES

PROCESS: CHANGE:	VP	INFL	GI	SI	
1 - 2	.2033	.1528	.1212	.1838	(N=21)
2 - 3	.0687	-.1172	.1068	.1287	(N=15)
1 - 3	.3426	.1928	.0331	.0587	(N=15)

CHANGE 1-2 = PERCENTAGE INFERENTIAL-EXPRESSIVE CONSTRUCTS AT TIME2 MINUS PERCENTAGE AT TIME1

PROCESS VARIABLES;
VP IS VERBAL PARTICIPATION
INFL IS INFLUENCE
GI IS GIVING INFORMATION
SI IS SEEKING INFORMATION

FIELD STUDY

TABLE: 7 CORRELATION BETWEEN THE CHANGES IN PERCENTAGE OF INFERENTIAL-EXPRESSIVE CONSTRUCTS AND THE TOTAL NUMBER OF CONSTRUCTS PRODUCED BEFORE, AFTER AND THREE MONTHS AFTER TRAINING GROUP

NUMBER PRODUCED:	BEFORE	AFTER	3M AFTER	
CHANGE 1 - 2	.3769 *	.4543 *		(N=21)
CHANGE 2 - 3		.1160	.0079	(N=15)
CHANGE 1 - 3	.2863		.1656	(N=15)

* = .05 TWO-TAILED TEST

FIELD STUDY

TABLE: 8 TRAINER STYLES(1)

	LEADERSHIP SCALE	TRAINER 1	2	3	4	5	6
		RESPONSE PERCENT					
1	O SILENCE	15.0	10.5	25.0			5.0
2	GD GROUP DIRECTED	20.0	15.8	5.0		5.0	12.5
3	RA REASSURANCE-APPROVAL	10.0		15.0	21.1	5.0	2.5
4	SG SUBTLE GUIDANCE		10.5	5.0	26.3		2.5
5	S STRUCTURE				5.3		5.0
6	A ATTACK	5.0			5.3		
7	MF MEMBER FEELING	5.0	10.5	30.0	5.3	30.0	
8	LF LEADER FEELING	5.0				5.0	10.0
9	LE LEADER EXPERIENCE		5.3		5.3		
10	CQ CLARIFICATION CONFIRMATION QUESTION	15.0	31.6	15.0	21.1	5.0	5.0
11	GQ GROUP DYNAMICS QUESTION		5.3	5.0			15.0
12	GA GROUP ATMOSPHERE INTERPRETATION	5.0	5.3			5.0	10.0
13	GI GROUP DYNAMICS INTERPRETATION	5.0	5.3		5.3	20.0	5.0
14	PI PSYCHODYNAMIC INTERPRETATION	10.0				20.0	2.5
15	PL PERSONAL LIFE	5.0			5.3	5.0	
16	PP PAST AND PARENTS						
17	BC BEHAVIOUR CHANGE						
18	NV NON VERBAL						
19	RP ROLE PLAYING						

NOTE: TRAINER STYLE(1) COMPILED FROM THE ONE RESPONSE CONSIDERED MOST IMPORTANT

TABLE: 9 TRAINER STYLES(2)

	LEADERSHIP SCALE	TRAINER 1	2	3	4	5	6
		RESPONSE PERCENT					
1	O SILENCE	7.8	6.3	29.0		2.1	3.0
2	GD GROUP DIRECTED	19.6	10.8	11.6	3.2	6.7	6.6
3	RA REASSURANCE-APPROVAL	5.9	2.7	10.1	16.1	6.2	3.6
4	SG SUBTLE GUIDANCE	2.0	2.7	4.4	14.5	3.6	2.4
5	S STRUCTURE	2.0	1.8		6.5	4.1	4.2
6	A ATTACK	2.0		1.5	1.6	1.0	1.8
7	MF MEMBER FEELING	13.7	11.7	17.4	11.3	9.8	10.1
8	LF LEADER FEELING	11.8	10.8	10.1	9.7	9.3	11.3
9	LE LEADER EXPERIENCE		.9		1.6	1.6	1.2
10	CQ CLARIFICATION CONFIRMATION QUESTION	13.7	16.2	7.3	9.7	8.3	9.5
11	GQ GROUP DYNAMICS QUESTION	5.9	9.9	7.3	8.1	8.8	10.7
12	GA GROUP ATMOSPHERE INTERPRETATION	3.9	9.0		3.2	9.3	10.1
13	GI GROUP DYNAMICS INTERPRETATION	2.0	9.0		3.2	9.3	8.9
14	PI PSYCHODYNAMIC INTERPRETATION	5.9	5.4	1.5	1.6	6.7	6.6
15	PL PERSONAL LIFE	2.0	1.8		6.5	6.2	5.4
16	PP PAST AND PARENTS					1.6	
17	BC BEHAVIOUR CHANGE		1.9		3.2	5.2	4.8
18	NV NON VERBAL	2.0					
19	RP ROLE PLAYING						

NOTE: TRAINER STYLE(2) COMPILED FROM ALL THE RESPONSES THE TRAINER MIGHT CONSIDER MAKING

FIELD STUDY

TABLE:10 CORRELATIONS BETWEEN TRAINER STYLES(1)
N=19

TRAINERS:	1	2	3	4	5	6
1	-	.6306**	.4675*	.1162	.2369	.2368
2		-	.4994*	.4241	.1922	.3303
3			-	.2897	.3864	.5540*
4				-	-.0207	-.1200
5					-	.5580*
6						-

