GROUP MODIFICATION OF AFFECTIVE VERBALIZATIONS AND EXTENDED GENERALIZATION EFFECTS

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CHAPTER I

INTRODUCTION

Traditional approaches to psychotherapy hold forth the offer of extensive and meaningful changes in behavior as the outcome of engaging in treatment. Yet over the past twenty-five years many writers have interpreted the available evidence as failing to bear out this promise. It was Eysenck (1952) who provided a focus for subsequent debate and research, when he concluded that psychotherapy was no more beneficial than the passing of time. More recent reviews have pointed out the rather equivocal support for traditional techniques in the literature. Taking two examples, Truax and Carkhuff (1967) agree substantially with Eysenck (1952, 1960), while the conclusion of Bergin (1971) is that "moderately positive" results accrue from therapy.

Considering the breadth of the claims for influence over human behavior, though, evidence that measurable and durable change results from psychotherapy is surprisingly sparse in the literature. Those researchers who have managed to document the effects of treatment have typically shown a willingness to state very specific criteria. This seems to be most true of the behavior modifers, who tend to forego the global aims of traditional therapy in favor of the intensive study of specific and observable behaviors.

Behavior modification is a method for controlling behavior that is based on the principles of operant conditioning, developed in large part

by B. F. Skinner (1938). As an experimental science, operant conditioning is concerned with the modification of the frequency of a bit of behavior by its consequences. Behavior is thus understood by knowing what factors modify it. As a therapeutic tool, behavior modification has sought to concentrate on changing specific behaviors by altering the consequences of that behavior. For instance, if a behavior is consistently rewarded (reinforced), then its frequency can be expected to increase. Behavior that fails to produce reinforcing consequences in some form will eventually disappear (extinguish).

In this study the principles of operant conditioning were applied in a group therapy format. Group techniques themselves are often viewed as an alternative to traditional, individual therapy. Yalom (1970), a chief proponent, notes that a primary advantage of groups is that they allow members to interact therapeutically with a number of others simultaneously. In a sense the group provides a social microcosm which fosters more adaptive learning. Combining the methods of operant conditioning and group therapy, it is believed, will permit clear specification of behaviors and goals within a setting conducive to therapeutic learning.

This design has already been successfully implemented in the work of Fromme, Whisenant, Susky and Tedesco (1974). The technique used a mechanical reinforcer to teach affective verbalizations to leaderless, four-person groups of college students. The verbalizations included various statements thought to be important in psychotherapeutic processes. Using this method subjects were trained to engage in open and personal interaction. This general method was used in the present study, and is further detailed in Methodology.

Fromme, Stommel and Duvall (1976) studied the effectiveness of the operant group technique in producing verbal learning that was resistant to extinction and capable of generalizing. It was felt these were crucial if the technique was to meet two criteria often applied to therapy outcome: durability and flexibility. Any new behavior resulting from psychotherapy must be available outside the therapy setting on a long-term basis. Krasner (1965) has argued that verbal conditioning could be analogous to psychotherapy, and whether or not it resisted extinction and generalized was thought to be a good test. The finding of Fromme et al. (1976) was that learning generated by their operant group technique met both criteria.

One measure of positive change used in the present study was, of course, the rate at which subjects used the affective verbalizations. However, the specificity of these "categories" could be interpreted as producing learning too narrow to be truly therapeutic. This general criticism is often leveled by proponents of traditional therapies. If the technique could be shown to impact on more global measures of change, though, further assurance of its usefulness would be gained. With this in mind, three separate instruments were selected to be used as a means of determining the effect of the operant method on what could be considered more traditional personality variables.

The first selected was the Modified Jourard Self-Disclosure Questionnaire (Jourard and Lasakow, 1958), which is a means of measuring one's willingness to disclose oneself to another. The second was the Personal Orientation Inventory (Shostrum, 1964), an attempt to operationalize "self-actualizing" attributes. The third was the Group Perceptions Test (Fromme, 1976), a scale providing "self and other" perceptions which

can be combined to provide measures of group feeling and perception. The value of these scales in assessing therapeutic outcome is discussed in following sections of this study.

In brief, this study represents an expansion of earlier research using the Fromme et al. (1974) method. An attempt was made to determine whether previous results could be replicated with an increased number of subjects, and if the generalization effects would endure over a longer period of time. Additional validation of the operant method was attempted through the use of three self-report instruments.

The Review of Literature is intended to provide support for the following assumptions:

1. That conditioning of verbal behavior is possible and can be accomplished through a variety of techniques.

2. That verbal behavior can be a credible analogue to the process of psychotherapy.

3. That a group setting is a useful way to facilitate changes in behavior.

4. That the Fromme et al. technique (1974) can be used to generate meaningful changes in behavior and that this learning will generalize to new situations.

5. That the Jourard Self-Disclosure Questionnaire, Personal Orientation Inventory, and Group Perceptions Test are useful methods of evaluating changes due to the operant technique.

CHAPTER II

REVIEW OF THE LITERATURE

Conditioning of Verbal Behavior

The study of verbal conditioning began many decades ago with the work of Humphreys (1939) and Razran (1949). The research of Greenspoon (1954, 1955), though, seems to have been responsible for stimulating much of the current interest in the area. He was able to modify the probability of occurrence for a response class of plural nouns by using verbal approval in the form of "mmm-hmm." Since this early study the number of operant variables under investigation has expanded to include various response classes, extinction rates, different types of reinforcers and generalization effects. Over the past few years several reviews of the area have appeared (Krasner, 1958, 1962, 1965; Salzinger, 1959; Greenspoon, 1962; Williams, 1966; Holz and Azrin, 1966; Hersen, 1967; and Kanfer, 1968).

The earliest studies tended to target simple and specific response classes consisting of parts of speech, such as pronouns (Taffel, 1955), verbs (Sarason, 1955), nouns and pronouns (Mock, 1957; Krasner, 1958; Spielberger and DeNike, 1962). In time broader verbalizations like expressions of feeling and self-references were employed. A representative list would include self-references (Rogers, 1960; Phelan, Tang and Heckmat, 1967; Dickens and Fordham, 1967; Powell, 1968; Myrick, 1969;

Ince, 1970), affect words or statements (Ullman, Krasner and Collins, 1961; Williams and Blanton, 1968; Ince, 1968; and Merbaum and Lukens, 1968), affective self-references (Merbaum, 1963; Hoffnung, 1969, and Heckmat, 1971), independence and affection statements (Moos, 1963), and self-disclosing statements (Mann, 1972; and Olson, 1972). Fromme, Whisenant, Susky and Tedesco (1974), Fromme and Close (1975), Fromme, Stommel and Duvall (1976) modified affective, feedback, and empathy statements.

Quite a variety of reinforcers have also been studied: among them the "mmm-hmm" sound of Greenspoon (1954, 1955), gestural cues (Mock, 1957; Eckman, 1958; Drasner, 1959), and mechanical cues such as lights (Ball, 1952; Greenspoon, 1954; Nutman, 1957; and Hastorf, 1968), sound (Ball, 1952; Greenspoon, 1954; and McNair, 1957), and a combination of sound, lights, and serial counters (Fromme, Whisenant, Susky and Tedesco, 1974; Fromme and Close, 1975; Fromme, Stommel and Duvall, 1976).

Verbal Conditioning as an Analogue to Psychotherapy

Although some of these studies were conducted in a "quasi-therapeutic" setting, few have used a conditioning paradigm with deliberate therapeutic intent. An exception was Ullman, Krasner and Collins (1961). In their study psychiatric patients already in group therapy were asked to participate in four story-telling sessions, during which affect-laden words were: (1) reinforced in a positive-personal manner; (2) reinforced in an impersonal-unstructured manner; or (3) not reinforced. Ratings by group therapists before and after experimental sessions indicated that only those individuals receiving positive personal

reinforcement made any gains in the adequacy of their interaction with other group members.

Taking another approach, Williams and Blanton (1968) told their subjects they were being referred for psychotherapy. Eighteen nonpsychotic patients were assigned to three treatment groups. One group was verbally reinforced for "feeling" statements, another for statements without feeling content, and the third group was given traditional psychotherapy. After nine sessions the percentage of feeling statements had increased for the group receiving selective reinforcement and the traditional therapy group, while the group reinforced for nonfeeling words had shown a slight decrease in feeling statements. In this study, verbal conditioning was as effective as psychotherapy in eliciting feeling statements.

Even though verbal conditioning procedures have been used to study or approximate the processes of psychotherapy, there remains a question regarding their sufficiency as an analogue. The issue of the degree of relationship centers around two considerations: (1) How similar are the processes and settings? (2) How does a change in verbal behavior mediate change in complex life patterns?

Regarding the first question, Krasner (1965) has pointed out the many shared features of verbal conditioning and psychotherapy. He notes that they are both situations involving the exercise of social influence, that they are both interaction processes involving lawful variables, and that they both effect changes in behavior that are at the same time extensive and durable.

The issue of how a change in verbal behavior might contribute to overall client improvement is much more complex. In selected cases the verbal behavior is itself the target symptom, as in the work of Houghton

(1964) with delusional speech, and van Sommers (1968) with stammerers. As a rule, though, verbal behavior is not the object of such specific interventions. However, the traditional viewpoint in psychotherapy has long held one of the most important factors in client improvement to be the chance for verbally exploring and explaining oneself within a framework of therapeutic rapport. Although specifics vary according to theoretical positions, they have in common the notion that the symbolic properties of language mediate between verbal and other behaviors in bringing about change.

Group Therapy

Another major alternative to traditional, individual psychotherapy of interest to this study is actually a number of various techniques collectively referred to as "group therapy." It is currently available across a wide range of theoretical approaches, from psychoanalysis to encounter therapy. As already noted its main advantages are thought to be economy and an opportunity for therapeutic interaction with a number of other people. Bednar and Lawlis (1971), in their review of empirical group research, concluded that group therapy is an effective means toward client improvement.

Yalom (1970) contends that group therapy provides a social microcosm which permits trying out new behaviors, with the consequence that emotionally corrective experiences are fostered. For a therapeutic experience to occur, he argues, it is necessary that group members spontaneously express their feelings toward others in the group. Feedback and consensual validation are also requirements, so that the appropriateness of one's behavior may be safely tested. Yalom (1970) investigated critical

incidents which group members had described as helpful. Studying 20 successful therapy cases, he found three common occurrences singled out by the client as the most important in their therapy. These were: (1) the strong expression of negative affect to others; (2) the expression of strong positive affect to others; and (3) an incident, usually involving self-disclosure, that involved them more intensely with their group.

Group techniques and conditioning principles have been successfully combined in some instances. Liberman (1970, 1971) reinforced certain types of statements thought to be important in developing group cohesiveness (also termed intimacy, solidarity or affection). In the experimental group the therapist used social reinforcement techniques to facilitate cohesiveness, while a therapist closely matched in several traits used a more conventional approach with the control group. The experimental group members showed more signs of cohesiveness, increased independence from the therapist, quicker symptom remission, and greater personality change than the control group.

Most group studies have relied on the efforts of a leader to provide direction for group members. Even so, a paper by Wolf (1961) has suggested that therapists may become the focus of attention in the group, encouraging an antitherapeutic dependency upon the leader. Salzberg (1961) found that the level of verbal interaction among group members was inversely related to the frequency of the therapist's interventions. Therapist-led groups also present the problem of controlling for individual differences, a frequent source of bias in group therapy research.

In an attempt to avoid the problems associated with therapist-led groups, some studies have used a mechanical feedback apparatus in place of the leader. Hastorf (in Krasner and Ullman, 1968) used sets of lights

in successfully manipulating the leadership hierarchy in four-person groups. Krueger (1971) employed light flashes, which could later be exchanged for primary reinforcers, to modify behavior in a therapeutic direction. She found the modification effective when reinforcement was administered by a fellow group member. Guiterrez and Eisenmann (1971) conditioned groups of delinquent boys using a mechanical buzzer.

Generalization of Verbal Conditioning

Traditional therapies assume that more adaptive behavior learned in the actual sessions becomes available to the person indefinitely and without situational constraints. For a behavior to remain specific to therapy settings would not meet any reasonable criteria of successful treatment. For verbal operant conditioning to succeed as an analogue to psychotherapy, the new learning it produces must also be resistant to changes of time, place and context. In the language of conditioning theory it must "transfer" or "generalize" to new situations. Demonstration of generalization effects is a crucial test for verbal conditioning. As it happens, reviews of the area reveal that the evidence for such effects is neither extensive nor conclusive (Greenspoon, 1962; Williams, 1964; Kanfer and Phillips, 1970; Levine and Fasnacht, 1974).

Many of the studies investigating generalization have failed to demonstrate the predicted effects. Rogers (1960), in a quasi-therapeutic setting,was able to condition self-references in 36 male college students using "mmm-hmm" and head nods as reinforcers. In six 10-minute sessions positive self-references were reinforced as subjects freely discussed their personality characteristics. Generalization, defined as pre- and post-test differences on a battery of personality tests, failed to occur.

Using these same reinforcers Moos (1963) successfully conditioned independence and affection statements in 20 female undergraduates, but failed to find significant generalization effects.

Lanyon (1967) attempted to condition statements of "content" versus "affect" during 20-minute sessions in which subjects were asked to freely recall childhood experiences. Two other control groups were administered noncontingent reinforcement at a constant interval. Immediately after the sessions, subjects were taken to a different room and asked by a different experimenter to complete a 100-item sentence completion blank orally. This second part of the task constituted a test for generalization. Results showed that content words could be conditioned by this method, but affect words could not. No generalization was detected.

