ASSESSING THE THERAPEUTIC EFFECTIVENESS OF AN OPERANT GROUP REINFORCEMENT PARADIGM WITH THREE CATEGORIES OF PSYCHIATRIC INPATIENTS

By

GEORGE VERNON DICKEY

Bachelor of Arts
University of California, Berkeley
Berkeley, California
1973

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1980

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Thesis Approved:

Kenneth D. Sandvold
Thesis Adviser

Gary T. Bon

Donald K. Fromme

Dan K. Edgley

Larry Hochhaus

Norman N. Durham
Dean of the Graduate College

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CHAPTER I

INTRODUCTION

Is psychotherapy no more effective in helping people deal with their problems than the passing of time? This was Eysenck's (1952) assertion almost 30 years ago. Since that time, research in this area has yet to establish solid proof that he was wrong. Two of the more positive reviews of the literature (Bergin, 1971; Truax and Mitchell, 1971) have concluded that only modest evidence, at best, can be found in support of the effectiveness of psychotherapy; while one of these reviewers, Bergin (1963, 1970, 1975, 1980), has written extensively about psychotherapy-induced deterioration effects. He believes the research shows that some psychotherapy "induces harmful effects that would not occur without treatment or with good treatment" (1980, p. 99). Other reviewers believe the research is completely inconclusive. For example, Strupp and Hadley (1977, p. 28) state, "After critically reviewing the psychotherapy outcome studies . . . we have concluded that nearly all of the studies are marred by multiple flaws." Two of the more pervasive flaws in psychotherapy research discussed in the literature are: (1) a scarcity of well-controlled studies (Mays and Franks, 1980), and (2) a shortage of careful and

intense investigations of specific factors that contribute to specific psychotherapeutic change (Bergin and Strupp, 1972; Bergin, 1980).

Fromme, Whisenant, Susky, and Tedesco (1974) developed a psychotherapy research paradigm that largely avoids the above methodological problems, and has lent itself to a number of methodologically sound studies investigating several clinically related areas. These areas include: group composition effects (Fromme and Close, 1974; Close, 1977); group modification of affective verbalizations, generalization and resistance to extinction (Smallwood, 1975; Fromme, Stommel, and Duvall, 1976); group modification of affective verbalizations, "here and now" versus "there and then" and valence effects (Marcy and Fromme, 1979); empathy (Marcy, 1977); sex roles (Neal, 1976); shyness (Fajen, 1978); interpersonal perception (Duvall, 1977; Fajen, 1978; Schaefer, 1980); directive versus non-directive therapist styles (Dickey, 1980); and the impact of operant conditioning of quasi-therapeutic verbal behaviors on psychiatric inpatients (Smallwood, 1975).

The paradigm used in all the above studies (hereafter referred to as "Fromme's technique") has its roots in operant conditioning, humanistic psychology, and group therapy. The technique utilizes lights and digital counters to reinforce "here and now" verbalizations of feeling, feedback, and empathy. Groups of four subjects, usually half male and half female, are seated around a table which contains

the reinforcement apparatus. When subjects emit the desired verbalizations they are reinforced by a counter registering a cumulative number and the click it makes while registering. Lights are used to inform subjects that they are not expressing the desired types of verbalizations. This technique will be explained in detail in the Review of Literature and Methodology sections of the present study. The literature review is provided to offer support of several assumptions:

1. The conditioning of verbal behavior is possible.
2. The conditioning of verbal behavior may be accomplished by a variety and combination of techniques.
3. Operant conditioning is a powerful tool in the modification of behavior and the facilitation of change.
4. Preliminary evidence exists that operant conditioning of verbal behavior in a group therapy setting can be an effective quasi-psychotherapeutic device in both college and psychiatric populations.
5. The various diagnostic categories of psychiatric patients apparently respond differently to various therapeutic approaches.

This study was based on these assumptions. The purpose of this study was to further investigate the possible psychotherapeutic benefits of operant reinforcement of affective and self-disclosing verbalization in a psychiatric population, and to explore the impact of Fromme's technique on three major diagnostic types of psychiatric inpatients.

CHAPTER II

REVIEW OF LITERATURE

Conditioning of Verbal Behavior--A Brief History

The efficacy of the conditioning of verbal behavior has been demonstrated repeatedly since the initial work of Greenspoon (1954, 1955). He found that the use of "mmm-hmm" could effectively be used as a reinforcer to increase the frequency of target verbalizations and that the use of a red light and a tone could also serve the same purpose. In subsequent studies a large variety of verbal response classes have been successfully targeted for reinforcement using various types of reinforcement techniques. Taffel (1955) reinforced all sentences which begin with "I" or "we"; and Sarason (1957) found he could selectivity reinforce a class of verbs. Mock (1957) used a combination of verbal and nonverbal reinforcement: head nodding and "mmm-hmmm." Ekman (1958) used only the nonverbal reinforcement techniques of a head nod, a smile, and a slight movement forward. Krasner (1958a) reinforced the category of "mother" and all nouns and pronouns referring to the mother figure. Krasner (1958b) also reported in a comprehensive review of the relevant

literature that the majority of the verbal conditioning studies report positive results with the use of generalized conditioned reinforcers.

Mechanical cues have been successfully used to reinforce verbal behavior. Ball (1952) found flashes of light to be effective, as did Nuthman (1957), Sidowski (1954), and Taffel (1955). Ball (1952) also effectively used a buzzer, and McNair (1957) successfully utilized a bell tone. Later studies successfully using buzzers, lights, and bell tones as reinforcers instead of verbal comments include Hastorf (1965) and Krueger (1971).

Verplanck (1955) used the paraphrasing of what a subject had just said and the agreement with a subject's statement as reinforcers. By doing this, he was able to increase every subjects' rate of verbalizing statements of opinion. In an interesting study, Hastorf (1965) demonstrated that the structure of a group, including leadership dynamics, could be modified by differentially reinforcing the behavior of individuals while they were participating in a group problem solving situation. Green and Marlatt (1972) found that instructional and modeling procedures could be used to increase the occurrence of affective and descriptive verbalizations.

Few of the above studies were conceived as being directly related to psychotherapy, but rather were intended to validate the effectiveness of the conditioning of verbal

behavior. Behavioral research more directly applicable to psychotherapy will be discussed in the next section.

Psychotherapy and Operant Conditioning

A number of different response classes relevant to psychotherapy have been conditioned in quasi-therapeutic settings. These response classes have included self-references (Rogers, 1960; Dicken and Fordham, 1967; Phelan, Tang, and Hekmat, 1967; Kennedy and Zimmer, 1968; Powell, 1968; Myrick, 1969; and Ince, 1970) affect words or statements (Ullman, Krasner, and Collins, 1961; Ullman, Krasner, and Gelfand, 1963; and Williams and Blanton, 1968); affective self-references (Salzinger and Pisoni, 1960; Merbaum and Southwell, 1963; Hoffnung, 1968, and Hekmat, 1971); independence and affection statements (Moos, 1963); and affective, feedback, and empathy statements (Fromme, Whisenant, Susky, and Tedesco, 1974; Close and Fromme, 1976, Smallwood, 1975; and Dickey, 1980).

Two early studies which were designed to test the direct applicability of verbal conditioning to the psychotherapeutic process were Williams and Blanton (1968) and Lieberman (1970). In the former study the authors found that verbal reinforcement was as effective as traditional psychotherapy in eliciting feeling statements from subjects who were not psychotic. In the latter study the author demonstrated the utility of social reinforcement in bringing about symptomatic relief and group cohesiveness in a

group therapy setting. Lieberman felt his study strongly supported the value of reinforcement in the understanding and practice of group therapy. Several other studies have effectively used reinforcement techniques in a therapeutic group setting (e.g., Krueger, 1971; Hauserman, Zweback, and Plotkin, 1972; and Zweback, 1976). Zweback (1976) was able to demonstrate that verbalizations in group psychotherapy could be controlled by concrete reinforcement. Although most such studies have shown the effectiveness of the therapist as reinforcer, other studies have used other methods of reinforcement. For example, Fromme, Whisenant, Susky, and Tedesco (1974) found they could dispense with the therapist by using remote-controlled, mechanical, feedback as an operant reinforcer. In doing so they were able to maintain indirect control of the group process. While most operant group research has focused on fairly simple behaviors such as verbal initiations (Hastorf, 1965; Hauserman et al., 1972), order of speaking (Levin and Shapiro, 1962), giving opinions (Oakes, 1962), and personal or group references (Dinoff, Horner, Kuspiewski, Rickard, and Timmons, 1960), Fromme et al. (1974) attempted to create a very close analog to group psychotherapy by conceptualizing target responses in terms of a limited set of verbalizations. In selecting these verbal response classes they relied heavily on Yalom (1970) and Truax and Carkhuff (1967). Yalom

posited that for group therapy to be therapeutic, group members should express themselves in the "here and now," that they be empathic in understanding each other's actions and feelings, and that group members should provide feedback and consensual validation for each other so that they could test the appropriateness of their behavior.

Truax and Carkhuff (1967) contended that interpersonal interactions characterized by empathy, nonpossessive warmth, and genuineness are the most important factors related to therapeutic improvement in both individual and group psychotherapy. With these factors in mind, Fromme et al. (1974) used verbal conditioning techniques in a group therapy setting to substantially improve the interpersonal interactions of group members. The authors devised five classes of verbal responses which were thought to be therapeutic analogies and which could be clearly and reliably identified. These were: "here and now" expressions of feeling, giving and asking for feedback, and two categories of empathy statements. Four-person groups of college undergraduates were instructed to use these five response classes in their group interactions. These instructions were somewhat detailed, and each subject had an index card in front of him or her that served as an aid by listing the response categories. Every time a subject made a statement that qualified as a reinforceable response, his or her counter was advanced one digit. The counter made an audible

click that enabled the other group members to vicariously learn how to use the response categories. If no one in the group received a click within a three-minute period, a red light mounted in front of each subject was flashed on momentarily. This was to warn the group members that they were not properly using the response categories. If one member fell 10 reinforceable responses or more behind the group's leader (the member with the most accumulated points on his counter), the red light in front of that person was turned on and stayed on until his or her reinforceable response total again rose to less than 10 behind the leader. All groups were given the same instructions and were observed for the same period of time. Each group met for one session. Reinforceable response totals between instructions-only control groups and instructions-plus-reinforcement experimental groups were computed. The results upheld the hypothesis that the experimental groups would emit significantly more of the desired responses. The reinforced experimental groups averaged 9.75 reinforceable responses per person while the unreinforced control group averaged 0.85 per person. A reliability test of the response categories yielded an index of 93% interjudge agreement. This suggests that the categories were reliably judged by the experimenters. In a partial replication of this study, again with college undergraduates, Fromme and Close (1976) obtained very similar results adding a warm-up

procedure to the instructions. Reinforced groups emitted 10.04 responses per person, while unreinforced groups averaged only 2.58. In a later study with college students, Dickey (1980) obtained results that were remarkably similar to the two studies above. The operantly reinforced groups without a therapist (some groups utilized a therapist) averaged 9.75 reinforceable responses per person, and the non-reinforced groups without a therapist averaged only 2.16 such responses per person.

Smallwood (1975) used virtually the same operant group paradigm to elicit affective and self-disclosing verbalizations from reinforced groups of psychiatric inpatients. Subjects for his study were 24 nonpsychotic adult inpatients. The psychiatric diagnoses for these patients were: 9 schizophrenics in remission, 11 personality disorders, and 4 neurotics. These diagnoses were made by staff in accordance with D.S.M.-II. These subjects were randomly assigned to six groups of four subjects each. Experimental and control treatments were then assigned randomly to the groups so that three experimental and three control groups were formed. The 12 males and 12 females were matched as closely as possible across groups by age, sex, psychiatric ward, and diagnosis.

The apparatus, procedures, and response categories were the same as in the Fromme et al. (1974) study, with the exceptions that subjects were psychiatric inpatients

and each group met for one baseline and four subsequent sessions. Smallwood (1975) also tested for generalization of the learning of the response categories with one follow-up session.

All groups were given instructions only during the first baseline session. During session two through five the experimental groups were reinforced for using the response categories, as in the Fromme et al. (1974) study, and the control groups were given instructions only. Before the baseline session and following the last session, each group was given three measures. The first was a modification of Jourard's (1964) self-disclosure questionnaire, the second was a variation of the Semantic Differential (Osgood, Succi, and Tannenbaum, 1957), and the third was the Mooney Problem Check List.