NOTE: TRAINER STYLE(1) COMPILED FROM THE ONE RESPONSE CONSIDERED MOST IMPORTANT

TABLE:11 CORRELATIONS BETWEEN TRAINER STYLES(2)

TRAINERS:	1	2	3	4	5	6
1	-	.8095***	.6422**	.3238	.5500*	.5859**
2		-	.4694*	.3480	.8086***	.8678***
3			-	.2352	.1906	.2402
4				-	.5118*	.4008
5					-	.9607***
6						-

NOTE: TRAINER STYLE(2) COMPILED FROM ALL OF THE RESPONSES THE TRAINER MIGHT CONSIDER MAKING

* = .05
** = .01
***= .001
TWO-TAILED TESTS

EXPERIMENTAL TRAINING GROUPS

TABLE:12 COMPARISONS BETWEEN PARTICIPANTS AND CONTROLS

	MEAN CHANGE SCORES		
CHANGES ON GRID 1	PARTICIPANT	CONTROL	T
73 NO OF CONSTRUCT CLUSTERS	.0769	.2000	.3213
74 NO OF CONSTRUCTS NOT CLUSTERD	-.2308	-.8667	1.2130
75 FIC(CONSTRUCTS)	-.1539	-.6667	1.2421
76 NO OF PEOPLE CLUSTERS	-.1923	.2000	1.1886
77 NO OF PEOPLE NOT CLUSTERED	.1154	-.5333	1.1621
78 FIC(PEOPLE)	-.0769	-.3333	.5687
CHANGES ON GRID 2			
79 NO OF CONSTRUCT CLUSTERS	.3077	.4667	.4424
80 NO OF CONSTRUCTS NOT CLUSTERD	-.2692	-.2000	.1061
81 FIC(CONSTRUCTS)	.0385	.2667	.4862
82 NO OF PEOPLE CLUSTERS	-.0385	.6667	2.0646 *
83 NO OF PEOPLE NOT CLUSTERED	.4231	-.6000	2.7830 **
84 FIC(PEOPLE)	.3846	-.0667	.8373
	(N=30)	(N=15)	

* = P IS LESS THAN .05
**= P IS LESS THAN .01
TWO-TAILED TESTS

EXPERIMENTAL TRAINING GROUPS

TABLE:13 CORRELATION BETWEEN STRUCTURAL CHANGES ON GRIDS AND PROCESS FOR TOTAL GROUP (N=30)

MEASURE OF CHANGE		83
PROCESS VARIABLES:		
3 AGREES	SAD	-.3664
5 GIVES OPINION	SBB	-.4328
13 TOTAL 1 TO 12 SENT		-.3932
16 AGREES	RAD	-.3714
29 AGREES	TAD	-.4136
31 GIVES OPINION	TBB	-.3905

NOTE: V82 NOT SIGNIFICANTLY RELATED TO PROCESS VARIABLES

EXPERIMENTAL TRAINING GROUPS

TABLE:14 CLUSTER ANALYSIS OF PEOPLE ON 6 MEASURES OF COGNITIVE CHANGE (SECOND GRID CF FIRST)

SUBJECT	ENTR. AVG.	TOT. AVG.	ENTR. ORDR.
	CLUSTER NUMBER 1		
15	1.000	.571	1
16	1.000	.571	2
8	.853	.577	3
13	.859	.738	4
24	.674	.746	5
19	.563	.685	6
17	.589	.604	7
10	.553	.592	8
28	.535	.535	9
NO FURTHER ITEMS ARE ELIGIBLE FOR THIS CLUSTER			
	CLUSTER NUMBER 2		
5	.973	.817	1
18	.973	.779	2
6	.929	.668	3
3	.901	.722	4
11	.726	.734	5
14	.771	.722	6
4	.739	.670	7
26	.657	.641	8
30	.424	.424	9
NO FURTHER ITEMS ARE ELIGIBLE FOR THIS CLUSTER			
	CLUSTER NUMBER 3		
12	.945	.616	1
27	.945	.736	2
23	.931	.718	3
21	.811	.567	4
1	.743	.747	5
25	.681	.630	6
22	.462	.520	7
7	.421	.421	8
NO FURTHER ITEMS ARE ELIGIBLE FOR THIS CLUSTER			
	CLUSTER NUMBER 4		
2	.876	.876	1
20	.876	.876	2
NO FURTHER ITEMS ARE ELIGIBLE FOR THIS CLUSTER			

NO FURTHER SCALES CAN BE FOUND WHICH SATISFY THE PARAMETERS
UNCLUSTERED ITEMS ARE: 9 , 29

NOTE: ENTR. AVG. AVERAGE CORRELATICN OF THE ITEM WITH PREVIOUS ITEMS IN THE SCALE
TOT. AVG. AVERAGE CORRELATION OF THE ITEM WITH ALL ITEMS IN SCALE
ENTR. ORDR. ORDER ITEM ENTERED SCALE

