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Increase in Cognitive Complexity: A Comparison of Human Relations Training and Group Psychotherapy

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INCREASE IN COGNITIVE COMPLEXITY: A COMPARISON OF HUMAN
RELATIONS TRAINING AND GROUP PSYCHOTHERAPY

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Psychology

by
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ABSTRACT

The purpose of this investigation was to measure whether, after group treatment, open ward hospitalized psychiatric patients would demonstrate an increase in ability to describe other people by means of interpersonal constructs. Measuring the ability to describe other people, or more precisely cognitive complexity, has never been undertaken with a hospitalized psychiatric patient population nor has the effect of group treatment on cognitive complexity been examined.

Responses investigated included cognitive complexity before and after four weeks of treatment, variability in description of others depending on sex of the other person and whether he or she was liked or disliked, and improvement after four weeks of treatment and on a two month follow-up. Cognitive complexity was considered in its possible relationship to symptomatology, intelligence, diagnosis, patients' conceptualization of control of their destiny, improvement after treatment, and certain factors involving group process.

Two groups of psychiatric patients on open wards at a VA hospital were compared. One group received Human Relations Training Laboratory exercises and had autonomous

group sessions for four weeks. The other group received more traditional Group Psychotherapy and had a therapist present for alternate sessions for four weeks. Subjects were comparable in age, education and intelligence. The cognitive complexity measure was a free response paper and pencil instrument on which subjects were asked to identify and describe two liked males, two liked females, two disliked males and two disliked females.

Experimental findings may be summarized as follows:

1. Neither group increased in cognitive complexity after treatment. Human Relations Training Laboratory patients decreased significantly more than Group Psychotherapy patients.
2. Psychiatric patients described liked females with greatest facility, implying that they are most adept in such interactions. They described liked and disliked males with equal facility and had greatest difficulty describing disliked females.
3. When sex is or is not considered, patients produced a greater variety of constructs to describe people who are liked as opposed to people who are disliked.
4. No significant relationship was found between degree of cognitive complexity and degree of symptomatology.
5. Patients manifested equal degree of symptomatic improvement after both types of treatment as rated by

the staff and on self-ratings.

6. A significant correlation between intelligence and cognitive complexity was obtained within the intelligence range represented in a patient population.
7. The Rotter I-E score, which measures a person's sense of control of his overall environment, was not correlated with cognitive complexity, which hypothetically measures a person's sense of control of interpersonal relations.
8. Differences in cognitive complexity were not found among the diagnostic categories of depressive reaction, anxiety reaction and personality disorder.
9. Less than half of the 29 Human Relations Training Laboratory patients answering the follow-up were working. More than half of the 27 Group Psychotherapy patients responding were working. However, more Group Psychotherapy patients had jobs waiting when they entered treatment and several had just left the hospital.
10. Cognitive complexity was not correlated to prominence or hyperdependency within the group, but it was related to a tendency to engage in conflict. Cognitive complexity was correlated to participation in group discussion. These conclusions applied only

CHAPTER I

INTRODUCTION

Considerable research in psychology has been concerned with variations in an individual's conceptual description of himself, others and the world. It has been generally assumed that there is a very close relationship between an individual's conception of events and subsequent behavior. Many psychological tests and questionnaires have been based on the epistemological inference that verbal reports of the individual describe his actual thoughts, feelings and actions. Although this inference must lead us to scientific caution in our conclusions, it has proved to be a worthwhile hypothesis in the study of human behavior.

When a group is studied and the conceptual structure of several individuals is compared or contrasted, the denotation and connotation of words for each of the individuals presents a possible delimitation to our generalizations. Although it is assumed that with a properly selected sample these limitations are under control, it is still wise to bear in mind Allport's (1942, 1961) reminders on the uniqueness of the individual. Wolman (1960) and Holt (1962) criticize Allport's ideographic-nomothetic distinction but refrain from denying that a person's categorization of his environment contains elements which are peculiar to himself.

It is not novel to suggest that individual differences in the impressions formed from a standard set of stimulus information reflect systematic differences in the cognitive processes of the perceivers. Bruner and Tagiuri (1954) and Cronbach (1955) have suggested that individuals utilize an "implicit personality theory" by which they understand and predict (to their own satisfaction, at least) their own behavior and that of their associates. This implicit personality theory can be referred to as the individual's cognitive system with respect to other people. In a particular interactional sequence, the perceiver may observe only a limited number of characteristics of another person. Yet, the impression that he forms usually contains a considerable number of attributes that were not observed but which are presumed, nevertheless, to characterize the other person. The more extensive literature on impression formation, though not directly related to our purposes here, attests to the fact that our perceptual and conceptual capabilities are definitely involved in our handling of complex interpersonal interactions.

The principal theoretical orientation that was presented in this study reflects the influence of Lewin (1951), Sullivan (1953), Werner (1957), Krech, Crutchfield and Ballachey (1962) and more particularly, Kelly (1955) and Crockett (1965). These authors postulate that there is a

gradual differentiation and integration of concepts from childhood to adulthood and this process continues throughout adult life as the individual is confronted with varying events. A person's conceptualization of interpersonal interactions and more specifically his conceptualization of the individuals involved in these interactions determines his attitude and behavior in such encounters. The individual's view of others determines not only his behavior towards them but is also a direct reflection of how he views himself. In interpersonal relations a person learns a role which is consonant with his conceptualization of the roles of others whom he encounters. As Sullivan (1953) has stated, the process begins with the infant in the arms of his mother and the child's understanding of significant others. Although theoretically the construing of others is constantly open to variations and modifications, individuals tend to develop patterns of organization in their perception of others and their consequent behavior follows this pattern, even when at times the behavior is detrimental to the individual.

G. A. Kelly (1955) developed a cognitive theory of personality which he called a Personal Construct Theory. This theory was directly involved in the present study, so it will be described in detail. His theory is based on the assumption that all men may be thought of as "scientists" in

the sense that each is concerned with the prediction and control of his environment. Each individual seems therefore to assemble for himself a set of constructs with which he structures (conceptualizes) his world and tries to anticipate events. Constructs may be thought of as elements in a system by which an individual codifies or categorizes the world he experiences. The psychology of personal constructs, then, is concerned with ways in which personal construct can be measured and utilized in explaining individual behavior. It must be acknowledged that Kelly's is one theory among many. It has been chosen for this study because it fulfills the epistemological orientation of this researcher, recognizing each individual as a unique describer of his world.

According to personal construct theory, each individual has a complex series of filters through which he views reality. Construing is a biologically purposeful process whereby an individual seeks to anticipate events. A construct is not merely a label; it is in essence a prediction. To construe one woman as friendly and another as bothersome is to predict reactions in relation to the person described. The constructs used to describe a situation or person are subject to change as they are validated or invalidated, or events prove the prediction to have been irrelevant. In other words, the events may turn out to be outside the range of convenience of the constructs used and other constructs gradually replace previous ones. Ways of

construing, therefore, are subject to change as the individual reacts to the emerging validation situation. Kelly formulated a basic postulate and several corollaries which are presented in Appendix A.

In construing, a person places an interpretation on what is construed. The person notes features in a series of elements which characterize some of the elements and are particularly uncharacteristic of others. Both similarity and contrast are inherent in the same construct. The person's choice of an aspect determines both what will be considered similar and what will be considered contrasting. In forming a construct, then, a person is essentially saying that two things are alike and different from a third. When a person labels an object as red, he is stating that it is red like other red objects, yet different from non-red objects.

Kelly devised the Role Construct Repertory Test (RCRT, or as it is called, the Reptest) as a diagnostic tool for the clinician in understanding and helping his client. The administration of the Reptest will be described in detail since it is closely related to our purposes in this study. The client is presented with a Role Title list either orally or in written form. The list contains such items as:

1. A teacher you liked
2. A teacher you disliked

3. An employee or supervisor whom you found hard to get along with
4. A fellow employee who is easy to get along with
5. Etc.

The model list presented by Kelly contains 24 titles of this kind. The subject is asked to respond to the list by designating, by name or otherwise, the personal identification of the people in his own realm of experience who fit the role titles. The subject is usually asked to write the names on separate cards and to select 24 different names. When all the names have been written, the examiner hands the subject three of the cards and asks, "In what important way are two of these people alike but different from the third?" The examiner records verbatim the reported likeness between the two people. He also asks the subject how the third person is different and records this response. Thirty-two such "sorts" are elicited and recorded in a similar manner.

Kelly provided a list of possible combinations of the 24 roles which could be presented to the subject. He also presented eight modifications of this basic administrative procedure. One of these modifications is the Grid Form of the test which has been used extensively in research. In this format, the role titles are written as columns on a grid and the constructs and contrasts are written in rows. The basic sorting procedure is used with checks entered in the columns of the two persons who are alike (construct) and a circle in

the column of the person who is unlike these two people (contrast). After all the sorts have been completed, the subject is asked to check other columns on which the construct may apply and circle those in which the contrast applies to the person. In analyzing the Grid, Kelly devised a nonparametric factor analysis in order to determine which constructs seemed more important in the subject's interpersonal relations. Kelly's complex statistical techniques have been found incomplete and have been modified by subsequent investigators (Bonarius, 1965).

Some criticisms which can be made of Kelly's method of eliciting constructs are: (1) For many subjects, supplying a long list of people who are presently relevant in their environment may lead them to give names of people they do not really know; (2) The subject is asked to compare and contrast people whom he probably usually does not compare and contrast; (3) In sorting, the subject is forced to make subtle verbal distinctions between three people and thereby may be encouraged to supply words which may not be in his usual verbal repertoire and therefore these may not be personally assimilated differentiations; (4) Kelly's methods seem to be limited to intelligent and very verbal subjects.

Crockett (1965) has described a free response method for measuring interpersonal constructs or what he calls cognitive complexity in interpersonal relations. It is

actually a method by which free verbal descriptions of others are substituted for Kelly's elicited construct descriptions. It avoids the pitfalls of the experimenter's encouraging subtle verbal differences outside the usual repertoire of the subject. Crockett believes that it is unrealistic to try to identify every possible construct a person uses. However, it is possible to determine the number of interpersonal constructs that a subject uses in certain standard situations. The constructs thus obtained will obviously be a sample of the total set of constructs that are available to the subject. If this sample represents the total number of constructs in about the same proportion for all subjects who are observed, than the rank ordering of subjects on the basis of the number of constructs they use in the standard situation should approximate the rank that would be obtained if the actual degree of differentiation of every subject were determinable. This method has only been used with a college population thus far but seems adaptable to other literate populations.

The procedure described by Crockett requires subjects to identify eight different individuals, each of whom fits a predetermined role, and then to spend three minutes describing these individuals as fully as possible in writing. The number of interpersonal constructs in these descriptions is taken as the measure of cognitive differentiation. Subjects are required to describe eight of their

acquaintances to insure that the interpersonal constructs they use are among those they actually apply to real people. Eight categories are used in order to obtain a broad range of social roles. When this method of eliciting constructs is used, subjects use more constructs to describe people they like than people they dislike and are better able to describe other people who are of the same sex as themselves. This technique was devised as a measure of individual differences in cognitive complexity with respect to other people.

Since the method allows great freedom to a subject in regard to his responses, the question of its reliability immediately arises. The subject could be influenced by his free choice of the person he selects to describe, by his feeling of the moment and by his verbal repertoire of the immediate present. Test-retest reliability of the method, however, is reported to be very good. "In an unpublished study of the test-retest reliability of this method, using 14 subjects and with the two testings taken four months apart, the product moment correlation between the two sets of scores was $+ .95$ ($p < .01$)," (Crockett, p. 51, 1965).

Review of the Literature

The present study was concerned with personal construct theory in the areas of cognitive complexity, change

in constructs, and research in personal construct theory involving psychiatric patients. The literature was reviewed in those areas which were believed to be most pertinent to the subject matter of this investigation. All of the relevant research in cognitive complexity has been done with a college population and has utilized modifications of Kelly's RCRT. There has been no cognitive complexity research utilizing a psychiatric population but the RCRT has been used with such a population. There has been only one study reported involving the free response method of constructs with a college population. The review of the literature was therefore organized into three parts: (1) research in cognitive complexity with college students; (2) research utilizing the RCRT with psychiatric patients; (3) the free response method of eliciting constructs.

Research in Cognitive Complexity with College Students

One of the first studies involving Kelly's (1955) theoretical orientation towards interpersonal constructs and the possible change in interpersonal perceptions following social interaction was reported by Bieri (1953b). Bieri was attempting to demonstrate that a person's perceptual system varies as he successively construes or perceives events and that a person's perceptions of others changes over time as a result of social interaction. The specific experimental

hypothesis was that an individual will perceive another individual as more similar to himself after a period of constructive interaction than before the interaction has occurred.

The subjects for the above study were 52 beginning undergraduate psychology students. The predicting instrument was Rosenzweig's Picture-Frustration Study (P-F). The experimental procedure involved dealing with all subjects in pairs, with the two strangers of the same sex forming each pair. In the experimental group procedure: (a) each member of the pair responded to the Rosenzweig P-F and then, after a mere social introduction to one another, each member of the pair was told to attempt to answer the P-F as he thought his new acquaintance had answered it, (b) the pair was then allowed to have two ten-minute verbal interactions, one about the Psychology course and the other about vacations; (c) each member of the pair was asked to predict once again his partner's original answers to the P-F. The control group was treated in a similar manner but the members of the pairs did not interact; they were told to write for ten minutes their own impressions of the Psychology class and a vacation. Results indicated that the interaction allowed in the experimental group increased a subject's tendency to see his partner as similar to himself in answering the Rosenzweig P-F. The increase was significant at the .001 level.

In his discussion Bierer pointed out the limitations of the Rosenzweig as a measuring instrument. However, he concluded that it was reasonable to construe the results as supporting the hypothesis that in a constructive group interaction situation in which mutual agreement on experiences and activities is emphasized, members come to perceive their partners as more similar to themselves. In terms of construct theory, Bierer demonstrated that constructs change as a result of social interaction.

The study of cognitive complexity (CC) as a personality variable received its greatest impetus from the work of Bierer. Bierer (1955) utilized the designation "cognitive complexity-simplicity" and applied it in reference to the degree of differentiation in an individual's system of interpersonal constructs. A system of constructs which differentiated highly among persons was considered to be cognitively complex and a system which provided poor differentiation was considered cognitively simple. In this research, Bierer hypothesized that there was a significant positive relationship between degree of cognitive complexity and accuracy of predictive behavior.

Subjects in this study were 22 female and 12 male undergraduates. The measure of cognitive complexity was the RCRT. This procedure yielded a 12x12 matrix of check patterns which represented how the subject perceived and

differentiated a group of persons. By considering how similar each construct row was to every other construct row in the matrix, in terms of similarity of check patterns, the degree of differentiation could objectively be ascertained. If many of the construct rows had identical or similar check patterns, it would mean that the person would be said to have low cognitive complexity. A totaling of the number of identical check patterns for all rows yielded a complexity score.

The predicative instrument used in this study was a Situations Questionnaire consisting of 12 items depicting social situations in which four reasonable behavior alternatives were presented. Each subject completed the questionnaire by selecting one of the four alternative responses and in addition predicted the responses of two of his classmates whom he rated as acquaintances but not close friends.

Results indicated that there was a significant correlation between cognitive complexity as measured by the RCRT and predictive accuracy measured by the Situations Questionnaire ($r = .29, p < .05$). Thus, Bieri concluded that cognitive complexity relates especially to the tendency to predict accurately the differences between oneself and others. Similarly, the tendency to engage in inaccurate projections concerning the similarity between self and

others relates significantly to cognitive simplicity. The complexity of a person's cognitive system for perceiving others is effectively related to his ability to predict accurately the behavior of others. Bieri himself admitted that this correlation ($r = .29$), though significant, was small and did not account for much of the variance. He suggested that further studies were needed to specify more accurately the variables involved. Bieri also acknowledged the fact that a 12 item questionnaire had many limitations as a predictive instrument.

In an extension of Bieri's work, Leventhal (1957) administered the RCRT to 253 male students in elementary Psychology and scored it in terms of cognitive complexity following Bieri's technique. He then chose the subjects in two extreme groups, those high in cognitive complexity (complex subjects) and those low in cognitive complexity (simple subjects). He then used 14 subjects as interviewers (seven simple and seven complex) and 56 as judges (28 simple and 28 complex). Tape recordings lasting 35 minutes were made of the 14 interviewees with the first 15 minutes dealing with family and school and the last 20 minutes discussing values and self-descriptions. Upon the close of the interview, the interviewee responded to a 38-item multiple choice situations questionnaire, which then served as criterion for the accuracy of the judges' predictions. The

experiment was designed so that both simple and complex judges judged a simple and complex interviewee both with 15 and 35 minutes of taped information. The judges then answered the questionnaire as they thought each interviewee had.

The hypotheses were: (1) the more information provided to the judges, the more accurate would be their predictions; (2) the complex judges would more accurately predict behavior than the simple judges; (3) with increasing information complex judges would show a relatively greater increase in predictive accuracy than simple judges. Only the first hypothesis was significant ($p < .05$). Leventhal stated that from analysis of the data, it seemed that all the judges, both simple and complex, had generalized their judgments of the interviewees to what they would expect of the freshmen college male. Leventhal's study, therefore, did not uphold the contention that cognitively complex persons are better predictors of the behavior of others than cognitively simple persons. However, the author himself inferred that the situations questionnaire was deficient as a predictive instrument.