Other researchers have been more successful in producing evidence for the generalization of verbal learning. Ullman, Krasner and Collins (1961) conditioned emotional words in three groups of ten "continued treatment" hospitalized males. Subjects were seen four times over two weeks, during which time they were asked to make up five-minute stories to pictures depicting neutral scenes common to a hospital setting. In the Positive-Personal condition subjects were reinforced by "mmm-hmm" as they used emotional words: in the Impersonal-Unstructured group, a mechanical counter was advanced as a reinforcer; and a third group was not reinforced. Subjects were evaluated pre- and post-experimentally by their group therapist, using a scale to monitor patient behavior. Only the Positive-Personal group made a significant improvement in their rating. Since the behavior rated had transferred from experimental to group therapy session, this was interpreted as evidence of generalization.

In another study Hoffnung (1969) explored the differential effects of five forms of therapy-like interventions on the conditioning and transfer of affective self-references in a role-played interview. The interventions made during 40-minute sessions were designed to provide various levels of discriminative cue potency for the subjects, and were, from least to most potent: Condition I, "mmm-hmm;" Condition II, Echoic, or reflecting the mood and content of the subject's affective self-reference; Condition III, in which the experimenter restated or rephrased subject's statement; Condition IV, combined "mmm-hmm" and echoic; and Condition V, combined "mmm-hmm" and paraphrasing. Immediately preceding and following role-playing, subjects were required to tell three two-minute stories to Thematic Apperception Test Cards. Results indicated that affective self-references increased for all five experimental conditions, with no differential effects between them. Transfer of training to the TAT task was demonstrated by the greater production of affective self-reference by experimental subjects as compared with control subjects.

Modification of "Here and Now" Affect, Feedback, and Empathy Verbalizations in Leaderless Groups

Truax and Carkhuff (1967) have gathered a great deal of support for the contention that interactions characterized by empathy, nonpossessive warmth and genuineness are the most significant factors related to client improvement in either individual or group psychotherapy. Along similar lines, Yalom (1970) has emphasized that group members need to express their feelings toward others as they arise in the group ("here and now"),

and that the opportunity to give and receive feedback in testing the appropriateness of behavior is an important component of the therapy process.

Bearing these factors in mind, Fromme, Whisenant, Susky and Tedesco (1974) sought to use the techniques of verbal operant conditioning as a means of enhancing the interaction process of four-person groups composed of college students. They selected five categories of affective verbalizations which included statements of immediate feeling, feedback and empathy. Both experimental and control subjects were given detailed instructions concerning use of the categories during the 60-minute sessions. Experimental subjects were additionally reinforced by means of a mechanical counter, with further information about their progress given through the use of lights (this method was used in the present study; see Methodology for a more detailed explanation).

Results over one session for all groups in the two conditions showed the experimental groups emitting significantly more reinforceable statements, a mean of 9.75, than the control subjects, 0.85. A test of the reliability of judging these categories yielded an index of 93% agreement, suggesting that these categories could be reliably judged. In a partial replication of this study, Fromme and Close (1974) found that groups with the feedback apparatus average 10.04 responses per person, and groups without only 2.58.

Since these initial studies, the Fromme et al. (1974) technique has been used to investigate a number of different variables important to verbal conditioning procedures. Fromme, Stommel and Duvall (1976) employed the technique in examining the effects of varying schedules of reinforcement on acquisition, extinction and generalization. Two groups

of four subjects were given 10 one-hour sessions, during which one group was maintained on continuous reinforcement, the other on variable ratio schedules. The eight subjects were then each placed with three untrained subjects, within one week of the last reacquisition trial.

Results showed that the group on the continuous reinforcement schedule were resistant to extinction, while the variable ratio group was not. This finding is exactly opposite to the usual effects of reinforcement schedules, suggesting that a variable schedule was unsuitable for such response categories. Generalization effects were demonstrated for the eight original subjects; their scores from the generalization sessions were not only statistically significant, but showed very little overlap with scores from baseline sessions. This suggests the technique had psychological impact as well as statistical significance. Scores of the untrained subjects in the generalization session provided further evidence for the power of the technique. These subjects had a mean response total significantly greater than the original subjects in the baseline session, indicating that exposure to a trained subject had a measurable effect on the response rates of untrained subjects.

Following a suggestion by Fromme, Stommel and Duvall (1976) that a logical next step might be utilizing the technique with a psychiatric population, Smallwood (1975) used it to facilitate interpersonal openness in four-person groups composed of patients. Three groups were assigned in each of two conditions, reinforcement and control, which met for five 45-minute sessions across two and one-half weeks. After an initial baselines session for both conditions, the reinforcement groups received continuous reinforcement in the manner already described. Control groups met for four sessions and attempted to follow the detailed

instructions. Then, as a test of possible generalization effects, one member of each experimental and control groups was placed in a baseline-type session with three untrained subjects. These groups met within one week of the last regular session. Three different instruments were administered after baseline and again after the last acquisition session. Scores on the pre- and post-test measures were then compared. The instruments were: (1) the Mooney Problem Checklist; (2) the Semantic Differential for "Real and Ideal Self" discrepancies; and (3) the Modified Jourard Self-Disclosure Questionnaire.

Results for reinforcement data further supported the effectiveness of the Fromme et al. (1974) technique. Experimental groups emitted significantly more reinforceable responses than did control groups. The test for generalization proved significant, demonstrating transfer of training to a new setting. Results for data derived from the three instruments found that only one recorded a significant change for the experimental groups between the two administrations: the modified Jourard Self-Disclosure Questionnaire. This supports the operant technique as a means of increasing self-disclosing behavior, and it suggests in turn that the scale is a sensitive enough instrument to detect therapeutic changes in behavior.

Self-Disclosure and the Modified Jourard Self-Disclosure Questionnaire

The act of revealing one's feelings to others has been traditionally viewed as a positive trait by several major personality theorists (Fromm, 1947; Sullivan, 1953; Rogers, 1968; Maslow, 1971). A more current advocate of interpersonal transparency, Jourard (1971), contends

that the fear of allowing others to know one's true feelings underlies most human malaise. The chief benefit from traditional therapies, he believes, is that they allow the airing of suppressed or repressed material (Jourard, 1964). From his reasoning it follows that any therapy technique which increases self-disclsoure is producing beneficial results.

Jourard and Lasakow (1968) developed an instrument to measure the amount of disclosure that a person perceives himself to have made to another person. It is a 60-item, forced-choice questionnaire, which can be modified to accommodate different "targets," i.e., the person or persons to whom one is disclosing (see Appendix A). As a predictive instrument, the questionnaire has been evaluated differently by various researchers. Some have found that it is indeed capable of predicting self-disclosing behavior in certain situations (Jourard, 1961; Taylor, 1965; Resvick, 1970). Others have reported less positive results (Himmelstein and Kimbrough, 1963; Vondracek, 1968; Hurley and Hurley, 1969). When considering the question of construct validity, the evidence is more clearly positive. The questionnaire seems clearly to measure what it purports to--self-disclosure (Burkenne and Mirels, 1970; Jourard, 1971; Panyard, 1973).

Smallwood (1975), interpreting the operant technique as facilitating self-disclosure, studied the effects of five training sessions on pre- and post-scores with a modification of Jourard's questionnaire. The modification consisted of reducing the number of items to 30 and changing the "target" for disclosure to "people in this group," thereby rendering the instrument more suitable for the operant method (see Smallwood, 1975). Results suggested that the procedure was indeed effective in changing self-disclosing behavior, as measured by the questionnaire.

Since the instrument seemed appropriate, it was used in the present study. Should significant changes be detected, they could be interpreted as evidence that an impact on more traditional personality variables results from the present method of verbal conditioning. The questionnaire was one of three instruments used in this study.

Personal Orientation Inventory

Another means of assessing the effects of training was Shostrum's (1963, 1964) Personal Orientation Inventory (POI) (see Appendix B). It is a diagnostic inventory designed to measure personal values related to positive mental health. The focus of this instrument is to tap "self-actualization," a concept attributed primarily to Maslow (1954). Self-actualization is viewed as a process by which a person becomes increasingly capable of using his abilities in an autonomous, inner-directed fashion. Other qualities attributed to self-actualized persons are a benevolent view of human nature, efficient use of time, present-centeredness, and participation in mutually rewarding relationships. Understandably, these qualities are often put forth as ideal outcomes of psychotherapy.

Despite considerable theoretical work, the concept of self-actualization has been criticized as relatively valueless by investigators. For some time research using the concept had been hampered by lack of an operationalized definition. Since development of the POI, however, a reasonably valid and reliable measure is thought to exist (Shostrum, 1966; Maslow, 1967). It has been used, as a few examples, in clinical studies (Shostrum, 1965; Fox, 1965a; Fox, Knapp and Michael, 1968), in counseling studies quite extensively (Hood, 1968; Foulds,

1969abc; McClain, 1970a; Graff and Bradshaw, 1970; Graff, Bradshaw, Danish, Austin, and Altekruse, 1970; Heckmat and Theiss, 1971), and in studies of school achievement (Pearson, 1966; Leil and Snyder, 1967; Lemay and Damm, 1968; Weber, 1970).

Of particular interest to the present study are some examinations of therapeutic outcome (more exactly outcome of "growth techniques") using the POI. Culbert, Clark and Bobele (1968) investigated the effects of sensitivity training on pre- and post-session scores. Two groups of ten college students were assigned to a 14-week program consisting of one two-hour session per week. One group's pre-treatment scores indicated they were low self-actualizers, while the other group was composed of students with initially high scores. Results indicated that low self-actualizers changed significantly on four scales, with the high group showing no changes. This finding supports the notion that a normal population treated by "sensitivity" methods can change sufficiently to be measured by the POI. In a similar outcome study, but with a marathon-group format, Guinan and Foulds (1970) found POI scores to have changed significantly after a 30-hour weekend session.

This partial survey provides support for use of the POI as a measure of changes toward positive emotional growth resulting from encounter-type techniques. The method of Fromme et al. (1974) can be classified in this general category, and the POI will be one of three instruments, thought to measure more traditional personality variables, that will be used in this study (see Methodology section for listing of 12 POI scales and explanation of administration and scoring).

Interpersonal Perception and the Group Perceptions Test

The third instrument used in the present study was developed by Fromme (1976) as a means of measuring group perceptions and feeling. The Group Perceptions Test (Appendix C) was devised to provide data about self and other perceptions which could be combined in various ways to provide measures of important group qualities.

The basic concepts used in this approach have their origins in the pioneer work of Tagiuri (1958), who used sociometric techniques to study interpersonal feelings in dyads. One of the earliest concepts developed was "congruency," or the tendency of individuals to feel about others as they perceive others to feel about them. His finding that the phenomenon occurred clearly in excess of chance was supported by other work (Force, 1954; Borgatta, 1954; and Scher, 1955). Although the emergence of congruency in a dyad has several possible psychodynamic explanations (see Lorber, 1973), Tagiuri favors the notion that it begins with a simple feeling of liking of disliking, rather than with the actual percept of how the other feels.

Two other concepts that have been closely studied are related to congruency: accuracy and mutuality. Accuracy is defined as the degree to which one can predict the feelings of another, and mutuality is how similar the feelings are between members of a dyad. While observations indicate that these two exist independently of congruency, a relationship does exist in that the presence of any two of the three seems to determine the presence of the third (Tagiuri, 1958).

The Group Perceptions Test also owes a conceptual debt to the work of Laing (1966). His phenomenological analysis of interpersonal

relations focuses on the experience of the person: the perceptions of the individual rather than specific behavioral categories. He has developed a method of measuring these perceptions, which includes the two relating persons' views of themselves, the relationship of the other to himself, one's own relationship to the other, and the other's relationship to oneself. These relationships can be viewed from a direct perspective, or can be further removed, as in metaperspective or meta-metaperspective. Metaperspective would involve, as an example, the person's view of the other's view of himself, while meta-metaperspective in this example would be the person's view of the view of the other's view of himself. In the analysis of a relationship it is possible to combine these to measure the extent of agreement, understanding, and "realization of understanding" between two persons (see Laing, 1966).

The test utilizes a semantic-differential type of scale in an attempt to measure the self, other, and relationship perspectives described by Laing (1966). The scales ask the subject to rate: (1) himself (his view of himself); (2) the other members (his view of the others); (3) how he thinks the others rated him (his view of the others' views of him); and (4) how he thinks the others rated themselves (his view of the others' views of themselves). The ratings were conducted along four dimensions described elsewhere (see Methodology).

The four points of view can then be combined to form measures of group perception, such as those developed by Tagiuri (1958). For example, "congruency," defined by him as the tendency to feel about others as they are perceived to feel about oneself, can be derived by comparing the rating of the other group members with how one perceives them to have rated oneself. The discrepancy can be taken as a congruency score:

the smaller the difference the more congruent the viewpoints. Eight such measures were devised for use in the present study, as a means of measuring the impact of the operant method on group perceptions (Appendix D). Scoring is further explained in the Methodology section.

CHAPTER III

STATEMENT OF THE PROBLEM

The method of Fromme et al. (1974) has been shown to be an effective means of facilitating feeling, feedback and empathy statements in groups of both college students and psychiatric patients. Conditioning of these complex response categories has been repeatedly demonstrated in studying traditional operant variables such as acquisition rates, extinction and generalization. Taken as a whole, these studies suggest that this method of verbal operant conditioning is a consistently effective tool for changing behavior in a therapeutic direction.

This conclusion, however, is generally challenged by Levine and Fasnacht's (1974) review of the literature. They charge that outcome studies of token economy techniques show the learning generated to be neither resistant to extinction nor capable of generalization. Furthermore, they point out, cognitive factors play a central role in whether the subject decides he is working for extrinsic or intrinsic reasons; which in turn determines whether or not the learning is durable. It is their view that these factors have been largely ignored by behavior modifiers, with the result that any behavioral change tends to remain specific to the setting in which it was learned.

Previous research establishing the present operant technique as resistant to extinction and capable of generalization effects (Fromme, Stommel and Duvall, 1976) seems to meet this general criticism of operant

research. Yet two aspects of this research also tend to reduce the level of assurance that the technique has produced "real" generalization effects: the relatively small number of subjects used and the fact that tests for generalization have been done within a week of the end of training (Smallwood, 1975; Fromme et al., 1976). If equally convincing results could be produced with an expanded number of subjects, over a longer interim period, the value of the present operant method would be even clearer.