EXPERIMENTAL TRAINING GROUPS

TABLE:15 ANALYSIS OF VARIANCE FOR 3 DERIVED GROUPS

SOURCE	NESTING	DENOM	DEGREES OF FREEDOM NUM	DEGREES OF FREEDOM DEN	SUM OF SQUARES	MEAN SQUARE	F RATIO	
G		S	2.	23.	48.1850	24.0925	6.1017	**
S	G		23.		90.8146	3.9485		
V		VXS	5.	115.	11.2051	2.2410	2.1204	
GXV		VXS	10.	115.	177.9150	17.7915	16.8341	***
VXS	G		115.		121.5410	1.0569		

NOTE: G=GROUPS(3) V=VARIABLES(6 STRUCTURAL CHANGES FROM GRID 2)
S=SUBJECTS(9 IN GROUP 1,9 IN GROUP 2,8 IN GROUP 3)

FACTOR S IS THE NUMBER OF SUBJECTS AND S HAS AN UNEQUAL NUMBER OF LEVELS FOR EACH COMBINATION OF LEVELS IN THE FACTORS IN WHICH IT IS NESTED
HOWEVER THE NUMBER OF LEVELS ARE PROPORTICNAL AND HENCE THE DESIGN IS BALANCED

KEY: ** = P IS LESS THAN .01
***= P IS LESS THAN .001

EXPERIMENTAL TRAINING GROUPS

TABLE:16 COMPARISON BETWEEN PARTICIPANTS AND CONTROLS(COMPARISON GROUP)

VARIABLES	F VALUE	LEVEL	MEAN GRP1	MEAN GRP2	MEAN GRP3	MEAN CONT
MEASURES OF GRID STRUCTURE: INITIAL VALUES						
66 NO OF CONSTRUCT CLUSTERS	1.1225					
67 NO OF CONSTRUCTS NOT CLUS	2.0942					
68 FIC(CONSTRUCTS)	1.2870					
70 NO OF PEOPLE CLUSTERS	1.7238					
71 NO OF PEOPLE NOT CLUSTD	14.1345	***	3.6667	2.3333	2.1250	5.9333
72 FIC(PEOPLE)	0.6001					
MEASURES OF GRID STRUCTURE: CHANGES ON GRID 1						
73 NO OF CONSTRUCT CLUSTERS	0.1700					
74 NO OF CONSTRUCTS NOT CLUS	1.7184					
75 FIC(CONSTRUCTS)	1.8984					
76 NO OF PEOPLE CLUSTERS	3.0743	*	0.5556	-.4444	-.7500	0.2000
77 NO OF PEOPLE NOT CLUSTERED	2.7789					
78 FIC(PEOPLE)	0.7324					
MEASURES OF GRID STRUCTURE: CHANGES ON GRID 2						
79 NO OF CONSTRUCT CLUSTERS	1.1007					
80 NO OF CONSTRUCTS NOT CL	6.2183	**	-.3333	-2.2222	2.0000	-.2000
81 FIC(CONSTRUCTS)	7.4508	***	0.1111	-1.5556	1.7500	0.2667
82 NO OF PEOPLE CLUSTERS	5.9988	**	1.0000	-.4444	-.7500	0.6667
83 NO OF PEOPLE NOT CLUSTD	10.4359	***	-1.7778	1.3333	1.8750	-.6000
84 FIC(PEOPLE)	2.3877					

CODING FOR SIGNIFICANCE LEVEL.
.05 = *
.01 = **
.001= ***

EXPERIMENTAL TRAINING GROUPS

TABLE:17 DIFFERENCES BETWEEN 3 DERIVED GROUPS AND CONTROL(COMPARISON)

3 DERIVED GROUPS=1,2,3 CONTROL=4
T TESTS

MEASURES OF GRID STRUCTURE	DIFFERENCES BETWEEN GROUPS		
VARIABLES:	1-4	2-4	3-4
INITIAL VALUES:			
71 NO OF PEOPLE NOT CLUSTERED	3.34 *	5.31 ***	5.41 ***
CHANGES ON GRID 1:			
76 NO OF PEOPLE CLUSTERS	0.83	1.50	2.13 *
CHANGES ON GRID 2:			
80 NO OF CONSTRUCTS NOT CLUSTD	0.15	2.29 *	2.50 *
81 FIC(CONSTRUCTS)	0.26	2.99 **	2.34 *
82 NO OF PEOPLE CLUSTERS	0.75	2.50 *	3.07 **
83 NO OF PEOPLE NOT CLUSTERED	1.77	2.91 **	3.59 **
(DEGREES OF FREEDOM)	22	22	21