Tripodi and Bieri (1963) investigated the question of whether eliciting constructs or providing constructs for a subject to rank generated any difference in the cognitive complexity measure. Test-retest reliability, one week apart,

for both methods was significant ($\rho = 0.50$, $p < .05$).

The authors state that having subjects rank constructs seems to be more advantageous for research since the experimenter can control what constructs will be provided to subjects.

These results seem to indicate a deficiency which has been pointed out in Kelly's method of eliciting constructs. Forcing the subject to make comparisons is significantly equivalent to the experimenter's providing adjectives for the subject to rate. Therefore, the question arises, whether in both cases the subject is making a verbal distinction instead of an internalized distinction which he customarily makes in his evaluation of people.

Both Bieri (1961) and Crockett (1964) have been careful in stating that they relegate their studies of cognitive complexity to the interpersonal domain and do not intend to generalize outside that domain. Vannoy (1965) was also of the same opinion and postulated that cognitive complexity varies over different domains depending upon the amount and kind of knowledge and interest of the individual. In order to investigate this hypothesis, he administered the RCRT together with a large battery of cognitively oriented tests. Thirteen tests were administered in all, including several semantic differential scales, social questionnaires, sentence-completion tests, authoritarian and ego-strength scales. Subjects were 113 male Introductory Psychology

students. A factor analysis of the results indicated that cognitive complexity is not as general a trait as some authors had implied. No large first factor emerged on which all of the tests or even a large proportion of the tests were loaded. Vannoy concluded that what is termed cognitive complexity as measured by the construct technique probably consists of several relatively independent conceptual dispositions.

Tripodi and Bieri (1966) investigated the possibility of a positive association between cognitive complexity and the attribution of interpersonal conflict in stories about imaginary persons, and the possibility that high complex subjects are relatively more certain of their judgments of conflicting information than low complex subjects. This research was divided into two studies. One study consisted of administering the RCRT with the subjects' rating constructs provided by the examiner and with the test scored in terms of cognitive complexity. Subjects were 64 graduate students in Social Work. Three social situations were described involving a problem and subjects were asked to write a story about each one. Stories were rated by independent judges who totaled expressed ideas, beliefs or feelings that presented opposition or conflicts for the imaginary people in the stories. Results indicated that there was a positive association between cognitive complexity

and the attribution of interpersonal conflict in stories about imaginary persons ($p < .05$).

A second study utilized 72 graduate Social Work students. The RCRT was administered to all students and scored for cognitive complexity. Subjects were then divided into high and low complexity groups with 36 subjects in each group. Eighteen high complexity subjects received conflicting information about a person and eighteen received non-conflicting information. The low complexity group, divided into sub-groups of 18, were treated in the same manner. Information consisted of four statements of aggressive behavior perpetrated by one person; in the conflicting condition two statements were extremely aggressive and two were mildly aggressive, and in the non-conflicting condition all statements were extremely aggressive. All subjects were asked to rate the behavior on an eight point maladjustment scale and to rate their degree of certainty for their maladjustment rating on a scale from 0 to 100. Results indicated that high complex subjects have significantly higher certainty in their judgments of conflicting information than low complex subjects. However, both high and low complex subjects were comparable in that they rated the stimulus person with conflicting information as significantly more maladjusted than the stimulus person with non-conflicting information.

One study concerning cognitive complexity and affective stimulus value was particularly pertinent to the present investigation. Irwin, Tripodi and Bieri (1967) were interested in finding out whether subjects manifest greater cognitive complexity in describing people they like rather than people they dislike. Supnick (1964) had found when using a free response method of eliciting constructs that subjects could describe people they liked better than people they disliked. Irwin, et al. were interested in testing this finding using the RCRT.

The research was carried out in two studies. One study utilized undergraduates from fraternities and sororities at Berkeley, 64 males and 51 females. A modification of the RCRT devised by Tripodi and Bieri (1963) was used. Subjects were asked to name four housemates they liked, four towards whom they were neutral, and four they disliked. The subjects rated all 12 persons on each of the 10 provided construct dichotomies using a six point scale. Results were scored in terms of cognitive complexity and indicated that for both male and female subjects, positive figures were differentiated significantly less accurately than negative figures ($p < .001$). Further, positive figures were less accurately differentiated than neutral figures ($p < .001$), and neutral figures were less accurately differentiated than negative figures ($p < .001$, males; $p < .01$, females).

The second study used as subjects undergraduate students at the University of Texas, 40 males and 40 females. Each subject judged four persons he liked and four persons he disliked; no neutral persons were judged. However, half of the persons were of the same sex as the judge and half of the opposite sex as the judge. Results indicated that both male and female subjects differentiated significantly less when judging positive-affect persons than when judging negative-affect persons ($p < .001$).

The authors reported that both studies unequivocally supported the proposition that individuals differentiate more among persons who evoke more negative affect than among persons with whom strong positive-regard tendencies are associated. In the discussion they admitted that the method of measurement must be remembered and generalization guarded. They attempted to discredit Crockett's (1965) free response technique by arguing that "only a task requiring the subject to make discriminations about others using his own or provided construct dimensions can provide an index of the number of independent dimensions in his cognitive structure." However, as it has been pointed out above, the technique of forcing subjects to make comparisons of three people and make discriminations among them is open to criticism, since the subject is often being asked to compare and make discriminations among them which he has never internalized. It

is noteworthy that Tripodi and Bieri (1963) found that providing adjectives for the subject to rank was equivalent to getting the subject to elicit constructs through forced comparisons. It would seem that in both instances subjects are open to making comparisons and ratings which may not be inherent in their construct systems but are simply verbal distinctions.

Bonarius (1965) in his review article on RCRT research listed over 20 unpublished masters and doctoral theses which have dealt with cognitive complexity in various dimensions. He gave brief summaries of many of these studies which have been done predominantly with college populations. Since the present research dealt with a patient population, it was more important for our purposes to proceed and examine some studies done with this group.

Research Involving the RCRT and Psychiatric or Psychotherapy Patients

Although Kelly (1955) had intended in devising the RCRT that it could be used as a clinical tool in treating patients, research with patient populations utilizing the RCRT is very sparse. Bonarius (1964) in his review article pointed out that it is ironic that the RCRT has been used predominantly outside the clinical area. One reason for this, he believed, was that the test and its scoring as presented by Kelly appeared complex and time-consuming.

There is only one published study in this country using the RCRT measuring personality of neuro-psychiatric patients (Jones, 1961). The research report consisted of one page, so extensive details were not given. The subjects were 36 hospitalized males with mild or moderate psychiatric disorders, and a control group of 36 normal males, matched on age and education. The main hypotheses were: (a) neuro-psychiatric patients more often than normal adult males will either overidentify or underidentify with personally significant male figures; (b) the personal construct matrices of neuro-psychiatric patients will be simpler than those of controls. The hypothesis of underidentification was supported ($p < .10$, one-tailed t-test). The hypothesis of overidentification was significant ($p < .01$), i.e. neuro-psychiatric patients are more likely to see others as extremely like themselves than normal subjects. Also, as predicted, the construct matrix of patients was simpler ($p < .05$) than that of normal subjects. Jones concluded that both overidentification and underidentification were badges of maladjustment in that they were associated with a factorially simple, value-laden system of constructs. The construct system has become polarized into a "good guys and bad guys" framework. Either type of identification, whether excessive or deficient, can be explained in terms of an oversimplified construct system.

There have been no studies in this country dealing with differentiations among psychiatric diagnostic categories utilizing the RCRT. In England, Bannister (1960, 1962, 1966) has worked with a modification of Kelly's test in the area of "thought-disordered schizophrenia."

Bannister had hypothesized differences among other diagnostic groups, but his measures did not prove significant.

Bannister (1960) was interested in comparing conceptualization as measured by a modification of the RCRT in groups of normals, "thought-disordered schizophrenics" (firmly diagnosed and judged to have thought disorder by the psychiatric consultants), "non-thought-disordered schizophrenics," neurotics, and depressives. All patients were in the hospital at the time of the testing. Groups were equivalent in age, sex, intelligence and social status. Bannister developed his own modification of the RCRT. All subjects were asked to write down the names of 36 adults they knew on 36 cards. The cards were then thoroughly shuffled and divided into two groups with cards 19 to 36 in one group and cards one to 10 in the other. The first 18 cards were spread out with the names visible. Then the experimenter presented 10 constructs one at a time and asked the subject to name nine of the people to whom the construct applied most. At each construct presentation, the experimenter recorded the nine people the subject chose. After

the ten constructs had been applied to the first 18 cards, the cards were set aside and cards 19 to 36 were treated in the same manner. Two grids were formed, both 18x10, and check marks entered under the proper names of nine people for each construct.

Scoring of each grid involved comparing each row with every other row and counting the number of matching columns in the two rows. Thus, for each grid there are 45 comparisons between rows (from 10 rows). The rationale for this scoring is that it measures the tendency for constructs to be associated, to occur independently, or to occur repeatedly in the absence of one another. After each grid has been scored independently, the 45 comparisons within each grid are compared with the comparisons of the other grid. A correlation between the first and second grid forms the "Consistency of Relationship" score. A significant positive correlation would indicate consistency of constructs for the subject, whereas failure to achieve a significant positive correlation would be associated with pathological processes.

In this study Bannister found that only thought-disordered schizophrenics differed significantly from other groups of patients and normal subjects in consistency of constructs. None of the other groups differed significantly among themselves. Bannister concluded that thought-disordered schizophrenic patients constitute a sub-group within a population of schizophrenia. He hypothesized that

the process occurring in the thought-disordered schizophrenic patient was a loosening of construct meanings and interrelationships through invalidation. The thought-disordered schizophrenic patient has predicted and construed events loosely and events have not borne out the predictions, until eventually constructs lose their meaning and prediction becomes confused and impossible.

Bannister (1962) replicated his previous study on the comparison of thought-disordered schizophrenic patients and other diagnostic groups of patients. In this study he hoped to avoid the problem of having subjects name 36 people they knew, since he felt schizophrenic patients might supply the names of people they did not know very well. Therefore, he used 40 photographs of people whom the subjects did not know, 20 for the first grid and 20 for the second. A list of 10 constructs was supplied for the subjects. They were asked to check off the 10 photographs towards which each construct seemed more applicable for the first 20 photographs. The same procedure was followed for the second 20 photographs. Results again upheld the findings of the previous study: only thought-disordered schizophrenic patients were significantly different from all other groups. The other groups were not significantly divergent from one another on a consistency of construct measure. Predictions about the differences expected between the various additional diagnostic groups and

normal subjects were not borne out. Bannister (1966) again replicated the same study. The results of the two previous studies were again confirmed. Bannister concluded that since he had found a consistent pattern in three different studies with three different groups at three different hospitals, thought-disordered schizophrenic patients seemed to be a "sub-diagnosis" of schizophrenia. Therefore, he reasoned that studies should describe schizophrenic subjects as either "thought-disordered" or "non-thought disordered," since there were obvious differences between these two categories of subjects. Bannister's reasoning is open to question, however, since the diagnoses of "thought-disordered schizophrenic" and "non-thought-disordered schizophrenic" are rather idiosyncratic and might be unobtainable where staff physicians did not agree on the theory and diagnosis of schizophrenia to which Bannister adheres.

There are no outcome studies dealing with increase in cognitive complexity in patients after psychotherapy. The following studies were presented because they demonstrated that construct changes occur as a result of therapy. All of the studies, except one, dealt with individual therapy. The one study performed in a group setting was unpublished and only a brief summary of it is given below.

Landfield, Stern, and Fjeld (1961) administered the RCRT to 24 University Mental Hygiene Clinic patients before

and after individual therapy. They then developed a content-categories scale with which to rate the RCRT protocols, on "forcefulness," "inconsistency," and "emotional arousal." Their hypothesis was that improvement in psychotherapy would be manifested by an increase in forcefulness and a decrease in inconsistency and emotional arousal. Judges rated the 24 patients as 12 most improved and 12 least improved. Results indicated that increased forcefulness is correlated with a positive change in psychotherapy (biserial $r = .41$, $p < .05$). Lessening of inconsistency and emotional arousal were not independently related to improvement, but in combination they were significantly related ($r = .40$, $p < .05$). This study was especially relevant to our study. Although it dealt with individual therapy patients and content categories, it did demonstrate that changes in constructs occur as a result of therapy.

Sechrest (1962) studied 35 individual therapy patients in an attempt to describe transference. He administered the RCRT to all subjects at the beginning and after six weeks of treatment. One of the role titles to be compared and contrasted was that of the patient's therapist. The hypothesis was that the patients would construe the therapist as a professional person, educated, high in social prestige, mature and dedicated to others. Before and after treatment this hypothesis was found to be significant. The

Freudian hypothesis that the psychotherapy patient will perceive the therapist as similar to some family member was not supported by this study. The therapist was seen predominantly as similar to the patient's family doctor or minister. It seems that most recent experiences in a person's life offer more appropriate dimensions of stimulus similarity than past figures. Sechrest's findings demonstrated no significant differences in the patient's view of the therapist before and after therapy.

Cartwright and Lerner (1963) used the RCRT as part of a study on the improvement of individual client centered therapy. The RCRT was administered to discover the 10 most important constructs in a person's life. A five point rating scale was formed with these constructs and the patient first completed the scale in terms of how he saw himself before treatment and how he would like to be after treatment. The patient's therapist also filled out the scale after two sessions and at the end of treatment in terms of how the patient saw himself. It was found that there was no significant difference between the improved and unimproved cases in the therapist's ability to understand the patient's pre-therapy self-image. However, the therapists understood the post-therapy self-image of the improved patients significantly better than they did that of the unimproved patients.

Twenty university clinic patients were studied by Nawas and Landfield (1963) before and after eight weeks of

individual therapy. Both the patients and their six eclectic therapists were given the RCRT. After each testing session both therapists and patients ranked their constructs in terms of their meaningfulness for understanding people. The top 25 percent of the constructs for each client and therapist were compared and the number of constructs borrowed by the client from his therapist after treatment was totaled. The hypothesis was that clients with the most improvement would show a significant increase in the number of constructs borrowed from their respective therapists. The results were not significant. However, there seemed to be a trend with subjects who improved using more of their own constructs and not borrowing from the therapists' construct system.

Landfield and Nawas (1964) administered the RCRT to 36 individual psychotherapy clients at a university clinic and to the six therapists involved with these patients before and after treatment. As in the previous study (Nawas and Landfield, 1963), all subjects were required to rank order their constructs in terms of importance in understanding people. The top five and bottom five ranks were considered to be the most important in this study. Patients were divided by raters into two groups of 18, a least improved and most improved group. Results indicated that after therapy there was a greater commonality of construct dimensions between patients who improved and their therapists

than patients who did not improve ($p < .05$).

Lundy (1952) in an unpublished study summarized by Bonarius (1964), investigated construct changes in six patients who were engaged in group therapy. Patients were tested several times during the two months of therapy. Lundy did not use the RCRT but a questionnaire based on personal construct theory. Patients were to indicate how each of the five other candidates would answer the questions. Before therapy the patients guessed; in the first week they equated all group members with themselves, and after therapy they could point out differences among fellow group members. There was a gradual increase over the weeks in the patients' ability to differentiate varying personality characteristics of fellow group members.

The Free Response Method of Measuring Personal Constructs

The only study reported which used Crockett's free response method of obtaining constructs was performed by Supnick (1964). This was an unpublished thesis described at length in Crockett's review (1965). Subjects were drawn from two groups, 59 undergraduate students enrolled in Psychology courses and 14 adults taking undergraduate Psychology courses at night.

All subjects responded to an eight role measure of differentiation. The measure required the subject to

identify eight different individuals who were known to him. Each of these people fitted one of eight different categories; half of the others were older than the subject and half were his peers; half were males and half females; half were people he liked and half were people he disliked. Each subject was asked to write down the names of these eight people on separate cards. Then they were allowed to spend three minutes describing each of the eight people as fully as they could in writing.

The number of constructs each subject used in the eight descriptions was counted. Results indicated that subjects significantly used more constructs to describe individuals they liked than to describe those in similar role categories whom they disliked ($p < .05$). Subjects used more constructs to describe peers than to describe older people ($p < .05$), especially others whom the subject liked. And female subjects used more constructs to describe people than did male subjects ($p < .05$).

Results are explained as follows: it is plausible to suppose that a person associates more often with others whom he likes and who are approximately his own age; individuals come to know others of their own sex more than those of the opposite sex; interpersonal relationships are inferred to be of greater functional significance in a woman's life than in a man's (women are more fluent and analytical

in their description of others). Therefore, a woman manifests greater facility in her use of construct descriptions. The author concluded that the evidence supports the proposition that the complexity of an individual's cognitions varies from one role category to another, depending upon the extent of his experiences with people in those role categories.