Smallwood found that while the experimental groups had a mean of 4.67 reinforceable verbalizations per person and the control groups had a mean of 4.03 reinforceable verbalizations per person in the baseline sessions, the experimental groups averaged 14.58 in the fifth session and the controls only averaged 6.08. Clearly, the experimental group had learned to use the response categories significantly better than the controls by the fifth session. He also found statistically significant differences between the experimental and control groups during sessions three and four. This means the experimental groups verbalized

significantly more of the desired responses than controls after one baseline and one reinforcement session, and continued to emit significantly more reinforceable responses in all subsequent sessions. Additionally, Smallwood found that the experimental group had significantly higher post self-disclosure scores (as measured by the Modified Jourard Self-Disclosure Questionnaire) than the controls; but no significant differences were found between the two groups as measured by the other two dependent variables: the Sementic Differential and the Mooney Problem Check List.

Smallwood's (1975) study supports the efficacy of Fromme's operant group paradigm in teaching affective and self-disclosing verbalizations to a psychiatric population, and suggests that this population might learn to be more self-disclosing when subjected to this procedure. This study did not, however, explore the possible differential impact of the operant group paradigm on specific diagnostic groups of patients.

Psychiatric Diagnosis and Success in Psychotherapy

Smallwood's (1975) success with diverse diagnostic categories of psychiatric inpatients led him to conclude that a behavioral approach to psychotherapy would be effective with a broad range of diagnostic groups of patients.

Both Hagen (1960) and Dinoff, Horner, Kuspiewski, and Timmons (1960) had previously demonstrated that verbal response categories similar to those used by Smallwood could be reliably used and effectively conditioned in a group therapy-like situation with a schizophrenic population. Sloan, Staples, Cristol, Yorkston, and Whipple (1975) argued that behavior therapy principles could be successfully applied to the treatment of neurotics and personality disorders and questioned the assumption that a behavioral approach to psychotherapy is only indicated for monosymptomatic problems such as phobias and sexual problems. In their words,

> Phobic patients, especially monophobic patients, are much rarer than patients with anxiety neurosis and personality disorders. There have been very few controlled evaluations of behavior therapy with patients with anxiety neurosis and personality disorders. The tendency has been to assume that only a 'deeper' therapy could produce a lasting effect for these patients by attacking the underlying causes of general psychiatric problems (p. 373).

To prove their point, Sloan et al. undertook a comprehensive study of the matter. They found that behavior therapy was slightly more effective than psychoanalytic therapy with outpatients diagnosed as neurotic and personality disorder. They did not, however, determine the differential response of the two diagnostic categories to the two different therapeutic approaches, and they did not evaluate schizophrenic patients' responses to therapy. These studies

seem to offer support for the usefulness of behavior therapy with neurotics, personality disorders, and schizophrenics; and there are a number of other studies that reflect on the differing therapeutic responsiveness of the various diagnostic categories when they are treated with different psychotherapeutic methods, including behavioral ones.

There have been several important studies that have investigated schizophrenics' response to therapy. Beal, Durkro, Elias, and Hecht (1977) found that activity and remotivation therapy groups were effective in helping to increase social interaction among withdrawn schizophrenics; and O'Brien (1975) pointed out that promoting social interaction among group members is one of the most important goals of group therapy with withdrawn schizophrenics. In an interesting article investigating the relationship of self-disclosure to therapeutic outcome in schizophrenics, Strassberg, Roback, Anchor, and Abramowitz (1975) point out that most of the research supporting the theory that greater psychotherapeutic gain accrues to the individual who is more self-disclosing was done using non-schizophrenic college students as subjects. They repeat that, in contrast to these studies, schizophrenics in their study who were more self-revealing made less therapeutic progress than their counterparts who divulged less.

A number of studies have examined schizophrenic patients' responses to behavioral techniques--with mixed

results. Ebner (1961) found that more chronic schizophrenics showed higher levels of conditioning on a verbal task than less chronic schizophrenics, while Hartlage (1970) demonstrated that behavioral reinforcement techniques were much more effective than traditional psychotherapeutic approaches in treating hospitalized schizophrenics in short-term therapy. In comparing schizophrenics, neurotics, and normals, Beech and Adler (1963) found that schizophrenics and normals were responsive to conditioning techniques, while neurotics were not. However, several studies have suggested that schizophrenics are not very responsive to behavioral approaches. Interestingly, in a study very similar to Beech and Adler's, Gelder (1968) obtained opposite results. He found that neurotics and normals were subject to conditioning, but schizophrenics were not. In another interesting study, Leventhal (1959) explored the effects of positive reinforcement and punishment on different diagnostic categories of patients. He found that while neurotics profited from both reward and punishment, schizophrenics profited only from punishment. Hartman (1955) interpreted the results of his study as indicating that it is very difficult to modify schizophrenics' behavior due to very strong habit patterns in these patients; while Cohen and Cohen (1960) found that reinforcement effects were generally negligible for schizophrenic patients, regardless of the response

class used. In contrast, they found that neurotics showed a significant reinforcement effect, regardless of response class.

Two studies comparing anti-social personality disorders and neurotics are worth reporting. While Blaylock (1960) found no significant differences between anti-social personality disorders and neurotics in verbal conditioning exercises, Cromes (1972) found that juvenile offenders diagnosed as anti-social personality disorders became more anti-social when given group therapy, but neurotic offenders improved in terms of development of appropriate social skills.

A very few studies have found that neurotics are not exceptionally responsive to therapy. For example, Yalom (1978) found no significant differences in degree of improvement between alcoholics (usually considered to be personality disorders) and neurotics after 8 to 12 months of group therapy, and Beech and Adler (1963) found neurotics less responsive to verbal conditioning techniques than schizophrenics and normals. But the preponderance of the evidence suggests that neurotics as a group are more responsive to psychotherapeutic intervention than the other categories of psychiatric patients. Horner (1975) even argues that group therapy, while helpful for neurotics, is probably useless for personality disorders. Several studies have shown that the chief hallmarks of the

neuroses, anxiety (Gallager, 1954; Taffel, 1955; Sarason, 1958; Campbell, 1960; Gottschalk, 1967; Hamburg et al., 1967; and Luborsky, 1962) and depression (Conrad, 1952; Gallager, 1954; and Uhlenhuth and Duncan, 1968), are closely associated with positive therapeutic or quasi-therapeutic outcome; and a few behavioral studies, Cohen and Cohen (1960) and Gelder (1968), for example, have demonstrated neurotics' superior conditionability. Hawkins, Wyrick, Mohl, and Williams (1978) analyzed the relationships between the psychopathology presented by 12 medical students and success in brief psychotherapy. They found psychotherapeutic success was related to neurotic pathology, regardless of severity. The neurotic students achieved significant clinical benefit in a short time, while the authors felt that those students diagnosed as personality disorders would probably require long-term psychotherapy.

There are many studies (Appfelbaum, 1958; Gottschalk et al., 1967; McNair, Callahan, and Lorr, 1962; Strupp, Wallach, Jenkins, and Wogan, 1963; and Sullivan, Miller, and Smelser, 1958) which have found more psychotherapeutic improvement in less pathological patients, regardless of the measure of pathology used. A recent example of this kind of study was undertaken by Sloan, Staples, Cristol, Yorkston, and Whipple (1976). They found that in psychotherapy, relatively greater success was associated with less overall pathology on the Minnesota Multiphasic

Personality Inventory. They also found that those patients diagnosed as personality disorders responded remarkably well to a behavioral approach, while responding poorly to traditional psychotherapy.

The present study attempted to replicate Smallwood's (1975) findings and also to determine how three major diagnostic categories of psychiatric patients (neurotics, personality disorders, and schizophrenics) would respond to Fromme's operant group paradigm. It was hypothesized that the three groups would behave quite differently since they are assumed to be representatives of psychiatric categories with qualitatively different characteristics.

CHAPTER III

STATEMENT OF THE PROBLEM

Several studies (Fromme et al., 1974; Fromme and Close, 1976, and Dickey, 1980) have shown Fromme's operant group paradigm to be an effective means of facilitating feeling, feedback, and empathy statements in college students. Smallwood (1975) demonstrated this same paradigm's effectiveness with psychiatric inpatients. Taken as a whole body of research, these studies support this method of verbal operant conditioning as a consistently effective tool for changing behavior in a therapeutic direction.

In order to further evaluate Fromme's method it is important to ascertain its impact on specific target populations. The present study is a step in that direction.

The paradigm used in this study could have important implications for the treatment of psychiatric patients, as Smallwood (1975) has mentioned. For example, if further research continues to yield positive results, this method could become a significant therapeutic tool to be used in place of, or as an adjunct to, longer term, traditional therapies. For this reason, Smallwood's findings with psychiatric patients suggested a need for replication.

Therefore, this study has two major purposes. The first is to partially replicate Smallwood's study using

three of his dependent variables and two new ones involving the attending psychiatric staff's evaluation of the subject. The second is to investigate the differential effectiveness of Fromme's technique on three different diagnostic categories of patients: neurotics, personality disorders, and schizophrenics.

Under the first major purpose of the study there were five hypotheses. Hypothesis 1 predicted that the subgroup of patients receiving reinforcement would increase its number of emitted desired verbalizations significantly more than subgroups receiving only instructions, as measured by comparing the first with the fifth session.

Hypothesis 2 predicted that the subgroup receiving reinforcement would increase in openness (as measured by the Modified Jourard Self-Disclosure Questionnaire) significantly more than the subgroup receiving only instructions, as measured by comparing the pre and post scores on that instrument.

Hypothesis 3 predicted that the subgroup receiving reinforcement would decrease its number of psychosocial problems (as measured by the Mooney Problem Check List) significantly more than the subgroup receiving only instructions. Pre/post comparisons were made.

The next two hypotheses involved the utilization of the Unit Staff Evaluation Form, which required attending psychiatric staff to rate a subject's therapeutic progress in several areas. Hypothesis 4 predicted that the

subgroup receiving reinforcement would be rated higher on its overall psychological functioning (item 1 on the Unit Staff Evaluation Form) than the subgroup receiving instructions only. Ratings were made 10 to 14 days after a subject's participation in the study.

Hypothesis 5 predicted that the subgroup receiving reinforcement would be rated higher on a measure of overall therapeutic progress (as determined by the average score of all 10 items on the Unit Staff Evaluation Form) than the subgroup receiving only instructions. Again, as in hypothesis 4, ratings were taken 10 to 14 days after a subject's participation in the study.

Hypotheses 1, 2, and 3 were directly explored by Smallwood, while hypotheses 4 and 5 are indirectly related to his study.

The remaining six hypotheses of the study explored the three diagnostic subgroups' differential responsiveness to learning the response categories, and evaluated the therapeutic benefit gained by each group while doing this. For these hypotheses all eight subjects in each diagnostic category (both reinforced and non-reinforced) were considered a diagnostic subgroup and were compared to each other. Also, it is important to note that for the sake of hypothesis testing an assumption was made regarding the relative psychopathology of the three diagnostic groups. This assumption was that schizophrenics suffer

from more psychopathology than personality disorders, and that patients diagnosed as personality disorders manifest more psychopathology than patients diagnosed as neurotic. Although this was perhaps a debatable assumption, it was consistent with clinical lore and descriptive implications of these categories in both DSM-11 (1968) and DSM-III (1979). The neuroses were described in DSM-II as manifesting "neither gross distortion or misinterpretation of external reality, nor gross personality disorganization" (p. 39), while DSM-III stated that in neurotic disorders "reality testing is grossly intact; behavior does not actively violate gross social norms" (p. 10). But these same documents implied greater psychopathology for the personality disorders. DSM-III states:

> . . . it is only when personality traits are inflexible and maladaptive and cause either significant impairment in social or occupational functioning or subjective distress that they constitute personality disorders (p. 305).

DSM-II describes personality disorders as "characterized by deeply ingrained maladaptive patterns of behavior that are perceptibly different in quality from psychotic and neurotic symptoms" (p. 41). Schizophrenia is clearly a more serious disorder than the other two. Regarding this, DSM-II says

> This large category includes a group of disorders manifested by characteristic disturbances of thinking, mood and behavior. Disturbances in thinking are marked by alterations of concept formation which may lead to misinterpretations of reality and sometimes to

> delusions and hallucinations. . . . Corollary mood changes include ambivalent, constricted and inappropriate emotional responsiveness and loss of empathy with others. Behavior may be withdrawn, regressive and bizarre (p. 33).

DSM-III says essentially the same thing regarding schizophrenia. These discussions of relative psychopathology are relevant to hypotheses 6 through 11.

Hypothesis 6 predicted that the less the relative psychopathology of a diagnostic group of patients, the greater would be the increase in the amount of emitted desired verbalizations in comparing the first with the fifth sessions. More specifically, this means that the subgroup of neurotics was predicted to show more increase than the subgroup of personality disorders, and the personality disorders would show more increase than the schizophrenics.