The present study was designed to provide evidence bearing on these two considerations, and to examine the effects of the technique on three instruments measuring personal and interpersonal variables. The three major purposes were: (1) a replication of the findings of the previous Fromme et al. studies that the method in fact generates learning, with an expanded number of subjects; (2) an attempt to demonstrate long term generalization effects; and (3) an investigation of the effects of training on self-disclosure, personal orientation and group perceptions, as measured by the Modified Jourard Self-Disclosure Questionnaire, the Personal Orientation Inventory and the Group Perceptions Test, respectively.

The first major purpose included the expectation that reinforcement groups would emit affective verbalizations at a significantly higher level than nonreinforcement groups, in all sessions. Also, that reinforcement subjects would show increased levels of responding across sessions, while nonreinforcement subjects would not.

The second major purpose, the test for generalization, was accomplished by "seeding" trained subjects into groups of naive ones. This was done at two different points: immediately after acquisition three (for immediate effects), and then 45 days after this (delayed

generalization). For immediate sessions, 12 of the 24 original subjects (6 reinforcement, 6 nonreinforcement) were randomly selected and paired with untrained subjects. This procedure, it was believed, allowed for a check of the effects of being in a previous generalization session on response levels in the delayed sessions. It was expected that those subjects participating in immediate generalization would perform at higher levels, in delayed generalization, than those who had not. The test for delayed generalization involved pairing all 24 subjects with three untrained ones.

The third major purpose was an examination of the effects of operant training on three instruments: (1) the Modified Jourard Self-Disclosure Questionnaire; (2) the Personal Orientation Inventory (POI); and (3) the Group Perceptions Test.

The Jourard and POI were administered to the 24 original subjects prior to the experiment (Pre-test), to the 12 randomly-selected original subjects just before immediate generalization session (Post 1), and again to all 24 subjects just before the delayed generalization sessions (Post 2). The literature supported both of these instruments as sensitive to therapeutic change. It was expected that the operant method would result in significant increases in reported willingness to self-disclose, and in reports of self-actualizing attributes. Specifically, that the mean raw scores for reinforcement subjects would be greater than those for nonreinforcement subjects, on both Post 1 and Post measures. It was also expected that those subjects who participated in the first generalization session would score significantly higher on Post 2 measures than those who had not.

The Group Perceptions Test was administered after each session, to all subjects. For present purposes, however, results were sampled only after acquisition one and three, and after delayed generalization. Reinforcement subjects were expected to significantly outperform nonreinforcement subjects on all eight measures used. Further, it was felt that reinforcement subjects would show more congruency, mutuality, etc. across sessions, while nonreinforcement subjects would not. Finally, it was hypothesized that the effects of being in generalization one, or not, would be reflected in a significant difference between the scores of the two groups.

The hypotheses associated with the three major purposes are stated more formally as follows. First was the problem of whether replication of previous results with expanded numbers of subjects was possible. The hypothesis developed to test this was:

1. Subjects in reinforcement groups will emit significantly more statements fitting the categories than those in nonreinforcement groups. Further, reinforcement groups will show an increasing response rate across sessions, while nonreinforcement subjects will not.

Second, there was the question of producing long term generalization effects. Two hypotheses were stated to test this:

2. Learning generated in reinforcement groups will generalize to the delayed generalization sessions, while the results of nonreinforcement subjects will not.

3. Reinforcement subjects who participate in the immediate generalization sessions will respond at a significantly higher level in G2 than those who do not, while there will be no similar effect for the nonreinforcement subjects.

The remaining three hypotheses dealt with the effects of the operant technique on the three instruments:

4. Reinforcement subjects will score significantly higher on the Modified Jourard Self-Disclosure Questionnaire, specifically the Post 2 measure, than nonreinforcement subjects. Further, reinforcement subjects will increase in self-disclosure from Pre-test to Post measures, while nonreinforcement subjects will not. Third, for the Post 2 measure, those reinforcement subjects who participate in the immediate generalization sessions will be more self-disclosing than reinforcement subjects who do not, while nonreinforcement subjects will show no differential effect.

5. Reinforcement subjects will score higher on the 12 scales of the Personal Orientation Inventory, Post 2 measure, than subjects in nonreinforcement groups. They will also show an increase in self-actualizing attributes from Pre-test to Post measures, nonreinforcement subjects will not. Third, those reinforcement subjects who participate in the immediate generalization sessions will score better on the 12 POI scales, Post 2, than reinforcement subjects who do not, while nonreinforcement subjects will fail to show a similar effect.

6. Subjects in the reinforcement condition will show more of the eight attributes derived from the Group Perception Test than will the nonreinforcement subjects. Further, reinforcement subjects will significantly increase across sessions, while nonreinforcement subjects will not. Finally, those reinforcement subjects participating in the immediate generalization sessions will show more of these eight attributes after the delayed generalization sessions, while nonreinforcement subjects will not show any such differential effect.

CHAPTER IV

METHODOLOGY

Subjects

The subjects were volunteers taken from freshman and sophomore psychology classes at Oklahoma State University. Since 24 of the total 132 subjects were required to obligate themselves for a period of approximately two and one-half months, individual interviews were conducted to determine whether or not such a degree of commitment was possible. Pretreatment measures for the POI and Jourard were taken at the time of the interview. During the selection process, any questions concerning the general nature of the experiment were answered straightforwardly. Additional selection criteria included omitting those with previous encounter group experience and avoiding assignment of subjects with prior acquaintance to the same group. Class credit was given, proportional to the amount of participation in the study.

The original 24 subjects were randomly chosen and assigned to six four-person groups, with the stipulation that there be at least one of either sex in each group. These six groups were then randomly assigned to reinforcement and nonreinforcement conditions, three groups each. These subjects then participated in three acquisition sessions spread over one-and one-half weeks. One-half of the subjects were then randomly selected for an immediate generalization session, conducted within one week of the last acquisition session. All 24 subjects then participated

in the delayed generalization sessions, after 45 days had elapsed; and these were conducted within one week of each other.

The remaining 108 subjects were randomly assigned in groups of three to the original subjects for the two generalization sessions. In the first, 36 untrained subjects and 12 trained subjects combined to form 12 groups, 6 in the reinforcement condition and 6 in the nonreinforcement condition. For the delayed generalization sessions, 24 trained subjects and 72 untrained subjects formed 24 groups, 12 in the reinforcement condition and 12 in the nonreinforcement condition.

Apparatus and Procedures

The experimental room was 12 x 15 with a one-way mirror centered in one wall. Subjects were seated in a semi-circular fashion around a small table, facing the mirror. Group interaction was also monitored through a microphone on the table. The first acquisition session for reinforcement subjects was videotaped for use in checking rater reliability. In the reinforcement group sessions, a four-channel relay control panel was used to record those instances where a member's statement was evaluated as fitting one of the reinforcement categories. As the response was recorded a digital counter in front of the subject advanced, making an audible click. Additional feedback in the reinforcement sessions was given by a red light mounted on the subjects' counters. This light was used to provide discriminative cues in the following two instances: (1) all four were automatically flashed by an interval timer whenever three minutes elapsed with no member having emitted a reinforceable response; and (2) a subject's light was switched on as he fell ten or more behind

the count of the leading subject, and was turned off when the difference reverted to nine.

The six groups of original subjects met separately for the three acquisition sessions. In the reinforcement sessions, reinforcement was applied on a 100%, continuous schedule. The nonreinforcement groups did not receive reinforcement, but those responses fitting the categories were recorded by the experimenter.

For the first generalization session 12 of the first 24 subjects were selected at random. These 12 were then paired with 3 randomly-chosen, randomly-grouped subjects who were unfamiliar with the procedure. These 12 groups of 4 then met within one week of the last acquisition session, as scheduling would allow. No reinforcement was given during generalization sessions. These 12 original subjects were administered the POI and Jourard, Post 1, just prior to the first generalization sessions.

The test for delayed generalization, on the other hand, was carried out using all 24 original subjects. Following a lapse of 45 days, all subjects were again matched with 3 new subjects, forming 24 groups of 4. These sessions were conducted within one and one-half weeks after the 45-day period. Again, only instructions were given. The POI and Jourard were administered to the 24 original subjects just prior to these sessions, Post 2.

The Group Perceptions Test was administered to each subject immediately after each session involved in the study.

Response Categories

Responses were the same as those used in the previous Fromme et al. studies (Fromme, Whisenant, Susky and Tedesco, 1974; Fromme and Close, 1976; Fromme, Stommel and Duvall, 1976). These were originally chosen to include the expression of current feelings, seeking others' expression of feelings, giving and asking for feedback on current behavior, and the use of empathy statements. Five categories were used, defined operationally as follows:

1. Giving Feeling: any verbal expression of one's current feelings as elicited by members of the group. This expression must be explicit and cannot merely be implied. It does not count for a group member to express a feeling, even a current feeling, that was produced by an outside situation. This definition also excludes cognitive, conative and perceptual state verbalizations such as "I think," "I wish," or "I hope."

2. Seeking Feeling: asking for information from another group member regarding his feelings, as defined in Category 1.

3. Seeking Feedback: seeking information in regard to the effects of one's own behavior on the feelings of the rest of the group members.

4. Giving Feedback: statements made to another group member describing or labeling one's own perception of that group member's current behavior or the group's behavior in general.

5. Empathy: any attempt to clarify, by means of verbal labeling, the expressed feeling states (as defined in Category 1) of another member, with regard to what transpires in the current situation.

In the sequence of interaction, only those statements meeting the following criteria were defined as reinforceable: (1) those meeting the conditions described above; (2) "statement" here is defined as a complete

thought, with subject, predicate and object (either explicit or clearly implied); (3) the statement must add or seek new information about the current situation and/or accompanying subjective states. Instruction cards (Appendix E) summarizing the five response categories were taped to the discussion table in front of each subject.

Instructions

After being seated in the first session and both generalization sessions, subjects were given the same set of detailed instructions (Appendix F) suggesting the desirability of sharing one's feelings, being empathic, and providing direct feedback to others. Definitions and illustrative examples were given for each of the categories. The overall task was explained as "getting to know each other on a personal basis," which the subjects were requested to do by using the categories. They were informed of being monitored and observed. Before the second and third acquisition sessions, subjects were given a brief reminder of their task.

In the reinforcement condition, an explanation of the feedback apparatus was included. Its function was described as a means of allowing the experimenter to be less intrusive, and as allowing them to become more self-reliant. In the nonreinforcement condition, only instructions exhorting the use of the categories was given (see Appendix F for distinction).

A warm-up procedure similar to that used by Fromme and Close (1976) was conducted prior to the first acquisition, immediate generalization, and delayed generalization (it was at these points that group members were "strangers"). The four subjects were paired up and asked to hold

hands while looking into each others' eyes for about 15 seconds. They were then asked to verbalize current affective states, which were evaluated by the experimenter as fitting or not fitting the response categories. This procedure was thought to provide a brief learning experience whereby the categories could be more easily recognized.

Measures and Statistical Analyses

Affective Verbalizations

Although the present operant method was developed using college students (Fromme et al., 1974), it has also been successfully implemented with psychiatric patients (Smallwood, 1975). The value of the technique lies in its reliability in producing beneficial behavioral changes. If in the present study training proved to be effective with larger numbers of subjects, over a greater delay of generalization period, then the hypotheses concerning efficacy and replicability would have been supported.

In other words, analysis of the data should show that: (1) subjects in the reinforcement condition should emit significantly more reinforceable responses than the nonreinforcement subjects, across all sessions; (2) reinforcement subjects should show a significantly increasing rate of responding across acquisition sessions, and a generalization effect in delayed generalization, while nonreinforcement subjects should not vary significantly from baseline (acquisition one) levels of responding; (3) those subjects in the reinforcement groups who participate in the immediate generalization (G1) sessions should respond at a higher rate in the delayed generalization (G2) than those reinforcement subjects who

do not. There should be no significant difference found between non-reinforcement subjects due to Gl-yes or Gl-no.

To test these three hypotheses, a three-way analysis of variance (ANOVA) (2x2x4) with repeated measures on the sessions factor was used. The three independent variables were: (1) reinforcement versus nonreinforcement; (2) four sessions, including the three acquisition and one delayed generalization session; and (3) Gl-yes versus Gl-no. Four groups of subjects were formed by combining the two nonrepeated factors, reinforcement and generalization one, yes or no. For each of these four groups there was a total of six subjects.

Modified Jourard Self-Disclosure Questionnaire

Jourard and Lasakow (1958) devised a self-disclosure questionnaire for judging the amount of personal information an individual states he is willing to disclose to another. Research has tended to support this instrument as valid. A modified version of this scale was used in the present study, the modification being that only 30 of the original 60 items were used (see Appendix A).

All 24 original subjects were asked to complete the questionnaire on two separate occasions: before the first acquisition (Pre-test), and just prior to delayed generalization (Post 2). Only the 12 randomly-selected subjects made up Post 1, taken prior to immediate generalization. Since the other group members were to be strangers on each occasion, the "target" for these self-disclosures was stated as ". . . to a group composed of yourself and three other college students with whom you are unacquainted, whose stated purpose is to get to know each other on a personal basis." Subjects answered each item with one of

the following:

A. Would tell these people nothing about this aspect of me.

B. Would talk in general terms about this item.

C. Would talk in full and complete detail about this item to these people.

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

A self-disclosure score was then computed according to the following rating scale:

Answered with A: a score of zero 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.

The individual score was derived by totaling the ratings, with the possible total ranging from zero to 60.

The following effects on reported self-disclosure from the operant technique were hypothesized: (1) subjects in reinforcement conditions should score significantly higher in self-disclosure in delayed generalization than the nonreinforcement subjects; (2) the reinforcement subjects should increase in self-disclosure from Pre-test to Post 2 testings, while the nonreinforcement subjects should not show this effect; and (3) the Gl-yes subjects in the reinforcement groups should score significantly higher than the Gl-no subjects, on the Post 2 measure, while the Gl-yes versus Gl-no subjects in nonreinforcement conditions should not be significantly different.