Problem

Although subject to the limitations of the RCRT which have already been described in detail, an investigation using the Reptest to study psychiatric outpatients pre- and post-therapy was of special interest for the present research. Tippet (1959) administered the Reptest at the beginning and after three months of individual psychotherapy. She reported a therapist influence upon the type of construct which changed. When the therapist emphasized the patient's past, constructs formed on figures who usually play an important part in one's early life were altered. When the therapist emphasized the present, constructs formed on figures who are introduced later in one's life changed. Tippet reported that an emphasis of the present by the therapist brought about an overall discrimination among people and within the construct system itself than an emphasis of the past. This emphasis also brought

about a greater complexity of the verbal construct system as a whole. Tippet was not measuring cognitive complexity as such, but she did find a broadening and greater complexity of constructs after three months of therapy when the therapist emphasized discussions of present relevant people in the patient's life. Inferentially from Kelly's (1955) theory, greater facility in the description of significant others should bring about greater facility in interpersonal interaction.

Several psychological theorists have considered neurosis as resulting from the manner in which the individual sees and understands his environment. Sullivan (1953) had maintained that early interpersonal interactions of neurotic individuals led to a perceptual rigidity in later interpersonal relationships. As Rotter (1954) would describe it, the neurotic person has learned to avoid punishment or obtain gratification on an unreal level since he has developed a faulty definition of goals in dealing with other people and inflexibility in the methods of achieving them. Kelly (1955) viewed the neurotic as a person who has built up a system of personal constructs and then attempts to fit all new experiences into this system. Ellis's (1962) approach is closely related to the above positions in that he regards neurosis as the product of "what the individual tells himself" about his experiences and unfounded beliefs. Other theorists could be cited, but

it suffices for the present purposes to state that neurotic behavior is intertwined with how the individual views and understands other people in his surroundings.

Hypothesizing, therefore, in accord with the theories above, that one of the factors involved in problems in living is a deficiency in interpersonal relations, one of the aims of treatment should be to improve or enhance interpersonal interactions. Improvement of interpersonal relations, according to Kelly's cognitive theory, requires an improved flexibility and facility in verbal description of significant others. Group methods of treatment seem especially conducive to clarifying interpersonal problems since patients are constantly confronting other people and learning how to deal with them. Since interaction in groups is predominantly verbal, a patient develops cognitive skills in describing others and his feelings about others. No previous investigation has considered what happens to cognitive complexity (ability to describe others) as a result of group treatment. In fact, cognitive complexity per se has not been studied within a psychiatric population.

The purpose of the present investigation was to measure whether, after group treatment, open ward hospitalized psychiatric patients would show an increase in ability to describe others by means of interpersonal constructs. A free response method of eliciting constructs, described

previously, was used in order to avoid the problems inherent in adaptations of Kelly's (1955) method. Treatment in this instance consisted of four weeks of Human Relations Training Laboratory (HRTL) exercises or four weeks of Group Psychotherapy (GP). Since these techniques were considered as independent variables, a brief description of the more pertinent similarities and differences between them is required. Daily groups on the HRTL are autonomous (no staff member present), whereas GP patients have a therapist present at daily alternate sessions. Besides the daily leaderless group sessions HRTL patients daily receive one and a half hours of theory from staff members on optimal democratic group processes in the form of short lectures, rating scales and demonstrations, whereas GP patients assimilate group norms from other group members and the informal teaching of their therapist. Procedures common to both groups are honest discussion of problems, listening openly to the comments of others, planning practical action for the future. A divergent emphasis results in that HRTL patients are taught that clarifying their descriptions of each other within the group brings about a greater self knowledge and understanding of others which can be generalized to home situations (multiple rating scales are used to bring about a continuing system of interpersonal evaluation). GP patients, on the other hand, are directed

predominantly to analyze conflicts in the home situation and some possible methods of resolution with minimal emphasis on interpersonal evaluation within group (no rating scales are used). More detailed descriptions of each method are presented in Appendixes B and C.

It was expected that both groups should increase in cognitive complexity after treatment but that HRTL patients would show a greater increase because of the greater emphasis on interpersonal description within group in that form of treatment. According to Supnick's (1964) results for college students, patients in both groups should use more constructs to describe people that they liked than people they disliked and be better able to describe people of the same sex as themselves. Since differentiation is an integral part of cognitive complexity (Bieri and Blacker, 1956), variety of constructs should increase after treatment with greater variety exhibited in describing liked others of the same sex as the subject. In a similar vein, disregarding the sex of the person to be described, a greater variety of constructs should be used to describe people who are liked, and this variety should increase after treatment.

Whether or not patients manifested any cognitive change, it was important to ascertain if independent staff (non-therapist) raters and the patients themselves considered that there had been improvement after four weeks of

treatment. As regards staff ratings, most external behavior observatory scales tend to be oriented to psychotics or severe psychoneurotics and are not specifically applicable to the type of open ward patients which are selected for the HRTL and GP programs. Another deficit of observatory scales is that they usually require the nursing personnel (who are usually the raters) to be very familiar with each individual patient. A scale which required a brief interview was felt to be most appropriate in this situation and one designed for a person with some degree of clinical judgment. Consequently, the ARP, Symptom, History and Vocational Expectancy Ratings, or as it is abbreviated, the "Shaver," was chosen as a measure of adjustment since it has been extensively used in the Patient Evaluation Project of the Veterans Administration and has proved discriminatory with neurotic and psychotic patients (Jenkins, Stauffacher and Hester, 1959; Cohen, Gurel and Stumpf, 1966). The Shaver, then, provided a symptomatic adjustment score before and after treatment. Both groups of patients were expected to be rated as improved at the end of the four weeks. A copy of the Shaver is presented in Appendix D.

Besides obtaining staff ratings of improvement, it was felt necessary to have a measure of self-rating by each patient to avoid possible staff biases. It was important to learn whether the patients themselves reported improvement.

The PBQ (Patient Behavior Questionnaire) is a short scale divided into overall functioning, physical symptoms and psychological symptoms. A copy of the PBQ is presented in Appendix E. The PBQ was chosen as an instrument for this study because it is routinely administered to HRTL patients and in this study it was administered to GP patients also. No published reliability data is available but it has proved valuable in plotting progressive improvement for both HRTL and GP groups (Rothaus, Morton, Johnson, Cleveland and Lyle, 1963).

No previous study has ever compared symptomatic adjustment and cognitive complexity. Implied in Kelly's (1955) theory is the notion that fluidity of interpersonal constructs, or as it has been termed by Bieri (1955) cognitive complexity, indicates a greater degree of personal adjustment. Theoretically, a person who can be more adaptive in various interpersonal situations would manifest fewer symptoms. This study, therefore, will investigate the possible correlation between symptomatic ratings on the Shaver and cognitive complexity.

Previous research with college students (Mayo, 1959; Sechrest and Jackson, 1961; Rosenkrantz, 1961) found no significant correlation between cognitive complexity and intelligence test scores. A question arose as to whether these results were peculiar to the narrow range of intelligence within college populations. It was expected that the

range of intelligence scores within a psychiatric population would be broader and there might be a positive correlation between cognitive complexity and intelligence test scores.

Kelly (1955) considered constructs as tools to predict events, and consequently the more cognitively complex person would have greater predictive control of interpersonal relationships. Although Vannoy (1965) in his factor analytic study found no significant degree of relationship between interpersonal cognitive complexity and other cognitive variables, an area which he did not consider was the possible correlation between attitudinal environmental control and attitudinal predictive power over interpersonal interactions. Rotter's (1966) Internal-External locus of control scale is a means of measuring a person's generalized attitude towards the environment. Rotter's scale consists of 29 pairs of statements; one statement of each pair indicates the attitude that an individual's personal responsible action will result in positive benefits to himself, whereas the other statement proposes that various environmental forces, beyond an individual's control, determine his destiny. People who express the belief that whatever rewards they receive are due to factors beyond their control are labeled externalizers and those who attribute rewards to their own endeavor are labeled internalizers. A person's attitude of external or internal control will determine, according to Rotter, his

behavior in various situations. The scale itself is scored in the direction of externalization, a high score indicating an attitude of external control and a low score an attitude of internal control. This present study tested the hypothesis that high cognitive complexity is related to internalization of control and low cognitive complexity is related to externalization of control. People high in cognitive complexity should tend to have a greater verbal command of interpersonal situations and possibly feel in greater control of other environmental contingencies.

Appendix F supplies a copy of the Rotter scale, or as it has been labeled at the Houston VA, the Social Reaction Inventory (SRI). Appendix G gives more detailed information about the scale.

Bannister (1960) found that he could not distinguish between diagnostic categories on a "consistency of construct measure." No previous study has considered such a distinction in terms of cognitive complexity. The present investigation, therefore, assessed possible differences in cognitive complexity within the diagnostic categories represented in the total sample.

Since increase in cognitive complexity was expected as a result of group treatment, it was important to ascertain whether this cognitive change contributed to favorable readjustment to the home environment after treatment. A follow-up

letter was sent to all patients two months after completion of four weeks of treatment. Items included in the follow-up were symptomatic adjustment, employment at the time, and possible interpersonal improvement.

The relationship between various processes within the group and cognitive complexity has not been considered in previous research. The processes of participation in group discussion, prominence within the group, tendency to engage in conflict and hyperdependency or passivity and their relationship to cognitive complexity were selected for the present investigation. These measures were only available for the HRTL closed groups. HRTL patients ranked each other on group participation each day and a cumulative score was available for the four weeks. The factors of prominence, conflict and hyperdependency (O'Connell, Rothaus, Hanson and Moyer, 1969) were derived from the Group Behavior Questionnaire (GBQ) which HRTL patients filled out after sessions 5, 10, 15, and 20. From the four administrations it is possible to obtain a score on each factor for each patient within the group. A copy of the GBQ is presented in Appendix H.

Hypotheses

The following hypotheses were chosen for investigation:

- a. After four weeks of treatment patients from the HRTL would supply a greater number of constructs in describing significant others than patients in Group Psychotherapy for four weeks. HRTL techniques place more direct emphasis on clarifying interpersonal descriptions within the group, where GP (as practiced on Ward 612) is more oriented toward individual problem solving in reference to the home environment.
- b. Patients from both groups would show an increase in total number of constructs after treatment. One of the aims of both treatments should be to better interpersonal relationships by increasing cognitive adaptation.
- c. Patients in both groups would use more constructs to describe people they liked than people they disliked and use more constructs to describe people of the same sex as themselves.
- d. Both groups would show an increase in variety of constructs after treatment and would exhibit more variety in describing other people they liked than others they disliked, and more variety in describing males than females.
- e. If sex of the person to be described is disregarded, patients from both groups would use a greater variety of constructs to describe people they liked rather than people they disliked, and variety of constructs should increase with treatment.
- f. Patients' symptomatic scores on staff ratings and self-ratings would be significantly lower after four weeks of treatment for both groups.
- g. An inverse correlation would exist between total number of constructs and the Shaver symptomatic rating scale before and after treatment. The correlation should be greater after treatment.
- h. A significant correlation would be found between cognitive complexity and intelligence test scores within this psychiatric population.
- i. An inverse correlation between Rotter I-E scores and cognitive complexity would be obtained. The more complex subject would feel in greater control of his environment and consequently obtain a lower score on the Rotter.

- j. There would be no difference among diagnostic groups represented in the sample as regards cognitive complexity.
- k. Patients who showed an increase in cognitive complexity would report better personal adjustment on a two month follow-up, i.e. they would be feeling better, be working, be getting along better with people.
- l. A positive correlation would be found between cognitive complexity and the sociometric factors of prominence and conflict, and a negative relationship between cognitive complexity and hyperdependency. This hypothesis applies to HRTL patients only since data was available only for them.
- m. The thirteenth hypothesis was that there would be a positive correlation between cognitive complexity and daily participation in group sessions. This data again was only available for HRTL patients.

CHAPTER II

METHOD

Subjects

Subjects were 80 open ward male neuropsychiatric patients, 40 of whom were from Ward 210 (HRTL) and 40 from Ward 612 (GP), at the Houston Veterans Administration Hospital. Their diagnoses ranged from anxiety reaction to schizophrenic reaction. Patients for this study were accepted as they were assigned to groups on either program, i.e., there was no random selection except that patients on the ward at the time were used as participants. Patients were tested before and after the fourth week of the programs. Experimental measures were presented as a battery of tests administered to new patients.

Age, education and I.Q. were not controlled, since it was felt both groups would be very similar on these measures. A tabulation of this data is presented in Appendix I, and no significance was found between the two groups on these variables. Other variables described in Appendix I are race, number of hospitalizations, marital status, employment status and diagnosis.

Patients from several groups on both wards were involved in order to make up a total of 40 subjects. At

times, patients leave either program before a four week period. For the purposes of this study, patients for whom pre- and post-therapy data were not available were excluded from the sample.

Free Response Cognitive Complexity Measure

Subjects were presented a card containing the following role titles:

1. A female you dislike
2. A male you dislike
3. A male you like
4. A female you like
5. A female you dislike
6. A male you dislike
7. A male you like
8. A female you like

Eight sheets of ruled paper numbered from one to eight were presented to the subject. He was told to write one name for these eight different people on each sheet. The subjects were allowed three minutes to describe the qualifying characteristics of each person. Scoring was done by counting the number of adjectives and adjectival phrases (constructs) on each sheet and summing totals for sheets one and five, two and six, three and seven, four and eight. Five scores were obtained.

1. Number of constructs describing disliked females
2. Number of constructs describing disliked males

3. Number of constructs describing liked males
4. Number of constructs describing liked females
5. Total number of constructs (Cognitive Complexity Score)

Another five scores were obtained by counting the number of different constructs on the two matching role title sheets:

1. Number of different constructs describing disliked females
2. Number of different constructs describing disliked males
3. Number of different constructs describing liked males
4. Number of different constructs describing liked females
5. Total number of different constructs describing the four role titles

After the completion of the four weeks of treatment, new sheets with the names of the same eight people written on them were given to the subject. Again three minutes were allowed for the description of the eight persons. The same scores were extracted from the data.

This free response method was based on that of Crockett (1965). It retained measurement of differences in descriptions of people varying in sex and valence. The dimension of age of the person to be described was excluded since it was not especially pertinent to our purposes with a predominantly middle-aged Veteran population. Subjects were asked to name people fitting four pairs of matching role titles, allowing for differentiation within a role title.

The Shaver

The Shaver, the staff-rating described previously, requires a fifteen to twenty minute interview by a trained rater. Half of the interview is concerned with the patient's self-report and half with the judgment of the rater. A total adjustment score is obtained by combining these two scores. There are a total of 40 items in all, but generally only 32 are used.

Two advanced psychology trainees whose reliability with the instrument was established beforehand were the raters. One of the raters interviewed the patient before and after four weeks of treatment.

PBQ

The self-rating scale, PBQ (Patient Behavior Questionnaire), consists of three parts. The first part is a 10 question rating scale with five choices per question giving a general indication of how the patient feels he is functioning. It contains questions on anxiety, depression, lack of energy, etc. Answers are scored on a scale from five to one. The second part consists of a list of 12 body parts with the subject checking a column of "much trouble," "some trouble," and "no trouble." The columns are scored two, one and zero respectively. The third part consists of seven

items which are considered psychological symptoms with the subject checking a column of "much trouble," "some trouble," and "no trouble." Patients filled out the PBQ before and after treatment.

Intelligence

The Army General Classification Test (AGCT, 1960 Civilian Edition, SRA) was used as a measure of intellectual functioning since it is routinely administered to all patients before they begin the HRTL program. For the purpose of this study GP patients were also given the AGCT.

Rotter I-E

The Rotter I-E (or SRI) is a self-administered scale. Twenty-three of the 29 paired forced choice items are scored in the direction of externalization, and therefore, low scores indicate internalizers and high scores externalizers. This study tested the hypothesis that high cognitive complexity is related to internalization of control and low cognitive complexity is related to externalization of control.

The Follow-Up

A follow-up letter and questionnaire was sent to all patients two months after they had completed four weeks of

treatment. The follow-up questionnaire consisted of a 10 item rating scale of symptomatic adjustment, a question concerning employment, a question about degree of improvement (if any) from treatment, and five items concerning possible improvement in interpersonal relations. A copy of the follow-up letter and questionnaire is presented in Appendix J. The symptomatic adjustment scale consisted of the first part of the PBQ.

Sociometric Rating

The GBQ (Group Behavior Questionnaire) was administered to HRTL patients only. It provided the group process scores on the factors of prominence, conflict and hyper-dependency. It was not used with GP patients since the groups are open and older members of a group often did not belong to this experimental population. Though applicable to HRTL patients only, the GBQ was included in this study to provide insight into the relationship between cognitive complexity and group process.

Participation Ratings

At the end of each daily group session, HRTL patients rated each other on participation on a scale from one to nine. A total participation score was computed for each patient for the 20 group sessions (four weeks). Daily

participation ratings for GP patients were not obtained since individuals are "on focus" to discuss their problems on a particular day and may participate very much on that day, whereas they may not participate very much when someone else is "on focus."