Hypothesis 7 predicted that across sessions diagnostic groups of lesser pathology would show consistently greater increases in emitted desired verbalizations than those of greater pathology. More specifically, it was predicted that patients with a neurotic diagnosis would show more consistent increases across sessions than those diagnosed as personality disorders; and correspondingly, the diagnostic group of personality disorders should show more consistent increases than the group of schizophrenics.

Hypothesis 8 predicted that the less the relative psychopathology of a diagnostic group, the greater would be the increase in openness (as measured by the Modified

Jourard Self-Disclosure Questionnaire), comparing the pre and post scores. More specifically, neurotics were predicted to show more increase than personality disorders, and personality disorders were predicted to show more increase than schizophrenics.

Hypothesis 9 predicted that the less the relative psychopathology of a diagnostic group, the greater would be the decrease in the number of psychosocial problems (as measured by the Mooney Problem Check List), comparing pre and post scores. More specifically this means that neurotics were predicted to show more decrease than personality disorders, and personality disorders were predicted to show more decrease than schizophrenics.

Hypothesis 10 predicted that the less the relative psychopathology of a diagnostic group of patients, the greater the rating of their overall psychological functioning would be 10 to 14 days after participation in the study (as measured by item 1 on the Unit Staff Evaluation Form). More specifically, neurotics were predicted to receive better ratings than personality disorders, and personality disorders were predicted to get higher ratings than schizophrenics.

Hypothesis 11 predicted that the less the relative psychopathology of a diagnostic group, the higher the rating of therapeutic progress (as measured by the average score of all 10 items on the Unit Staff Evaluation Form)

would be 10 to 14 days after participation in the study. This means that neurotics were predicted to score higher than personality disorders, and personality disorders were predicted to score higher than schizophrenics.

The statistical methods used to test these hypotheses and a further discussion of the dependent variables used in this study can be found in the next chapter.

CHAPTER IV

METHODOLOGY

Subjects

Subjects for this study were 24 nonpsychotic adult inpatients at the Veterans Administration Hospital in San Antonio, Texas. Participation in the study was voluntary and subjects had the right to withdraw at any time. Groups were matched as closely as possible by age, sex, and psychiatric ward. Eight patients diagnosed as neurotics, eight diagnosed as personality disorders, and eight diagnosed as schizophrenics in remission were selected for the study. The diagnosis was made by the attending psychiatrist, who was instructed to select only those patients with a clear diagnosis. Because actively psychotic schizophrenics and depressives would probably have been unable to attend to the task at hand, and because patients with a clear diagnosis of anti-social personality (one of the most severe kinds of personality disorders) would likely have been a disruptive force in the group, these types of patients were excluded from the study. Each of the three groups (neurotics, personality disorders, and schizophrenics) were then divided into two subgroups. One of these

subgroups was given instructions and the benefit of the feedback apparatus; the other was given only instructions.

Instructions

In order to clarify the task and to maximize motivation, subjects were given instructions and a warm-up procedure prior to the first session. The instructions emphasized the desirability of sharing one's feelings, being empathic, and providing feedback. The warm-up procedure required each group member to use one of the response categories in a "trial run" until the experimenter was sure the category was well understood by the subject. This procedure was similar to those used by Fromme and Close (1976), Duvall (1974), and Dickey (1980).

Prior to the first session in which the reinforcement apparatus was used for each experimental group (the second group session for these groups), instructions explaining the meaning and functions of the feedback apparatus were given. A verbatim transcript of all instructions and the warm-up procedure can be found in Appendix A.

Apparatus and Procedures

Subjects were seated around a rectangular table immediately adjacent to a one-way mirror of an observation room. Each group's conversation was tape recorded and simultaneously monitored by the experimenter via mirror and microphone. Subjects were informed of this procedure.

A control panel operating digital counters and a multiple event recorder was used to record instances where the experimenter judged that a group member's statement fit one of the reinforceable response categories. When reinforcement was applied, a digital counter placed in front of a subject was advanced, and produced an audible click. A red light attached to each subject's counter was used to produce two additional discriminative cues to subjects in feedback sessions: (1) lights on all four counters were flashed whenever three minutes elapsed in which no reinforceable responses were made; and (2) a subject's light was switched on whenever he or she fell 10 or more responses behind the subject with the highest count and remained on until he or she caught up.

All groups, experimental (feedback apparatus and instructions) and control (instructions only) met a total of five 45-minute sessions across a two-week time period. The first session was a baseline session for all groups in which reinforcement was not given. During the next four sessions, the experimental groups were reinforced as described earlier for making the desired verbalizations, while the control groups attempted to carry out the instructions given in the baseline session. The experimenter monitored the control groups but did not intervene in any way.

Before the baseline session and following the last session, each group was given two questionnaires. The

first was a modification of Jourard's (1964) self-disclosure questionnaire, and the second was the Mooney Problem Check List. Also, after the last session, each subject was given a short questionnaire concerning his or her experience during the experiment.

Additionally, a Unit Staff Evaluation Form was administered to each patient's unit staff 10 days to two weeks after his or her participation in the study. The unit staff consisted of physicians, psychologists, residents, and nurses who had direct contact with the patient before, during, and after the study.

Response Categories

As in the Dickey (1980) study, feeling, feedback, and empathy statements were divided into four categories, defined as follows:

1. Feeling: An expression of feeling.

2. Empathy: Clarifying for another group member what one thinks he or she feels.

3. Behavioral Observations: Commenting on another group member's body language or behavior. These comments were to have been made to that member.

4. Seeking Feedback: Asking another group member to describe one's own behavior, appearance, or how he or she feels about that person.

In the context of the group interactions, only those statements which added new or additional information about

ongoing processes or accompanying affective status were reinforced.

Also, to insure that subjects did not forget the response categories, each subject was provided with a list of these, which was taped to the table directly in front of him. The list also gave several examples of acceptable responses in each category.

Measures and Statistical Analysis

Feeling, Feedback, and Empathy Statements

The operant group conditioning technique used in the present study was originally developed by Fromme with pilot studies done in a college population (Fromme, Whisenant, Susky, and Tedesco, 1974; Fromme and Close, 1976) and in a psychiatric population (Smallwood, 1975). Digital counters and lights were used to reinforce selected verbalizations which corresponded to categorical statements involving feeling, feedback, and empathy. The actual technique has been discussed previously in the Review of Literature and Methodology (Apparatus and Procedures). Use of the results of the technique as a measure of therapeutic benefit has its basis in the theories of Jourard (1964), Rogers (1961), Sullivan (1953), and Yalom (1970). Theory and research have indicated that the giving and receiving of feeling, feedback, and empathy is therapeutic. Therefore, although

the technique per se is a test of the experimental manipulation of behavior, successful results of the technique infer therapeutic benefit according to the literature. Three hypotheses of this study directly test how well subjects learned the response categories. Hypotheses 1, 6, and 7 use the quantity of feeling, feedback, and empathy statements emitted per group session as the dependent variable.

Hypothesis 1 predicted that the reinforced subgroups would increase their output of feeling, feedback, and empathy statements from the first to the fifth session substantially more than the non-reinforced subgroups. To test this, a two-way analysis of variance (Hays, 1973) was used. Hypothesis 6 predicted that a significantly greater number of desired verbalizations would be emitted by groups of relatively less pathology, comparing the first with the last session. This was also tested by a two-way analysis of variance (Hays, 1973). A Tukey's HSD post hoc test was also computed according to procedures outlined in Kirk (1968). This test was undertaken to specifically compare the pre-post change scores of the three diagnostic categories. Hypothesis 7 predicted that, across sessions, diagnostic groups of lesser pathology would show consistently greater increases in feeling, feedback, and empathy statements than those of greater pathology. To test this hypothesis, a 3x2x5 mixed repeated measure design (Winer, 1971) was employed. An F test for simple simple main effects was computed according to procedures outlined in

Kirk (1968). The test for simple simple main effects was undertaken to analyze the results of the technique across sessions by reinforcement condition by diagnostic category.

Modified Self-Disclosure Questionnaire

Jourard (1964) devised a questionnaire for judging interpersonal openness. A modified version of this original scale was used in the present study. The original questionnaire used 60 items while the present version only used one-half of those items. The term "people in this group" was used as the basis for rating the questions on the present modified form instead of Jourard's original use of the terms "mother," "father," "male friend," "female friend," and "spouse." Jourard's research findings have indicated that self-disclosure is a measurable and valid quantity. The original questionnaire's validity as demonstrated by Jourard gives the present modified version face validity.

Subjects were asked to fill out the 30 item scale (Appendix C) in accordance with one of the following categories as they relate to the three other "people in this group":

1. Would tell people nothing about this aspect of me.
2. Would talk in general terms about this item.
3. Could talk in full and complete detail about this item to these people.

4. Would lie or misrepresent myself to these people about this particular item.

An openness, or self-disclosure, score was then computed according to the following rating scale:

Answered with A: A zero rating was given.

Answered with B: A score of one was given.

Answered with C: A score of two was given.

Answered with D: A score of zero was given.

A self-disclosure score was computed by determining the total score of an individual's ratings. This score, therefore, ranged from zero to 60. The questionnaire was given before the baseline session and after the final session and a comparison was made. Hypothesis 2 predicted that the reinforced subgroup would increase in self-disclosure, comparing pre and post scores, substantially more than the non-reinforced subgroup. Hypothesis 8 predicted that the less the relative pathology of a diagnostic subgroup, the greater would be the increase in self-disclosure, comparing pre and post scores. Both of these hypotheses were tested using a 3x2x2 mixed repeated measure design (Winer, 1971).

Mooney Problem Check List

The Mooney Problem Check List (Gordon and Mooney, 1950) was developed as an instrument to help individual delineate their psychosocial problems. It offers individuals the opportunity of communicating their problems in a precise

and economical fashion. The Check List is easy to use and administer. It is constructed so that the various problem areas run horizontally across the page in groupings of six items. In addition to the directions and several open ended follow-up questions, the Check List is comprised of 288 items covering nine problem areas (see Appendix D). Problems which are of concern to an individual are underlined. A total number of problems of each person using the instrument is obtained in this way.

The Mooney Problem Check List is a survey instrument and not a test designed for prediction purposes; therefore, discussion of its validity is of little value. More meaningful and relevant has been the research support of the Problem Check List's basic assumptions as a survey instrument. Studies by Gordon and Mooney (1949), and Houston and Marzolf (1944) have supported these assumptions. The assumptions are:

1. The majority of individuals will respond to the items.

2. Individuals will accept the task with a constructive attitude.

3. Most people will find that it covers reasonably well their range of problems.

4. Professionals will find it to be useful.

5. Researchers will find it to be useful.

Research is one of the suggested uses of the Check List, particularly for measuring changes in the quantity or

patterns of problems after a planned problem-reduction program has been undertaken, as in the present study.

Hypotheses 3 and 9 utilized the Problem Check List as the dependent variable. The former predicted that the reinforced subgroup would show a significantly greater decrease in problems listed than the non-reinforced group, pre to post. The latter predicted that subgroups of less relative psychopathology would show a significantly greater decrease in problems listed than subgroups of greater relative psychopathology, pre to post. Both of these hypotheses were tested with a 2x3x2 mixed repeated measure design (Winer, 1971).

The Mooney Problem Check List was one of two instruments used in the present study that directly measured therapeutic impact; and this was the major rationale for using it. The second direct measure of therapeutic progress will now be discussed.

Unit Staff Evaluation Form

The Unit Staff Evaluation Form was devised because it was felt that a direct measure of the subject's therapeutic progress undertaken by the attending psychiatric staff was desirable. The Evaluation Form consists of 10 items which pertain to psychotherapeutic progress as observed by staff on the psychiatric ward. Progress is rated on each of these items through use of a seven-point Likert-type scale ranging from "much greater than normal progress" to "much

less than normal progress." The Evaluation Form can be found in Appendix E.

The Evaluation Form was completed by the unit staff 10 to 14 days after a subject's participation in the study, and ratings were consensually agreed on by all staff present. In every case at least one psychiatrist, one nurse, one psychologist, and one aide who was directly treating the subject being rated was present when the form was completed.

Statistical analyses were done two ways on the data obtained from this form: (1) using only item 1, "Patient's overall psychological functioning," and (2) an average score on all 10 items. There were four hypotheses that utilized the Unit Staff Evaluation Form. Hypotheses 4 and 5 predicted that the reinforced subgroups would be rated significantly higher on both (1) and (2) above than non-reinforced sub-groups; and likewise, hypotheses 10 and 11 predicted that subgroups of relatively lesser pathology would be rated higher on (1) and (2) than subgroups of greater psychopathology. To test hypotheses 4 and 10 a 2x3 analysis of variance (Hays, 1973) was used. Using the same design a separate analysis of variance was used to test hypotheses 5 and 11.