As a test of these hypotheses, a three-way analysis of variance (ANOVA) (2x2x2), with repeated measures on the sessions factor, was

performed. The three independent variables were: (1) reinforcement versus nonreinforcement; (2) Pre-test and Post 2; and (3) Gl-yes versus Gl-no. Four groups of subjects were formed by combining the two nonrepeated factors, reinforcement versus nonreinforcement and Gl-yes versus Gl-no. For each of these four groups there were six subjects.

In addition to the above, hypotheses regarding the six reinforcement and nonreinforcement subjects randomly selected for participation in Gl were formulated. The following concern the effects of reinforcement on self-disclosure for these subjects: (1) that the reinforcement subjects should score significantly better than the nonreinforcement subjects; and (2) that reinforcement subjects should increase on Post 1 and Post 2 measures, while nonreinforcement subjects should not.

In order to test these hypotheses, a two-way analysis of variance (ANOVA) (2x3), with repeated measures on the sessions factor, was done. The two independent variables were: (1) reinforcement versus nonreinforcement; and (2) Pre-test, Post 1, and Post 2. There were six subjects in each of the two groups.

Personal Orientation Inventory (POI)

Shostrum (1964) developed the POI in an attempt to operationalize several important humanistic concepts related to Maslow's theory of "self-actualization." In this study it was used as an independent measure of the effects of training with the operant technique. The inventory has 150 items, and is both paired-opposite and forced-choice. It yields 12 scales of personal values, concepts and self-percepts thought to be of significance in the identification of self-actualization.

These scales have been discussed in detail by Shostrum (1963), and are briefly presented and described as follows:

1. Time Ratio-Time Incompetence/Time Competence: measures degree to which one is "present-oriented."

2. Support Ratio-Other/Inner: measures whether reactivity orientation is basically toward others or self.

3. Self-Actualizing Value: measures affirmation as a primary value of self-actualizing people.

4. Existentiality: measures ability to situationally or existentially react, without rigid adherence to principles.

5. Feeling Reactivity: measures sensitivity of responsiveness to one's own feelings or needs.

6. Spontaneity: measures freedom to react spontaneously or to be oneself.

7. Self-Regard: measures affirmation of self because of worth or strength.

8. Self-Acceptance: measures affirmation or acceptance of self in spite of weaknesses or deficiencies.

9. Nature of Man: measures degree of the constructive view of the nature of man, masculinity, femininity.

10. Synergy: measures ability to be synergistic, to transcend dichotomies.

11. Acceptance of Aggression: measures ability to accept one's natural aggressiveness as opposed to defensiveness, denial and repression of aggression.

12. Capacity for Intimate Contact: measures ability to develop contactful intimate relationships with other human beings, unencumbered by expectations and obligations.

All of the 24 original subjects completed the POI at Pre-test and Post 2, while only the 6 from each reinforcement condition who participated in the immediate generalization sessions were administered Post 1. The POI is essentially self-administering and did not require any special adaptation to the requirements of this study. The hand-scoring system yields 12 scores for each subject, with an increase representing improvement in that particular attribute.

It was felt that reinforcement of the five categories would have the effect of increasing scores on the 12 POI scales. Consequently, three hypotheses were developed: (1) reinforcement subjects' POI scores should prove to be significantly higher than those of nonreinforcement subjects, at Post 2; (2) reinforcement subjects should show an increase across testings, Pre-test to Post 2, while nonreinforcement subjects should not vary significantly; and (3) Gl-yes subjects should have higher scores on Post 2 than the Gl-no subjects, for the reinforcement groups; no such effect should be evident for the nonreinforcement groups.

As a test of these hypotheses 12 separate analyses of variance (ANOVAs) (2x2x2), with repeated measures on the sessions factor, were performed. Again, the independent variables were: (1) reinforcement versus nonreinforcement; (2) Pre-test and Post 2; and (3) Gl-yes versus Gl-no. Four groups of six subjects each were formed by combining the two nonrepeated factors.

As with the Jourard data, additional hypotheses were formulated for those subjects, six from reinforcement and six from nonreinforcement, randomly selected for participation in immediate generalization. The following two hypotheses concern the effects of reinforcement or nonreinforcement on the 12 POI scale scores: (1) that reinforcement subjects

will show significantly higher POI scores than nonreinforcement subjects; and (2) that reinforcement subjects should show an increasing trend from Pre-test to Post to Post 2, while nonreinforcement subjects should not significantly vary.

In order to test these hypotheses 12 two-way analyses of variance (ANOVAs) (2x3), with repeated measures on the sessions factor, were done. The two independent variables were: (1) reinforcement versus nonreinforcement; and (2) Pre-test, Post 1, and Post 2. There were six subjects in each of the two groups.

Group Perceptions Questionnaire

The Group Perceptions Questionnaire was developed by Fromme (1976) as a means of measuring perceptions and feelings toward the self and others among small group members. Conceptually, development of the scale owes much to the work of Tagiuri (1958) and Laing (1966) (see Review of Literature). It was believed, however, that many of the same concepts could be measured through the use of a semantic differential type of scale. By asking each group member to rate: (1) how they rate themselves; (2) how they rate other group members; (3) how they perceive other group members as rating them; and (4) how they perceived other group members as rating themselves, various measures of group perception and feeling could be derived (see Appendices C and D). The four rated dimensions were: (1) friendly/hostile; (2) strong/weak; (3) good/bad; and (4) active/passive.

From a comparison of these ratings, various measures of group perception and feeling could be derived. Eight measures used in this study were:

1. Congruency: degree to which one rates others as they are perceived rating oneself (perceived behavior exchange).

2. Mutuality: degree to which one rates others as they actually rate oneself (behavior exchange).

3. Accuracy: degree to which one can predict how others perceive oneself (self-accuracy).

4. Empathy: degree to which one can predict how others see themselves (other accuracy).

5. Interpersonal Openness: degree to which others can predict your rating of them (reflects degree to which one is understood).

6. Personal Openness: degree to which others can predict one's self-concept (reflects degree to which one is understood).

7. Felt Openness: degree to which one predicts that others agree with one's self-perception (reflects degree to which one feels understood).

8. Realism: degree to which one sees self as others see one (others' agreement with self-concept).

In computing these individual measures, squared deviation scores were used. As an example, in deriving a congruency score for one subject, a comparison was made between the rating given the other three group members by this subject, Item II on the scale (see Appendix C), and the scores from Item III, how this subject saw each of the other three as rating him. The deviation score for each dimension was then totaled for each of the three subjects. The final congruency score for the original subject was then obtained from totaling these three scores. Since these scores were squared deviations, the smaller the score the more congruent subjects would be; the more closely he would have rated

others as he perceived them as rating him. The derivation of other measures is presented in Appendix D.

It was hypothesized that training in the operant method would have the effect of improving the attributes measured by these eight derivations (decreasing the deviation scores). Specifically, the hypotheses were: (1) that subjects in the reinforcement groups would score significantly more of the attributes derived from these eight measures than nonreinforcement subjects; (2) reinforcement subjects should show a significant improvement across sessions while nonreinforcement subjects should not; and (3) subjects in the reinforcement groups, Gl-yes, should score at higher levels of these attributes than reinforcement groups, Gl-no; and there should be no such difference between nonreinforcement, Gl-yes versus Gl-no.

As a test of these hypotheses, a three-way analysis of variance (ANOVA) (2x2x3) with repeated measures on the sessions factor was used. The three independent variables were: (1) reinforcement versus nonreinforcement; (2) sessions, A1 and A3, and delayed generalization; and (3) Gl-yes versus Gl-no. Four groups of subjects were formed by combining the two nonrepeated factors, reinforcement and immediate generalization, yes or no. There were six subjects in each group.

Rater Reliability

A check of the reliability of rating the affective verbalizations was made between the experimenter, who recorded all reinforceable responses in this study, and a graduate assistant who was planning to use the same system in a later study. A video tape of the first acquisition session of the first reinforcement group was made, and this material was

divided into 734 scoreable units (see Methodology for definition). These were independently numbered and judged by each rater as to whether or not they fit one of the five categories.

Interrater agreement, or how often the raters agreed that a scoreable unit fit a category, was 732 agreements out of the 734 scoreable units, 99.7%. Given the relatively small proportion of the total responses that were reinforceable (18 of 734), this method of computing reliability becomes somewhat uninformative. Therefore, reliability was computed a second way: reinforcement agreement, or how many times the actual number of reinforcements were in agreement. This figure was 18 out of 20, or 90.0%, still reflecting a high level of agreement.

These figures are consistent with those of previous studies, and provide further support for the categories being a method which can be accurately and reliably judged.

CHAPTER V

RESULTS

Analysis of Affective Verbalizations

The mean reinforceable responses for each original group, across sessions, are listed in Table I. Figure 1 displays means for reinforcement and nonreinforcement conditions across sessions A1, A2, A3 and G2. A three-way analysis of variance with repeated measures on the sessions factor was used to compare the groups. The ANOVA summary data appears as Table II.

Since only six randomly-selected subjects from reinforcement conditions and six from nonreinforcement conditions participated in immediate generalization, the data from this session was not included in this ANOVA. However, the mean reinforceable responses from this immediate generalization session for reinforcement groups was 9.50, for nonreinforcement groups was 2.67.

The reinforcement groups had a mean of 5.83 reinforceable responses in the first acquisition session, compared with a mean of 1.50 for the nonreinforcement groups. In the delayed generalization session (G2), the reinforcement groups achieved a mean of 5.27, as opposed to 3.00 for the nonreinforcement groups. The analysis of variance determined that reinforcement conditions differed significantly ($F = 48.26$, $df = 1,20$; $p < .01$). This clearly supports the hypothesis that reinforcement groups would make significantly more use of the affective verbalization

TABLE I

MEAN REINFORCEABLE RESPONSES ACROSS SESSIONS FOR REINFORCEMENT AND NONREINFORCEMENT GROUPS

		Sessions n = 4			
		A1	A2	A3	G2
Reinforcement Groups	1	4.50	5.00	6.50	6.50
	2	6.00	6.25	6.75	4.75
	3	7.00	9.50	8.25	5.75
Nonreinforcement Groups	1	1.25	1.00	0.75	1.25
	2	2.00	2.50	0.75	5.00
	3	1.00	3.00	2.00	2.75

TABLE II

ANOVA SUMMARY TABLE FOR REINFORCEMENT VERSUS NONREINFORCEMENT GROUPS BY AFFECTIVE VERBALIZATIONS

Source	df	F
Reinforcement	1	48.26**
Gl/yes-no	1	1.04
Sessions	3	0.70
Reinforcement by Gl/yes-no	1	0.03
Reinforcement by Sessions	3	2.16
Gl/yes-no by Sessions	3	0.38
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	3	0.08
Subjects by Sessions	60	

**p < .01.

categories than would the nonreinforcement groups. It also lends further credibility to the technique as a powerful and reliable means for fostering the learning of adaptive behavior.

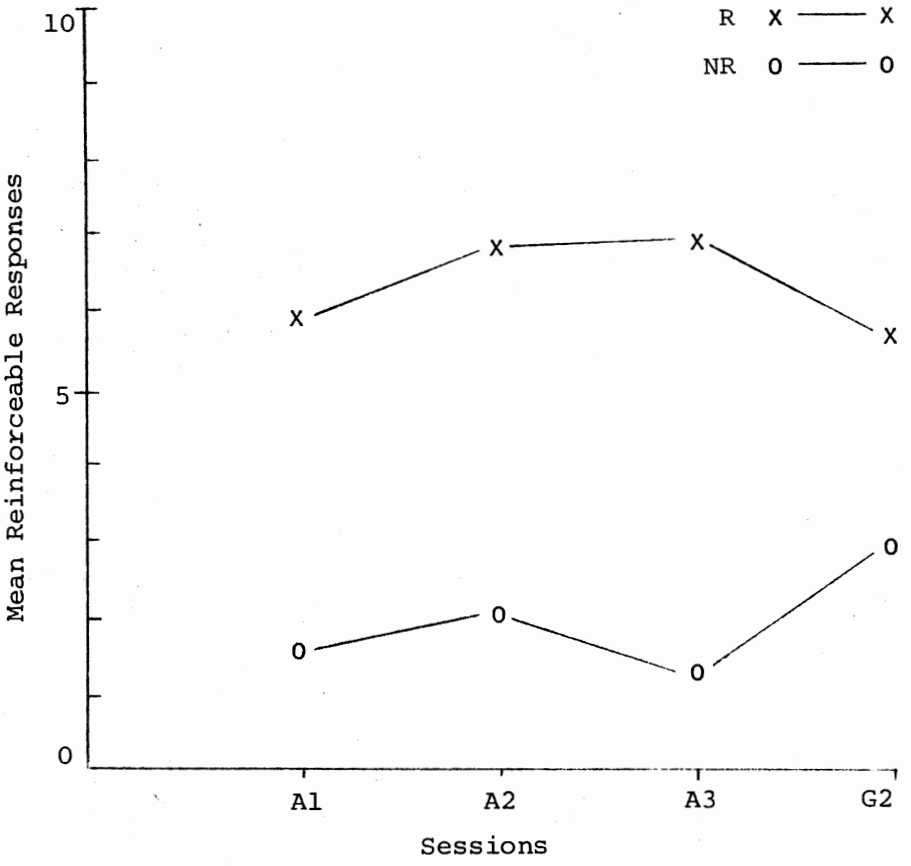

Figure 1. Mean Reinforceable Responses for Reinforcement and Nonreinforcement Groups

The G1/yes-no factor failed to achieve statistical significance, suggesting that membership in the immediate generalization session had no detectable effect on response rates in the delayed generalization session.