Procedure

The AGCT, PBQ and Rotter I-E were administered as parts of the battery before the HRTL exercises or GP programs began. During this time each patient was also given the Free Response Personal Construct Measure singly or in groups of three depending when patients were available. Directors of both the Ward 210 and Ward 612 programs required that the research was planned so as not to interfere with normal routine. Physical examinations, laboratory tests, intake interviews and certain ward functions took precedence over research testing. Since it took several days to assemble a group on Ward 210, patients were all tested before beginning the program. Groups on Ward 612 are open, and patients are usually placed in a group on the day they enter the ward; therefore most patients had attended one or more group sessions before research testing was administered.

Patients were told research was being done to study certain aspects of what people learned in group therapy. Participation was voluntary (there were only three refusals).

They were told that there would be testing presently, after four weeks, and that they would receive a short two month follow-up questionnaire.

The following instructions were read to patients for the Personal Construct measure:

This is a new test given to everyone beginning this program. On this card are descriptions of eight types of people. I want you to write down the number of each description and the first and last names of someone you know who fits that description, on the top line of each of these sheets, one number and one name on each sheet. These names will be kept in the strictest confidence, so feel free to write any names you want. After you have written all the names, I will give you three minutes to describe each individual in writing. I want you to describe as many of his or her personality characteristics, such as good, kind, etc., as you can within the three minutes. I am not interested in physical descriptions but in good and bad qualities of the persons. Do you have any questions?

Instructions were given to all subjects in the same manner. The experimenter used a stop watch to record the three minutes allowed for each description. After the subject had completed all eight descriptions, the experimenter collected the sheets and recorded the scores. He also recorded the eight names on eight new sheets for the session after completion of four weeks of HRTL exercises or four weeks of GP.

After four weeks of treatment were completed, the new sheets were supplied to the subject with the names of the people he described in the first session written on them. The instructions were:

As you remember, in a previous session you were asked to describe eight people. I have prepared eight new sheets with the names of the same eight people written on them. Again you will have three minutes to describe each person. As you remember, I want you to describe his or her personality characteristics, such as good, bad, kind, etc. I am not interested in physical descriptions but in good or bad qualities of the persons. Do you have any questions?

Constructs on these cards were scored according to the manner described above.

One of two advanced psychology trainees rated all subjects on the Shaver pre and post four weeks of treatment. Interviews with each patient lasted approximately 15 minutes. Since the patients were interviewed upon their entrance on the wards and after four weeks of treatment, and patients talked in terms of receiving or having received treatment, it was impossible to prevent interviewers from knowing that it was a pre or post interview. It unavoidably also happened that often the same rater rated an individual subject both pre and post. However, ratings were four weeks apart and pre ratings were no longer available to the rater during the post interview.

The follow-up letter and questionnaire were mailed to each patient in the sample two months after the completion of treatment. Patients who did not answer the first follow-up were sent a second letter two weeks later with a personal note expressing appreciation for their cooperation.

Sociometric ratings were administered to Ward 210 patients after sessions 5, 10, 15, 20. A cumulative total

score was obtained for the four week program.

Daily participation ratings for Ward 210 patients were assembled and a total score for the 20 sessions during the program was obtained.

An attempt was made to maintain a friendly relationship with all subjects in the sample. AGCT scores were discussed with each patient who so desired and certain demographic variables were clarified in conversation, although most demographic data and diagnoses were obtained from the patients' charts.

CHAPTER III

RESULTS

Results will be presented in the same order as the hypotheses. First to be considered are the hypotheses concerning total number of constructs produced by both groups before and after treatment. The Personal Construct Measure allowed for four pairs of identical role titles to be identified. A sum of the constructs produced was computed for each pair, yielding four scores per subject both before and after treatment. Means and standard deviations for these scores for both groups of subjects are presented in Table 1.

Data concerned with total number of constructs was analyzed by means of a four way analysis of variance with subjects (S) nested in the treatment (T) factor and repeated measures on three factors Pre-Post (P), Sex (X) and Valence (V = Like-Dislike) (Winer, p. 319ff.).

Table 2 contains a summary of the analysis of variance for the total number of constructs pre and post treatment for both groups. Ward 210 (HRTL)¹ patients did not

¹Ward 210 patients and HRTL patients are synonymous; Ward 612 patients and GP patients are synonymous.

TABLE 1

MEANS AND STANDARD DEVIATIONS FOR TOTAL NUMBER OF
PATIENT CONSTRUCT SCORES PRE AND POST TREATMENT

Pre Treatment Scores

		LM	LF	DM	DF	Total
Ward 210	M	10.80	13.33	9.88	7.55	41.55
	SD	6.83	8.46	6.37	4.66	24.98
Ward 612	M	8.30	9.68	7.25	5.90	31.13
	SD	4.38	5.28	3.71	3.36	15.87

Post Treatment Scores

		LM	LF	DM	DF	Total
Ward 210	M	8.95	10.75	8.20	6.43	34.33
	SD	5.59	6.81	4.83	3.92	20.42
Ward 612	M	7.53	9.33	7.15	5.63	29.58
	SD	3.68	4.30	3.08	2.66	12.99

Key

LM = Like Male
 LF = Like Female
 DM = Dislike Male
 DF = Dislike Female

TABLE 2

ANALYSIS OF VARIANCE OF NUMBER OF CONSTRUCTS PRE AND POST
TREATMENT FOR PATIENTS ON WARD 210 AND WARD 612

Source	d.f.	MS	F	P
Treatment (T)	1	571.91	3.31	
Subjects (S)	78	172.59		
Pre-Post (P)	1	190.31	18.60	.001
TxP	1	81.94	8.00	.01
SxP	78	10.23		
Sex (X)	1	.69	.53	
TxX	1	.02	.01	
SxX	78	1.29		
Valence (V)	1	1068.64	63.82	.001
TxV	1	20.66	1.23	
SxV	78	16.74		
PxX	1	.02	.03	
TxPxX	1	.45	.93	
SxPxX	78	.48		
PxV	1	14.10	6.29	.05
TxPxV	1	1.91	.85	
SxPxV	78	2.24		
XxV	1	523.81	118.27	.001
TxXxV	1	14.10	3.18	
SxXxV	78	4.43		
PxXxV	1	1.13	1.37	
TxPxXxV	1	8.79	10.56	.005
SxPxXxV	78	.83		

produce a greater significant number of constructs after treatment than Ward 612 (GP) patients, as had been predicted. Therefore, Hypothesis (a) was not confirmed. There was a significant difference in number of constructs produced before and after four weeks of treatment for both groups (P), $p < .001$. An examination of the pre treatment mean $\bar{M} = 9.08$ and post treatment mean $\bar{M} = 7.99$ showed that there was a decrease rather than an increase in constructs. Consequently, Hypothesis (b) was not supported since the effect occurred in the opposite direction from what had been predicted.

Patients did not demonstrate a significant difference in describing males as opposed to females (X) but were better able to describe people they liked than people they disliked (V) $p < .001$. Hypothesis (c) was consequently partially confirmed. The Sex by Like-Dislike significant interaction $p < .001$ supplied further information for this hypothesis. More constructs were used to describe liked females than any other role title, whereas fewest constructs were used to describe disliked females, and there was very little difference in the number of constructs produced to describe liked males versus disliked males.

Other significant interactions, though not directly related to the hypotheses, were discovered. Treatment by Pre-Post was significant $p < .01$. An explanation is that,

although both groups of patients evidenced a decrease in number of constructs after treatment, Ward 612 subjects manifested a smaller decrease. In other words, Ward 612 patients were more consistent in number of constructs produced before and after treatment. Pre-Post by Valence (Like-Dislike) was also significant $p < .05$, indicating a greater difference in the pretesting between number of like versus dislike constructs than in the post-testing. A complex relationship which was difficult to describe was the fourth order interaction, Treatment by Pre-Post by Sex by Valence, $p < .005$). A partial rationale can be given by the fact that this interaction was a combination of two highly significant interactions, Treatment by Pre-Post $p < .001$ and Sex by Valence $p < .001$. An examination of the group means involved implicated that Ward 612 patients maintained consistency of constructs (TxP) across the Sex-Valence relationship; that is, although relationships of more constructs used to describe liked females, least used to describe liked females, and little difference between liked males versus disliked males was maintained, the disparity between these factors was less for Ward 612 patients than Ward 210 patients.

The next analysis considered the number of different constructs used to identify each role title. Each subject was asked to identify eight role figures consisting of four

pairs which were identical in sex and valence. It was possible, therefore, to obtain a score for the different number of constructs used in describing identical role titles. Thereby, four scores were obtained pre and post for both groups of patients. Table 3 presents means and standard deviations of these scores for both groups of patients. Data was analyzed by the same type of analysis of variance as that of Table 1.

Table 4 presents the summary of the analysis of variance for number of different constructs. A treatment effect was significant for the different number of constructs produced by the two groups $p < .05$. Ward 210 patients used a greater variety of constructs in describing others than Ward 612 patients. However, a greater number of different constructs was used before treatment than after treatment $p < .005$, contrary to what had been expected, $M_{pre} = 7.41$, $M_{post} = 6.76$. Consequently, that part of Hypothesis (d) which predicted a greater number of different constructs after treatment was not supported. Subjects utilized significantly more different constructs to describe females than males, $p < .001$, and used more different constructs to describe people they liked than people they disliked, $p < .001$. Consequently, the second part of Hypothesis (d) concerning a greater variety of constructs being used to describe liked people was confirmed but the part involving

TABLE 3

MEANS AND STANDARD DEVIATIONS FOR DIFFERENT NUMBER OF
PATIENT CONSTRUCT SCORES PRE AND POST TREATMENT

Pre Treatment Scores

		LM	LF	DM	DF	Total
Ward	M	8.68	10.97	7.63	6.97	34.25
210	SD	5.49	6.79	4.54	3.94	18.31
Ward	M	6.43	8.03	5.48	5.13	25.07
612	SD	3.54	4.47	2.89	2.74	11.69

Post Treatment Scores

		LM	LF	DM	DF	Total
Ward	M	7.55	9.10	6.65	6.57	29.87
210	SD	4.77	5.78	4.27	4.55	13.64
Ward	M	6.15	8.10	5.38	4.63	24.26
612	SD	2.91	3.57	2.33	2.28	10.87

Key

LM = Like Male
 LF = Like Female
 DM = Dislike Male
 DF = Dislike Female

TABLE 4

ANALYSIS OF VARIANCE OF DIFFERENT NUMBER OF CONSTRUCTS
PRE AND POST TREATMENT FOR PATIENTS ON
WARD 210 and WARD 612

Source	d.f.	MS	F	P
Treatment (T)	1	549.45	4.56	.05
Subjects (S)	78	120.46		
Pre-Post (P)	1	66.95	9.79	.01
TxP	1	31.65	4.67	.05
SxP	78	6.84		
Sex (X)	1	77.70	50.60	.001
TxX	1	1.14	.74	
SxX	78	1.54		
Valence (V)	1	686.83	63.08	.001
TxV	1	.35	.03	
SxV	78	10.09		
PxX	1	.13	.22	
TxPxX	1	.04	.07	
SxPxX	78	.56		
PxV	1	3.75	2.10	
TxPxV	1	10.25	5.73	.05
SxPxV	78	1.79		
XxV	1	212.75	106.82	.001
TxXxV	1	.02	.01	
SxXxV	78	1.99		
PxXxV	1	.83	1.04	
TxPxXxV	1	10.76	13.54	.001
SxPxXxV	78	.79		

a greater variety of constructs used to describe people of the same sex was not confirmed. The Sex by Valence significant interaction, $p < .001$, supplies further information on the relationship of Like-Dislike and Sex. A greater number of different constructs was used to describe liked females than any other role figure. Also, there was more consistency in the number of different constructs used to describe liked or disliked males than between liked and disliked females. Disliked females were described with the smallest variety of constructs.

As in total number of constructs, Ward 612 patients were more consistent in the number of different constructs used before and after treatment than Ward 210 patients. Treatment (T) by Pre-Post (P) interactions allows us to draw this conclusion $p < .05$. The significant interaction $T \times P \times V$, $p < .05$, leads to the conclusion that there is a greater difference between Ward 210 than Ward 612 patients in number of different constructs pre than post, and this difference was more apparent in describing others who are liked than others who are disliked. As with total number of constructs there was a significant fourth order relationship, $T \times P \times X \times V$, $p < .001$, for different number of constructs. Again, it was partially explainable from the fact that it was a combination of $T \times P$, $p < .005$, and $X \times V$, $p < .001$ significant interactions. Further explanation given for total

number of constructs was also applicable (see p. 56).

The next area of concern was number of different constructs used to describe liked versus disliked people. Since eight role figures were identified by each subject, four who were liked and four who were disliked, it was possible to obtain two scores pre and post treatment for each subject on the dimension of number of different constructs for people liked versus people disliked. Means and standard deviations for this data are represented in Table 5.

Table 6 presents the result of the three way analysis of variance with subjects (S) nested in the treatment factor (T) and repeated measures on two factors Pre-Post (P) and Valence (V). This is the same basic design used in previous analyses.

Results indicated that Ward 210 patients did produce a greater number of varied Like-Dislike constructs than Ward 612 patients, $p < .05$. However, more varied Like-Dislike constructs were elicited before treatment than after treatment, $p < .05$, contrary to what had been predicted. Therefore, the second part of Hypothesis (e) was not supported and occurred in the opposite direction of expectations. Subjects used a greater variety of constructs to describe people liked than people disliked, $p < .001$, regardless of the sex of the role figure. The first part of Hypothesis (e) was therefore confirmed at a highly significant level.

TABLE 5
MEANS AND STANDARD DEVIATIONS OF NUMBER OF DIFFERENT
CONSTRUCTS USED FOR LIKE-DISLIKE,
PRE AND POST TREATMENT

		PRE		POST	
		L	D	L	D
Ward	M	16.08	12.30	14.03	11.22
210	SD	9.60	7.23	8.97	7.62
Ward	M	11.50	8.95	11.82	8.32
612	SD	6.16	4.40	5.49	3.65

TABLE 6
ANALYSIS OF VARIANCE OF DIFFERENT NUMBER OF CONSTRUCTS
USED FOR LIKE-DISLIKE, PRE AND POST TREATMENT

Source	d.f.	MS	F	P
Treatment (T)	1	848.25	5.04	.05
Subjects (S)	78	168.34		
Pre-Post (P)	1	58.65	4.81	.05
TxP	1	39.90	3.27	
SxP	78	12.19		
Valence (V)	1	796.95	84.81	.001
TxV	1	1.38	.14	
SxV	78	9.39		
PxV	1	.03	.01	
TxPxV	1	18.53	8.88	.01
SxPxV	78	2.08		

The triple interaction $TxPxV$, $p < .01$, as in the previous analysis, again demonstrated that there was a greater difference between Ward 210 than Ward 612 patients in number of different constructs pre than post treatment, and this difference was more apparent in describing other people who are liked than other people who are disliked.

Whether subjects increased in cognitive complexity or not as a result of treatment, it was important to know whether staff members would see them as improved and whether they could see themselves as improved. The means and standard deviations on these measures, the "Shaver" and the three parts of the PBQ are supplied in Table 7. Table 8 presents the results for analyses of variance with subjects nested in the treatment factor and repeated measures on one factor (Winer, p. 302ff).

Results for the Shaver indicated that the staff definitely rated patients as improved, $p < .001$ after treatment. Both Ward 210 and Ward 612 patients were rated as Improved with no significant difference between the two groups. The patients rated themselves as improved after treatment on the PBQ Feeling measure, $p < .001$. There was also significant improvement on how the patients rated themselves after treatment on somatic complaints, $p < .005$ and psychological complaints, $p < .001$. Hypothesis (f) was therefore confirmed at a very high level of confidence.

TABLE 7a

MEANS AND STANDARD DEVIATIONS PRE AND
POST TREATMENT ON THE "SHAVER"

		PRE	POST
Ward	M	63.38	60.42
210	SD	7.18	7.42
Ward	M	66.40	59.68
612	SD	8.00	6.99

TABLE 7b

MEANS AND STANDARD DEVIATIONS PRE AND
POST TREATMENT ON THE PBQ

		PRE			POST		
		Feelings	SSS	PSS	Feelings	SSS	PSS
Ward	M	31.87	5.90	7.97	26.87	5.40	5.52
210	SD	6.00	4.01	3.54	6.64	4.27	3.40
Ward	M	31.63	5.22	6.30	25.97	4.35	4.67
612	SD	7.24	2.95	3.14	4.82	2.28	2.43

Key

SSS = Somatic Complaints
PSS = Psychogenic Complaints

TABLE 8a

ANALYSIS OF VARIANCE FOR BOTH GROUPS ON
THE "SHAVER," PRE AND POST TREATMENT

Source	d.f.	MS	F	P
Treatment (T)	1	74.25	.74	
Subjects (S)	78	99.88		
Pre-Post (P)	1	2153.55	215.64	.001
TxP	1	15.00	1.50	
SxP	78	9.98		

TABLE 8b

ANALYSIS OF VARIANCE FOR BOTH GROUPS ON
PBQ FEELINGS, PRE AND POST TREATMENT

Source	d.f.	MS	F	P
Treatment (T)	1	13.22	.19	
Subjects (S)	78	68.99		
Pre-Post (P)	1	1134.22	125.56	.001
TxP	1	4.22	.46	
SxP	78	9.03		

TABLE 8 (continued)

c

ANALYSIS OF VARIANCE FOR BOTH GROUPS ON
PBQ SOMATIC, PRE AND POST TREATMENT

Source	d.f.	MS	F	P
Treatment (T)	1	29.75	1.32	
Subjects (S)	78	22.41		
Pre-Post (P)	1	18.90	11.07	.005
TxP	1	1.40	.82	
SxP	78	1.70		

TABLE 8d

ANALYSIS OF VARIANCE FOR BOTH GROUPS ON PBQ
PSYCHOLOGICAL, PRE AND POST TREATMENT

Source	d.f.	MS	F	P
Treatment (T)	1	63.75	3.55	
Subjects (S)	78	17.94		
Pre-Post (P)	1	166.05	80.63	.001
TxP	1	6.80	3.30	
SxP	78	2.05		

The next area of interest was a possible correlation between the Shaver adjustment ratings and total cognitive complexity score for each subject. Means and standard deviations for the cognitive complexity scores are given in Table 1, and the Shaver means and standard deviations are supplied in Table 7. Table 9 provides the Person correlations. None of the correlations between the Shaver pre or post and cognitive complexity were significant. However, all but one of these relationships was inverse, which means that a low symptom score tended to be associated with a high cognitive complexity score and treatment increased this tendency. Hypothesis (g), however, was not confirmed since no inverse correlation between symptoms and cognitive complexity was significant.