Subject's Evaluation of Experiment

The Subject's Evaluation of Experiment (Appendix F)

was devised because an instrument that gauged the participants' subjective reactions to the experiment was desired. This instrument required that the subject rate the experiment in six areas: Helpfulness, Worthwhileness, Pleasantness, Experiment's Facilitation of Group Closeness, Interestingness, and Comparison of Experimental Paradigm vs. Other Therapies. Six 2x3 analysis of variance procedures (Hays, 1973) and one Tukey HSD post hoc test were computed to evaluate the data obtained from the Subject's Evaluation of Experiment Form.

CHAPTER V

RESULTS

Reliability

Audio tapes of two operant group sessions conducted during pilot work were used for a preliminary estimate of interjudge agreement on the presence or absence of the categories. Categorical distinctions were not made since the four categories were treated interchangeably throughout the experiment. Scoring units were defined as any non-interrupted complete thought or statement. The few instances of disagreement between judges as to what constituted a scoreable unit were resolved in conference. Two judges then independently scored 670 units. Of this total, 164 were determined to be reinforceable. This total was compared with the record of statements actually reinforced by the experimenter. Reinforcements actually administered numbered 151, of which seven were later judged erroneous. The experimenter missed giving reinforcements in 20 cases for a ratio of 27 errors in 679 judgments, or a 96% level of interjudgment agreement. This compared with a 97% level of agreement found in the Dickey (1980) study, and a 96% level of agreement found in the Fromme et al. (1974) study, using a similar procedure. It should be noted that missed

reinforcements have the effect of introducing an intermittent schedule and were therefore not considered particularly serious.

Effects of Reinforcement and Diagnostic Category on the Production of Reinforceable Responses

A two-way analysis of variance was computed to test the first and sixth hypotheses. The results of this analysis can be found in Table I. It is important to note here that the significant interaction effect (F=12.71, $p<.001$) obtained by this analysis does not pertain to either hypothesis. This effect is clearly the result of the high pre/post increase in production of reinforceable responses by the reinforced personality disorder subgroup and very similar to the third order interaction found in Table II. This interaction effect will be discussed further in conjunction with hypothesis seven (Table II).

The first hypothesis predicted that reinforced subgroups would increase their production of reinforceable responses, pre to post, more than the non-reinforced subgroups. With an F value of 40.83 ($p<.001$), it is clear that this hypothesis was upheld, and was therefore a successful replication of Smallwood's (1975) findings.

The sixth hypothesis predicted that a significantly greater number of reinforceable responses would be produced by groups of relatively less pathology, comparing pre and

post scores. Specifically, it was predicted that the neurotics would increase their production of reinforceable responses more than the personality disorder subgroup, and that the personality disorder subgroup would likewise increase their production of these responses significantly more than the schizophrenics, pre to post. A significant F value of 34.32 ($p<.001$) was obtained, indicating significant pre/post differences between the three diagnostic subgroups in their production of reinforceable responses. A Tukey's HSD post hoc test was then computed. The N (Neurotic) subgroup ($M=3.25$) produced significantly more of the desired verbalizations, pre to post, than did the S (Schizophrenic subgroup ($M=-4.00$); and the PD (Personality Disorder) subgroup ($M=17.63$) produced significantly more reinforceable responses, pre to post, than did the N (Neurotic) subgroup ($M=3.25$) or the S (Schizophrenic) subgroup ($M=-4.00$) (Tukey HSD = 6.79, $p<.05$). Therefore, hypothesis 6 was partially upheld (the PD subgroup did indeed outperform the S subgroup, pre to post), but interpretation of these results should be viewed in light of the fact that these pre/post scores do not tell the whole story. It is important to note here that even though the S subgroup decreased in production of reinforceable responses from session 1 to session 5, it had a very high baseline level (13.13 per session average), and produced substantially more reinforceable responses over all five sessions than the other two subgroups (S=517, PD=370, N=192). To further

analyze these data on the total number of reinforceable responses emitted, a 3x2 analysis of variance (Appendix G, Table IV) was computed. Clearly, the reinforced subgroup produced significantly more of the desired responses than the non-reinforced subgroup (F=76.21, $p<.001$). Significant differences within the diagnostic category condition were also found (F=11.81, <.001). A Tukey's HSD post hoc test was then computed. Both the schizophrenic subgroup (M=51.5) and the personality disorder subgroup (M=43.5) produced significantly more reinforceable responses than the neurotic subgroup (M=21.75) (Tukey HSD=21.06, $p<.05$). These results seem to further substantiate the impact of reinforcement and to clarify the differential responding pattern of the three diagnostic subgroups.

TABLE I

ANALYSIS OF VARIANCE OF EFFECT OF REINFOREMENT AND DIAGNOSTIC CATEGORY ON THE PRODUCTION OF REINFORCEABLE RESPONSES: PRE TO POST

Source	SS	df	MS	F	P
Reinforcement	1153.13	1	1153.13	40.83	<.001
Diagnostic Category	1938.25	2	969.13	34.32	<.001
RxD	718.00	2	359.00	12.71	<.001
Error	508.25	18	28.24	--	--

TABLE II

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT, DIAGNOSTIC CATEGORY, AND SESSIONS ON PRODUCTION OF REINFORCEABLE RESPONSES

Source	SS	df	MS	F	P
R*	2548.41	1	2548.41	53.87	<.001
D**	1324.32	2	662.16	14.00	<.001
RxD	188.72	2	94.36	1.99	-
Error	851.55	18	47.31	-	-
S***	450.53	4	112.63	8.69	<.001
SxR	824.80	4	206.20	15.91	<.001
SxD	1363.76	8	170.47	13.15	<.001
SxRxD	655.70	8	81.96	6.32	<.001
Error	933.20	72	12.96	-	-

*Reinforcement

**Diagnostic Category

***Sessions

The seventh hypothesis predicted that across sessions diagnostic groups of lesser pathology would exhibit consistently greater increases in reinforceable responses than those of greater pathology. To test this, a 3x2x5 mixed repeated measures design was employed. Table II presents the results of this analysis. Significant F values for all three main effects were obtained: Reinforcement (F=53.87, <.001), Diagnostic Category (F=14.00, <.001), and Sessions (F=8.69, <.001). Also, significance was attained in the Sessions x Reinforcement interaction (F=15.91, <.001; the Sessions x Diagnostic Category interaction (F= 13.15, <.001); and the Sessions x Reinforcement x Diagnostic Category interaction (F=6.32, <.001). F tests for simple simple main effects were then computed to determine statistical significance between reinforced and non-reinforced groups in each diagnostic category across sessions. In effect, these tests were a gauge of the differential responsiveness to reinforcement of the three diagnostic categories across sessions. Results of the tests can be found in Table III. To further clarify these results, Figures 1, 2, and 3 graphically show the differing reinforcement response patterns of the diagnostic groups. By viewing these graphs the reader can see that the reinforced personality disorder group is clearly the reason for the third order interaction (SxRxD) found in Table II. Hypothesis 7 was not upheld, although it is important to note that the personality disorder subgroup was

the only one that consistently increased its output of reinforceable responses from session to session. Of even more importance, the results of the analyses undertaken for this hypothesis seem indicate that the three diagnostic subgroups responded in a qualitatively different fashion from session one to session five in their ability to learn to use the response categories and their responsiveness to operant reinforcement.

TABLE III

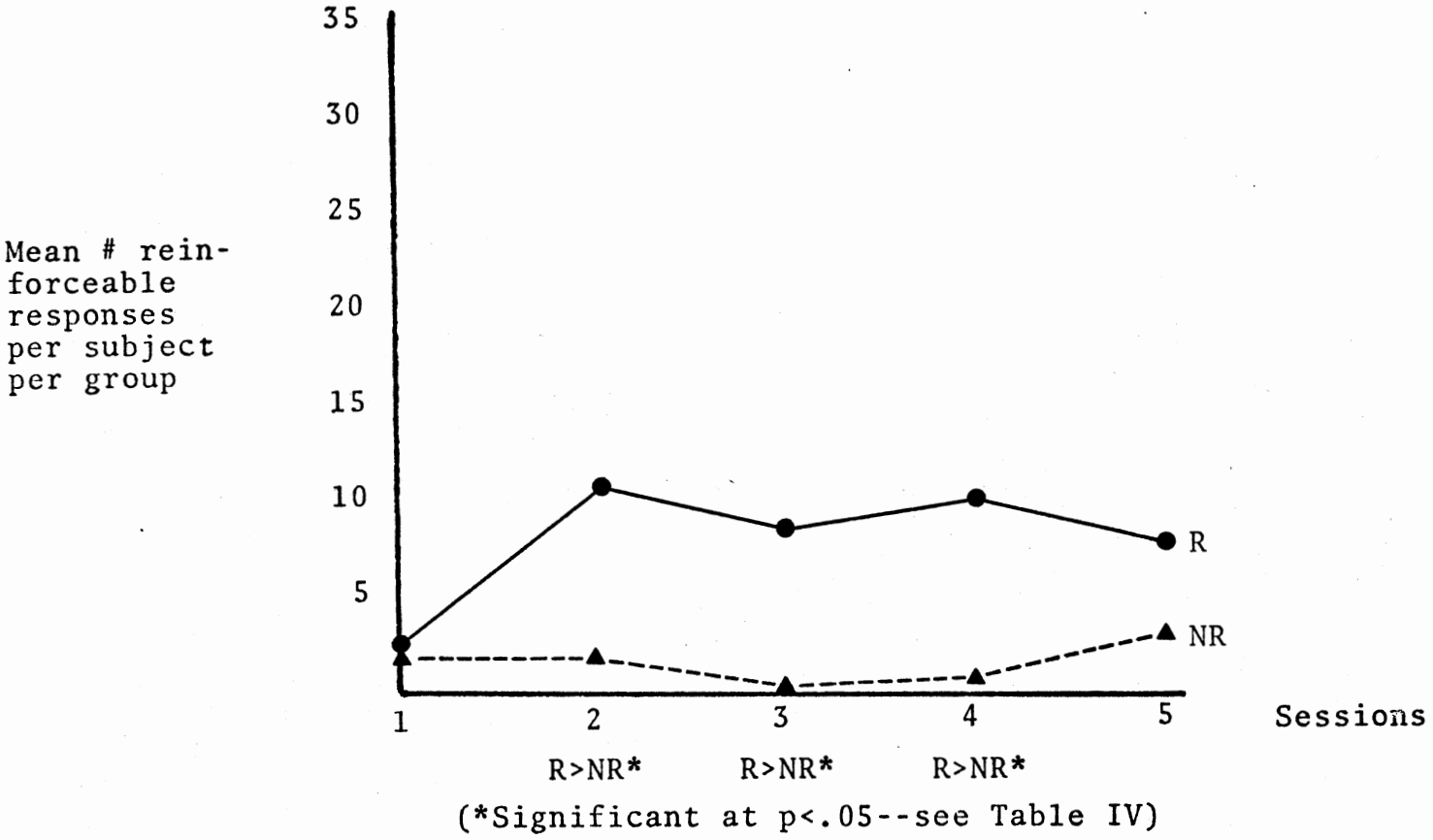
$\underline{F}$ SCORES FOR SIMPLE SIMPLE MAIN EFFECTS FOR REINFORCEMENT VERSUS NON-REINFORCEMENT ACROSS SESSIONS FOR EACH DIAGNOSTIC CATEGORY

	Sessions				
	1	2	3	4	
N	.07	5.38*	4.25*	5.99*	1.66
PD	.60	.10	3.00	16.03***	45.73***
S	1.50	7.67**	9.96**	31.40***	10.79**