The sessions factor did not show a significant difference, indicating that levels of responding in the acquisition sessions carried over to the delayed generalization session. Thus, the hypothesis that generalization occurred is supported, but somewhat obscured by the fact that reinforcement by the fact that reinforcement by sessions interaction approached significance at the $p < .10$ level. To sort out the relationship between reinforcement and nonreinforcement means across all eight sessions, a Newman-Keuls test was performed, according to Kirk (1968, p. 91). Results of this analysis are displayed in Table III.

The reinforcement groups at A1, A2, A3, and G2 are represented by RA1, RA2, RA3, and RG2; nonreinforcement groups are represented by NRA1, NRA2, NRA3, and NRG2. All reinforcement group means were significantly different from all nonreinforcement means, at the $p < .01$ level. These results lend further assurance that generalization did in fact occur for reinforcement groups in delayed generalization.

Pre and Post Self-Disclosure

Table IV contains the means for the Modified Jourard Self-Disclosure questionnaire for Pre-test and Post 2, reinforcement and nonreinforcement groups. The possible range of scores was zero to sixty. Reinforcement groups had a Pre-test mean score of 48.42, and nonreinforcement groups 50.67. The Post 2 means were reinforcement 44.75 and nonreinforcement 45.00.

A three-way analysis of variance with repeated measures on the sessions factor was used. However, none of the three factors reached statistical significance, failing to support any of the hypotheses concerning the effects of the reinforcement technique on self-disclosure.

TABLE III

NEWMAN-KEULS COMPARISON OF REINFORCEMENT AND NONREINFORCEMENT MEANS ACROSS ACQUISITION SESSIONS AND IN DELAYED GENERALIZATIONS

	NRA3	NRA1	NRA2	NRG2	RG2	RA1	RA2	RA3
NRA3 = 1/25	---	.25	.91	1.75	4.41**	4.58**	5.67**	5.83**
NRA1 = 1.50		---	.66	1.50	4.16**	4.33**	5.42**	5.58**
NRA2 = 2.16			---	.84	3.50**	3.67**	4.76**	4.92**
NRG2 = 3.00				---	2.66**	2.83**	3.92**	4.08**
RG2 = 5.66					---	.13	1.22	1.42
RA1 = 5.83						---	.13	1.25
RA2 = 6.92							---	.16
RA3 = 7.08								---

**p < .01.

TABLE IV

MEAN PRE-TEST AND POST 2 JOURARD SELF-DISCLOSURE SCORES

	Pre-Test	Post 2
Reinforcement	48.42	44.75
Nonreinforcement	50.67	45.00

Note: Data from the two-way analyses of variance dealing with the randomly-selected "G1/yes only" groups will not be presented for either the Jourard or Personal Orientation Inventory (POI). Selection of this analysis represents a methodological misjudgment, considering that: (1) there is a good deal of overlap between this analysis and the three-way analysis of variance. The data would provide little new information over and above that given by the reinforcement by sessions interaction on the three-way analysis of variance; and (2) perusal of the data from the analyses yielded almost no significant tests, underscoring the relative valuelessness of reporting it.

Pre and Post Personal Orientation Inventory

Table V presents the means for the 12 scales of the POI, Pre-test and Post 2, for reinforcement and nonreinforcement groups. Twelve three-way analyses of variance, with repeated measures on the sessions factor, were used. The ANOVA summary tables appear as Appendix G. Significant results for each analysis and a brief statement of their bearing on the hypotheses are given below, with a summary to follow.

1. Time Incompetence/Time Competence: The sessions factor reached statistical significance ($F = 7.62$, $df = 1,20$; $p < .05$), demonstrating an increase in "present orientation" for both reinforcement and nonreinforcement groups from Pre-test to Post 2. However, since the reinforcement by sessions factor failed to reach significance, the sessions factor cannot be interpreted as supporting the hypothesis of a significant increase for reinforcement groups only.

2. Support Ratio: The sessions factor was significant ($F = 15.32$, $df = 1,20$; $p < .01$), suggesting an increase in orientation toward others

for both reinforcement and nonreinforcement groups. As above, this does not support the hypothesis that reinforcement groups would show an increase over sessions.

TABLE V

MEAN PRE-TEST AND POST 2 POI SCORES

Scale No. and Symbol	Pre-Test		Post 2	
	R	NR	R	NR
1 - TI/TC	14.58	16.50	16.83	17.25
2 - O/I	76.92	82.25	82.67	86.75
3 - SAV	18.67	19.50	19.75	20.50
4 - Ex	18.83	19.00	22.17	22.08
5 - Fr	13.58	16.08	14.75	15.50
6 - S	11.50	12.25	12.08	11.58
7 - Sr	11.25	11.25	12.42	12.25
8 - Sa	13.67	14.92	15.67	17.00
9 - Nc	9.08	11.58	10.92	12.25
10 - Sy	6.17	6.75	7.08	7.58
11 - A	13.92	16.58	16.00	17.41
12 - C	16.92	16.92	17.92	18.75

3. Self-Actualizing Value: Sessions factor was significant ($F = 5.69$, $df = 1,20$; $p < .05$), and was interpreted as above.

4. Existentiality: Sessions factor was significant ($F = 26.26$, $df = 1,20$; $p < .01$) suggesting an increase for both reinforcement and nonreinforcement groups, which is interpreted as above.

5. Feeling Reactivity: The reinforcement by sessions factor approached significance at the $p < .10$ level ($F = 3.57$, $df = 1,20$).

Examining the means in Table V, this result provides some support for the hypothesis that reinforcement groups would show in increase in responsiveness to their own feelings and needs, while nonreinforcement subjects would not.

6. Spontaneity: The near significant reinforcement by sessions interaction ($F = 3.07$, $df = 1,20$; $p < .10$) and the direction of the means provide support for the hypothesis that reinforcement groups would increase in spontaneity for Pre-test to Post 2, while nonreinforcement groups would not.

7. Self-Regard: The sessions factor reached significance ($F = 7.51$, $df = 1,20$; $p < .05$), affirming that reinforcement and nonreinforcement groups both increased significantly in self-regard from Pre-test to Post 2, which fails to support the hypothesis that only reinforcement groups would show this effect.

8. Self-Acceptance: Sessions factor ($F = 4.66$, $df = 1,20$; $p < .05$) and Gl/yes-no factor ($F = 6.15$, $df = 1,20$; $p < .05$) both reached significance. The sessions factor is interpreted as before. The Gl/yes-no factor failed to support the hypothesis of highest response levels for R/Gl-yes. The cell means are: R/Gl-yes 15.17, R/Gl-no 14.17; and NR/Gl-yes 18.25, NR/Gl-no 13.67. As can be seen the Gl-yes groups outperformed the Gl-no groups in both conditions. However, nonreinforcement groups in Gl-yes scored higher in self-acceptance than reinforcement groups, which fails to support the hypothesis concerning the superiority of the reinforcement groups.

9. Nature of Man: In this analysis the reinforcement factor was significant ($F = 5.33$, $df = 1,20$; $p < .05$), but the nonreinforcement groups scored significantly higher than reinforcement groups. This does

not support the hypothesis that reinforcement subjects' view of man would be significantly more constructive than those in nonreinforcement groups. Sessions factor was also significant ($F = 12.78$, $df = 1,20$; $p < .01$), but is interpreted as failing to support the predicted pattern of change across Pre-test to Post 2.

10. Synergy: Significant results were found on the sessions factor ($F = 6.70$, $df = 1,20$; $p < .05$) and near-significant results on the Gl/yes-no factors ($F = 3.52$, $df = 1,20$; $p < .10$). The sessions factor is interpreted as not supporting the hypothesis of change for reinforcement groups, while nonreinforcement groups would stay the same. As with the Self-Acceptance (No. 8) analysis, the Gl/yes-no factor does not support the hypothesis of Gl-yes in reinforcement groups as having the greatest mean score (R/Gl-yes 7.08, R/Gl-no 6.17; and NR/Gl-yes 7.50, NR/Gl0-no 6.83).

11. Acceptance of Aggression: No significant factors were found.

12. Capacity for Intimate Contact: The sessions factor was again the only one reaching significance ($F = 4.60$, $df = 1,20$; $p < .05$), but it does not support any of the stated hypotheses.

In summary, the first hypothesis concerning higher scores on the POI scales for R subjects does not appear generally supported by the results of the 12 ANOVAs. Only one analysis yielded a significant reinforcement factor, (No. 9) Nature of Man. The second hypothesis, that reinforcement subjects would increase from Pre-test to Post 2 while nonreinforcement subjects would not, was supported by significant reinforcement by sessions factors on analyses of scales, (No. 5) Feeling Reactivity and (No. 6) Spontaneity. The third hypothesis, that R/Gl-yes subjects would score higher than the other three Gl/yes-no groups, was

supported by significant results and means in the required relationship on the analysis of (No. 10) Synergy only.

The persistence of a significant sessions factor, without the reinforcement by sessions interaction, seems to indicate an uncontrolled but fairly consistent variable operating among reinforcement and nonreinforcement groups. A discussion of this phenomenon will be offered in the next section.

Group Perceptions Data

Means for the eight measures of the Group Perceptions Test taken following A1, A3 and G2 are presented for reinforcement and nonreinforcement groups in Table VI. The eight ANOVA summary tables appear as Appendix H. Significant results for each measure, with a statement of their bearing on specific hypotheses, are listed below. Also, Newman-Keuls tests were performed for those measures with significant reinforcement by sessions effects, as indicated in Table VI. Results from these appear as Appendix I.

1. Congruency: The only factor reaching significance on this measure was reinforcement by seniors ($F = 3.40$, $df = 2,40$; $p < .05$). Looking at Table VI it can be seen that reinforcement groups were significantly more congruent after A1, but had become significantly less so after session A3. However, by G2 the reinforcement groups were again more congruent than nonreinforcement groups.

2. Mutuality: Again the reinforcement by sessions factor reached significance ($F = 5.45$, $df = 2,40$; $p < .05$). The pattern of means is almost identical: reinforcement groups were significantly more mutual after session A1, significantly less so after A3, and not significantly

different after G2. From the two measures, congruency and mutuality, examined thus far, it appears that reinforcement had an unexpected effect on social perceptions.

TABLE VI

MEAN GROUP PERCEPTIONS SCORES ACROSS SESSIONS

Measure		A1	A3	G2
Congruency*	R	19.75a	32.08c	20.83a
	NR	31.25c	21.92a,b	24.67b
Mutuality*	R	32.08a	46.17c	31.75a
	NR	53.83d	35.17b	30.17a
Accuracy	R	20.75	27.25	20.75
	NR	30.33	28.08	19.33
Empathy*	R	24.83b	24.17b	22.67b
	NR	32.42c	30.75c	15.83a
Interpersonal Openness	R	22.50	28.08	27.25
	NR	29.83	29.25	18.82
Personal* Openness	R	24.83b	24.33b	31.00c
	NR	32.17c	30.42c	15.83a
Felt Openness	R	14.25	13.08	13.92
	NR	11.67	6.05	11.00
Realism*	R	26.50b	29.50b	21.33a
	NR	32.25c	29.42b	18.17a

*Newman Keuls tests for simple effects were computed for starred items. Means with different superscripts were significantly different from each other at the $p < .05$ level. Those with the same superscript were not significantly different.

3. Although none of the factors was significant in this analysis, just looking at the means suggests that at least the direction of the trends was similar to the above two.

4. Empathy: This analysis yielded a significant sessions factor ($F = 3.65$, $df = 2,40$; $p < .05$) and a reinforcement by sessions factor which approaches significance at the $p < .10$ level ($F = 2.26$, $df = 2,40$). Examination of the means shows reinforcement groups significantly more empathic than nonreinforcement groups after A3, yet significantly less so after delayed generalization. Nonreinforcement groups showed precisely the pattern predicted for reinforcement groups.

5. Interpersonal Openness: None of the factors has achieved statistical significance. Reinforcement groups appear to become less open across sessions, while nonreinforcement groups changed very little across acquisition sessions, but became more open after delayed generalization.

6. Personal Openness: The reinforcement by sessions factor approached significance at the $p < .10$ level ($F = 2.83$, $df = 2,40$). The means reveal that the exact opposite of the predicted effects occurred. Reinforcement groups did not vary significantly from A1 to A3, but then became significantly less open after session G2. Nonreinforcement groups did not change significantly across acquisition sessions either, but became much more open after delayed generalization.

7. Felt Openness: This analysis failed to reach statistical significance. Reinforcement groups appear to have remained relatively unchanged across all sessions. Nonreinforcement groups appear to have felt themselves slightly more open than reinforcement groups, particularly after session A3.

8. Realism: The sessions factor was significant at the $p < .05$ level ($F = 3.92$, $df = 2,40$). The Newman-Keuls test revealed that both reinforcement and nonreinforcement groups became more realistic after delayed generalization, but the difference between these two groups did not reach statistical significance as a result of delayed generalization.

Briefly, the hypothesis that reinforcement groups would show more of the attributes derived from the Group Perceptions Test was not generally supported by the data. It in fact appears that the opposite trend occurred: the reinforcement groups showed significantly more Congruency, Mutuality, Accuracy, Personal Openness, and Realism as a result of the first acquisition session, but generally tended to show less of these attributes after A3. After the delayed generalization session the nonreinforcement groups showed significantly more on three measures. The other two found reinforcement groups showing more congruency after delayed generalization; and no significant difference between the two on Mutuality after delayed generalization. The Gl/yes-no factor failed to achieve significance on any of the eight analyses.

CHAPTER VI

DISCUSSION

Results will be discussed in the order of their presentation in the last section. The first major purpose was a replication of the reinforcement effect demonstrated in previous studies. This was accomplished with the data clearly showing that reinforcement groups were superior in their use of the categories. The two statistical tests provide high levels of assurance that the groups were significantly different, particularly since the F-test was highly significant and the Neuman-Keuls showed that each of the reinforcement means was different from every non-reinforcement mean.