Hypothesis (h) was confirmed since a significant positive correlation was found for both groups between ACCT I.Q. and cognitive complexity, $p < .01$, Table 10. Means and standard deviations for I.Q. scores of each group are presented in Appendix I.

Table 11 presents the results for the correlation between the Rotter I-E (SRI) and cognitive complexity. Only Ward 612 patients manifested the inverse expected relationship to a significant degree, $p < .02$. When both groups are considered, this relationship no longer exists. Therefore, Hypothesis (i) was only confirmed as regards Ward 612 patients and not for all 80 subjects.

TABLE 9

CORRELATIONS BETWEEN "SHAVER" PRE TREATMENT AND COGNITIVE
COMPLEXITY AND "SHAVER" POST TREATMENT AND
COGNITIVE COMPLEXITY FOR BOTH GROUPS

Source	r
Ward 210 CC Pre and Shaver Pre	.04
Ward 612 CC Pre and Shaver Pre	-.17
Both Wards CC Pre and Shaver Pre	-.01
Ward 210 CC Post and Shaver Post	-.08
Ward 612 CC Post and Shaver Post	-.26
Both Wards CC Post and Shaver Post	-.14

CC = Cognitive Complexity

TABLE 10

CORRELATIONS BETWEEN AGCT I.Q. AND COGNITIVE
COMPLEXITY (PRE) FOR BOTH GROUPS

Source	r	P
Ward 210	.39	.02
Ward 612	.58	.01
Both Groups	.43	.01

TABLE 11

CORRELATION BETWEEN ROTTER I-E (PRE TREATMENT)
AND COGNITIVE COMPLEXITY (PRE TREATMENT)

Source	r	P
Ward 210	-.06	.02
Ward 612	-.36	
Both Groups	-.11	

Analysis of possible differences in cognitive complexity between diagnostic groups is considered next.

Table 12 presents the means and standard deviations of cognitive complexity scores for the five diagnostic categories included in the total sample (HRTL and GP patients combined).

TABLE 12

MEANS AND STANDARD DEVIATIONS OF COGNITIVE COMPLEXITY
SCORES (PRE TREATMENT) FOR DIAGNOSTIC CATEGORIES

	1	2	3	4	5
	A.R.	D.R.	P.D.	A.	S.
	N=27	N=21	N=15	N=8	N=9
M	35.48	39.66	30.73	40.87	41.55
SD	24.52	21.76	13.97	18.21	21.01

Key

A.R. Anxiety
D.R. Depressive Reaction
P.D. Personality Disorder

A. Alcoholic
S. Schizophrenic

The category "Personality Disorder" includes those individuals diagnosed as sociopathic personalities and the various types of passive-aggressive personalities. Only the first three categories were analyzed by means of a single-factor analysis of variance (Model I, Winer, p. 56ff.), since it was judged that the last two groups were too small to be considered representative samples. Results in Table 13 indicated that there was no significant difference between the three diagnostic categories, or their various possible combinations. Hypothesis (j) was, therefore, confirmed.

Hypothesis (k) was not confirmed since subjects did not increase in cognitive complexity after treatment and hence there was no way of ascertaining how this cognitive change might have affected overall follow-up improvement. The follow-up questionnaires for Ward 210 and Ward 612 are considered separately since Ward 612 patients remained in the hospital longer and many had just been discharged when they received the follow-up. Twenty-nine Ward 210 patients answered the follow-up questionnaire. Table 14 presents means and standard deviations for PBQ Feeling scores post treatment and for the two month follow-up. Table 14b gives results of a one way analysis of variance of these PBQ scores and no significant difference was found. These 29 subjects as a group did not report feeling significantly better or worse when they completed the four weeks of

TABLE 13a

ANALYSIS OF VARIANCE OF COGNITIVE COMPLEXITY SCORES FOR
PATIENTS DIAGNOSED ANXIETY REACTION, DEPRESSIVE
REACTION AND PERSONALITY DISORDER

Source	d.f.	MS	F
Total	62	460.32	
Groups	2	350.79	.76
Error (G)	60	463.97	

TABLE 13b

ANALYSIS OF VARIANCE OF COGNITIVE COMPLEXITY SCORES
FOR PATIENTS DIAGNOSED ANXIETY REACTION VERSUS
DEPRESSIVE REACTION AND PERSONALITY DISORDER

Source	d.f.	MS	F
Total	62	460.32	
Groups	1	3.31	.01
Error (G)	61	467.81	

TABLE 13c

ANALYSIS OF VARIANCE OF COGNITIVE COMPLEXITY SCORES
FOR PATIENTS DIAGNOSED ANXIETY REACTION
VERSUS DEPRESSIVE REACTION

Source	d.f.	MS	F
Total	47	538.51	
Groups	1	206.90	.38
Error (G)	46	545.73	

TABLE 13 (continued)
d

ANALYSIS OF VARIANCE OF COGNITIVE COMPLEXITY SCORES
FOR PATIENTS DIAGNOSED ANXIETY REACTION
VERSUS PERSONALITY DISORDER

Source	d.f.	MS	F
Total	41	453.24	
Groups	1	217.39	.47
Error (G)	40	459.14	

TABLE 13e

ANALYSIS OF VARIANCE OF COGNITIVE COMPLEXITY SCORES
FOR PATIENTS DIAGNOSED DEPRESSIVE REACTION
VERSUS PERSONALITY DISORDER

Source	d.f.	MS	F
Total	35	368.74	
Groups	1	698.29	1.95
Error (G)	34	359.05	

treatment. Examination of raw scores indicated that certain individuals definitely felt worse. Table 14 is a listing of the self-report responses made by the 29 Ward 210 patients. Less than half were employed, although admittedly four were still hospitalized. Approximately half stated that they were feeling better than before treatment. Less than half felt their interpersonal relationships had improved overall. Approximately half felt they had experienced a significant personality change.

Twenty-seven Ward 612 patients returned the follow-up questionnaire. Table 14 gives the means and standard deviations for the PBQ Feeling scores post treatment and at the two month follow-up. On the two month follow-up these 27 patients report they are feeling much the same as after one month of treatment, Table 14. Table 14 presents the responses of the 27 Ward 612 patients. Only half were employed, more than half were feeling better than before treatment, less than half felt their interpersonal relationships had improved, about half reported significant personality change.

In terms of employment and feeling better than before treatment, Ward 612 patients reported themselves as better than Ward 210 patients on the follow-up. However, several Ward 612 patients had just left the hospital since their treatment lasted two and one-half to three months, and it is uncertain whether their adjustment continued.

TABLE 14a

MEANS AND STANDARD DEVIATIONS FOR PBQ FEELINGS POST
TREATMENT AND AFTER TWO MONTH FOLLOW-UP
(N=29, WARD 210)

	Post Treatment	Follow-up
M	26.51	28.93
SD	6.59	5.23

TABLE 14b

ANALYSIS OF VARIANCE FOR PBQ FEELINGS POST
TREATMENT AND AFTER TWO MONTH FOLLOW-UP
(N=29, WARD 210)

Source	d.f.	MS	F
Between Groups	1	84.90	2.31
Error (within)	56	36.37	
Total	57		

TABLE 14c

SELF REPORT RESPONSES FOR FOLLOW-UP QUESTIONS
(N=29, WARD 210)

Employed	12
Not Employed	17 (4 still in hospital)
Feeling better than before treatment	15
Feeling same as before treatment	12
Feeling worse than before treatment	2
Interpersonal relationships better	11
Interpersonal relationships same	12
Interpersonal relationships partially improved	6
Significant personality change Yes	14
No	15

Four more patients were able to be contacted by phone. Two were working but felt their adjustment was precarious. Two were not working and were having great difficulty with alcohol.

TABLE 14d

MEANS AND STANDARD DEVIATIONS FOR PBQ FEELINGS POST
TREATMENT AND AFTER TWO MONTH FOLLOW-UP
(N=27, WARD 612)

	Post Treatment	Follow-up
M	25.44	25.11
SD	5.23	7.69

TABLE 14e

ANALYSIS OF VARIANCE FOR PBQ FEELINGS POST
TREATMENT AND AFTER TWO MONTH FOLLOW-UP
(N=27, WARD 612)

Source	d.f.	MS	F
Between Groups	1	1.50	.34
Error (within)	52	44.31	
Total	53		

TABLE 14f

SELF REPORT RESPONSES FOR FOLLOW-UP QUESTIONS
(N=27, WARD 612)

Employed	16	
Not Employed	11 (5 still in hospital)	
Feeling better than before treatment	17	
Feeling same as before treatment	8	
Feeling worse than before treatment	2	
International relationships better	11	
International relationships same	12	
International relationships partially improved	4	
Significant personality change	Yes 14	
	No 13	

Three more patients were able to be contacted by phone. Two were working and doing fine. One was not working, yet claimed he was doing well but was too nervous to work.

Scores on the GBQ (Sociometric Ratings) for sessions 5, 10, 15, and 20 were summed and 18 scores obtained for each of the Ward 210 subjects. An orthogonally rotated varimax factor analysis was used to obtain factor loadings on three factors for 58 Ward 210 subjects, 40 of whom belonged to this research sample. Admittedly, the sample was small, but factor loadings were almost identical to a previous analysis with 721 subjects (O'Connell, Rothaus, Hanson, and Moyer, 1969). Table 15 presents the factor loadings on this analysis. As in previous research, questions 1, 4, 7, 9, 11, 14, 16 and 17 loaded on Factor I, Prominence; questions 3, 8, 10, 13, 14 and 15 loaded on Factor II, Conflict; questions 2, 5, 6, 12 and 18 loaded on Factor III, Hyperdependency. Question 14 loaded equally on Factor I and Factor II, and it was retained in this analysis because it had been retained in previous studies. Factor scores on the three factors were obtained for each of the 40 Ward 210 patients involved in this study. A Pearson product-moment correlation was then computed between the three factor scores for each subject and his cognitive complexity score. Results are presented in Table 16. There is a significant correlation between Factor II, Conflict, and cognitive complexity, $p < .02$, as had been predicted. The relationship between Factors I and III and cognitive complexity was not significant. Consequently, Hypothesis (1) was

TABLE 15

FACTOR LOADINGS OF THE SOCIOMETRIC RATINGS FOR
PROMINENCE, CONFLICT AND HYPERDEPENDENCY
(N = 40)

Variable	Factor 1	Factor 2	Factor 3	h^2
1	<u>-0.8379</u>	-0.3423	0.2665	0.8904
2	<u>0.3151</u>	-0.0127	<u>-0.8602</u>	0.8349
3	-0.2865	<u>-0.8606</u>	<u>0.1320</u>	0.8399
4	<u>-0.8835</u>	0.0929	0.2494	0.8514
5	<u>0.2158</u>	0.3601	<u>-0.7951</u>	0.8085
6	0.1100	0.1224	<u>-0.8701</u>	0.7842
7	<u>-0.8289</u>	-0.3174	<u>0.1864</u>	0.8226
8	<u>-0.2218</u>	<u>-0.7456</u>	0.2986	0.6943
9	<u>-0.8349</u>	-0.1106	0.2286	0.7615
10	<u>0.1634</u>	<u>-0.6543</u>	0.0804	0.4613
11	<u>-0.8872</u>	<u>-0.2636</u>	0.2680	0.9285
12	<u>0.2258</u>	0.0174	<u>-0.8522</u>	0.7777
13	0.1890	<u>-0.8798</u>	<u>-0.1190</u>	0.8240
14	<u>0.5593</u>	<u>0.5480</u>	-0.0470	0.6148
15	<u>0.4931</u>	<u>-0.7899</u>	0.1328	0.8849
16	<u>-0.8932</u>	<u>-0.1326</u>	0.2743	0.8907
17	<u>-0.7572</u>	-0.0260	0.2623	0.6430
18	<u>0.3590</u>	0.0596	<u>-0.7032</u>	0.6270
Eigen Values	8.61	3.09	2.23	

TABLE 16

CORRELATION BETWEEN COGNITIVE COMPLEXITY (PRE) AND FACTOR
SCORES ON PROMINENCE, CONFLICT AND HYPERDEPENDENCY

Source	r	P
Prominence	.16	
Conflict	.36	.02
Hyperdependency	-.01	

only partially confirmed. Cognitive complexity was not correlated with prominence within the group nor inversely related to hyperdependency (passivity) within the group.

The final concern of this study was a possible relationship between participation in daily group sessions and cognitive complexity. Table 17 presents the mean and standard deviation of the participation scores for the 40 Ward 210 patients. Table 18 presents the Pearson Correlation between cognitive complexity and participation scores. Hypothesis (m) was, therefore, confirmed, $p < .05$. Cognitively complex subjects participate more in group discussion than cognitively simple subjects.

TABLE 17

MEAN AND STANDARD DEVIATION FOR WARD 210
PARTICIPATION SCORES (N=40)

M	91.59
SD	15.69

TABLE 18

CORRELATION BETWEEN COGNITIVE COMPLEXITY
AND GROUP PARTICIPATION SCORES

	r	P
CC and Participation	.34	.05

Key

CC = Cognitive Complexity

CHAPTER IV

DISCUSSION

Increase in Cognitive Complexity as a Result of Treatment

A purpose of this investigation was to compare Group Psychotherapy (GP) patients and Human Relations Training Laboratory (HRTL) patients before and after four weeks of treatment to ascertain whether there would be an increase in their ability to conceptualize other persons.

Contrary to expectations, HRTL and GP patients did not produce an increased number of personal constructs after four weeks of treatment. In fact, there was a significant decrease in number of constructs used after treatment. An examination of this decrease indicated that HRTL patients decreased much more than GP patients. Admittedly, certain patients in both groups expressed reluctance at completing the personal construct measure after a time lapse of only four weeks and a motivational factor may partially be involved in the decrease within both groups. However, the greater decrease which the HRTL patients manifested leads to another tentative explanation. These patients receive several structured feedback exercises which consist in sharing impressions of one another with their group; each group member has the opportunity to corroborate or disagree

with another's impression of himself or any other group member. It seems, then, that possibly HRTL patients may learn to become more careful, afraid or bored with the process of describing others. These principles may also be operative in the decrease of constructs for GP patients and the lesser degree of decrease may be due to the fact that they do not receive interpersonal structured feedback exercises. Admittedly, the above conjectures for decrease in constructs are tentative and require further investigation. No previous study has investigated the effect of group experience on cognitive complexity.

A comment is in order concerning the production of constructs by the two groups. Examination of the category means (like male, etc.) and mean total for total number of constructs indicated that HRTL patients were more productive in describing other people, producing more constructs post treatment (although they had decreased significantly from pretesting) than GP patients produced pretesting. It seems that HRTL patients have a "set" to be more productive on paper and pencil tests. HRTL patients are given a questionnaire upon entering the ward and are told that the program requires paper work, whereas GP patients ordinarily are not required to take any tests or fill out any questionnaires. The same instructions were used for both groups in this study, but HRTL patients

exceeded GP patients in productivity of constructs.

Crockett's (1965) free response method of eliciting constructs had previously only been used with a college population. This study seems to imply that the attitude of subjects in regard to the task influences productivity of constructs.

This factor of productivity becomes especially relevant when considering the number of different constructs used by each group (HRTL vs. GP) of patients in describing significant others. HRTL patients produced more different constructs, largely because their total productivity was greater than GP patients. They also produced more different constructs before treatment than after treatment as compared with GP patients, which may be intertwined with the notions of carefulness, fear or boredom described above. In general, it may be stated that most patients exhibited a specificity in their description of people which might be called a tendency toward concreteness. Most of the basic relationships for total number of constructs were maintained for different number of constructs, which means that when patients described one liked male, or whatever role figure considered, they were very specific and did not use exactly the same constructs in describing another liked male. There was naturally some overlapping in description, but the specificity exists in a much greater degree than the overlap.