*Significant at $p<.05$

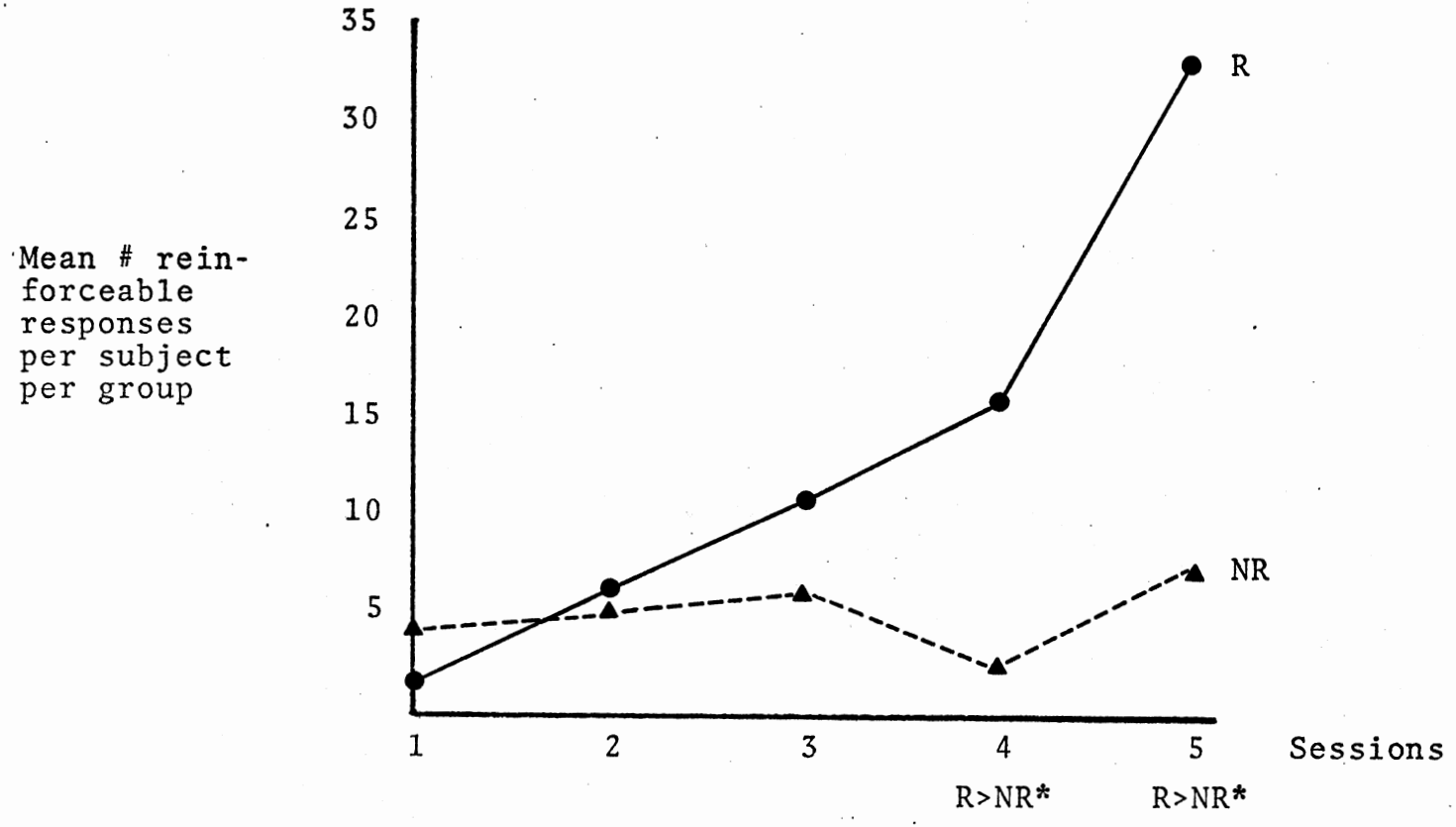
**Significant at $p<.01$

***Significant at $p<.001$



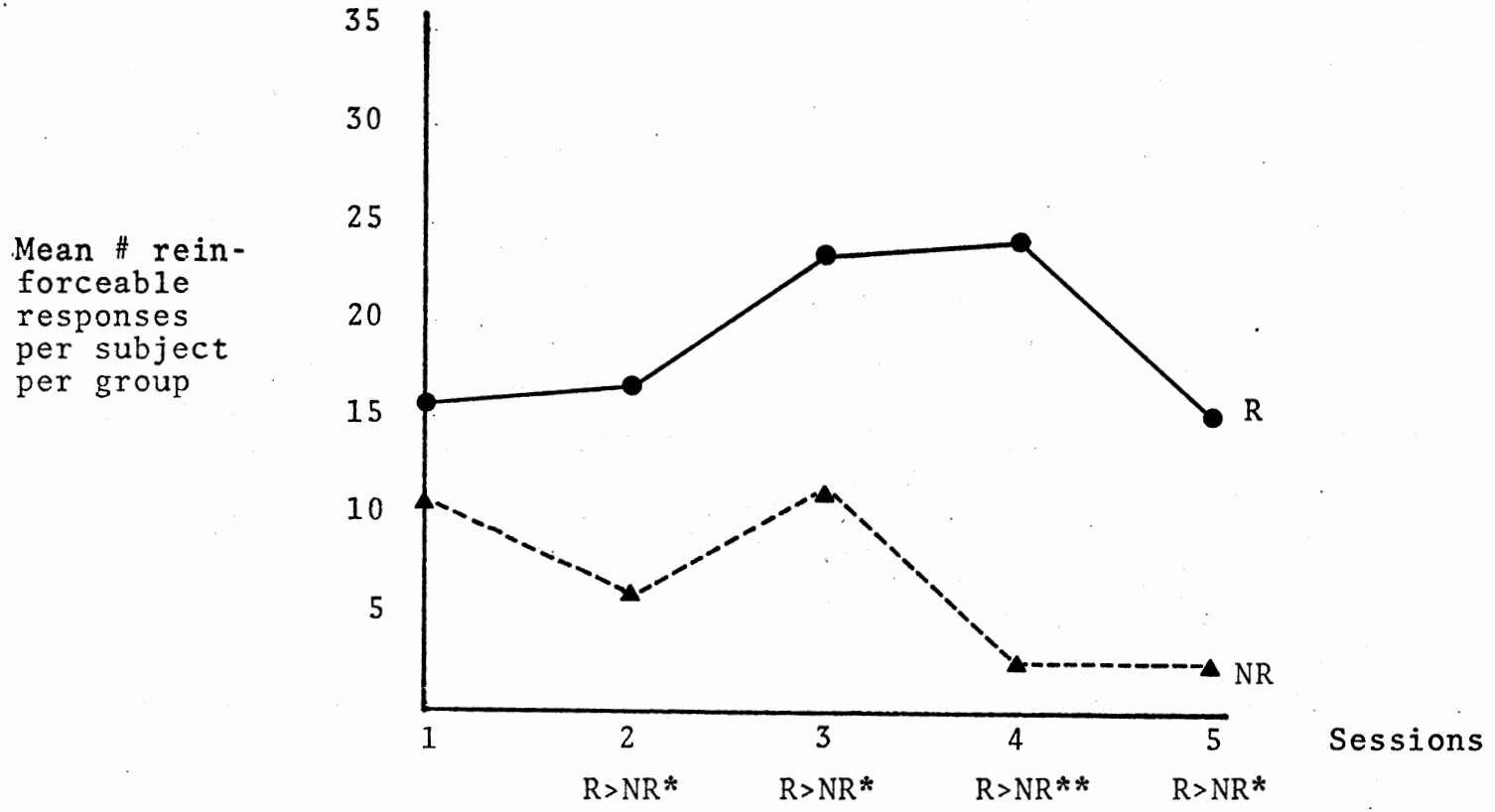
(*Significant at p<.05--see Table IV)

Figure 1. Comparison of Reinforced (R) vs. Non-Reinforced (NR) NEUROTIC Groups Across Sessions



(*Significant at p<.001--see Table IV)

Figure 2. Comparison of Reinforced (R) vs. Non-Reinforced (NR) PERSONALITY DISORDER Groups Across Sessions



(*Significant at p<.01--see Table IV;
**Significant at p<.001--see Table IV)

Figure 3. Comparison of Reinforced (R) vs. Non-Reinforced (NR) SCHIZOPHRENIC Groups Across Sessions

Pre and Post Self-Disclosure

The second hypothesis of the present study predicted that the reinforced subgroup would increase in self-disclosure, comparing pre and post scores, substantially more than the non-reinforced subgroup. Smallwood (1975) had found that reinforced groups had significantly higher post experiment scores on self-disclosure than pre scores and that the reinforced groups registered significantly higher self-disclosure scores than non-reinforced groups in post testing. However, the present study did not replicate Smallwood's findings and the second hypothesis was not upheld. A 3x2x2 mixed repeated measure design (see Appendix G, Table V) was utilized for testing this hypothesis and no significance was found.

The eighth hypothesis of the present study predicted that the less the relative pathology of a diagnostic group, the greater would be the increase in self-disclosure, comparing pre and post scores. To test this, the same 3x2x2 mixed repeated measure design that was used for hypothesis 2 above was employed (Appendix G, Table V). No significance was found and hypothesis 8 was not upheld.

Mooney Problem Check List

The study's third hypothesis predicted that the reinforced subgroup would list significantly fewer problems, pre to post, than the non-reinforced subgroup. This was one of Smallwood's (1975) hypotheses which was not upheld.

In the present study this hypothesis was tested by a 2x3x2 mixed repeated measure design (Appendix G, Table VI). Results of the analysis indicate that this hypothesis was not upheld. Apparently, the reinforcement procedure does not have a significant impact on the number of problems subjects check on the Mooney Problem Check List.

The ninth hypothesis predicted that the subgroups of less relative psychopathology would significantly decrease the number of problems checked on the Check List. The same statistical analysis as was used above for hypothesis 3 (Appendix G, Table VI) was employed; the hypothesis was not upheld.

It is also worthy of note that the diagnostic subgroups differed significantly ($F=4.65$, $<.03$) in the amount of problems checked, when pre and post scores were combined. The schizophrenic subgroup checked many more problems on the Check List than the other two diagnostic subgroups. This is not unexpected since schizophrenics are generally considered to suffer from substantially more psychopathological problems than either personality disorders or neurotics. Also, there was a significant ($F=5.03$, $<.04$) decrease of problems checked, pre to post, when all 24 subjects were analyzed as a group.

Unit Staff Evaluation Form

Four hypotheses were tested using the Unit Staff Evaluation Form. Hypothesis 4 predicted that the reinforced

subgroup would be rated significantly higher on item one ("patient's overall psychological functioning"), and hypothesis 10 predicted that the subgroups of relatively lesser pathology would be rated significantly higher on this same first item. The same 2x3 analysis of variance (Appendix G, Table VII) was used to test both hypotheses and neither was upheld.

Hypothesis 5 predicted that the reinforced subgroup would score significantly higher on a measure of its overall therapeutic progress (as determined by the average score of all 10 items on the Unit Staff Evaluation Form) than the non-reinforced subgroup, and hypothesis 11 predicted that the less the relative pathology of a diagnostic subgroup, the higher would be the rating of its therapeutic progress (as determined by the same process as above in hypothesis 5). Both hypotheses utilized the same 2x3 analysis of variance (Appendix G, Table VIII) and both were not upheld.

Subject's Evaluation of Experiment

Analysis of data obtained from the Subject's Evaluation of Experiment was undertaken to provide information regarding subject's subjective experience of the study. Six different 3x2 analysis of variance procedures were computed to provide information in the following areas: Helpfulness (Appendix G, Table IX); Worthwhileness (Appendix G, Table X); Pleasantness (Appendix G, Table XI); Experiment's

Facilitation of Group Closeness (Appendix G, Table XII); Interestingness (Appendix G, Table XIII); and Comparison of Experimental Paradigm vs. Other Therapies (Appendix G, Table XIV). Of the six analyses, two yielded significant results.

While all three diagnostic categories found the study to be worthwhile, the non-reinforced subgroup rated it as significantly more worthwhile ($F=5.16$, $p<.05$) than the reinforced subgroup. Also, an especially interesting finding was that there was a significant difference ($F=5.03$, $<.05$) between diagnostic subgroups in their rating of how the experimental paradigm compared therapeutically with the other therapies they received while hospitalized. A Tukey's HSD was computed, and it was found that the neurotic subgroup ($M=6.5$) felt that the experimental paradigm was significantly more therapeutic than the schizophrenic subgroup ($M=4.63$). By looking at the form (Appendix F) the reader can see that the neurotic group found the experimental paradigm to be much more valuable than their other therapies, while the schizophrenic subgroup found it to be only slightly more valuable.

CHAPTER VI

DISCUSSION

The results of the present study provide further information about the efficacy of Fromme's operant group paradigm in an inpatient psychiatric setting, while providing some very interesting insights into the differences between neurotic, personality disorder, and schizophrenic patients. The three diagnostic groups of patients responded quite differently to the experimental task of learning to use the response categories, and also were markedly different in their responsiveness to operant reinforcement.