As in previous research, then, the operant technique is supported as an effective and reliable means of modifying verbal behavior. What distinguishes the results of the present study is that this effect was achieved with a larger number of subjects than in any of the previous studies. Heretofore, the low numbers typical of exploratory research have allowed the possibility of idiosyncratic effects. In the present study the total number of subjects was precisely three times that in the first "extinction and generalization" study (Fromme, Stommel and Duvall, 1976), yet the response levels of the two are very close. The net result is increased confidence in asserting the reliability of the technique.

Next it was hypothesized that reinforcement groups would show a significant increase in total affective verbalizations across sessions, while nonreinforcement groups would not. This prediction, however, was not supported by the data. Looking at the means, reinforcement groups began at a high response total and increased only slightly across acquisition sessions, dropping off in delayed generalization. Nonreinforcement groups never really showed any gain, until one anomalous group raised the delayed session mean. So there was a slight convergence in delayed generalization due at least in part to this unusually active nonreinforcement group.

Although the absence of a sessions effect supports the next hypothesis, that long-term generalization effects would occur, the clarity of the effect is somewhat obscured by the tendency of reinforcement and nonreinforcement means to converge in delayed generalization. Also, the reinforcement by sessions interaction at least approached significance at the $p < .10$ level. Therefore, the Neuman-Keuls provided a means of further determining whether generalization had really occurred. Results showed no overlap between reinforcement and nonreinforcement session means. This demonstration of a 45-day delay is therefore the first long-term generalization effect using this technique, and from the data appears a very convincing one.

The test for the effects of participation in an additional generalization session on response levels in delayed generalization failed to reach significance. Apparently immediate generalization came too soon after the last acquisition to create an effect that was durable over 45 days. It could be that placement of immediate generalization sessions midway between the last acquisition and delayed generalization might

have had a measurable effect. As it was, whether or not delayed generalization was the first or second generalization session for a group had no detectable impact.

Failure of the Modified Jourard data to reflect a significant difference in willingness to self-disclose between reinforcement and nonreinforcement groups is both disappointing and puzzling, more so because the latter groups were actually more willing than reinforcement groups to self-disclose in both the first acquisition and delayed generalization. Also, both reinforcement and nonreinforcement groups showed a decline, although not a significant one, in their willingness to reveal themselves. As far as the reinforcement groups are concerned, the most salient question is what led these subjects to be less open after the 45-day delay? This finding is in direct contrast with Smallwood's (1975) results showing an impact on subjects' reported willingness to disclose themselves.

Several explanations for this phenomenon are present. One that must be seriously considered is the possibility of "ceiling effects" that was due to a subject pool with high pre-treatment levels of self-disclosure. Comparing these college students with Smallwood's (1975) psychiatric subjects tends to lend credence to this suggestion. His groups were roughly 30% lower in initial self-disclosure scores (experimental 38.50, control 33.92), but managed to show a significant increase across sessions. Jourard's (1964) norm group levels, when adjusted for the modification, are 40% to 50% lower than groups in this study (27.87 average) for groups heterogeneous as to sex and race, when the target was described as a friend. These findings provide support for the

notion that the lack of a significant effect was at least in part due to ceiling effects.

The decrease across testings might also be attributed to another factor: that both reinforcement and nonreinforcement subjects reacted to initial high self-disclosure by conscious self-restraint at later testings. They could have perceived themselves as "over-disclosing" to a group of strangers, with the result that they decided to be more conservative. This process would have contributed to the pattern of scores obtained.

There is also a question of whether the types of self-disclosure demanded by the operant procedure ("here and now") conflicted with the more historical questions asked on the questionnaire. The two tasks seem to demand two different sorts of self-disclosure, which could certainly have also been a factor in reports of self-disclosure decreasing at Post 2.

A final conjecture is that time simply had a greater effect on the scores than the reinforcement technique. The period of time set to test transfer of effects may have been too ambitious. But there were also two differences in the use of the questionnaire between the present study and Smallwood (1975); he administered it just after the group session, while here it was just prior to the sessions and after a lapse of 45 days. Whatever tendency to self-disclose was engendered by the reinforcement technique was seemingly diluted by the long delay. Then too, administering the questionnaires just following the group sessions might have made a significant difference, since this would have more directly reflected what took place in the session. It may also be argued,

however, that such a procedure would primarily record the effects of specific sessions rather than a general willingness to self-disclosure.

The effects of splitting up subjects into groups of Gl-yes and Gl-no were not significant. There were no detectable differences resulting from having been administered the Modified Jourard on two versus three occasions.

Another possible source of nuisance variables, more a matter of timing than just lapse of time, should be considered. At the first administration of the questionnaire, subjects were just entering a new situation, for many the first psychological research in which they had participated. By the time of the second or third testing, the setting and the task were no longer novel. As it happened, the delayed generalization sessions fell within two weeks of finals, a period that finds most college students less than euphoric. The possibility of anxiety and resentment of being away from studies was reflected in the tone and content of some conversations monitored during delayed generalization sessions.

Analysis of the Personal Orientation Inventory data failed to provide general support for the hypothesized effects of the reinforcement procedure on its 12 scales. Except for the "Nature of Man," none of the scales showed a significant reinforcement effect. It appears that reinforcement subjects were not changing those self-perceptions measured by the POI as a result of using the categories. Of course, "self-actualizing" attributes could not reasonably be viewed as being as responsive as the reinforcement categories, and it seems that such a short-term technique ultimately had little effect on these more permanent personality characteristics.

One problem in finding a differential reinforcement versus nonreinforcement effect is that the latter were actually more self-actualizing on the Pre-test measure. This initial difference would complicate getting a reinforcement effect, since it would have to be overcome during training.

The sessions factor was significant on eight of the twelve analyses, indicating that both reinforcement and nonreinforcement groups had increased in self-actualization attributes from Pre-test to Post 2. Without the reinforcement by sessions factor reaching significance and the means in the right relationship, however, this does not support any of the hypotheses. Yet the effect appeared so consistently that some powerful influence on subject attitude clearly seems to have been operating.

A possible explanation for the unexpected increases in POI scores for delayed generalization comes from the literature on the use of college students as subjects. First is a survey by Rosenthal and Rosnow (1969), who found one consistent characteristic of volunteer subjects, vis-à-vis other college students, to be a high need for social approval. That a need for approval from the experimenter may be an important factor has been pointed out by Orne (1962), who observes that volunteer students may wish to perform as a means of confirming themselves to be "good" subjects. According to him, they often feel that they "have a very real stake in the successful outcome of the experiment."

In the present study subjects were expressly informed of the purpose of the experiment, which was to get to know each other on a personal basis <u>through the use of the categories</u>. Those subjects in the nonreinforcement conditions, however, were not successful in using the

categories. That they were aware of their failure was brought to the experimenter's attention repeatedly by statements such as "We didn't do too well, did we?" According to the literature cited above, one way they could reduce the dissonant cognitions "I want to be a good subject" and "I didn't do well" is to attempt to subsequently perform according to what he perceives as the experimenter's expectations; in this case, to do better on another task involved in the experiment. In the case of the POI, this could require answering in a "healthy" or "positive" direction on Post 2. That this might be possible is indicated by the results ($F = 26.26$) of the sessions factor on #4, Existentiality. An effect this large tends to suggest that the POI could be somewhat transparent, so that a subject could "fake good" if motivated to do so.

The analysis of two scales produced significant reinforcement by sessions factors: #5 Feeling Reactivity and #6 Spontaneity. At the $p < .10$ level, however, these must be regarded rather tentatively. Taken together they do suggest that subjects became more sensitized to feelings and the need to express them. The G1/yes-no factor achieved significance on only one scale, #9 Synergy. This does not provide support for the effects of being in immediate generalization, or having been administered Post 1, on scores at Post 2.

Data from the eight analyses of measures derived from the Group Perceptions Test showed some unexpected patterns. The most consistent was one in which the reinforcement groups had superior scores (the smaller) after the first acquisition sessions. Clearly the initial effect of the reinforcement technique on social perceptions was to sharpen them. The remainder of the pattern for reinforcement groups,

however, is that they declined on almost every measure across acquisition and then slightly improved in delayed generalization.

Nonreinforcement groups, on the other hand, displayed exactly the pattern predicted for the reinforcement groups, with a relatively poor score following the first session, and marked improvement in the third acquisition and in delayed generalization. One general explanation for this finding is that nonreinforcement groups showed this session effect simply because of the opportunity to interact in a permissive atmosphere. Even without the reinforcement technique, this type of group session represents a unique opportunity for college students to engage their peers on an unusually personal level.

Failure of the reinforcement groups to improve over acquisition sessions is puzzling, and is most likely due to a complex of factors. One of these could be qualitative variations in group interaction. It was the subjective impression of the experimenter, taken from a log of each session, that reinforcement and nonreinforcement groups differed markedly in how they interacted with each other. Nonreinforcement groups tended to stay with a very superficial "pastime" style, in spite of specific instructions to avoid this. The reinforcement groups, who used the categories more successfully, also followed more closely the request for open and honest feedback. At times this predictably led to discord; but this could be viewed as more "realistic" interaction. Since the Group Perceptions Test is exploratory, the exact potential for these group attributes to affect scores is unknown. However, the possibility of "group denial" in nonreinforcement groups, and "realistic discord" in reinforcement groups having had a differential effect must be acknowledged.

Summary

The first two major purposes of this study were accomplished in a very clear and conclusive fashion. These results provide solid support for this operant technique as a powerful and reliable modifier of affective verbalizations. Furthermore, the effects of training were shown to meet two very important outcome criteria necessary for any method for therapeutic behavior change: durability and flexibility. The level of responding learned during initial sessions persisted over a 45-day period, and they were shown to have transferred to a new group situation. The credibility of these results is enhanced by the large number of subjects in the study.

The use of the three instruments in the hope of gaining other perspectives on the impact of the method was much less successful. Several hypotheses have been offered as to the lack of significant findings, but ultimately their absence can probably be attributed to the unsuitability of the instruments for such a short-term method, and the lapse of time and events over one and one-half months. Nonetheless, the technique has been shown to produce positive changes in verbal behavior, and a search for additional means of cross-validation should continue.

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APPENDIX A

MODIFIED JOURARD SELF-DISCLOSURE QUESTIONNAIRE

You can see that the answer sheet you have been given has four different possible answers: A, B, C, or D. You are to read each item in the booklet and choose the answer that most nearly applies to you for that item. That is, use the answer sheet to indicate how much you would be willing to disclose to a group composed of yourself and three other college students with whom you are unacquainted, whose stated purpose is to get to know each other on a personal basis.

The four possible answers are:

A--Would tell these people nothing about this aspect of me.

B--Would talk in general terms about this item.

C--Would talk in full and complete detail about this item.

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

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 party or social gathering that I like best, and the kind that would bore me, or that I would not 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 am 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 really depressed or blue.

23. What it takes to get me really 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 do not like, and things that 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 B

PERSONAL ORIENTATION INVENTORY

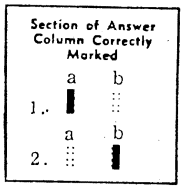
PERSONAL ORIENTATION INVENTORY

EVERETT L. SHOSTROM, Ph.D.

DIRECTIONS

This inventory consists of pairs of numbered statements. Read each statement and decide which of the two paired statements most consistently applies to you.

You are to mark your answers on the answer sheet you have. Look at the example of the answer sheet shown at the right. If the first statement of the pair is TRUE or MOSTLY TRUE as applied to you, blacken between the lines in the column headed "a". (See Example Item 1 at right.) If the second statement of the pair is TRUE or MOSTLY TRUE as applied to you, blacken between the lines in the column headed "b". (See Example Item 2 at right.) If neither statement applies to you, or if they refer to something you don't know about, make no answer on the answer sheet. Remember to give YOUR OWN opinion of yourself and do not leave any blank spaces if you can avoid it.



In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet. Make your marks heavy and black. Erase completely any answer you wish to change. Do not make any marks in this booklet.

Remember, try to make some answer to every statement.

Before you begin the inventory, be sure you put your name, your sex, your age, and the other information called for in the space provided on the answer sheet.

NOW OPEN THE BOOKLET AND START WITH QUESTION 1.

EDUCATIONAL AND INDUSTRIAL TESTING SERVICE SAN DIEGO, CALIFORNIA 92107

1. a. I am bound by the principle of fairness.

   b. I am not absolutely bound by the principle of fairness.

2. a. When a friend does me a favor, I feel that I must return it.

   b. When a friend does me a favor, I do not feel that I must return it.

3. a. I feel I must always tell the truth.

   b. I do not always tell the truth.

4. a. No matter how hard I try, my feelings are often hurt.

   b. If I manage the situation right, I can avoid being hurt.

5. a. I feel that I must strive for perfection in everything that I undertake.

   b. I do not feel that I must strive for perfection in everything that I undertake.

6. a. I often make my decisions spontaneously.

   b. I seldom make my decisions spontaneously.

7. a. I am afraid to be myself.

   b. I am not afraid to be myself.

8. a. I feel obligated when a stranger does me a favor.

   b. I do not feel obligated when a stranger does me a favor.

9. a. I feel that I have a right to expect others to do what I want of them.

   b. I do not feel that I have a right to expect others to do what I want of them.

10. a. I live by values which are in agreement with others.

    b. I live by values which are primarily based on my own feelings.

11. a. I am concerned with self-improvement at all times.

    b. I am not concerned with self-improvement at all times.

12. a. I feel guilty when I am selfish.

    b. I don't feel guilty when I am selfish.

13. a. I have no objection to getting angry.

    b. Anger is something I try to avoid.

14. a. For me, anything is possible if I believe in myself.

    b. I have a lot of natural limitations even though I believe in myself.

15. a. I put others' interests before my own.

    b. I do not put others' interests before my own.

16. a. I sometimes feel embarrassed by compliments.

    b. I am not embarrassed by compliments.

17. a. I believe it is important to accept others as they are.

    b. I believe it is important to understand why others are as they are.