KEY: * P IS LESS THAN .05
KEY: ** P IS LESS THAN .01
KEY: *** P IS LESS THAN .001
TWO-TAILED TESTS

EXPERIMENTAL TRAINING GROUPS

TABLE:18 COMPARISONS BETWEEN 3 GROUPS OF PARTICIPANTS

ANALYSIS OF VARIANCE: 3DERIVED GROUPS

VARIABLES		F VALUE	LEVEL	GRP1	GRP2	GRP3
INTERACTION PROCESS VARIABLES						
S=SENT R=RERECEIVED						
T=TOTAL=SENT+RECEIVED						
1 SEEMS FRIENDLY	SAF	0.4004				
2 DRAMATISES	SAE	0.1925				
3 AGREES	SAD	0.3337				
4 GIVES SUGGESTION	SBC	0.8365				
5 GIVES OPINION	SBB	1.8260				
6 GIVES INFORMATION	SBA	1.0753				
7 ASKS FOR INFORMATION	SCA	0.3715				
8 ASKS FOR OPINION	SCB	0.0485				
9 ASKS FOR SUGGESTION	SCC	0.2586				
10 DISAGREES	SDD	1.5224				
11 SHOWS TENSION	SDE	0.0513				
12 SEEMS UNFRIENDLY	SDF	0.5742				
13 TOTAL SENT (1 TO 12)		1.7932				
14 SEEMS FRIENDLY	RAF	0.9851				
15 DRAMATISES	RAE	0.3304				
16 AGREES	RAD	3.2192				
17 GIVES SUGGESTION	RBC	4.2695	*	1.2222	3.5556	1.5000
18 GIVES OPINION	RBB	0.6194				
19 GIVES INFORMATION	RBA	0.4866				
20 ASKS FOR INFORMATION	RCA	2.5415				
21 ASKS FOR OPINION	RCB	3.8255	*	5.6667	4.7778	2.0000
22 ASKS FOR SUGGESTION	RCC	3.7657	*	0.4445	1.3333	0.0000
23 DISAGREES	RDD	0.2411				
24 SHOWS TENSION	RDE	0.4770				
25 SEEMS UNFRIENDLY	RDF	0.7020				
26 TOTAL RECEIVED (14 TO 25)		0.7851				
27 SEEMS FRIENDLY	TAF	0.6655				
28 DRAMATISES	TAE	0.1614				
29 AGREES	TAD	1.6567				
30 GIVES SUGGESTION	TBC	1.6153				
31 GIVES OPINION	TBB	1.3082				
32 GIVES INFORMATION	TBA	0.7873				
33 ASKS FOR INFORMATION	TCA	1.5729				
34 ASKS FOR OPINION	TCB	0.9680				
35 ASKS FOR SUGGESTION	TCC	1.4257				
36 DISAGREES	TDD	1.6378				
37 SHOWS TENSION	TDE	0.0545				
38 SEEMS UNFRIENDLY	TDF	0.6041				
39 GRAND TOTAL INTERACTION		1.6819				

TABLE:18 CONTINUED

VARIABLES	F VALUE	LEVEL	GRP1	GRP2	GRP3
CONSTRUCT CONTENT CATEGORIES:					
INITIAL VALUES	0.0635				
40 OBSERVABLE-CONCRETE	0.3305				
41 STRUCTURE OF RELATIONSHIP	1.9596				
42 INSTRUMENTAL	1.9596				
43 CONCRETE-INSTRUMENTAL	0.0608				
44 INFERRABLE	1.9670				
45 RELATICNSHIP PROCESSES	1.5439				
46 EXPRESSIVE(FEELING)	0.9903				
47 INFERENTIAL-EXPRESSIVE	0.0256				
CONSTRUCT CONTENT CATEGORIES:					
CHANGES					
48 OBSERVABLE CONCRETE	0.2423				
49 STRUCTURE OF RELATIONSHIP	0.1361				
50 INSTRUMENTAL	1.7800				
51 CONCRETE-INSTRUMENTAL	1.2526				
52 INFERRABLE	0.4147				
53 RELATIONSHIP PROCESSES	2.4573				
54 EXPRESSIVE	1.5383				
55 INFERENTIAL-EXPRESSIVE	0.6397				
PERSONALITY VARIABLES:					
INITIAL VALUES					
56 HOSTILITY	0.2095				
57 HOSTILITY DIRECTION	1.0315				
58 SOCIABILITY	0.4410				
PERSONALITY VARIABLES:					
FINAL VALUES					
59 HOSTILITY	0.2591				
60 HOSTILITY DIRECTION	0.3515				
61 SOCIABILITY	0.6133				
PERSONALITY VARIABLES:					
CHANGES					
62 HOSTILITY	0.3845				
63 HOSTILITY DIRECTION	1.0603				
64 SOCIABILITY	1.9172				
FACTOR ANALYSIS OF GRID:					
INITIAL VALUES					
65 CONSTRUCT FACTORS	0.2462				
69 PEOPLE FACTORS	0.5351				
MEASURES OF GRID STRUCTURE:					
INITIAL VALUES					
66 NO OF CONSTRUCT CLUSTERS	0.7220				
67 NO OF CONSTRUCTS NOT CLUS	2.3479				
68 FIC(CONSTRUCTS)	1.5287				
70 NO OF PEOPLE CLUSTERS	2.9169				
71 NO OF PEOPLE NOT CLUSTERED	2.5652				
72 FIC(PEOPLE)	0.8026				

TABLE:18 CONTINUED

VARIABLES	F VALUE	LEVEL	GRP1	GRP2	GRP3
MEASURES OF GRID STRUCTURE:					
CHANGES ON GRID 1					
73 NO OF CONSTRUCT CLUSTERS	0.1664				
74 NO OF CONSTRUCTS NOT CLUS	1.8158				
75 FIC(CONSTRUCTS)	2.2341				
76 NO OF PEOPLE CLUSTERS	4.2417	*	0.5556	-.4444	-.7500
77 NO OF PEOPLE NOT CLUSTERED	2.9790				
78 FIC(PEOPLE)	0.9871				
MEASURES OF GRID STRUCTURE:					
CHANGES ON GRID 2					
79 NO OF CONSTRUCT CLUSTERS	1.8500				
80 NO OF CONSTRUCTS NOT CL	20.9102	***	-.3333	-2.2222	2.0000
81 FIC(CONSTRUCTS)	15.4006	***	0.1111	-1.5556	1.7500
82 NO OF PEOPLE CLUSTERS	9.8889	***	1.0000	-.4444	-.7500
83 NO OF PEOPLE NOT CLUSTD	18.4072	***	-1.7778	1.3333	1.8750
84 FIC(PEOPLE)	4.0622	*	-.7778	0.8889	1.1250
FACTOR ANALYSIS OF GRID:					
CHANGES ON GRID 1					
91 CONSTRUCT FACTORS	0.4923				
92 PEOPLE FACTORS	0.0433				
CHANGES ON GRID 2					
93 CONSTRUCT FACTORS	0.9751				
94 PEOPLE FACTORS	2.9643				