Variability in Description of Role Title Categories

As had been expected, patients were better able to describe people they liked than people they disliked, both with respect to total number of constructs and number of different constructs. This leads to the inference (based on Kelly's 1955 theory) that they are more adept at interpersonal interactions with people they like since they have a greater conceptual understanding of these people. This finding is in direct agreement with Supnick's (1959) results for a college student population. It would seem plausible from common sense that it would be easier to describe people who are liked since more time is spent with them, whereas disliked people are usually avoided. In administration of the Personal Construct Measure, many patients had great difficulty identifying people they disliked, both as regards males and to an even more pronounced degree, as regards females. They seemed to feel threatened and several of them asked the examiner about confidentiality. Even after being reassured, they were hesitant and several commented that they liked everyone but would supply a name or often initials if the examiner insisted; however, it was to be understood that they really did not dislike this person but were bothered by some things he or she did.

Contrary to prediction, subjects did not manifest

the greatest facility in describing other persons of the same sex. According to research with college students (Supnick, 1959), subjects should have been able to describe liked males to a greater extent than other categories. These psychiatric patients, however, demonstrated greatest adeptness (cognitive complexity) in describing liked females. Most subjects chose to describe mothers, wives or female relatives. Their complexity scores imply that they consider these types of interpersonal relationships the easiest. Since no research has been done in examining cognitive complexity with a large population of this age range, it is impossible to ascertain whether facility in describing liked females is peculiar to psychiatric patients and possibly related to the concept of dependency needs, or a function of age (mean age = 40 years) wherein wife and mother take precedence over male friends. Only further research will be able to clarify the uncertainty of this area.

An examination of cognitive complexity in regard to disliked females shows that psychiatric patients found this category most difficult to describe. Complexity scores for disliked females was lower than that of any other category. This implies that patients may have greatest difficulty in interpersonal interactions with females they dislike. As mentioned previously, patients were very reluctant to identify particular disliked females. They then proceeded to be

very parsimonious with their descriptions.

Patients exhibited almost equal facility in describing liked males and disliked males. There is a slight propensity in favor of liked males when sheer number of constructs is considered, but this discrepancy becomes almost non-existent when number of different constructs is observed. This finding indicates that psychiatric patients get along with disliked males almost as well as with liked males. This implies that they have developed a certain adeptness at getting along with men whether they are liked or disliked. This result is in striking contrast to their description of liked females versus disliked females. Males, therefore, retain a certain preeminence in the interpersonal relationships of male psychiatric patients.

In reference to the aforementioned statements, it must be noted that the sex alone of the person described was not a significant variable when mere number of constructs was considered. When the number of different constructs is considered, sex was significant and more different constructs were used to describe females. However, it seems that the principle of productivity mentioned previously is applicable here; since liked females were described with more constructs, a greater number of different constructs were used in their regard. This interpretation seems consistent with the Sex by Valence interaction which was highly significant for both number of constructs

and number of different constructs, where relationship between categories remained constant for both interactions.

The complex fourth order interactions (TxPxXxV) which occurred for both number of constructs and number of different constructs were difficult to explain. Granted an explanation is tenuous, but although tenuous, its ramifications seem to be congruent with all that we have discussed above. The point of this complex interaction seems to be that HRTL patients produce more constructs than GP patients, especially before treatment, and the disparity between number of constructs used to describe liked females versus disliked females is greater than the disparity between liked males versus disliked males. This explanation is in line with the notion of productivity "set" described previously. The triple order interactions (TxPxV) for different number of constructs and number of constructs used for like-dislike (sex being excluded) can also be explained in a similar fashion. HRTL patients produce more constructs before treatment and especially as regards people they like as opposed to people they dislike.

Symptomatic Improvement on Staff and Self Ratings:
Relationship of Symptomatic Improvement
and Cognitive Complexity

Staff ratings on the "Shaver" pre and post treatment indicated that patients show definite improvement after four weeks of treatment. Neither group improved significantly

more than the other. An examination of the means and standard deviations for the "Shaver" pre and post treatment for both groups indicated that the overall lessening of symptomatology, though significant, was numerically small. This seems to indicate that the two staff raters did not view the patient as symptom-free after four weeks of treatment. Examination of raw scores showed that almost all patients were seen as decreasing in symptomatology.

The narrow range of discriminability on the "Shaver" may seem rather disconcerting. However, it must be remembered that only 32 items were used for rating. Also, both of these groups consisted of open ward psychiatric patients who require very little supervision and who are allowed a great deal of freedom outside of scheduled group sessions. Very few patients within these two groups exhibit maladjustive patterns of behavior to which a layman might react adversely within a normal social gathering outside the hospital. The purpose of the "Shaver" was to investigate whether staff (not involved in either treatment) would rate patients as improved after treatment, and it seems to have fulfilled that function.

The Personal Behavior Questionnaire (PBQ) was used as a short self-rating scale pre and post treatment. The first 10 items measure what has been termed "Feeling" for want of a better word. They are concerned with anxiety,

depression, lack of energy, sleep, self-worth and ability to handle problem situations. Both groups of patients improved significantly after treatment on this measure of "Feeling." There was no significant difference in improvement between the two groups. Similar significant improvement was found on the other two parts of the PBQ. There was a significant lessening of somatic and psychological complaints for both groups. As for the "Shaver" after four weeks of treatment patients' self-report on the PBQ indicated maintenance of many physical and psychological complaints.

Utilization of the GP patients as a comparison group gives us some grounds for saying that there has been genuine improvement in all patients. Most HRTL patients have completed their treatment after four weeks, whereas GP patients can remain for a maximum of three more months. Consequently, HRTL patients are probably not acting better and reporting themselves as better simply in an attempt to try to convince themselves that they are better because treatment is completed and they have to go back to life outside. This has been termed an "Hello-Good-bye" effect. In this case, however, both groups report comparable improvement after one month of treatment.

What is the nature of this improvement? Is it due to the HRTL or GP treatments? These patients are hospitalized, many taking mild tranquilizers, away from their daily

conflictual situations, getting an opportunity for physical and psychological rest, and being told directly and indirectly that they will get better. There is no certain way to ascertain whence the improvement arises. No doubt, patients on wards where there is no HRTL or GP treatment report comparable improvement after one month of treatment.

The fact that some patients in both groups are stating that they are not symptom-free is disconcerting. Possibly the quality of treatment can be questioned. However, another possibility is that they are allowing themselves the notion of still being "mentally ill" so that if problems arise later when they leave the hospital, they can have an excuse for returning for treatment or not taking responsible action. This inference is based on the information that two-thirds of the patients ($N = 80$) in the total sample had had one or more previous hospitalizations; almost half had had two or more previous hospitalizations.

Despite the above reservations, a suggestion for further research on cognitive complexity and group treatment could include an observational interpersonal rating scale. This might supply a more exact measure of the relationship of behavioral interpersonal improvement and cognitive complexity. Unlike the situation in this research, the staff doing the observation would have to have a greater opportunity to observe all patients.

The inverse relationship between symptomatic improvement on the "Shaver" and cognitive complexity was not significant before treatment. The relationship became greater after four weeks of treatment but was still not significant. This implies that the ability to get along interpersonally is not related to degree of symptomatology, at least, as far as measures in this study could determine.

Relationship Between Cognitive Complexity, I.Q., Rotter I-E and Diagnostic Categories

Cognitive complexity was found to be significantly related to AGCT I.Q. scores for each individual group of subjects and for both groups combined. There is no way to explain the higher correlation for GP patients as opposed to HRTL patients. Previous research with college students had found no significant correlation (Crockett, 1965). The I.Q. range for these college students was reported to be between 90 and 140. In our patient population the range was 75 to 139. This wider range may explain the significant correlations found in this study. Yet it seems that this wider range is more representative of the American population than extremely skewed scores found in college populations. Admittedly, correlations found in this study, though significant, do not account for a great deal of the variance.

The Rotter I-E or Social Reaction Inventory (SRI) was used in this investigation to see whether patients'

overall attitudes toward being in control of their environment would be correlated with their being in control of interpersonal interactions. Kelly (1955) and Bieri (1955) imply that a greater degree of cognitive complexity or a facility in describing significant others gives a person the feeling of being in greater control of interpersonal interactions. SRI items are more explicitly concerned with whether an individual views himself as controlled by environmental forces which he cannot manipulate or sees himself as capable of responsible actions which will place him in control of his destiny.

The predicted inverse correlation between SRI scores and cognitive complexity was not significant when both groups of patients are considered together or simply as regards HRTL patients. The correlation was significantly for GP patients. There is a possible explanation for this divergency. HRTL patients were tested as they arrived on the Ward and a period of a few days ensued until a group of 10 patients was gathered. GP patients were put into any of several open groups on their first day on the Ward. Although an attempt was made to test them as soon as possible after their inception into the GP program many of them had been in at least two group sessions and a few had participated in several sessions. On the wall of each GP room are signs listing the attributes of a good group member, and

these lists emphasize the notions of individual responsibility for decisions and readiness to accept the consequences; older group members have learned and are quick to point out to a new member any tendency to blame the environmental circumstances for his misfortunes in life. The therapist attending alternate sessions also presented this approach. From this perhaps too lengthy description it is inferred that more intelligent GP patients who participated in a few group sessions before taking the SRI acquired an attitude of acknowledging responsibility, scoring low on the SRI, and thus the significant correlation was obtained with cognitive complexity. Adding weight to this inference is the fact that the mean score for the GP patients on the SRI was lower than that for HRTL patients.

Just as Bannister (1960) reported finding no difference among diagnostic categories on a "consistency of construct" measure excepting "thought-disordered schizophrenics," so this study found no significant differences in cognitive complexity between patients diagnosed as being anxiety neurotics, depressive states, and having personality disorders. Although five diagnostic categories were represented in the sample, patients within the categories of Alcoholic ($N = 8$) and Schizophrenic ($N = 9$) were judged too small a sample and were not considered in the analysis. Results of this present study imply that degree of cognitive

complexity is not distinguishable in regard to these three diagnostic categories. Considering the limited functional value of diagnostic categories for open ward patients engaging in group treatment, this result is not surprising. Very few, if any, of these patients have such severe anxiety, depression or personality disorder that they cannot function on the ward or in group discussion.

However, the samples represented in this study are too small for generalizations to be made. Further research is necessary with larger groups including more diagnostic categories before a firmer conclusion concerning cognitive complexity and diagnosis can be drawn.

Follow-up Report after Two Months

Since there was no increase in cognitive complexity, it was impossible to measure any type of relationship between increase in description of others and adjustment reported on the follow-up. Other information reported by the patients is very pertinent although disconcerting. Reports of HRTL patients and GP patients are considered separately on the follow-up because of GP patients remain in treatment more than four weeks and several of them had just left the hospital when they completed the follow-up questionnaire.

Twenty-nine HRTL patients answered the mailed questionnaire. Eleven did not answer although a subsequent

letter was sent to each of them. Only four of these 11 were able to be contacted by phone. Two were working but felt their adjustment was not good, and two were unable to hold a job due to excessive drinking. For the 29 responding, the PBQ "Feeling" measure indicated that they continued to "feel" as well or as bad after two months as after four weeks of treatment, which implied some permanence of treatment. Examination of raw scores of the PBQ "Feeling" showed that some individual patients reported having gotten worse over the two month period; yet, for the group, improvement was significantly stable.

This stability in PBQ improvement becomes less important when other responses to the follow-up questions are considered. Less than half of the 29 patients were working after two months, about fifty percent reported feeling better than before treatment, about sixty percent reported some improvement in interpersonal relations, and about fifty percent answered "yes" to significant personality change. The most disconcerting report was that less than half of the patients were employed. If it is presumptuously postulated that the four patients in the hospital at the time of the follow-up return to work, only fifty percent of the patients answering the follow-up will be employed. At this point reference should be made to the demographic data for the group of 40 HRTL patients in

Appendix I. Table D of Appendix I indicates the problem that only 10 HRTL patients had a job waiting for them after treatment, with 30 having no job waiting. In light of this information, that only 14 of 33 contacted were working is more understandable. However, if we consider gainful employment as the criterion of functional improvement from HRTL treatment, less than half of the patients reporting their present situation have made functional improvement.

Twenty-seven GP patients responded to the follow-up by mail. Thirteen did not answer. Three of these 13 were able to be contacted by phone. Two were working and doing well, and one claimed he was doing well but was too nervous to work. For the 27 responding by mail, the PBQ "Feeling" measure indicated stability of improvement. Examination of raw scores showed that only two patients reported worsening over the two month period. It must be remembered, however, that several GP patients had just left the hospital and most had been out of the hospital less than two months, since patients are allowed a maximum stay of four months on the GP program.

Other responses to the questionnaire showed that over half of the 27 respondents were working, over half stated they felt better than before treatment, over half reported some interpersonal improvement, and half indicated a "yes" to significant personality change. Table D of

Appendix I shows that 15 GP patients had a job waiting when they entered treatment. (Only 10 HRTL patients had a job waiting.)

Again considering gainful employment as the criterion of functional improvement, more GP patients than HRTL patients were working (proportionately), but more GP patients had had jobs waiting at the inception of treatment. Also, these two follow-ups were not comparable for the two groups, since many GP patients had not yet been away from the hospital two months, whereas HRTL patients had been away for two months.

Relationship Between Cognitive Complexity and Selected Elements of Group Process

These particular measures were taken only in the closed groups of HRTL patients. HRTL patients all begin the group at once, whereas new GP patients enter any of several already functioning groups. Existing group members on the GP program were not part of the experimental sample so group process measures would have been pointless for our purposes here. Sample size for these measures is limited to 40 HRTL patients and consequently generalizations are limited.

The first area of investigation concerned the GBQ factors of prominence, conflict and hyperdependency. The GBQ is a 20 item rating scale presented in Appendix J. HRTL patients complete this scale after sessions 5, 10, 15, and

20. Previous research (O'Connell et al., 1969), for 721 patients extracted three factors from the first 18 questions of this instrument. Items 1, 4, 7, 9, 11, 14, 16, and 17 loaded on Factor I, Prominence; items 3, 8, 10, 13, 14, and 15 loaded on Factor II, Conflict; items 2, 5, 6, 12, and 18 loaded on Factor III, Hyperdependency. Item 14 loaded equally on Factor I and Factor II and was not really discriminatory.

When the hypothesis concerning a correlation between these three factors and cognitive complexity was formulated for this study, a tentative method had been devised to obtain a Prominence, Conflict, Hyperdependency score for each patient from raw data. This method was later found to be inaccurate. Consequently, data for the 40 patients in this sample plus 18 others was factor analyzed using the same orthogonally rotated varimax factor analysis used in previous research. Using such a small sample for factor analysis is statistically questionable. However, it was found that the same three factors, as in previous research with 721 subjects, were located; the same items loaded on each factor, and the factor loadings were extremely similar numerically. Consequently, for want of a better method, factor scores were obtained for each of the three factors for each of the 40 subjects. A Pearson product-moment correlation was then performed between each patient's factor

score and his cognitive complexity score.

Contrary to predictions, high cognitive complexity scores were not significantly related to a person's prominence within the group. This implies that the leaders, independent, most influential and respected group members (these items load on Prominence) are not necessarily more cognitively complex nor more intelligent in general. An inference can be made, then, that group members most capable of verbally analyzing situations, problems or describing interpersonal relations within the group are not necessarily viewed as the most prominent group members. Contrary to expectations, there was no significant inverse relationship between cognitive complexity and hyperdependency or passivity within the group. This reinforces the notion that cognitively complex patients are not necessarily the most active group members.

As had been expected, the factor of conflict was significantly positively related to cognitive complexity. Cognitively complex patients, therefore, tended to engage in conflict in the group to a greater extent than cognitively simple subjects. These results seem to be related to those of Tripodi and Bieri (1966) who found that cognitively complex subjects usually see life situations as involving conflict.

All of the above conclusions must be considered with some reservations due to sample size. However, these

limited conclusions seem plausible and reasonable.

The last point of interest was the correlations between participation in group discussion and cognitive complexity. A significant correlation was found between cognitive complexity and participation score for HRTL patients. Granted, the correlation though significant accounted for only a small percentage of the variance. This implies that there is some relationship between talking in group and cognitive complexity. From our discussion of factor scores above, it seems that it can be inferred that although the cognitively complex member may talk more, he is not necessarily looked upon as being leader, having high influence or respect in the group. And since he talks more, there is more opportunity for him to get involved in conflict within the group.

CHAPTER V

SUMMARY

The purpose of this investigation was to provide further knowledge of the influence of group treatment on cognitive complexity (ability to describe significant others) within a psychiatric patient population. No previous research has studied the effect of group experience on cognitive complexity, and research has been exclusively done with either normal college students or university clinic students.

Responses investigated included cognitive complexity before and after four weeks of treatment, variability in description of others depending on six of the other and whether he or she was liked or disliked, improvement after four weeks of treatment and on a two month follow-up. Cognitive complexity was considered in its possible relationship to symptomatology, intelligence, diagnosis, patients' conceptualization of control of their destiny, improvement after treatment, and certain factors involving group process.