18. a. I can put off until tomorrow what I ought to do today.

    b. I don't put off until tomorrow what I ought to do today.

19. a. I can give without requiring the other person to appreciate what I give.

    b. I have a right to expect the other person to appreciate what I give.

20. a. My moral values are dictated by society.

    b. My moral values are self-determined.

21. a. I do what others expect of me.

    b. I feel free to not do what others expect of me.

22. a. I accept my weaknesses.

    b. I don't accept my weaknesses.

23. a. In order to grow emotionally, it is necessary to know why I act as I do.

    b. In order to grow emotionally, it is not necessary to know why I act as I do.

24. a. Sometimes I am cross when I am not feeling well.

    b. I am hardly ever cross.

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25. a. It is necessary that others approve of what I do.

    b. It is not always necessary that others approve of what I do.

26. a. I am afraid of making mistakes.

    b. I am not afraid of making mistakes.

27. a. I trust the decisions I make spontaneously.

    b. I do not trust the decisions I make spontaneously.

28. a. My feelings of self-worth depend on how much I accomplish.

    b. My feelings of self-worth do not depend on how much I accomplish.

29. a. I fear failure.

    b. I don't fear failure.

30. a. My moral values are determined, for the most part, by the thoughts, feelings and decisions of others.

    b. My moral values are not determined, for the most part, by the thoughts, feelings and decisions of others.

31. a. It is possible to live life in terms of what I want to do.

    b. It is not possible to live life in terms of what I want to do.

32. a. I can cope with the ups and downs of life.

    b. I cannot cope with the ups and downs of life.

33. a. I believe in saying what I feel in dealing with others.

    b. I do not believe in saying what I feel in dealing with others.

34. a. Children should realize that they do not have the same rights and privileges as adults.

    b. It is not important to make an issue of rights and privileges.

35. a. I can "stick my neck out" in my relations with others.

    b. I avoid "sticking my neck out" in my relations with others.

36. a. I believe the pursuit of self-interest is opposed to interest in others.

    b. I believe the pursuit of self-interest is not opposed to interest in others.

37. a. I find that I have rejected many of the moral values I was taught.

    b. I have not rejected any of the moral values I was taught.

38. a. I live in terms of my wants, likes, dislikes and values.

    b. I do not live in terms of my wants, likes, dislikes and values.

39. a. I trust my ability to size up a situation.

    b. I do not trust my ability to size up a situation.

40. a. I believe I have an innate capacity to cope with life.

    b. I do not believe I have an innate capacity to cope with life.

41. a. I must justify my actions in the pursuit of my own interests.

    b. I need not justify my actions in the pursuit of my own interests.

42. a. I am bothered by fears of being inadequate.

    b. I am not bothered by fears of being inadequate.

43. a. I believe that man is essentially good and can be trusted.

    b. I believe that man is essentially evil and cannot be trusted.

44. a. I live by the rules and standards of society.

    b. I do not always need to live by the rules and standards of society.

45. a. I am bound by my duties and obligations to others.

    b. I am not bound by my duties and obligations to others.

46. a. Reasons are needed to justify my feelings.

    b. Reasons are not needed to justify my feelings.

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47. a. There are times when just being silent is the best way I can express my feelings.

    b. I find it difficult to express my feelings by just being silent.

48. a. I often feel it necessary to defend my past actions.

    b. I do not feel it necessary to defend my past actions.

49. a. I like everyone I know.

    b. I do not like everyone I know.

50. a. Criticism threatens my self-esteem.

    b. Criticism does not threaten my self-esteem.

51. a. I believe that knowledge of what is right makes people act right.

    b. I do not believe that knowledge of what is right necessarily makes people act right.

52. a. I am afraid to be angry at those I love.

    b. I feel free to be angry at those I love.

53. a. My basic responsibility is to be aware of my own needs.

    b. My basic responsibility is to be aware of others' needs.

54. a. Impressing others is most important.

    b. Expressing myself is most important.

55. a. To feel right, I need always to please others.

    b. I can feel right without always having to please others.

56. a. I will risk a friendship in order to say or do what I believe is right.

    b. I will not risk a friendship just to say or do what is right.

57. a. I feel bound to keep the promises I make.

    b. I do not always feel bound to keep the promises I make.

58. a. I must avoid sorrow at all costs.

    b. It is not necessary for me to avoid sorrow.

59. a. I strive always to predict what will happen in the future.

    b. I do not feel it necessary always to predict what will happen in the future.

60. a. It is important that others accept my point of view.

    b. It is not necessary for others to accept my point of view.

61. a. I only feel free to express warm feelings to my friends.

    b. I feel free to express both warm and hostile feelings to my friends.

62. a. There are many times when it is more important to express feelings than to carefully evaluate the situation.

    b. There are very few times when it is more important to express feelings than to carefully evaluate the situation.

63. a. I welcome criticism as an opportunity for growth.

    b. I do not welcome criticism as an opportunity for growth.

64. a. Appearances are all-important.

    b. Appearances are not terribly important.

65. a. I hardly ever gossip.

    b. I gossip a little at times.

66. a. I feel free to reveal my weaknesses among friends.

    b. I do not feel free to reveal my weaknesses among friends.

67. a. I should always assume responsibility for other people's feelings.

    b. I need not always assume responsibility for other people's feelings.

68. a. I feel free to be myself and bear the consequences.

    b. I do not feel free to be myself and bear the consequences.

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69. a. I already know all I need to know about my feelings.

    b. As life goes on, I continue to know more and more about my feelings.

70. a. I hesitate to show my weaknesses among strangers.

    b. I do not hesitate to show my weaknesses among strangers.

71. a. I will continue to grow only by setting my sights on a high-level, socially approved goal.

    b. I will continue to grow best by being myself.

72. a. I accept inconsistencies within myself.

    b. I cannot accept inconsistencies within myself.

73. a. Man is naturally cooperative.

    b. Man is naturally antagonistic.

74. a. I don't mind laughing at a dirty joke.

    b. I hardly ever laugh at a dirty joke.

75. a. Happiness is a by-product in human relationships.

    b. Happiness is an end in human relationships.

76. a. I only feel free to show friendly feelings to strangers.

    b. I feel free to show both friendly and unfriendly feelings to strangers.

77. a. I try to be sincere but I sometimes fail.

    b. I try to be sincere and I am sincere.

78. a. Self-interest is natural.

    b. Self-interest is unnatural.

79. a. A neutral party can measure a happy relationship by observation.

    b. A neutral party cannot measure a happy relationship by observation.

80. a. For me, work and play are the same.

    b. For me, work and play are opposites.

81. a. Two people will get along best if each concentrates on pleasing the other.

    b. Two people can get along best if each person feels free to express himself.

82. a. I have feelings of resentment about things that are past.

    b. I do not have feelings of resentment about things that are past.

83. a. I like only masculine men and feminine women.

    b. I like men and women who show masculinity as well as femininity.

84. a. I actively attempt to avoid embarrassment whenever I can.

    b. I do not actively attempt to avoid embarrassment.

85. a. I blame my parents for a lot of my troubles.

    b. I do not blame my parents for my troubles.

86. a. I feel that a person should be silly only at the right time and place.

    b. I can be silly when I feel like it.

87. a. People should always repent their wrongdoings.

    b. People need not always repent their wrongdoings.

88. a. I worry about the future.

    b. I do not worry about the future.

89. a. Kindness and ruthlessness must be opposites.

    b. Kindness and ruthlessness need not be opposites.

90. a. I prefer to save good things for future use.

    b. I prefer to use good things now.

91. a. People should always control their anger.

    b. People should express honestly-felt anger.

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92. a. The truly spiritual man is sometimes sensual.

    b. The truly spiritual man is never sensual.

93. a. I am able to express my feelings even when they sometimes result in undesirable consequences.

    b. I am unable to express my feelings if they are likely to result in undesirable consequences.

94. a. I am often ashamed of some of the emotions that I feel bubbling up within me.

    b. I do not feel ashamed of my emotions.

95. a. I have had mysterious or ecstatic experiences.

    b. I have never had mysterious or ecstatic experiences.

96. a. I am orthodoxly religious.

    b. I am not orthodoxly religious.

97. a. I am completely free of guilt.

    b. I am not free of guilt.

98. a. I have a problem in fusing sex and love.

    b. I have no problem in fusing sex and love.

99. a. I enjoy detachment and privacy.

    b. I do not enjoy detachment and privacy.

100. a. I feel dedicated to my work.

    b. I do not feel dedicated to my work.

101. a. I can express affection regardless of whether it is returned.

    b. I cannot express affection unless I am sure it will be returned.

102. a. Living for the future is as important as living for the moment.

    b. Only living for the moment is important.

103. a. It is better to be yourself.

    b. It is better to be popular.

104. a. Wishing and imagining can be bad.

    b. Wishing and imagining are always good.

105. a. I spend more time preparing to live.

    b. I spend more time actually living.

106. a. I am loved because I give love.

    b. I am loved because I am lovable.

107. a. When I really love myself, everybody will love me.

    b. When I really love myself, there will still be those who won't love me.

108. a. I can let other people control me.

    b. I can let other people control me if I am sure they will not continue to control me.

109. a. As they are, people sometimes annoy me.

    b. As they are, people do not annoy me.

110. a. Living for the future gives my life its primary meaning.

    b. Only when living for the future ties into living for the present does my life have meaning.

111. a. I follow diligently the motto, "Don't waste your time."

    b. I do not feel bound by the motto, "Don't waste your time."

112. a. What I have been in the past dictates the kind of person I will be.

    b. What I have been in the past does not necessarily dictate the kind of person I will be.

113. a. It is important to me how I live in the here and now.

    b. It is of little importance to me how I live in the here and now.

114. a. I have had an experience where life seemed just perfect.

    b. I have never had an experience where life seemed just perfect.

115. a. Evil is the result of frustration in trying to be good.

    b. Evil is an intrinsic part of human nature which fights good.

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116. a. A person can completely change his essential nature.

b. A person can never change his essential nature.

117. a. I am afraid to be tender.

b. I am not afraid to be tender.

118. a. I am assertive and affirming.

b. I am not assertive and affirming.

119. a. Women should be trusting and yielding.

b. Women should not be trusting and yielding.

120. a. I see myself as others see me.

b. I do not see myself as others see me.

121. a. It is a good idea to think about your greatest potential.

b. A person who thinks about his greatest potential gets conceited.

122. a. Men should be assertive and affirming.

b. Men should not be assertive and affirming.

123. a. I am able to risk being myself.

b. I am not able to risk being myself.

124. a. I feel the need to be doing something significant all of the time.

b. I do not feel the need to be doing something significant all of the time.

125. a. I suffer from memories.

b. I do not suffer from memories.

126. a. Men and women must be both yielding and assertive.

b. Men and women must not be both yielding and assertive.

127. a. I like to participate actively in intense discussions.

b. I do not like to participate actively in intense discussions.

128. a. I am self-sufficient.

b. I am not self-sufficient.

129. a. I like to withdraw from others for extended periods of time.

b. I do not like to withdraw from others for extended periods of time.

130. a. I always play fair.

b. Sometimes I cheat a little.

131. a. Sometimes I feel so angry I want to destroy or hurt others.

b. I never feel so angry that I want to destroy or hurt others.

132. a. I feel certain and secure in my relationships with others.

b. I feel uncertain and insecure in my relationships with others.

133. a. I like to withdraw temporarily from others.

b. I do not like to withdraw temporarily from others.

134. a. I can accept my mistakes.

b. I cannot accept my mistakes.

135. a. I find some people who are stupid and uninteresting.

b. I never find any people who are stupid and uninteresting.

136. a. I regret my past.

b. I do not regret my past.

137. a. Being myself is helpful to others.

b. Just being myself is not helpful to others.

138. a. I have had moments of intense happiness when I felt like I was experiencing a kind of ecstasy or bliss.

b. I have not had moments of intense happiness when I felt like I was experiencing a kind of bliss.

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139. a. People have an instinct for evil.

b. People do not have an instinct for evil.

140. a. For me, the future usually seems hopeful.

b. For me, the future often seems hopeless.

141. a. People are both good and evil.

b. People are not both good and evil.

142. a. My past is a stepping stone for the future.

b. My past is a handicap to my future.

143. a. "Killing time" is a problem for me.

b. "Killing time" is not a problem for me.

144. a. For me, past, present and future is in meaningful continuity.

b. For me, the present is an island, unrelated to the past and future.

145. a. My hope for the future depends on having friends.

b. My hope for the future does not depend on having friends.

146. a. I can like people without having to approve of them.

b. I cannot like people unless I also approve of them.

147. a. People are basically good.

b. People are not basically good.

148. a. Honesty is always the best policy.

b. There are times when honesty is not the best policy.

149. a. I can feel comfortable with less than a perfect performance.

b. I feel uncomfortable with anything less than a perfect performance.

150. a. I can overcome any obstacles as long as I believe in myself.

b. I cannot overcome every obstacle even if I believe in myself.

APPENDIX C

GROUP PERCEPTIONS TEST

I. Below are four items, consisting of pairs of words with opposite meanings. Please rate (X) how you see yourself in terms of these items.

Self (Your Name) _____

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

II. Now rate how you see the other members of the group. Be sure to write their names in the blank above each group of items.

(Name 1) _____

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

(Name 2) _____

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

(Name 3) _____

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

III. Next, rate how you think the other members of the group each rated you. Be sure to write in their names in the blanks above each group of items.

How (Name 1) _____ rated you.

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

How (Name 2) _____ rated you.

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

How (Name 3) _____ rated you.

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

IV. Finally, rate how you think the other members of the group rated him/herself. Be sure to write in their names in the blanks.

How (Name 1) _____ rated him/herself.

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

How (Name 2) _____ rated him/herself.