KEY: * P IS LESS THAN .05
KEY: ** P IS LESS THAN .01
KEY: *** P IS LESS THAN .001

EXPERIMENTAL TRAINING GROUPS

TABLE:19 DIFFERENCES BETWEEN 3 GROUPS OF PARTICIPANTS
T TESTS

VARIABLES:	DIFFERENCE BETWEEN GROUPS		
INTERACTION PROCESS VARIABLES	1-2	1-3	2-3
17 GIVES SUGGESTION(RECEIVED)	2.69 *	0.87	2.30 *
21 ASKS FOR OPINION(RECEIVED)	0.67	2.67 *	2.02
22 ASKS FOR SUGGESTION(RECEIVED)	1.84	0.89	2.67 *
MEASURES OF GRID STRUCTURE:			
CHANGES ON GRID 1:			
76 NO OF PEOPLE CLUSTERS	2.17 *	2.75 *	0.64
CHANGES ON GRID 2:			
80 NO OF CONSTRUCTS NOT CLUSTD	2.98 **	3.57 **	6.47 ***
81 FIC(CONSTRUCTS)	2.88 *	2.75 *	5.55 ***
82 NO OF PEOPLE CLUSTERS	3.49 **	4.10 ***	0.72
83 NO OF PEOPLE NOT CLUSTD	4.86 ***	5.54 ***	0.82
84 FIC(PEOPLE)	2.32 *	2.57 *	0.32
(DEGREES OF FREEDOM)	16	15	15

KEY: * P IS LESS THAN .05
KEY: ** P IS LESS THAN .01
KEY: *** P IS LESS THAN .001
TWO-TAILED TESTS

EXPERIMENTAL TRAINING GROUPS

TABLE:20
CORRELATIONS BETWEEN STRUCTURAL CHANGES ON GRIDS AND PROCESS FOR DERIVED GROUP 1 (N=9)

	MEASURES OF CHANGE:		76	80	81	82	83	84
3	AGREES	SAD		-.7036				
8	ASKS FOR OPINION	SCB				.6687		
9	ASKS FOR SUGGESTION	SCC				.6708		
13	TOTAL 1 TO 12 SENT			-.6927				
14	SEEMS FRIENDLY	RAF		-.6684				
15	DRAMATISES	RAE		-.6681				
17	GIVES SUGGESTION	RBC				.7354		
19	GIVES INFORMATION	RBA		-.6758				
22	ASKS FOR SUGGESTION	RCC				.6708		
26	TOTAL 14 TO 25 RECEIVED			-.7292				
29	AGREES	TAD		-.6713				
32	GIVES INFORMATION	TBA		-.6703				
34	ASKS FOR OPINION	TCB				.6661		
35	ASKS FOR SUGGESTION	TCC				.7071		
39	GRAND TOTAL INTERACTION			-.7102				

TABLE:21
CORRELATIONS BETWEEN STRUCTURAL CHANGES ON GRIDS AND PROCESS FOR DERIVED GROUP 2 (N=9)

	MEASURES OF CHANGE:		76	80	81	82	83	84
PROCESS VARIABLES:								
2	DRAMATISES	SAE		-.8547	-.6949			
4	GIVES SUGGESTION	SBC			-.6937	-.7600		-.7742
6	GIVES INFORMATION	SBA			-.6669			
8	ASKS FOR OPINION	SCB	-.7725					
9	ASKS FOR SUGGESTION	SCC			-.7941			-.7299
10	DISAGREES	SDD					.7826	
11	SHOWS TENSION	SDE	-.7197			-.8693		
12	SEEMS UNFRIENDLY	SDF					.7444	
14	SEEMS FRIENDLY	RAF		-.7596				
18	GIVES OPINION	RBB		-.7734				
20	ASKS FOR INFORMATION	RCA		-.8255				
22	ASKS FOR SUGGESTION	RCC		-.8878				
24	SHOWS TENSION	RDE		-.8472				
25	SEEMS UNFRIENDLY	RDF					.7303	
28	DRAMATISES	TAE			-.7191			
32	GIVES INFORMATION	TBA			-.8449			
33	ASKS FOR INFORMATION	TCA		-.7308				
34	ASKS FOR OPINION	TCB	-.7374					
35	ASKS FOR SUGGESTION	TCC		-.8249	-.6834			
36	DISAGREES	TDD					.7629	
37	SHOWS TENSION	TDE				-.7537		
38	SEEMS UNFRIENDLY	TDF					.7452	