The first major purpose of the study was to explore further the effectiveness of Fromme's operant reinforcement technique with psychiatric inpatients. Smallwood (1975) found that the reinforcement technique had been very effective in eliciting feeling, feedback, and empathy statements with this population. He also found that the reinforced groups were significantly more self-disclosing, after utilization of the reinforcement technique, than the non-reinforced groups. However, he found no significant decrease in the quantity of psychosocial problems with the use of the technique. He concluded that these

mixed results were promising, but not conclusive, in their support of Fromme's technique as a therapeutic agent in treating psychiatric inpatients. Results from the present study paint a similar picture. Smallwood's finding that reinforced groups significantly increase their production of feeling, feedback, and empathy statements was successfully replicated in the present study; while his finding that reinforced groups would be more self-disclosing was not upheld. Neither Smallwood's study nor the present study found that reinforced groups significantly decreased in psychosocial problems (as measured by the Mooney Problem Check List). It is unclear why Smallwood found a significant increase in self-disclosure (as measured by the Modified Jourard Self-Disclosure Questionnaire) with the reinforced group while the present study did not. The failure of the present study to replicate the previous research certainly casts doubt on the notion that reinforced groups will be more self-disclosing than non-reinforced groups, and requires that further investigation be undertaken to clarify this issue. It does seem clear that procedures used in this study did not affect the number of psychosocial problems patients suffered, at least when the Mooney Problem Check List was used as the dependent measure. It was possible the short span of time that elapsed during the experiment was too brief for many of the patients' long-standing problems to resolve themselves to the point that they recognized the change. Perhaps

some of these problems were beginning to be dealt with during the experimental procedure and took awhile to be completely resolved and noticed by the patient. If this was the case, administration of the Check List at a later time might have detected problem reduction. It is also possible that the Mooney Problem Check List is not sensitive enough to pick up significant problem resolution, and another instrument should be utilized. It is likewise a possibility that the Modified Jourard Self-Disclosure Questionnaire discussed above is not a very effective instrument for measuring self-disclosure change and this accounts for the inconsistent results discussed above. In both cases, perhaps new instruments should be considered for use in future research.

In addition to the three hypotheses discussed above that were replications of Smallwood's (1975) study (hypotheses 1, 2, and 3) two others were tested that evaluated the therapeutic impact of operant reinforcement. Smallwood had commented in his study that the clinical staff had noticed some therapeutic movement in patients receiving the reinforcement condition, but this information was only anecdotal and no objective measure was taken. He recommended future research employ a more objective method of directly measuring therapeutic progress. The Unit Staff Evaluation Form was divised for this purpose. It was utilized to monitor the psychiatric staff's evaluation of the patient's psychotherapeutic progress 10 days to two

weeks after the patient's participation in the study. Hypotheses 4 and 5 predicted that the reinforced group of patients would show significantly greater therapeutic progress, as measured by this instrument, than the non-reinforced group. This was not the case, and these hypotheses were not upheld. Possibly, the staff did not have adequate time or exposure to the patient to detect specific therapeutic skills learned in the study. It is also conceivable that skills learned during the study did not generalize to the unit setting, but may have generalized to other settings that could not be observed by staff such as: social situations involving friends, loved ones, or other intimates. Perhaps the instrument was not very sensitive and should be refined if it is to be used again. All of these possibilities require further investigation.

Only one item on the Subject's Evaluation of Experiment revealed anything of significance relevant to the comparison of the reinforced versus the non-reinforced groups. Both reinforced and non-reinforced subgroups rated their experience in the study worthwhile; however, the non-reinforced subgroup rated its experience significantly more worthwhile. This is a bit difficult to explain and clearly points to a need for replication. This finding may be a false positive. If it is not, it might be a reflection of the added stress experienced by the reinforced subgroup.

The first major purpose of the present study (hypotheses 1 through 5) evaluated the efficacy of the reinforcement procedure with psychiatric inpatients, and explored its possible therapeutic impact. Results from the present study and from Smallwood's (1975) study solidly confirm the operant reinforcement procedure's power to evoke the desired feeling, feedback, and empathy responses from patients, but failed to confirm their therapeutic value. It is important to note here that several authors, including Jourard (1964, 1968) and Rogers (1961) have stated that the mere expression of feeling, feedback, and empathy is, in itself, therapeutic. It is possible the quantity of such responses is not as important as the quality; a possibility that will be discussed later in the chapter.

The second major purpose of the study was to examine and compare the response patterns of the three diagnostic subroups. In general, hypotheses 6 through 11 predicted that diagnostic subgroups of lesser pathology would produce more feeling, feedback, and empathy statements; would be more responsive to reinforcement; and would show greater therapeutic gain on the various dependent measures used. With one relatively minor exception, none of these hypotheses were upheld. Indeed, the findings were generally opposite of those predicted. The one exception was the partial confirmation of the sixth hypothesis, which postulated that neurotics would outproduce personality disorders, and personality disorders would outproduce schizophrenics,

comparing the first to fifth session output of the desired responses. On that measure, the personality disorder subgroup outproduced both the schizophrenics and the neurotics. But this method of using first to fifth session change scores for the evaluation of relative output of feeling, feedback, and empathy statements is limited in its usefulness, and should be viewed in conjunction with the examination of each subgroup's total production of desired verbalizations. When this is done, it is clear that both the personality disorder and schizophrenic subgroups produced significantly more of the desired verbalizations than the neurotic subgroup. Thus, the subgroup of least pathology produced, overall, substantially less feeling, feedback, and empathy statements than subgroups of greater pathology. Also, by viewing Table III (Chapter V), it can be seen that both the personality disorder subgroup and the schizophrenic subgroup were generally more highly responsive to reinforcement than the neurotic subgroup. These findings are similar to those of Beech and Adler (1963) who found that schizophrenics were responsive to conditioning, but neurotics were not. However, the results of the present study run counter to several studies (Gelder, 1968; Leventhal, 1959; Hartman, 1955; and Cohen and Cohen, 1960) which suggest schizophrenics are not very amenable to conditioning techniques. The present findings are also apparently at odds with Blaylock's (1960) which suggested that neurotics are just as responsive to verbal

conditioning techniques as anti-social personality disorders, although the relevance of his study is questionable since the present study utilized no anti-social subtypes of the personality disorders. Findings from the present study seem to indicate that a relatively low level of psychopathology does not necessarily go hand in hand with a relatively high production of feeling, feedback, and empathy statements, at least in a quasi-group therapy setting. Likewise, it appears that lower levels of psychopathology do not necessarily imply higher responsiveness to reinforcement, although the present study suggests the opposite may be more likely.

Analyses of data from the four dependent measures used in hypotheses 8, 9, 10, and 11 (Modified Jourard Self-Disclosure Questionnaire; Mooney Problem Check List; Item One, Unit Staff Evaluation Form; the average of all 10 items on the Unit Staff Evaluation Form) revealed no differences of any real consequence between the three diagnostic group's performance on these measures. Analysis of the Problem Check List indicated schizophrenics admitted to substantially more problems, both before and after the experiment, than the other two diagnostic subgroups. This is not surprising since schizophrenics are generally acknowledged by clinicians to experience a great deal more psychosocial problems than other kinds of patients. Possible reasons for the failure of the above instruments to detect any differences were discussed earlier, and apply

here also. They should be taken into consideration in subsequent research.

One further point of interest is that the neurotic subgroup rated its experience during the study as much more therapeutic than other therapies conducted at the hospital, while the schizophrenic subgroup judged their experience to be substantially less therapeutically valuable than did the neurotics. (The personality disorder subgroup also rated their experience as less therapeutic than the neurotics, although the difference was not statistically significant.)

Interpretation of these somewhat unexpected results may be enhanced by the experimenter's subjective impressions. In observing the three diagnostic groups, it appeared as if each group responded to the experimental task in a qualitatively different fashion. The schizophrenic group seemed very stimulus-bound and more immediately concerned with reinforcement contingencies than the other groups. Schizophrenic patients would respond immediately to the red light and change the topic. Likewise, they appeared to be much more immediately cognizant of positive reinforcement. They also appeared to be very anxious to please the experimenter and perform the desired behavior--at nearly any cost. Many times their statements fit the response categories, but were clearly inappropriate; and on one occasion, almost precipitated a fight. When using the response categories it was as if they weren't able to

control themselves emotionally, and had difficulty in modulating affective material. Fromme's paradigm, and the reinforcement condition in particular, appeared to facilitate lowering of psychological defenses in schizophrenic patients, patients who may have already been suffering from abnormally low defenses. Additionally, the quality of their feeling, feedback, and empathy statements seemed more primitive and concrete than the other two groups. All of these observations are consistent with the general clinical view of schizophrenia, which emphasizes the low defenses of schizophrenics and their difficulty controlling and repressing emotionally-charged material. It is possible that medication taken by the schizophrenic patients could have affected their performance; although, if so, it is probable that the quality of their expressions were enhanced by the medication. From the above observations, it is hypothesized that Fromme's paradigm may not be therapeutic for a schizophrenic population, and that mere production of feeling, feedback, and empathy statements, without regard to their quality or social appropriateness, is not necessarily therapeutic. This hypothesis is in line with the views of Strassberg et al. (1975) who found that schizophrenics in their study who were more self-revealing made less therapeutic progress than those who divulged less. The authors further pointed out that most of the research supporting the theory that greater self-disclosure

leads to more therapeutic gain was undertaken using non-schizophrenic college students as subjects. Perhaps Fromme's paradigm would be more effective if the response categories were customized to decrease self-disclosure in schizophrenics. Since these patients appeared to be very responsive to operant reinforcement, development of different therapeutic response categories might be a profitable area of future investigation.

In contrast to the schizophrenic group, the personality disorder patients appeared very emotionally guarded throughout the entire experiment. Also, in contrast to the schizophrenics, it appeared as if this group of patients lacked emotional depth and authenticity in its use of the response categories. The non-reinforced personality disorder subgroup hardly used the response categories at all, while the reinforced subgroup did not respond to the reinforcement procedure until the fourth session, two sessions later than the schizophrenics or the neurotics. When, during the fourth and fifth sessions, the reinforced personality disorder patients tremendously increased their use of the response categories, their expressions of feeling, feedback, and empathy still appeared shallow and contrived. During the fifth session, when the response categories were used far more than at any other time in the experiment, members of this group openly joked about their ability to manipulate the reinforcement apparatus. It appeared to the experimenter that this reinforced

personality disorder group had learned how to get rewarded for superficial and inauthentic statements of feeling, feedback, and empathy, and then made a game of it during the final two sessions. Cromes (1972) came to a similar conclusion when he found, in his study, that a group of subjects diagnosed as anti-social personality disorders became more anti-social when treated with group therapy, while a group of neurotics improved, in terms of appropriate social skills acquired. Again, this kind of superficial, manipulative behavior is one of the clinical hallmarks of patients diagnosed as having a personality disorder. It is questionable whether the high production of reinforceable verbalizations of the personality disorder subgroup really indicates therapeutic progress. Patients diagnosed as having a personality disorder quite often are adept at verbal manipulation; so perhaps the mere conditioning of verbal behavior is not an effective way of treating these patients. This is a hypothesis that deserves further investigation, and certainly is consistent with the view of many clinicians.

In contrast to the other two diagnostic subgroups, the neurotic subgroup appeared to use the response categories in a modulated, integrated, and appropriate manner. Their interactions did not appear to be superficial or uncontrolled. Even though their output of reinforceable responses was much lower than the other two subgroups, the quality of their feeling, feedback, and empathy statements

appeared to be superior. The reinforced neurotic subgroup seemed to be genuinely aided by the reinforcement apparatus and the quality of the group's interactions seemed to profit as a result. It was the distinct impression of the experimenter that the neurotic subgroup gained more therapeutically from Fromme's paradigm than the other two diagnostic subgroups. If this impression is valid, than it would explain why the neurotics rated their experience during the study as much more therapeutic than did the other two subgroups.

In an attempt to make sense of the statistical and observational data, it is hypothesized that the quality of feeling, feedback, and empathy statements in a group therapy setting may be more important than the quantity. Truax and Carkhuff (1967), in their much quoted article, contended that interpersonal interactions characterized by empathy, non-possessive warmth, and genuineness are the most important factors contributing to therapeutic progress in psychotherapy. The schizophrenics' interactions in the present study seemed to lack warmth and high quality empathy, while the personality disorder subgroup's interactions certainly lacked genuineness. The neurotics' interactions, however, appeared to include high quality statements in all three areas mentioned by Truax and Carkhuff. The apparent lack of high quality statements emitted in the schizophrenic and personality disorder groups may help to explain why no measure of therapeutic gain

used in the study detected any significant therapeutic progress in these two diagnostic subgroups--despite their tremendous output of statements fitting the response categories. One would think (despite the possible relative insensitivity of the dependent measures used) that subgroups which emitted such high quantities of supposed therapeutic statements would show some tendency for therapeutic gain on one of more of the measures used. But this was not the case. Again, perhaps quality is more important than quantity.