The two groups compared in this study were psychiatric patients on open wards at a V.A. Hospital. One group received Human Relations Training Laboratory exercises and had autonomous group sessions for four weeks. The other

group received more traditional Group Psychotherapy and had a therapist present for alternate sessions for four weeks. Subjects were comparable in age, education and intelligence. All subjects were tested at the time of their inception on either program, after four weeks, and were sent a follow-up questionnaire. The cognitive complexity measure was a free response paper and pencil instrument on which subjects were asked to identify and describe two liked males, two liked females, two disliked males and two disliked females.

Experimental findings may be summarized as follows:

1. Neither group increased in cognitive complexity after treatment. Human Relations Training Laboratory patients decreased significantly more than Group Psychotherapy patients.
2. Psychiatric patients described liked females with greatest facility, implying that they are most adept in such interactions. They described liked and disliked males with equal facility and had greatest difficulty describing disliked females.
3. When sex is or is not considered, patients produced a greater variety of constructs to describe people who are liked as opposed to people who are disliked.
4. No significant relationship was found between degree of cognitive complexity and degree of symptomatology.

5. Patients manifested equal degree of symptomatic improvement after both types of treatment as rated by the staff and on self-ratings.
6. A significant correlation between intelligence and cognitive complexity was obtained within the intelligence range represented in a patient population.
7. The Rotter I-E score, which measures a person's sense of control of his overall environment, was not correlated with cognitive complexity, which hypothetically measures a person's sense of control of interpersonal relations.
8. Differences in cognitive complexity were not found among the diagnostic categories of depressive reaction, anxiety reaction and personality disorder.
9. Less than half of the 29 Human Relations Training Laboratory patients answering the follow-up were working. More than half of the 27 Group Psychotherapy patients responding were working. However, more Group Psychotherapy patients had jobs waiting when they entered treatment and several had just left the hospital.
10. Cognitive complexity was not correlated to prominence or hyperdependency within the group, but it was related to a tendency to engage in conflict.

cognitive complexity was correlated to participation in group discussion. These conclusions applied only to Human Relations Training Laboratory patients.

11. In general, Human Relations Training Laboratory procedures did not seem any more therapeutically effective or ineffective than Group Psychotherapy procedures in terms of the measures used in this research.

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APPENDICES

APPENDIX A

KELLY'S POSTULATE AND COROLLARIES

- a. Fundamental Postulate: A person's processes are psychologically channelized by the ways in which he anticipates events.
- b. Construction Corollary: A person anticipates events by construing their replications.
- c. Individuality Corollary: Persons differ from each other in their construction of events.
- d. Organization Corollary: Each person characteristically evolves, for his own convenience in anticipating events, a construction system embracing ordinal relationships between constructs.
- e. Dichotomy Corollary: A person's construction system is composed of a finite number of dichotomous constructs.
- f. Choice Corollary: A person chooses for himself that alternative in a dichotomous construct through which he anticipates the greater possibility for extension and definition of his system.
- g. Range Corollary: A construct is convenient for the anticipation of a finite range of events only.
- h. Experience Corollary: A person's construction system varies as he construes the replication of events successively.
- i. Modulation Corollary: The variation in a person's construction system is limited by the permeability of the constructs within whose range of convenience the variants lie.
- j. Fragmentation Corollary: A person may successively employ a variety of construction subsystems which are inferentially incompatible with one another.
- k. Commonality Corollary: To the extent that one person employs a construction of experience which is similar to that employed by another, his psychological processes are similar to those of the other.

1. **Sociality Corollary:** To the extent that one person construes the construction processes of another, he may play a role in a social process involving the other person.

APPENDIX B

THE HRTL

The Human Relations Training Laboratory for psychiatric patients was established at the Houston V.A. Hospital in May, 1961. This laboratory was adapted directly from the instrumental Human Relations Training Laboratory created by Blake and Morton (1962). Their work, in turn, originated in the methods of the National Training Laboratory at Bethal, Maine.

Each training week's activities are designed to provide learning experiences and concepts which can be used and amplified in following sessions. In the first week the broad philosophy of the program is emphasized--a learning approach to problems and the importance of learning in and about groups. Patients begin meeting in developmental groups and learn to use scales and rating instruments for observing behavior and noting group interactions. The second week focuses on the characteristics of intragroup relationships and the dynamics of two-person interaction. In the third week intergroup competition is introduced. The fourth week is given to review, integration, and generalization of laboratory concepts.

Each group is composed of eight to ten members and is autonomous, with no therapist or trainer. Through

exercises administered by the staff, intense interpersonal relationships are fostered in group sessions and an individual has the opportunity to discover how others see him. Behavioral checklists, attitude measures and rating scales direct the attention of participants to interpersonal relationships and behavior. Awareness of group processes makes it possible for members to change their usual styles of behavior in the interest of better interaction.

Structured exercises consisting of lecturettes, demonstration of group processes, role playing and competitive tasks are presented by various staff members. About twenty exercises varying from 20 to 50 minutes are used as "programmers," during the four weeks, to further group action and interpersonal involvement.

One of the main emphases of the exercises is to further frank communication in group. Ineffective social relationships can persist because the individual is unaware of its consequences. "Feedback" or risk-taking in finding new ways of interpersonal interaction is also stressed. Another major emphasis is the assumption that a person is responsible for his behavior. There is a de-emphasis of the "nervous condition," "mental illness" models, and a constant stress that patients are having "problems in living" which can be resolved.

Research has shown that patients, upon completion of the exercises, become more responsible, less dependent,

and take a new interest in interpersonal relations which before they generally avoided. The learning process of the laboratory involves shedding or modification of old attitudes and habits, the development of newer and more effective responses, and the establishment of an atmosphere of trust in one's relationships that allows this personal growth to continue. The democratic process which is emphasized concerns active and responsible participation in the decisions and plans that affect one's life and the climate of one's friendships.

One year follow-up data has shown that 65% of the patients were gainfully employed and improved in general functioning (Johnson, Hanson, Rothaus, Morton, Lyle and Moyer, 1966). A significant number of the patients report that they feel the program has effected change in their interpersonal relationships.

APPENDIX C

WARD 612

Ward 612 has a permanent professional staff consisting of a psychiatrist, psychologist and nursing personnel. The program relies on psychiatric residents (M.D.'s), advanced psychology trainees and advanced chaplain trainees to share in the therapeutic responsibilities. Five open groups of six to 12 patients are constantly in process with one therapist in charge. There is a team approach with all of the therapists on a first name basis. A weekly therapists meeting is held in which the staff discusses problems focusing on one therapist and his group per week.

The program has been in existence for 12 years. It has endeavored to help veterans with problems by providing them with an opportunity to encounter each other in small peer groups. The encounters serve to facilitate learning to deal more effectively and competently with interpersonal and intrapersonal difficulties. Special emphasis is placed on developing the veteran's capacity to invite and deal with criticism. Patients are encouraged to be open, to learn to laugh at themselves, and to look at their personality objectively without feeling threatened.

The therapeutic philosophy of the program is eclectic, but it is stressed that each therapist must be himself to be

effective. Within the eclectic framework there is an emphasis on patients' individual responsibility, discussion of specific problems in everyday living, realistic, objective appraisal of alternative goals and plans for future life, and a de-emphasis of the early history. Various theorists are borrowed from but the emphasis is in the direction of Albert Ellis or Glaser. There is a de-emphasis of mental illness and a stress on considering alternative modes of behavior, i.e. changing one's ideas or actions. The therapists intend to act as catalysts and to allow the members of the peer group to supply most of the feedback. Therapists strive to present themselves as not being authorities on living but authorities on group process.

An attempt is made to limit the program to veterans perceived by staff as good therapy candidates. Wives or significant others are called in to talk with the groups when such involvement is deemed necessary by the therapist.

Maximum stay on the ward is four months, but patients are allowed to leave when they feel they have received sufficient help. The average stay is approximately two months.

APPENDIX D

ARP SYMPTOM, HISTORY, AND VOCATIONAL EXPECTATION RATINGS

SHORT FORM (Little SHAVER) _____

LONG FORM (Big SHAVER) _____

NAME (Last name first): _____ ARP# _____

Patient's I-Day: Calendar date _____ ARP DAY# _____

E-Day: Calendar date _____ ARP DAY# _____

Interview Conducted: Calendar date _____ ARP DAY# _____

Project Intake _____

Project Exit _____

1 Month Follow-Up _____

12 Months Follow-Up _____

Readmission _____

RATING SCALESection 1Items 1 through 5 to be used only at intake:

1. REASON FOR HOSPITALIZATION

 Alcoholism1 I don't know3 Physical2 No choice42. ACCORDING TO PATIENT, WHO WAS PRIMARILY RESPONSIBLE FOR
DECISION TO COME INTO THE PROGRAM? Patient1 Blood or marital
relative4 Law enforcement agent or agency2 Other: _____5 Employee of readmitting hospital33. IF #4 IS CHECKED IN ITEM 2, SPECIFY THE BLOOD OR MARITAL
RELATIVE. Wife1 Children of vet.
and/or wife5 Mother2 Other female rela-
tive6 Father3 Other male rela-
tive7 Sibling4 Inapplicable, item
2 rated other than
48

4. DO YOU WANT TO STOP DRINKING?

<u> </u> Yes	<u> </u> No
<u> 1 </u>	<u> 3 </u>
<u> 2 </u> Don't know, undecided	

5. DO YOU FEEL YOU SHOULD STOP DRINKING?

<u> </u> Yes	<u> </u> No
<u> 1 </u>	<u> 3 </u>
<u> 2 </u> Don't know, undecided	

PART A:

6. DOES THE PATIENT REPORT ANXIETY OR APPREHENSION OVER THE PAST WEEK?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 4 </u>
<u> 2 </u> Very slightly	<u> 5 </u> Markedly
<u> 3 </u> Somewhat	<u> 6 </u> Extremely

7. DOES PATIENT REPORT ANY HALLUCINATIONS DURING THE PRECEDING WEEK?

<u> </u> No	<u> </u> Yes
<u> 1 </u>	<u> 2 </u>

8. TO WHAT EXTENT DOES HE DESCRIBE HIMSELF AS TIRED, WORN OUT, AND WITHOUT ENERGY?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 3 </u>
<u> 2 </u> Slightly	<u> 4 </u> Markedly

9. TO WHAT EXTENT DOES HE REPORT DIFFICULTY IN SLEEPING DURING THE PAST WEEK?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 3 </u>
<u> 2 </u> Somewhat	<u> 4 </u> Markedly

10. DOES PATIENT REPORT FEELINGS OF DEPRESSION DURING PRECEDING WEEK?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 4 </u>
<u> 2 </u> Very slightly	<u> 5 </u> Markedly
<u> 3 </u> Somewhat	<u> 6 </u> Extremely

11. DOES PATIENT REPORT FEELINGS OF ELATION DURING THE PRECEDING WEEK?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	<u>6</u> Extremely

12. DOES PATIENT REPORT HIMSELF AS PRESENTLY MENTALLY ILL?

<u>1</u> Yes	<u>2</u> Avoids or ambiguous	<u>3</u> No
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13. TO WHAT EXTENT DOES THE PATIENT REPORT HIMSELF AS PRESENTLY NERVOUS OR EMOTIONALLY ILL?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	<u>6</u> Extremely

14. WHEN ASKED DIRECTLY (unless explicit without asking), DOES THE PATIENT ADMIT EVER HAVING BEEN MENTALLY ILL?

<u>1</u> Yes	<u>2</u> Neither deny or acknowledge	<u>3</u> No
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15. TO WHAT EXTENT DOES PATIENT REPORT HIMSELF BEING AN ALCOHOLIC WITHIN SIX MONTHS PRIOR TO THIS HOSPITALIZATION?

<u>1</u> Not at all	<u>5</u> Aperiodic
<u>2</u> Social Drinker	<u>6</u> Daily
<u>3</u> Occasional binges	<u>7</u> Continuously
<u>4</u> Weekend regularity	

16. WHEN ASKED DIRECTLY (unless explicit without asking), DOES PATIENT ADMIT EVER HAVING BEEN AN ALCOHOLIC?

<u>1</u> Yes	<u>2</u> Avoids or ambiguous	<u>3</u> No
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17. DOES THE PATIENT DESCRIBE HIMSELF AS SOCIALLY WITHDRAWN IN WEEK PRECEDING RATING INTERVIEW?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly with- drawn	<u>5</u> Markedly withdrawn
<u>3</u> Somewhat	<u>6</u> Extremely

18. TO WHAT EXTENT DOES THE PATIENT REPORT HIMSELF AS PRESENTLY DISABLED OR AFFECTED BY PROBLEMS OF PHYSICAL HEALTH?

<u>1</u> Not at all	<u>3</u> Moderately
<u>2</u> Somewhat	<u>4</u> Markedly

19. TO WHAT EXTENT DOES THE PATIENT REPORT HIMSELF AS DISABLED OR AFFECTED BY ALCOHOL DURING THE SIX MONTHS PRIOR TO THIS HOSPITALIZATION?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	

20. WITHIN THE LIMITS REALISTICALLY AVAILABLE TO HIM FOR THE EXERCISE OF SELF-DETERMINATION, TO WHAT EXTENT DOES THE PATIENT AVOID ACCEPTING RESPONSIBILITY FOR HIS FUTURE ADJUSTMENT?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	

21. TO WHAT EXTENT DOES THE PATIENT REPORT SEEING HIS LIFE SPACE WITHIN THE IMMEDIATE FUTURE (Hosp.____, Community____) AS HAVING TO BE RESTRICTED?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	<u>6</u> Extremely

22. DOES THE PATIENT EXHIBIT A DEFICIT IN HIS MEMORY FOR EVENTS OF LAST WEEK?

<u>1</u> Not at all	<u>2</u> Somewhat	<u>3</u> Severe
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23. IS THE PATIENT DISORIENTED IN TIME, PLACE, AND/OR PERSON?

1 Not at all 2 Somewhat 3 Severe

24. TO WHAT EXTENT DOES THE PATIENT SHOW PARANOID SUSPICIOUSNESS IN THE PRECEDING WEEK DURING INTERVIEW?

1 Not at all 3 Moderately
2 Somewhat 4 Markedly

25. TO WHAT EXTENT DOES THE PATIENT REPRESENT HIMSELF AS CURRENTLY INFERIOR OR INADEQUATE, i.e., REPORT FEELINGS OF INTERIORITY/INADEQUACY?

1 Not at all 4 Moderately
2 Very slightly 5 Markedly
3 Somewhat

26. TO WHAT EXTENT DOES THE PATIENT APPEAR TO YOU TO LACK "STEAM" OR DRIVE AS AN ENDURING CHARACTERISTIC?

1 Not at all 4 Moderately
2 Very slightly 5 Markedly
3 Somewhat

27. TO WHAT EXTENT DOES THE PATIENT MANIFEST IMPAIRED REALITY TESTING DURING THE INTERVIEW?

1 Not at all 3 Moderately
2 Somewhat 4 Markedly

28. DOES THE PATIENT SHOW PECULIAR, ODD, OR UNUSUAL BEHAVIOR DURING THE INTERVIEW (SUCH AS MIGHT BE REACTED TO BY A LAYMAN)?

1 Not at all 3 Moderately
2 Somewhat 4 Markedly

29. TO WHAT EXTENT DOES HE EXHIBIT A SLOVENLY, UNKEMPT, OR DISORDERED APPEARANCE?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 3 </u>
<u> </u> Somewhat	<u> </u> Markedly
<u> 2 </u>	<u> 4 </u>

30. TO WHAT EXTENT IS THERE DISRUPTION OF COMMUNICATION DURING THE INTERVIEW?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 4 </u>
<u> </u> Very slightly	<u> </u> Markedly
<u> 2 </u>	<u> 5 </u>
<u> </u> Somewhat	
<u> 3 </u>	

31. TO WHAT EXTENT DOES HE EXHIBIT INDIFFERENCE OR LACK OF FEELING DURING THE INTERVIEW, REGARDLESS OF OBJECT TO WHICH AFFECT IS ATTACHED?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 3 </u>
<u> </u> Somewhat	<u> </u> Markedly
<u> 2 </u>	<u> 4 </u>

32. DOES THE PATIENT MANIFEST PHYSICAL SYMPTOMS OF ANXIETY OR APPREHENSION?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 4 </u>
<u> </u> Very slightly	<u> </u> Markedly
<u> 2 </u>	<u> 5 </u>
<u> </u> Somewhat	<u> </u> Extremely
<u> 3 </u>	<u> 6 </u>

33. DOES THE PATIENT MANIFEST EVIDENCE OF DEPRESSION IN INTERVIEW?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 4 </u>
<u> </u> Very slightly	<u> </u> Markedly
<u> 2 </u>	<u> 5 </u>
<u> </u> Somewhat	<u> </u> Extremely
<u> 3 </u>	<u> 6 </u>

34. DOES PATIENT MANIFEST ELATION DURING THE INTERVIEW?

<u> </u> Not at all	<u> </u> Moderately
<u> 1 </u>	<u> 4 </u>
<u> </u> Very slightly	<u> </u> Markedly
<u> 2 </u>	<u> 5 </u>
<u> </u> Somewhat	<u> </u> Extremely
<u> 3 </u>	<u> 6 </u>

35. DOES THE PATIENT SHOW HOSTILITY VERBALLY TOWARD THE INTERVIEWER?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	<u>6</u> Extremely

36. IS THE PATIENT OPENLY OR CONSCIOUSLY UNCOOPERATIVE IN RESPONDING TO THE INTERVIEW?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	<u>6</u> Extremely

37. IS THE PATIENT EVASIVE OR GUARDED DURING THE INTERVIEW?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	<u>6</u> Extremely

38. IRRESPECTIVE OF HIS ESTIMATE, AND UTILIZING YOUR OWN DEFINITION OF MENTAL ILLNESS, TO WHAT EXTENT DO YOU SEE THE PATIENT AS PRESENTLY MENTALLY ILL?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	<u>6</u> Extremely

39. IRRESPECTIVE OF HIS ESTIMATE, USING YOUR OWN DEFINITION OF ALCOHOLISM, TO WHAT EXTENT DO YOU SEE THE PATIENT AS AN ALCOHOLIC PRIOR TO HOSPITALIZATION?