TABLE:22
CORRELATIONS BETWEEN STRUCTURAL CHANGES ON GRIDS AND PROCESS
FOR DERIVED GROUP 3 (N=8)

MEASURES OF CHANGE:		76	80	81	82	83	84
PROCESS VARIABLES:							
1 SEEMS FRIENDLY	SAF		.8227	.8201			
8 ASKS FOR OPINION	SCB			-.7317			
13 TOTAL 1 TO 12 SENT				-.7340			
14 SEEMS FRIENDLY	RAF				-.7926		

CODES ASSOCIATED WITH IPA CATEGORIES:

FIRST LETTER S=SENT R=RECEIVED T=S+R=TOTAL INTERACTION

SECOND LETTER DESCRIBES THE PHASE ASSOCIATED WITH A CATEGORY:
- A SOCIAL-EMOTIONAL: POSITIVE REACTIONS
- B TASK AREA: EMOTIONALLY NEUTRAL (ATTEMPTED ANSWERS)
- C TASK AREA: EMOTIONALLY NEUTRAL (QUESTIONS)
- D SOCIAL-EMOTIONAL: NEGATIVE REACTIONS

THIRD LETTER IS THE KEY TO PROBLEM AREAS:
- A PROBLEMS OF COMMUNICATION
- B PROBLEMS OF EVALUATION
- C PROBLEMS OF CONTROL
- D PROBLEMS OF DECISION
- E PROBLEMS OF TENSION REDUCTION
- F PROBLEMS OF REINTEGRATION

MEASURES OF GRID STRUCTURE:
CHANGES ON GRID1
76 NO OF PEOPLE CLUSTERS
CHANGES ON GRID2
80 NO OF CONSTRUCTS NOT CLUSTERED
81 FIC(CONSTRUCTS)
82 NO OF PEOPLE CLUSTERS
83 NO OF PEOPLE NOT CLUSTERED
84 FIC(PEOPLE)

EXPERIMENTAL TRAINING GROUPS

TABLE:23 CORRELATION BETWEEN CHANGES IN THE CONTENT OF CONSTRUCTS AND CHANGES IN GRID STRUCTURE(N=30)

ONTENT TURE	48	49	50	51	52	53	54	55
79	+.1137	-.1332	+.0780	+.0577	+.2800	-.1114	-.3399	-.0643
80	-.1528	-.0140	+.1053	-.0375	-.0988	-.1375	+.2958	+.1604
81	-.1154	-.0871	+.1630	-.0125	+.0356	-.2178	+.1595	+.1505
82	+.0885	-.1509	-.1749	-.1218	+.3022	+.3300	-.4334*	+.0558
83	+.2004	+.0793	+.3177	+.3560	+.0989	-.5045**	+.3294	-.2382
84	+.2995	-.0028	+.2694	+.3503	+.0777	-.3938*	+.1150	-.2512

RIABLE LIST:

STRUCTURAL CHANGES - GRID 2
79 NO OF CONSTRUCT CLUSTERS
80 NO OF CONSTRUCTS NOT CLUSTERED
81 FIC(CONSTRUCTS)
82 NO OF PEOPLE CLUSTERS
83 NO OF PEOPLE NOT CLUSTERED
84 FIC(PEOPLE)

CONSTRUCT CONTENT CHANGES
48 OBSERVABLE-CONCRETE
49 STRUCTURE OF RELATIONSHIPS
50 INSTRUMENTAL
51 CONCRETE - INSTRUMENTAL
52 INFERRABLE
53 RELATIONSHIP PROCESSES
54 EXPRESSIVE(FEELING)
55 INFERENTIAL - EXPRESSIVE

KEY: * P IS LESS THAN .05
KEY: ** P IS LESS THAN .01
TWO-TAILED TESTS

EXPERIMENTAL TRAINING
TABLE:24 INTERCORRELATION STRUCT CATEGORIES(N=30)

CATEGORIES:	49	50	52	53	54	55
48						-.7268
49						
50			-.4961			-.6096
51				-.3845		-.9635
52					-.6046	.3670
53					-.2555	
54						

VARIABLE LIST:

48 OBSERVABLE - CONCRETE INFERRABLE
49 STRUCTURE OF RELATIONSHIP RELATIONSHIP PROCESSES
50 INSTRUMENTAL EXPRESSIVE(FEELING)
51 CONCRETE - INSTRUMENTAL INFERENTIAL - EXPRESSIVE

EXPERIMENTAL TRAINING

TABLE:25 RELATIONSHIP STRUCTURAL MEASURES OF CHANGE FROM GRID 2(N=30)

VARIABLES	74	75	76	77	9	80	81	82	83	84
73	-.6239	.0758	.0088	-.0480	-70	-.0631	.1177	.0478	.0938	.1443
74		.7319	.0651	.1787	49	.3468	.3010	.4147	-.2076	.0197
75			.0908	.1862	54	.3875	.4867	.5707	-.1831	.1510
76				-.7929	-85	-.2455	-.2303	.4727	-.5002	-.2955
77					07	.2614	.3122	-.0766	.4757	.5242
78					23	.2063	.2923	.2314	.3368	.5572
79						-.4981	-.0405	.3012	.0981	.3147
80							.8866	-.0540	.2156	.2250
81								.0985	.3007	.4271
82									-.5602	-.0242
83										.8417
84										