In summary, the present study replicated Smallwood's (1975) finding that operant reinforcement significantly increased psychiatric inpatient's production of feeling, feedback, and empathy statements in a group therapy setting over five sessions, but failed to clarify the therapeutic implications of this finding. Also, three very different patterns of verbal behavior were observed in each of the three diagnostic subgroups. Despite their low overall output of reinforceable responses and apparent relatively low responsiveness to reinforcement, there is some evidence that neurotics profited therapeutically from Fromme's procedure, but little evidence that the schizophrenic and personality disorder patients did. It is hypothesized that the quality of feeling, feedback, and empathy statements may be more therapeutically important than their quantity. It is also speculated that Fromme's operant group procedure might be more therapeutic in a

psychiatric population if different response categories were devised for the various types of patient diagnostic subgroups. Also, some groups of psychiatric patients, such as personality disorders, may not profit from operant conditioning of verbal behavior alone. Future research in this area is suggested.

In conclusion, it is important to note that, despite its limited proven direct therapeutic value, this and previous studies have demonstrated Fromme's paradigm to be an effective, well-controlled, laboratory technique that is very useful in the investigation of major psychotherapeutic issues.

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APPENDIXES

APPENDIX A

INSTRUCTIONS

These groups sessions are designed to help you get to know one another on a personal basis. One way of doing this is to share your feelings and observations with each other regarding the current situation. If a person's behavior pleases or displeases you, the best way to get him to continue or stop is by telling him how you feel about his behavior. When doing this, it will be best for you stay in the "here and now," that is, speak to him regarding the current situation, not the past. Empathy, understanding, and helpful feedback given to a person is a natural way to become closer to him.

There are many superficial communications which we all engage in. However, I have here (pointing to the cards in front of each subject) some specific statements of what I have been talking about. They are ways of interacting which have been shown to be effective in establishing and keeping close relationships. They are:

1. Feeling: An expression of feeling.

2. Empathy: Clarifying for another group member what you think he feels.

3. Behavioral Observations: Commenting on another

group member's body language or behavior. The comment must be made to that member.

4. Seeking Feedback: Asking another group member to describe your behavior, appearance, or how he feels about you.

Reinforcement Sessions

Whenever someone makes a statement which fits into one of the categories, I will activate the counter in front of him. It will make a loud click which will let you know that you are in fact using these categories in your interaction. The counter will register your total and if anyone falls too far behind, the red light in front of him will be turned on and will remain until he catches up. If no one gets a click for three minutes, all lights will flash on. This will be a sign that the group is not using the categories and should change the nature of the interactions.

Warm-Up Procedure

To make sure you understand these categories, I am going to give you a warm-up exercise. To get you used to communicating directly with each other, I would like the two of you on this side of the table and the two of you over here to look into each other's eyes for ten seconds when I say "begin." Ready, begin.

(ten seconds elapse)

Now I'm going to ask each of you to use one of the response categories to see if you understand them.

"John, can you give a feeling response?" "I was nervous when I was driving up here." "That's a feeling but it is not in the here-and-now. If you had said, 'I'm nervous,' you would have been correct."

"_____, would you give an empathy response to someone in the group?"

"_____, would you give a behavioral observation to someone in the group?"

"_____, would you seek feedback from someone in the group?"

Previous participants have found this experience enjoyable, but if you feel you must leave the group, please feel free to do so. We will stop at _____.

APPENDIX B

REINFORCEABLE RESPONSES

1. Feeling: An expression of feeling. For example:
   "I feel nervous."
   "I am excited."
   "You made me angry."
   "I'm glad you're in the group."
   "You're attractive to me."

2. Empathy: Clarify for another group member what you think he feels. For example:
   "You're feeling threatened."
   "You look nervous."
   "Are you bored?"
   "You're feeling good."

3. Behavioral Observations: Commenting on another group member's body language or behavior. The comment must be made to that member. For example:
   "You seem to be avoiding eye contact with me."
   "You always smile when someone asks you a question."
   "You haven't said much in the group."
   "You seem to be acting very self-conscious."

4. Seeking Feedback: Asking another group member to describe your behavior, appearance, or how he feels about you. For example:
   "Do I make you feel uncomfortable?"
   "Do you like me?"
   "Do I seem angry to you?"
   "What do you think of me?"

APPENDIX C

JOURARD SELF-DISCLOSURE QUESTIONNAIRE

Mark the appropriate rating on your card by filling in the appropriate number.

Rating

0 would tell this group of people nothing about this aspect of me or would lie or misrepresent myself
1 would talk in general terms about this item to this group
2 would talk in full and complete detail about this item to this group

1. What I think and feel about religion; my personal religious views. _____

2. My views on the present government--the president, government, policies, etc. _____

3. My personal views on sexual morality - how I feel that I and others ought to behave in sexual matters. _____

4. The things that I regard as desirable for a man to be - what I look for in a man. _____

5. My favorite reading matter. _____

6. The style of house, and the kinds of furnishings that I like best. _____

7. The kind of part, or social gathering that I like best, and the kind that would bore me, or that I wouldn't enjoy. _____

8. My favorite ways of spending spare time, e.g., hunting, reading, cards, sports events, parties, dancing, etc. _____

9. What I would appreciate most for a present. _____

10. What I find to be the worst pressures and strains in my work. _____

11. What I feel are my shortcomings and handicaps that prevent me from getting further ahead in my work. _____

12. What I feel are my special strong points and qualifications for my work. _____

13. My ambitions and goals in my work. _____

14. How I feel about the choice of career that I have made - whether or not I'm satisfied with it. _____

15. Whether or not I owe money; if so, how much. _____

16. The aspects of my personality that I dislike, worry about, that I regard as a handicap to me. _____

17. What feelings, if any, that I have trouble expressing or controlling. _____

18. The facts of my present sex life - including knowledge of how I get sexual gratification; any problems that I might have; with whom I have relations, if anybody. _____

19. Whether or not I feel that I am attractive to the opposite sex; my problems, if any, about getting favorable attention from the opposite sex. _____

20. Things in the past or present that I feel ashamed and guilty about. _____

21. The kinds of things that make me just furious. _____

22. What it takes to get me feeling real depressed or blue. _____

23. What it takes to get me real worried, anxious, and afraid. _____

24. What it takes to hurt my feelings deeply. _____

25. The kinds of things that make me especially proud of myself, elated, full of self-esteem or self-respect. _____

26. My feelings about the appearance of my face - things I don't like, and things I might like about my face and head - eyes, nose, hair, teeth, etc. _____

27. How I wish I looked: my ideals for overall appearance. _____

28. Whether or not I now have any health problems - e.g.,

trouble with sleep, digestion, female complaints, heart condition, allergies, headaches, piles, etc. _____

29. Whether or not I have any long-range worries or concerns about my health, e.g., cancer, ulcers, heart trouble. _____

30. My feelings about my adequacy in sexual behavior - whether or not I feel able to perform adequately in sex relationships. _____

APPENDIX D

MOONEY PROBLEM CHECK LIST

1950 REVISION

A ADULT FORM

Leonard V. Gordon and Ross L. Mooney
Bureau of Educational Research
Ohio State University

Name.....Date.....

Occupation.....Age.....Sex.....

Marital Status.....Children.....
(Single,Married,Divorced,etc.)

Directions

Following you will find a list of problems with which people are often faced - problems relating to health, work, family, temperament, and so on. You are to read through the list and to select those statements that represent your problems. Mark the list honestly and sincerely and you will obtain a representative inventory of your problems. Remember, this is not a test. There are no right or wrong answers. The statements that you are to underline are those that refer to you. You are assured that what you mark in the inventory will be treated in the strictest of confidence. There are three steps for you to take.

First Step: Read slowly through the list and underline each problem that suggests something that is troubling you, thus "1. Feeling tired much of the time."

Second Step: After you have gone through the entire list, look back over the problems that you have underlined and circle the numbers in front of those problems that are of most concern to you, thus "(1.) Feeling tired much of the time."

Third Step: Reply to the summarizing statements on page

1. Feeling tired much of the time
2. Sleeping poorly
3. Too much underweight or overweight
4. Gradually losing weight
5. Frequently bothered by a sore throat
6. Catching a good many colds

7. Living in an undesirable location
8. Transportation or commuting problem
9. Lacking modern conveniences in my home
10. Lacking privacy in my living quarters
11. Unfair landlord or landlady
12. Poor living conditions

13. Wanting to develop a hobby
14. Wanting to improve myself culturally
15. Wanting worthwhile discussions with people
16. Wanting to learn how to dance
17. Lacking skill in sports or games
18. Not knowing how to entertain

19. Lacking leadership ability
20. Lacking self-confidence
21. Not really being smart enough
22. Being timid or shy
23. Lacking courage
24. Taking things too seriously

25. Wanting a more pleasing personality
26. Awkward in meeting people
27. Daydreaming
28. Being too tall or too short
29. Being physically unattractive
30. Wishing I were the other sex

31. Being away from home too much
32. Member of my family in poor health
33. Death in my family
34. Member of my family working too hard
35. Worried about a member of my family
36. Drinking by a member of my family

37. Having too few dates
38. Not finding a suitable life partner
39. Deciding whether I'm really in love
40. Having to wait too long to get married
41. Being financially unable to get married
42. In love with someone my family won't accept

43. Needing a philosophy of life
44. Confused in my religious beliefs
45. Losing my earlier religious faith
46. Having beliefs that differ from my church
47. Failing to see the relation of religion to life

48. Differing from my family in religious beliefs

49. Poor appetite
50. Stomach trouble (indigestion, ulcers, etc.)
51. Intestinal trouble
52. Poor complexion or skin trouble
53. Poor posture
54. Feet hurt or tire easily

55. Needing a job
56. Needing part-time work
57. Disliking financial dependence on others
58. Having too many financial dependents
59. Getting into debt
60. Fearing future unemployment

61. Having a poor memory
62. Not being as efficient as I would like
63. Not using my leisure time well
64. Too few opportunities for meeting people
65. Trouble keeping up a conversation
66. Not mixing well with the opposite sex

67. Being lazy
68. Lacking ambition
69. Being influenced too easily by others
70. Being untidy
71. Being too careless
72. Not doing anything well

73. Feeling ill at ease with other people
74. Avoiding someone I don't like
75. Finding it hard to talk before a group
76. Worrying how I impress people
77. Not getting along well with people
78. Not really having any friends

79. Having to live with relatives
80. Irritated by habits of a member of my family
81. Home untidy and ill kept
82. Too much quarreling at home
83. Too much nagging and complaining at home
84. Not really having a home

85. Wondering whether to go steady
86. Deciding whether to become engaged
87. Deciding whether to get married
88. Needing advice about getting married
89. Wondering if I really know my prospective mate
90. Afraid of the responsibilities of marriage

91. In love with someone of a different religion
92. Finding church services of no interest to me
93. Doubting the value of prayer

94. Doubting the existence of God
95. Science conflicting with my religion
96. Not getting satisfactory answers from religion

97. Having a permanent illness or disability
98. Frequent nose or sinus trouble
99. Having trouble with my ears or hearing
100. Allergies (asthma, hayfever, hives, etc.)
101. Having trouble with my eyes
102. Having a serious illness or disease

103. Needing financial assistance
104. Can't seem to make ends meet
105. Not getting a satisfactory diet
106. Not having enough money for necessities
107. Never being able to own a home of my own
108. Having too many financial problems

109. Wanting to improve my mind
110. Wanting to improve my appearance
111. Wanting to improve my manners or etiquette
112. Having trouble with my speech
113. Forgetting the things I learned in school
114. Having trouble understanding what I read

115. Speaking or acting without thinking
116. Being rude or tactless
117. Being stubborn or obstinate
118. Sometimes acting childish or immature
119. Being envious or jealous
120. Tending to exaggerate too much

121. Being disliked by someone
122. Being left out of things
123. Being made fun of or teased
124. Being treated unfairly by others
125. Suffer from racial or religious prejudice
126. Having feelings of extreme loneliness

127. Not being understood by my family
128. Not being trusted by my family
129. Feeling rejected by my family
130. Having an unhappy home life
131. Wanting love and affection
132. Being an only child

133. Disappointed in a love affair
134. Too deeply involved in a love affair
135. Having to break up a love affair
136. In love with someone I can't marry
137. Caring for more than one person
138. Afraid of losing the one I love

139. Not going to church often enough

140. Wanting to feel close to God
141. Wondering if there is life after death
142. Troubled by lack of religious faith in others
143. Upset by arguments about religion
144. Differing with my husband or wife over religion

145. Troubled by headaches
146. Glandular disorders (thyroid, lymph, etc.)
147. Menstrual or female disorders
148. Kidney or bladder trouble
149. Muscular aches and pains
150. High blood pressure

151. Not enough money for medical expenses
152. Too little money for recreation
153. Needing money for education or training
154. Unsure of future financial support
155. No steady income
156. Work too irregular or unsteady

157. Needing more exercise
158. Needing more outdoor air and sunshine
159. Wanting more personal freedom
160. Wondering if further education is worth while
161. Wishing I had a better educational background
162. Wanting to read worthwhile books more