<u>1</u> Not at all	<u>4</u> Moderately
<u>2</u> Very slightly	<u>5</u> Markedly
<u>3</u> Somewhat	<u>6</u> Extremely

40. IRRESPECTIVE OF HIS ESTIMATE, TO WHAT EXTENT DO YOU
SEE THE PATIENT'S LIFE SPACE WITHIN THE IMMEDIATE
FUTURE (Hosp.____; Community____) TO BE RESTRICTED?

1 Not at all

2 Very slightly

3 Somewhat

4 Moderately

5 Markedly

6 Extremely

APPENDIX E

PERSONAL BEHAVIOR QUESTIONNAIRE

This questionnaire is divided into two parts. The first part consists of 10 questions about your feelings and reactions. Each question is followed by five statements. You are to check the statement that best answers each question as applied to you. The second part is a survey of body symptoms and feelings. Various parts of the body and some symptoms are listed. Beside each there are three blanks in which you can indicate how much trouble you have had, in the past week, with each body part or symptom.

PART I

1. To what extent do you feel tense or relaxed?

- ☐ Almost always extremely anxious or tense
- ☐ Usually anxious or tense
- ☐ Feel anxious or tense fairly often
- ☐ Usually relaxed, but sometimes tense or anxious
- ☐ Almost never anxious or tense; usually quite relaxed

2. To what extent do you have feelings of depression?

- ☐ Almost always extremely depressed
- ☐ Usually feel depressed or extremely discouraged
- ☐ Feel somewhat depressed or sad fairly often
- ☐ Occasional feelings of depression or discouragement
- ☐ Never feel depressed or discouraged

3. To what extent do you feel tired, weak or lacking energy?

- ☐ Almost always extremely tired or weak
- ☐ Usually feel tired or weak
- ☐ Feel somewhat tired or weak fairly often
- ☐ Occasionally feel tired or weak
- ☐ Never feel tired, weak or lacking energy

4. To what extent do you feel like a part of the community in which you live (where you have lived most of the time during the past month)?

- ☐ Feel like a stranger, completely isolated and a part from the community
- ☐ Feel I have only a few ties to the community
- ☐ Feel I am not quite as much a part of the community as the average man
- ☐ Feel that I am almost fully a part of the community
- ☐ Feel that I am fully accepted as a member of the community

5. To what extent do you have trouble sleeping?

- ☐ Almost always have trouble sleeping; a serious problem
- ☐ Usually have trouble sleeping, but occasionally have a good night's rest
- ☐ Have some trouble getting enough sleep; it is a problem
- ☐ Occasionally have trouble sleeping; not a serious problem
- ☐ Almost never have trouble sleeping; sleep well nearly every night

6. To what extent has drinking been a problem for you during the past month?

- ☐ Drinking is an extremely serious problem for me
- ☐ Drinking too much and having some problem with it
- ☐ Drinking is a fairly serious problem for me
- ☐ Drinking may be a problem for me but not serious
- ☐ No problem with drinking

7. How well do you feel you can handle problems that come up in connection with your work? Compare yourself with what you think of as the "average man."

- ☐ Much worse than the average man
- ☐ Worse than the average man
- ☐ About the same as the average man
- ☐ Better than the average man
- ☐ Much better than the average man

8. How well do you feel you can handle problems that come up in your family life? Compare yourself with what you think of as the "average man."

- ☐ Much worse than the average man
- ☐ Worse than the average man
- ☐ About the same as the average man
- ☐ Better than the average man
- ☐ Much better than the average man

9. What is your usual attitude towards problems you are faced with?

- ☐ Almost always feel overwhelmed by problems; feel they are too much for me to handle
- ☐ Tend to feel overwhelmed by problems, that they are usually too great for me to handle well
- ☐ Fairly confident about my handling of problems, but tend to be cautious
- ☐ Usually feel I can handle most problems pretty well
- ☐ Almost always feel I can handle most problems that come up

10. When faced with a really tough problem (try to think of some problem that came up in the past week), how do you usually react?

☐ Get angry, blow up
☐ Get angry, but hold your feelings in
☐ Take off; get away from the problem
☐ Find someone who will handle it for you
☐ Try to face it and work constructively at solving it. (If this is checked, explain briefly how you solved it constructively.)

PART II

To what extent have you had trouble (pains, aches, etc.) with the following parts of your body or kinds of symptoms DURING THE PAST WEEK? Use check marks to indicate how much trouble you have had.

<u>Body Parts</u>	<u>Much Trouble</u>	<u>Some Trouble</u>	<u>No Trouble</u>
1. Head	_____	_____	_____
2. Chest	_____	_____	_____
3. Stomach	_____	_____	_____
4. Arms or hands	_____	_____	_____
5. Legs or feet	_____	_____	_____
6. Eyes	_____	_____	_____
7. Ears	_____	_____	_____
8. Nose	_____	_____	_____
9. Heart	_____	_____	_____
10. Lungs	_____	_____	_____
11. Bowels	_____	_____	_____
12. Sex Organs	_____	_____	_____
<u>Symptoms</u>			
13. Dizziness or nausea	_____	_____	_____
14. Bad dreams, night-mares	_____	_____	_____
15. Confused thinking	_____	_____	_____
16. Shakiness, trembling	_____	_____	_____
17. Feelings of anger	_____	_____	_____
18. Feelings of jealousy	_____	_____	_____
19. Feelings of being misunderstood	_____	_____	_____
20. Worrying	_____	_____	_____

APPENDIX F

SOCIAL REACTION INVENTORY

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true, rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Each number is followed by a pair of statements lettered a and b. Draw a circle around the letter in front of the statement which you choose as most true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

REMEMBER

Select that alternative which you personally believe to be more true

NAME: _____

AGE: _____ DATE _____

I more strongly believe that:

1. a. Children get into trouble because their parents punish them too much.
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run, people get the respect they deserve in this world.
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try, some people just don't like you.
b. People who can't get others to like them don't understand how to get along with others.
8. a. Heredity plays the major role in determining one's personality.
b. It is one's experiences in life which determine what they're like.

9.
 - a. I have often found that what is going to happen will happen.
 - b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10.
 - a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
 - b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
11.
 - a. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
 - b. Getting a good job depends mainly on being in the right place at the right time.
12.
 - a. The average citizen can have an influence in government decisions.
 - b. This world is run by the few people in power, and there is not much the little guy can do about it.
13.
 - a. When I make plans, I am almost certain that I can make them work.
 - b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14.
 - a. There are certain people who are just no good.
 - b. There is some good in everybody.
15.
 - a. In my case, getting what I want has little or nothing to do with luck.
 - b. Many times we might just as well decide what to do by flipping a coin.
16.
 - a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
 - b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.
b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
b. There really is no such thing as "luck."
19. a. One should always be willing to admit his mistakes.
b. It is usually best to cover up one's mistakes.
20. a. It is hard to know whether or not a person really likes you.
b. How many friends you have depends upon how nice a person you are.
21. a. In the long run, the bad things that happen to us are balanced by the good ones.
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.
b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.
b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.
b. A good leader makes it clear to everybody what their jobs are.

- 25. a. Many times I feel that I have little influence over the things that happen to me.
 - b. It is impossible for me to believe that chance or luck plays an important role in my life.
- 26. a. People are lonely because they don't try to be friendly.
 - b. There's not much use in trying too hard to please people; if they like you, they like you.
- 27. a. There is too much emphasis on athletics in high school.
 - b. Team sports are an excellent way to build character.
- 28. a. What happens to me is my own doing.
 - b. Sometimes I feel that I don't have enough control over the direction my life is taking.
- 29. a. Most of the time I can't understand why politicians behave the way they do.
 - b. In the long run, the people are responsible for bad government on a national as well as on a local level.

APPENDIX G

Rotter (1966) published a monograph on his Internal-External Control Scale, providing extensive data on its development, validity and reliability. The Scale consists of 23 forced choice items together with filler items. In Rotter's theory, the control construct is considered a generalized expectancy, operating across a large number of situations, which is related to whether the individual possesses or lacks power over what happens to him. Individuals are labeled external controls when they are said to have the generalized expectancy that reinforcements are not under their control across varying situations. Internal control refers to the perception of positive and/or negative events as being a consequence of one's own actions and therefore under personal control.

Lefcourt (1966) published a review article in which he showed that scales of external-internal control of reinforcement have proven a useful variable in research. Locus of control has been found to be related to race and social class, to influence learning and achievement, and to be involved in self-concept. In studies where the range of intelligence is limited, locus of control is not related to intelligence. In the realm of psychopathology, it has been shown that schizophrenics are significantly higher than normals in attributing the locus of control as external to themselves.

In reference to the topic of the present investigation, it has been shown that internals attempt to exert more influence than externals in direct interpersonal situations (Davis and Phares, 1967; Phares, 1965). Internals have a need to understand and control interactions with others. They see themselves as responsible for their evaluations of others and consequent behavior towards others. Internals seem to work harder to give responses that their peers will agree with (Jones and Shrauger, 1968). Internals are more concerned with analyzing situations, seeking information relevant to problem solutions and are more open to trying to take remedial action (Phares, Ritchie and Davis, 1968).

APPENDIX H

GROUP BEHAVIOR QUESTIONNAIRE

Answer all questions by choosing members from your Development Group. Base all choices on interaction that occurred in the group. Use group number in filling out this form. Choose two people in answering each question. You may choose yourself. Where you are not sure, guess, but please answer every question.

Part I

1. Which two members of the group can MOST EASILY influence others to change their opinion? _____
2. Which two are LEAST ABLE to influence others to change their opinion? _____
3. Which two have clashed most sharply in the course of the meetings? _____
4. Which two are most highly accepted by the group at large? _____
5. Which two give in most easily to what other group members want? _____
6. Which two DEPEND MOST ON the group members or staff in keeping up with group and lab activities? _____
7. Which two REQUIRE THE LEAST HELP in keeping up with group and activities? _____
8. Which two try most to get attention from other group members? _____
9. Which two are most likely to talk about their medical and physical problems? _____
10. Which two are most likely to talk about their problems in dealing with others? _____
11. Which two have shown the greatest desire to accomplish something? _____
12. Which two have been most ready to discuss topics not directly related to the group's task? _____

13. Which two seem to be the genuine leaders? _____
14. Which two have shown the strongest need for direction and support? _____
15. Which two have shown the most hospitality in group meetings? _____
16. Which two have wanted the group to be warm, friendly and comfortable? _____
17. Which two have competed the most with others, in the sense of rivalry? _____
18. Which two have tried to do the most to keep the group "on the ball?" _____
19. Which two do YOU usually TALK TO the most? _____
20. Which two do YOU usually TALK TO the least? _____

APPENDIX I

DEMOGRAPHIC DATA

Table A

MEANS, STANDARD DEVIATIONS AND F-RATIOS
FOR AGE, EDUCATION, AND I.Q.

		Age	Education	I.Q.
Ward 210	M	38.67	11.75	102.10
	SD	9.15	2.57	14.98
Ward 612	M	41.35	11.70	102.47
	SD	9.50	3.54	18.83
F-Ratio		1.64	.005	.01

As had been expected, the two groups were comparable in Age, Education, and I.Q.

Table B

RACE

	Negro	Caucasian
Ward 210	9	31
Ward 612	5	35
Total	14	66
Total %	17.5	82.5

Both groups were predominantly Caucasian. In the total assessment, 82.5% were Caucasian and 17.5% were Negro.

APPENDIX I (continued)

Table C

NUMBER OF HOSPITALIZATIONS

	First	One Previous	Two or More Previous
Ward 210	15	6	19
Ward 612	11	9	20
Total	26	15	39
Total %	32.5	18.7	48.7
Total %	32.5	67.5	

Of the 80 subjects, 67.5 had been in the hospital for psychiatric treatment one or more times previously. 32.5% were first admissions. In each group almost 50% of the patients had two or more previous hospitalizations.

Table D

JOB SITUATIONS

	Job Waiting	No Job Waiting
Ward 210	10	30
Ward 612	15	25
Total	25	55
Total %	31.2	68.7
Ward 210 %	25	75
Ward 612 %	37.5	62.5

Two-thirds of the patients in the total sample had no job waiting. Only one-third, consequently, were assured of a definite job after treatment. Ward 612 patients were slightly better situated as regards jobs than Ward 210 patients.

APPENDIX I (continued)

Table E

MARITAL STATUS

	Married	Not Married		
		Divorced	Separated	Single
Ward 210	14	8	9	9
Ward 210 %	35.0	65.0		
Ward 612	25	5	4	6
Ward 612 %	62.5	37.5		

A greater percentage of patients in the Ward 612 sample were married than in the Ward 210 sample.

Table F

MARITAL STABILITY

	Single	One Marriage	Two	More Than Two
Ward 210	8	17	7	8
Ward 210 %	20	42.5	17.5	20
Ward 612	6	18	12	4
Ward 612 %	15	45	30	10
Both Groups %	17.5	43.75	23.75	15

43.75% of both groups were married once. 17.5% were never married, but of these only two were over 35, the others being in their early twenties. 38.75% had been married more than once, but only 15% had been married more than two times.

APPENDIX I (continued)

Table G

DIAGNOSIS

	A.R.	D.R.	P.D.	A.	S.
Ward 210	15	9	6	4	6
Ward 210 %	37.5	22.5	15	10	15
Ward 612	12	12	9	4	3
Ward 612 %	30	30	22.5	10	7.5
Total	27	21	15	8	9
Total %	33.75	26.25	18.75	10	11.25

Key

A.R. Anxiety Reaction
 D.R. Depressive Reaction
 P.D. Personality Disorder

A. Alcoholic
 S. Schizophrenic

Overall, it seems that, although both groups were comparable in Age, Education and I.Q., Ward 612 patients were more stable in that more of them had jobs waiting and many more of them were married at the time.

APPENDIX J

As part of the development of treatment programs for V.A. Hospitals, we are conducting an evaluation of the treatment you received last on Ward of the V.A. Hospital, Houston, Texas. We are sending a questionnaire to all former participants in the treatment program, asking them about how they are doing now.

We ask that you complete the enclosed questionnaire just as soon as possible. Then put it in the enclosed envelope and mail it to me. No stamp is necessary.

Your answers to these questions will have no affect on your V.A. benefits, so feel free to make any comments you like.

Sincerely,

STEPHEN HOTARD
Project Coordinator

Enclosures

P.S. Please return as soon as possible. Thank you.

APPENDIX J (continued)

FOLLOW-UP

The first 10 items of the Personal Behavior Questionnaire were used as Part I of the Follow-up. In addition, the following items were included.

PART II

1. At the present time are you

- ☐ Not employed
☐ Employed full-time (at least 30 hours per week)
☐ Employed part-time (5 to 29 hours per week)

2. How does your mental health now compare with the way you felt before your recent V.A. treatment? (Circle one)

Much better now Better now Same Worse now
 Much worse now

3. How does your ability to get along with people now compare with the way you felt before your recent V.A. treatment?

a. Family (Circle one)

Much better now Better now Same Worse now
 Much worse now

b. People in authority (Circle one)

Much better now Better now Same Worse now
 Much worse now

c. People you work with or encounter on the job (Circle one)

Much better now Better now Same Worse now
 Much worse now

d. Friends (Circle one)

Much better now Better now Same Worse now
 Much worse now

e. Neighbors and acquaintances (Circle one)

Much better now Better now Same Worse now
 Much worse now

4. Do you feel you have changed in a significant way as a result of your recent treatment? Yes No

5. Comments:

VITA

Stephen Hotard was born in Vacherie, Louisiana on November 10, 1938. He entered school in his home town and later graduated from St. Joseph Seminary, Covington, Louisiana, in 1956. He received the Bachelor of Arts degree from Notre Dame Seminary, New Orleans, Louisiana in 1961 and the Bachelor of Science degree from Loyola University, New Orleans, in 1962.

Stephen Hotard began his training for the Ph.D. degree in Clinical Psychology at Louisiana State University in 1965. He received a Master of Arts degree in 1967. From 1968 to 1969 he was involved in his clinical internship at the VA Hospital in Houston, Texas.

Stephen Hotard is a candidate for the Ph.D. degree at the Spring 1970 commencement.