VARIABLE LIST

MEASURES OF CHANGE FROM GRID	1	GRID 2
NO OF CONSTRUCT CLUSTERS	3	79
NO OF CONSTRUCTS NOT CLUSTERED	4	80
FIC(CONSTRUCTS)	5	81
NO OF PEOPLE CLUSTERS	6	82
NO OF PEOPLE NOT CLUSTERED	7	83
FIC(PEOPLE)	8	84

NOTE GRID 1 HAS CONSTIME 1 RE-RATED AT TIME 2
GRID 2 HAS FRESH AT TIME 2

EXPERIMENTAL TRAINING GROUPS

TABLE:26 MEAN UNITS OF INTERACTION IN LAST 3 SESSIONS OF EXPERIMENTAL TRAINING GROUPS

INTERACTION PROCESS VARIABLES:		GROUP1	GROUP2	GROUP3
1 SEEMS FRIENDLY	SAF	12.2	4.0	3.5
2 DRAMATISES	SAE	43.4	27.2	40.7
3 AGREES	SAD	14.4	21.6	26.8
4 GIVES SUGGESTION	SBC	5.8	5.7	1.4
5 GIVES OPINION	SBB	60.7	89.8	81.9
6 GIVES INFORMATION	SBA	32.0	16.8	23.0
7 ASKS FOR INFORMATION	SCA	8.1	5.7	5.8
8 ASKS FOR OPINION	SCB	6.3	9.5	5.4
9 ASKS FOR SUGGESTION	SCC	1.5	0.7	0.4
10 DISAGREES	SDD	4.6	10.9	4.4
11 SHOWS TENSION	SDE	17.3	14.5	25.9
12 SEEMS UNFRIENDLY	SDF	1.5	2.0	0.3
13 TOTAL SENT (1 TO 12)		208.0	208.3	219.5
14 SEEMS FRIENDLY	RAF	13.3	3.6	3.7
15 DRAMATISES	RAE	20.8	11.6	12.5
16 AGREES	RAD	12.2	22.5	25.9
17 GIVES SUGGESTION	RBC	3.3	2.9	1.3
18 GIVES OPINION	RBB	25.8	37.2	26.7
19 GIVES INFORMATION	RBA	15.9	7.5	9.5
20 ASKS FOR INFORMATION	RCA	6.9	4.9	4.0
21 ASKS FOR OPINION	RCB	4.7	6.2	4.3
22 ASKS FOR SUGGESTION	RCC	1.3	0.5	0.0
23 DISAGREES	RDD	4.6	10.1	3.6
24 SHOWS TENSION	RDE	10.4	9.1	14.0
25 SEEMS UNFRIENDLY	RDF	1.0	1.4	0.3
26 TOTAL RECEIVED (14 TO 25)		120.2	117.0	105.8
27 SEEMS FRIENDLY	TAF	25.5	7.6	7.2
28 DRAMATISES	TAE	64.2	38.8	53.2
29 AGREES	TAD	26.6	44.1	52.7
30 GIVES SUGGESTION	TBC	9.1	8.6	2.7
31 GIVES OPINION	TBB	86.5	127.1	108.6
32 GIVES INFORMATION	TBA	47.9	24.3	32.5
33 ASKS FOR INFORMATION	TCA	15.0	10.6	9.8
34 ASKS FOR OPINION	TCB	11.0	15.7	9.7
35 ASKS FOR SUGGESTION	TCC	2.8	1.2	0.4
36 DISAGREES	TDD	9.2	21.0	8.0
37 SHOWS TENSION	TDE	27.7	23.6	39.9
38 SEEMS UNFRIENDLY	TDF	2.5	3.4	0.6
39 GRAND TOTAL INTERACTION		328.2	325.8	325.3

NOTE: MEAN UNITS OF INTERACTION OBTAINED FROM 10 MINUTE SAMPLES FROM EACH SESSION SESSION LENGTH = 1 HOUR

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APPENDIX 1

TABLE: 1
CONSTRUCT CATEGORIES AND EXAMPLES

CONCRETE - INSTRUMENTAL	
1 OBSERVABLE CONCRETE	OLDER-YOUNGER
	ENGLISH-FOREIGN
2 STRUCTURE OF RELATIONSHOPS	SECOND YEARS-THIRD
	MIDDLE CLASS-LOWER
3 INSTRUMENTAL	EXPERIENCED-INEXPERIENCED
	PROFESSIONAL-AMATEUR
INFERENTIAL - EXPRESSIVE	
4 INFERRABLE	MODERATE-EXTREME
	SHY-CONFIDENT
5 RELATIONSHIP PROCESSES	DOMINANT-SUBSERVIENT
	LEADS DISCUSSION-DOESNT
6 EXPRESSIVE(FEELING)	HUMOROUS-DOUR
	TENDER-TOUGH

APPENDIX 1

FIELD STUDY

TABLE 2 INSTRUCTIONS FOR RATING PARTICIPATION

1 PARTICIPATION IN GROUP

One indication of involvement is verbal participation. Would you rate this as 0 for Zero participation to +5 for maximum participation. If people avoided participation use negative signs with -5 being complete withdrawal from the group. Please use DK for Don't Know.