163. Too self-centered
164. Getting into arguments or fights
165. Disliking certain persons
166. Sometimes lying without meaning to
167. Feeling blue and moody
168. Trying to forget an unpleasant experience

169. Not knowing the kind of person I want to be
170. Confused as to what I really want
171. Feeling I am too different
172. People finding fault with me
173. Feeling no one cares for me
174. Sometimes feeling life is hardly worth while

175. Too much interference by relatives
176. Having too many decisions made for me
177. Unable to discuss certain problems at home
178. Not getting along with a member of my family
179. Educational level different from my family's
180. Wishing I had a different family background

181. Petting and necking
182. Thinking too much about the opposite sex
183. Wondering how far to go with the opposite sex
184. Finding it hard to control sex urges
185. Repelled by thoughts of sexual relations
186. Needing information about sex

187. Lacking necessary experience for a job
188. Not knowing how to look for a job
189. Needing to know my vocational abilities
190. Unable to enter my chosen vocation
191. Doubting the wisdom of my vocational choice
192. Combining marriage and a career

193. Having considerable trouble with my teeth
194. Occasionally feeling faint or dizzy
195. Troubled by swelling of the ankles
196. Trouble with my scalp
197. Occasional pressure or pain in my head
198. Not getting enough rest or sleep

199. Not budgeting my money
200. Not having a systematic savings plan
201. Buying too much on the installment plan
202. Being too extravagant and wasteful
203. Living far beyond my means
204. Having to spend all my savings

205. Wanting more chance for self-expression
206. Little chance to enjoy art or music
207. Little opportunity to enjoy nature
208. Not having enough time for recreation
209. Wanting very much to travel
210. Needing a vacation

211. Mind constantly wandering
212. Constantly worrying
213. Too easily moved to tears
214. Too nervous or high strung
215. Having a bad temper
216. Feelings too easily hurt

217. Unable to express myself well in words
218. Feeling inferior
219. Not reaching the goal I've set for myself
220. Having difficulty in making decisions
221. Feeling I am a failure
222. Wanting to be more popular

223. Mother or father not living
224. Parents separated or divorced
225. Having clashes of opinion with my parents
226. Parents sacrificing too much for me
227. Parents having a hard time of it
228. Not seeing parents often enough

229. Being too inhibited in sex matters
230. Being underdeveloped sexually
231. Too easily aroused sexually
232. Thinking too much about sex matters
233. Fear of having a child

234. Lacking sex appeal

235. Working too hard
236. Getting no appreciation for the work I do
237. Finding my work too routine or monotonous
238. Wanting more freedom in my work
239. Would rather be doing other kind of work
240. Unsatisfactory working conditions

241. Bothered by shortness of breath
242. Having heart trouble
243. Having a persistent cough
244. Needing an operation or medical treatment
245. Needing another climate for my health
246. "Change of life" (menopause)

247. Needing legal advice
248. Needing to make a will
249. Needing an insurance program
250. Needing advice about investments
251. Wanting to have a business of my own
252. Worried about security in old age

253. Not having enough social life
254. Being alone too much
255. Missing my former social life
256. Not entertaining often enough
257. Spending too many evenings at home
258. Not living a well-rounded life

259. Unhappy too much of the time
260. Sometimes feeling things are not real
261. Bothered by thoughts running through my head
262. Sometimes afraid of going insane
263. Bothered by thoughts of suicide
264. Sometimes feeling forced to perform certain acts

265. Having a troubled or guilty conscience
266. Afraid of being found out
267. Sometimes being dishonest
268. Having a certain bad habit
269. Wanting to break a bad habit
270. Giving in to temptation

271. Worrying whether my marriage will succeed
272. Having different interests from husband or wife
273. Marriage breaking apart
274. Needing advice about a marriage problem
275. Needing advice about raising children
276. Wanting to have a child

277. Having unusual sex desires
278. Bothered by sexual thoughts or dreams

279. Worried about the effects of masturbation
280. Sexual needs unsatisfied
281. Sexually attracted to someone of my own sex
282. Sexual desires differ from husband's or wife's

283. Being bothered or interfered with in my work
284. Not liking some of the people I work with
285. Family disapproves of my present job
286. Dissatisfied with my present job
287. Poor prospects of advancement in my present job
288. Afraid of losing my job

SUMMARY

1. Use the space below to indicate any additional problems that you may have.

2. Write a brief summary of what you consider to be your chief problems.

3. Would you like to talk to someone about some your problems?

APPENDIX E

UNIT STAFF EVALUATION FORM

Patient:

Please rate the above patient's progress in the following areas since his or her completion of participation in my research study:

	much greater than normal progress	moderately greater than normal progress	slightly greater than normal progress	normal progress	slightly less than normal progress	moderately less than normal progress	much less than normal progress
1. Patient's overall psychological functioning	___	___	___	___	___	___	___
2. Patient's interpersonal skills	___	___	___	___	___	___	___
3. Patient's insight into his problems	___	___	___	___	___	___	___
4. Patient's mood	___	___	___	___	___	___	___
5. Patient's openness with others	___	___	___	___	___	___	___
6. Patient's attitude toward staff	___	___	___	___	___	___	___
7. Patient's commitment to psychotherapy	___	___	___	___	___	___	___
8. Patient's success in overcoming reclusiveness (if this is a problem)	___	___	___	___	___	___	___

	much greater than normal progress	moderately greater than normal progress	slightly greater than normal progress	normal progress	slightly less than normal progress	moderately less than normal progress	much less than normal progress
9. Quantity of patient's verbal interactions on the unit	___	___	___	___	___	___	___
10. Quality of patient's verbal interactions on the unit	___	___	___	___	___	___	___

APPENDIX F

SUBJECT'S EVALUATION OF EXPERIMENT

Generally speaking, I experienced this study as:

Helpful	___ ___ ___ ___ ___ ___ ___	Harmful
Very worthwhile	___ ___ ___ ___ ___ ___ ___	A waste of time
Pleasant	___ ___ ___ ___ ___ ___ ___	Unpleasant
Helping me get closer to my group	___ ___ ___ ___ ___ ___ ___	Pushing me further away from the people in my group
Interesting	___ ___ ___ ___ ___ ___ ___	Boring
Much more valuable than my other therapy	___ ___ ___ ___ ___ ___ ___	Much less valuable than my other therapy

Briefly relate any significantly positive experiences you had during the experiment, if any:

Briefly relate any significantly negative experiences you had during the experiment, if any:

Please make any other comments about the experiment you feel you would like to share:

APPENDIX G

ANALYSIS OF VARIANCE TABLES IV-XIV

TABLE IV

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON TOTAL PRODUCTION OF REINFORCEABLE RESPONSES: SESSIONS TWO THROUGH FIVE

Source	SS	df	MS	F	P
R*	12240.16	1	12240.16	76.21	<.001
D**	3792.33	2	1896.17	11.81	<.001
RxD	704.34	2	352.17	2.19	<.2
Error	2891.00	18	160.61	-	-

*Reinforcement

**Diagnostic category

TABLE V

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON SELF-DISCLOSURE, PRE AND POST

Source	SS	df	MS	F	P
R*	325.51	1	325.51	.92	-
D**	328.79	2	164.39	.47	-
RxD	467.79	2	233.89	.66	-
Error	6361.35	18	353.41	-	-
P***	3.02	1	13.02	.37	-
PxR	20.02	1	20.02	.57	-
PxD	131.79	2	65.90	1.88	-
PxRxD	70.29	2	35.15	1.00	-
Error	631.37	18	35.08	-	-

*Reinforcement

**Diagnostic Category

***Pre/Post self-disclosure change scores

TABLE VI

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON PRE/POST MEASURES OF PSYCHOSOCIAL PROBLEMS

Source	SS	df	MS	F	P
R*	13.20	1	13.20	.01	-
D**	13089.08	2	6544.54	4.65	<.03
RxD	3527.04	2	1763.52	1.25	-
Error	25317.66	18	1406.54	-	-
P***	336.02	1	336.02	5.03	<.04
PxR	17.52	1	17.52	.26	-
PxD	39.54	2	19.77	.30	-
PxRxD	98.79	2	49.40	.74	-
Error	1203.62	18	66.87	-	-

*Reinforcement

**Diagnostic Category

***Pre/Post Change Scores on the Mooney Problem Checklist

TABLE VII

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON ITEM ONE OF UNIT STAFF EVALUATION FORM: OVERALL PSYCHOLOGICAL FUNCTIONING

Source	SS	df	MS	F	P
Reinforcement	0.0	1	0.0	0.0	-
Diagnostic Category	0.25	2	0.13	0.15	-
R x D	0.75	2	0.38	0.45	-
Error	15.00	18	0.83	-	-

TABLE VIII

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON THE AVERAGE SCORE OF ALL ITEMS ON UNIT STAFF EVALUATION FORM

Source	SS	df	MS	F	P
Reinforcement	0.01	1	0.01	0.02	-
Diagnostic Category	0.10	2	0.05	0.11	-
R x D	0.34	2	0.17	0.38	-
Error	8.19	18	0.46	-	-

TABLE IX

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON ITEM ONE OF SUBJECT'S EVALUATION OF EXPERIMENT: HELPFULNESS

Source	SS	df	MS	F	P
Reinforcement	2.04	1	2.04	1.65	-
Diagnostic Category	1.59	2	.80	.65	-
RxD	3.08	2	1.54	1.24	-
Error	22.25	18	1.24	-	-

TABLE X

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON ITEM TWO OF SUBJECT'S EVALUATION OF EXPERIMENT: WORTHWHILENESS

Source	S	df	MS	F	P
Reinforcement	4.16	1	4.16	5.06	<.05
Diagnostic Category	4.09	2	2.05	2.53	<.2
RxD	2.58	2	1.29	1.59	-
Error	14.50	18	.81	-	-

TABLE XI

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON ITEM THREE OF SUBJECT'S EVALUATION OF EXPERIMENT: PLEASANTNESS

Source	SS	df	MS	F	P
Reinforcement	2.04	1	2.04	1.82	<.2
Diagnostic Category	7.59	2	3.80	3.39	<.1
RxD	1.07	2	.54	.48	-
Error	20.13	18	1.12	-	-

TABLE XII

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON ITEM FOUR OF SUBJECT'S EVALUATION OF EXPERIMENT: EXPERIMENT'S FACILITATION OF GROUP CLOSENESS

Source	S	df	MS	F	P
Reinforcement	1.50	1	1.50	1.35	-
Diagnostic Category	4.00	2	2.00	1.80	<.2
RxD	3.00	2	1.50	1.35	-
Error	20.00	18	1.11	-	-

TABLE XIII

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON ITEM FIVE OF SUBJECT'S EVALUATION OF EXPERIMENT: INTERESTINGNESS

Source	SS	df	MS	F	P
Reinforcement	1.49	1	1.49	2.57	<.2
Diagnostic Category	4.09	2	2.05	3.53	<.1
RxD	3.25	2	1.63	2.81	<.1
Error	10.50	18	.58	-	-

TABLE XIV

ANALYSIS OF VARIANCE OF EFFECT OF REINFORCEMENT AND DIAGNOSTIC CATEGORY ON ITEM SIX OF SUBJECT'S EVALUATION OF EXPERIMENT: COMPARISON OF EXPERMENTAL PARADIGM VS. OTHER THERAPIES

Source	SS	df	MS	F	P
Reinforcement	.67	1	.67	.44	-
Diagnostic Category	15.08	2	7.54	5.03	<.03
RxD	1.08	2	.54	.36	-
Error	27.00	18	1.50	-	-

VITA

George Vernon Dickey

Candidate for the Degree of

Doctor of Philosophy

Thesis: ASSESSING THE THERAPEUTIC EFFECTIVENESS OF AN OPERANT GROUP REINFORCEMENT PARADIGM WITH THREE CATEGORIES OF PSYCHIATRIC INPATIENTS

Major Field: Psychology

Biographical:

Personal Data: Born in Los Angeles, California, January 10, 1946, the son of Mr. and Mrs. E. L. Dickey; married to Kathryn Louise Dickey.

Education: Graduated from Hawthorne High School, Hawthorne, California, in June, 1964; received Bachelor of Arts degree in Psychology from the University of California, Berkeley, in 1973; received Master of Science degree in Psychology from Oklahoma State University in 1980; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in May, 1981.

Teaching and Professional Experience: Teaching assistant, College of Arts and Sciences, Oklahoma State University, 1973-75; National Institute of Mental Health traineeship, 1975-77; Clinical Psychology residency, University of Texas Health Sciences Center, San Antonio, Texas, 1977-78; Advanced Clinical Psychology residency at the Veterans Administration Hospital, San Antonio, Texas, 1978-79; Psychologist, Eastern State Hospital, Vinita and Tulsa, Oklahoma, 1979-81.