2. INFLUENCE ON OTHERS

Influence and participation are not the same. Some people may speak very little yet they capture the attention of the whole group. Others may talk a lot but are generally not listened to by other members. +5 is for members who were very high in influence (that is when they talked others seemed to listen closely), 0 for zero or neutral influence, neither positive nor negative, -5 for cases where the person was over-ridden or completely ignored. Use intermediate numbers for other amounts of influence. Please use DK for Don't Know.

3 GIVING INFORMATION

People differ in the amounts and nature of the information they disclose about themselves. Some speak in general terms about what "one" does, or is, while others give a personal and specific view which they identify as their own. +5 is for people who gave a maximum of information about themselves. 0 for people who gave no information and -5 for people who were evasive and concealed information about themselves from others. Please use DK for Don't Know.

4 SEEKING INFORMATION

People differ in their interest in others. Some persistently seek to understand others by maintaining an interest in the things said and by asking questions while others seek no further information and in some cases cut-off others or divert the discussion to other topics. +5 is for actively seeking information, 0 for no interest in others, -5 for blocking information from others. Intermediate numbers for other quantities. Please use DK for Don't Know.

APPENDIX 1

FIELD STUDY
TABLE: 3
RELIABILITY OF CONSTRUCT CATEGORISATION MEASURED BY AN INDEX OF AGREEMENT

		CATEGORY ASSIGNED BY JUDGE 1	
		CONCRETE-INSTRUMENTAL	INFERENTIAL-EXPRESSIVE
CATEGORY ASSIGNED BY JUDGE 2	CI	110	10
	IE	25	205

EXPECTED AGREEMENT(PE) = .5261
ACTUAL AGREEMENT(PA) = .9000
INDEX OF AGREEMENT =(PA-PE)/(1-PE)
= .7890

FIELD STUDY
TABLE: 4 TRAINER CORRELATIONS ON 4 MEASURES OF PARTICIPATION IN GROUPS

1 VERBAL PARTICIPATION

TRAINERS:	2	3	4	6	
2	-	.5003	.5583*	.6245*	(N=11)
3		-	.3537	.5087	
4			-	.5580*.	
6				-	

2 INFLUENCE ON OTHERS

TRAINERS:	2	3	4	6	
2	-	.6052*	.5940*	.9198**	(N=10)
3		-	.6212*	.6975*	
4			-	.6259*	
6				-	

3 GIVING INFORMATION

TRAINERS:	2	3	4	6	
2	-	.2848	.0805	.6487*	(N=11)
3		-	.4647	.4103	
4			-	.2423	
6				-	

4 SEEKING INFORMATION

TRAINERS:	2	3	4	6	
2	-	.6258*	.3298	-.1351	(N=10)
3		-	.4791	.0499	
4			-	.5541*	
6				-	

* = .05 ** = .01 ONE-TAILED TESTS

NOTE: TRAINER 1 DID NOT RATE PARTICIPATION
TRAINER 5 RATED TOO FEW PEOPLE TO BE INCLUDED

APPENDIX 1
EXPERIMENTAL TRAINING GROUPS
TABLE: 5
RELIABILITY OF CONSTRUCT CATEGORISATION MEASURED BY AN INDEX OF AGREEMENT

		CATEGORY ASSIGNED BY JUDGE 1					
		1	2	3	4	5	6
CATEGORY ASSIGNED BY JUDGE 2	1	39			1		
	2	2	11		1		
	3			31	1	1	
	4				267	35	25
	5				82	188	3
	6					6	147

EXPECTED AGREEMENT(PE) = .2980
ACTUAL AGREEMENT(PA) = .8131
INDEX OF AGREEMENT =(PA-PE)/(1-PE)
= .7338

CATEGORIES:
1 IS OBSERVABLE CONCRETE
2 IS STRUCTURE OF RELATIONSHIPS
3 IS INSTRUMENTAL
4 IS INFERRABLE
5 IS RELATIONSHIP PROCESSES
6 IS EXPRESSIVE(FEELING)

EXPERIMENTAL TRAINING GROUPS
TABLE: 6
RELIABILITY OF BALES INTERACTION PROCESS ANALYSIS.

ALL INTERACTIONS WERE RECORDED ON VIDEOTAPE AND VERBAL BEHAVIOUR ON ORDINARY MAGNETIC TAPE.
A TRANSCRIPT WAS OBTAINED FROM THE LATTER.IT WAS DOUBLE-CHECKED AND CONTAINED 99.5 PERCENT OF THE SPEECH.IT WAS CHECKED FOR A THIRD TIME AGAINST THE VIDEO RECORDING.
THE IPA WAS OBTAINED LARGELY FROM THE TRANSCRIPT WITH NONVERBAL BEHAVIOUR ADDED FROM VIDEOTAPE.
NONVERBAL BEHAVIOUR WAS 10 PERCENT OF THE TOTAL INTERACTIONS
THESE IPA CATEGORIES WERE CHECKED AGAINST A SECOND OBSERVERS LIVE RECORDINGS OF GROUPS 2 AND 3. THIS OBSERVER SCORED AT AN AVERAGE RATE OF 14.7 ACTS PER MINUTE BUT WITH A BIAS TOWARDS NEGATIVE SOCIO-EMOTIONAL CATEGORIES.
THE IPA DATA WAS BASED ON THE TRANSCRIPT AND THE VIDEOTAPE BECAUSE IT WAS POSSIBLE TO PAUSE AND REFER EACH ACT TO THE DETAILED CRITERIA PROVIDED BY BALES(1970)