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

How (Name 3) _____ rated him/herself.

	very	moderately	slightly	neutral	slightly	moderately	very	
friendly	___:	___:	___:	___:	___:	___:	___:	hostile
strong	___:	___:	___:	___:	___:	___:	___:	weak
bad	___:	___:	___:	___:	___:	___:	___:	good
passive	___:	___:	___:	___:	___:	___:	___:	active

APPENDIX D

DERIVATION OF GROUP PERCEPTION MEASURES

Self (S1)	Other (O 1/2, O 1/3, O 1/4)	(S2)	(O 2/1, O 2/3, O 2/4)
Self as others see me (So 1/2, SO 1/3, SO 1/4)	Other's self as he sees self (OS 1/2, OS 1/3, OS 1/4)	(SO 2/1, SO 2/3, SO 2/4)	(OS 2/1, OS 2/3, OS 2/4)
(S3)	(O 3/1, O 3/2, O 3/4)	(S4)	(O 4/1, O 4/2, O 4/3)
(SO 3/1, SO 3/2, SO 3/4)	(OS 3/1, OS 3/2, OS 3/4)	(SO 4/1, SO 4/2, SO 4/3)	(OS 4/1, OS 4/2, OS 4/3)

1. Congruency: degree to which one rates others as they are perceived rating oneself (perceived behavior exchange).

   S1 = [O 1/2 - SO 1/2] + [O 1/3 - SO 1/3] + [O 1/4 - SO 1/4].

2. Mutuality: degree to which one rates others as they actually rate oneself (behavior exchange).

   S1 = [O 1/2 - O 2/1] + [O 1/3 - O 3/1] + [O 1/4 - O 4/1].

3. Accuracy: degree to which a person can predict how others perceive him (self accuracy).

   S1 = [O 2/1 - SO 1/2] + [O 3/1 - SO 1/3] + [O 4/1 - SO 1/4].

4. Empathy: degree to which a person can predict how others see themselves (other accuracy).

   S1 = [OS 1/2 - S2] + [OS 1/3 - S3] + [OS 1/4 - S4].

5. Interpersonal Openness: degree to which others can predict your rating of them (reflects degree to which one is understood).

   S1 = [O 1/2 - SO 2/1] + [O 1/3 - SO 3/1] + [O 1/4 - SO 4/1].

6. Personal Openness: degree to which others can predict one's self concept (reflects degree to which one <u>is</u> understood).

   S1 = [OS 2/1 - S1] + [OS 3/1 - S1] + [OS 4/1 - S1].

7. Felt Openness: degree to which one predicts that others agree with one's self perception (reflects degree to which one feels understood).

   S1 = [SO 1/2 - S1] + [SO 1/3 - S1] + [SO 1/4 - S1].

8. Realism: degree to which one sees self as others see one (others' agreement with self concept).

   S1 = [S1 - O 2/1] + [S1 - O 3/1] + [S1 - O 4/1].

APPENDIX E

BASIC INSTRUCTION CARDS

Category 1. Any verbal expression of your current feelings resulting from interaction with the group.

Category 2. Seeking information from another group member regarding his or her feelings.

Category 3. Seeking information regarding your own behavior.

Category 4. Statements to another group member regarding your perception of his behavior.

Category 5. Any attempt to clarify the expressed feelings of another group member.

HERE & NOW

APPENDIX F

INSTRUCTIONS

Please listen carefully: This experiment is designed to help you get to know each other on a personal basis. We have found that the best way to get a genuine understanding of each other is to share your feelings that come out of this current group situation. As an example, if another group member behaves so as to displease you, the most direct way of doing something about it is to tell him or her how you feel about their behavior. Because you can get bogged down in a discussion of past events, it is best to stick to "here and now" happenings.

It might also help you to remember a couple of things about communication and getting close to others: (1) that perhaps the most important thing you can give another person is empathy and understanding, and this naturally makes others feel closer to you; and (2) that all of us do things to avoid genuinely personal interaction--such as speculating about "why?" someone said this or that, or engaging in small talk about academic majors, classifications, etc.

These five sentences (at this time the experimenter points to the cards in front of each subject) break down into categories of what I am talking about. They are ways of interacting which have been shown to help people establish and maintain close relationships. They are:

Category 1. Any verbal expression of your current feelings resulting from interaction with the group. "It makes me feel good because you're interested" is an example that fits, while "I feel good because I just aced an exam" does not fit because it relates to something outside the group.

Category 2. Seeking information from another group member regarding his or her feelings. For instance, "How did you feel when she ignored

you just then?". References to feelings outside the current situation such as, "Have you ever felt that way before?" do not fit this category.

Category 3. Seeking information regarding your own behavior. A question like, "Is my talking a lot bothering you?" fits, while "Do people who talk a lot bother you?" does not because it refers to people in general and not your specific behavior.

Category 4. Statements to another group member regarding your perception of his or her behavior. For example, "I think that was really an intelligent comment." An example that would not fit is "He's really coming on strong," because it is not made directly to the person being discussed.

Category 5. Any attempt to clarify the expressed feelings of another. "Are you saying that you feel better now?" is a good example, but "Yeah, I guess I see what you mean to say" does not fit because it does not clarify a feeling.

You can see that all of these categories apply to the current situation, the things you will do and say in this room. And they are about feelings, not abstract ideas. So, what I am asking you to do is to interact with each other for 60 minutes while keeping in mind and using these categories.

I will monitor the group through the one-way mirror and the microphone. What you say will be recorded, but will be kept completely confidential. It will be used only in this experiment, then erased.

(FOR REINFORCEMENT SESSIONS)

(This was read just before the above paragraph concerning monitoring.) You have undoubtedly noticed these boxes, and have probably wondered why they are here. Well, whenever any of you makes a statement

that fits any one of these five categories, I will activate the counter in front of that person. It makes an audible click, and this will let you know how well you are using these categories in your interaction. This counter will register your total, and if anyone falls too far behind, the red light above his counter will come on. This will be a sign that this person may need assistance, or that one person is tending to dominate the conversation. Another important sign for you is this: if no one gets a click for three minutes, all of your lights will flash on, and they will do so every three minutes until a click is registered. This will indicate to you that the group as a whole is not using the categories, and that you all should change how you are interacting with each other.

Now, I know that this apparatus may seem artificial to you, but it is the least distracting, nondisruptive method that we have found to give you information about how you are interacting, while you are interacting.

Instructions for Acquisitions 1 and 2

Let me remind you that the purpose of the study is to get to know each other on a personal basis. I am asking you to accomplish this by using these five categories (pointing to cards). (Here categories were read as above.) Again today, we will use the feedback procedure so as not to interrupt the flow of interaction. Is everything clear? (The sentence concerning the apparatus was of course omitted for the nonreinforcement groups.)

APPENDIX G

ANOVA SUMMARY TABLES FOR TWELVE SCALES OF POI

TABLE VII

TIME RATIO (SCALE NO. 1)

Source	df	F
Reinforcement	1	0.85
Gl/yes-no	1	1.56
Sessions	1	7.62**
Reinforcement by Gl/yes-no	1	0.62
Reinforcement by Sessions	1	1.91
Gl/yes-no by Sessions	1	0.09
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	1.15
Subjects by Sessions	20	

**p < .01.

TABLE VIII

SUPPORT RATIO (SCALE NO. 2)

Source	df	F
Reinforcement	1	1.56
Gl/yes-no	1	2.43
Sessions	1	15.32**
Reinforcement by Gl/yes-no	1	0.76
Reinforcement by Sessions	1	0.23
Gl/yes-no by Sessions	1	0.05
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	0.54
Subjects by Sessions	20	

**p < .01.

TABLE IX

SELF-ACTUALIZING VALUE (SCALE NO. 3)

Source	df	F
Reinforcement	1	0.52
Gl/yes-no	1	0.64
Sessions	1	5.69**
Reinforcement by Gl/yes-no	1	0.24
Reinforcement by Sessions	1	0.01
Gl/yes-no by Sessions	1	2.05
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	5.69**
Subjects by Sessions	20	

**p < .05.

TABLE X

EXISTENTIALITY (SCALE NO. 4)

Source	df	F
Reinforcement	1	0.00
Gl/yes-no	1	1.09
Sessions	1	26.26***
Reinforcement by Gl/yes-no	1	0.05
Reinforcement by Sessions	1	0.04
Gl/yes-no by Sessions	1	2.77
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	0.36
Subjects by Sessions	20	

***p < .01.

TABLE XI

FEELING REACTIVITY (SCALE NO. 5)

Source	df	F
Reinforcement	1	1.96
Gl/yes-no	1	2.60
Sessions	1	0.40
Reinforcement by Gl/yes-no	1	0.03
Reinforcement by Sessions	1	3.57*
Gl/yes-no by Sessions	1	0.66
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	3.57*
Subjects by Sessions	20	

*p < .10.

TABLE XII

SPONTANEITY (SCALE NO. 6)

Source	df	F
Reinforcement	1	0.02
Gl/yes-no	1	0.05
Sessions	1	0.01
Reinforcement by Gl/yes-no	1	0.05
Reinforcement by Sessions	1	3.07*
Gl/yes-no by Sessions	1	1.10
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	2.30
Subjects by Sessions	20	

*p < .10.

TABLE XIII

SELF-REGARD (SCALE NO. 7)

Source	df	F
Reinforcement	1	0.01
Gl/yes-no	1	0.00
Sessions	1	7.51**
Reinforcement by Gl/yes-no	1	1.00
Reinforcement by Sessions	1	0.04
Gl/yes-no by Sessions	1	0.18
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	1.60
Subjects by Sessions	20	

**p < .05.

TABLE XIV

SELF-ACCEPTANCE (SCALE NO. 8)

Source	df	F
Reinforcement	1	1.00
Gl/yes-no	1	4.66**
Sessions	1	6.15**
Reinforcement by Gl/yes-no	1	1.92
Reinforcement by Sessions	1	0.00
Gl/yes-no by Sessions	1	0.13
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	2.79
Subjects by Sessions	20	

**p < .05.

TABLE XV

NATURE OF MAN (SCALE NO. 9)

Source	df	F
Reinforcement	1	5.33**
Gl/yes-no	1	0.82
Sessions	1	2.78
Reinforcement by Gl/yes-no	1	0.09
Reinforcement by Sessions	1	2.78
Gl/yes-no by Sessions	1	0.51
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	0.06
Subjects by Sessions	20	

**p < .05.

TABLE XVI

SYNERGY (SCALE NO. 10)

Source	df	F
Reinforcement	1	1.65
Gl/yes-no	1	3.52*
Sessions	1	6.70**
Reinforcement by Gl/yes-no	1	0.09
Reinforcement by Sessions	1	0.02
Gl/yes-no by Sessions	1	0.14
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	1.23
Subjects by Sessions	20	

*p < .10; **p < .05.

TABLE XVII

ACCEPTANCE OF AGGRESSION (SCALE NO. 11)

Source	df	F
Reinforcement	1	3.03*
Gl/yes-no	1	0.21
Sessions	1	2.88
Reinforcement by Gl/yes-no	1	0.06
Reinforcement by Sessions	1	0.53
Gl/yes-no by Sessions	1	0.12
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	0.00
Subjects by Sessions	20	

*p < .10.

TABLE XVIII

CAPACITY FOR INTIMATE CONTACT
(SCALE NO. 12)

Source	df	F
Reinforcement	1	0.12
Gl/yes-no	1	2.44
Sessions	1	4.60**
Reinforcement by Gl/yes-no	1	1.33
Reinforcement by Sessions	1	0.40
Gl/yes-no by Sessions	1	0.40
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	1	0.40
Subjects by Sessions	20	

**p < .05.

APPENDIX H

ANOVA SUMMARY TABLES FOR EIGHT GROUP PERCEPTION MEASURES

TABLE XIX

CONGRUENCY (MEASURE NO. 1)

Source	df	F
Reinforcement	1	0.11
Gl/yes-no	1	0.15
Sessions	2	0.52
Reinforcement by Gl/yes-no	1	0.07
Reinforcement by Sessions	2	3.40**
Gl/yes-no Sessions	2	1.43
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	2	0.20
Subjects by Sessions	40	

**p < .05.

TABLE XX

MUTUALITY (MEASURE NO. 2)

Source	df	F
Reinforcement	1	0.21
Gl/yes-no	1	0.08
Sessions	2	3.11
Reinforcement by Gl/yes-no	1	1.26
Reinforcement by Sessions	2	5.45**
Gl/yes-no by Sessions	2	0.49
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	2	0.74
Subjects by Sessions	40	

**p < .05.

TABLE XXI

ACCURACY (MEASURE NO. 3)

Source	df	F
Reinforcement	1	0.41
Gl/yes-no	1	0.00
Sessions	2	1.78
Reinforcement by Gl/yes-no	1	1.93
Reinforcement by Sessions	2	0.97
Gl/yes-no by Sessions	2	1.57
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	2	0.67
Subjects by Sessions	40	

TABLE XXII

EMPATHY (MEASURE NO. 4)

Source	df	F
Reinforcement	1	0.34
Gl/yes-no	1	0.38
Sessions	2	3.65**
Reinforcement by Gl/yes-no	1	0.03
Reinforcement by Sessions	2	2.26
Gl/yes-no by Sessions	2	0.50
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	2	0.04
Subjects by Sessions	40	

**$p < .05$.

TABLE XXIII

INTERPERSONAL OPENNESS (MEASURE NO. 5)

Source	df	F
Reinforcement	1	0.00
Gl/yes-no	1	0.37
Sessions	2	1.17
Reinforcement by Gl/yes-no	1	0.26
Reinforcement by Sessions	2	2.32
Gl/yes-no by Sessions	2	0.84
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	2	0.39
Subjects by Sessions	40	

TABLE XXIV

PERSONAL OPENNESS (MEASURE NO. 6)

Source	df	F
Reinforcement	1	0.01
Gl/yes-no	1	0.01
Sessions	2	0.50
Reinforcement by Gl/yes-no	1	0.13
Reinforcement by Sessions	2	2.83*
Gl/yes-no by Sessions	2	0.21
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	2	1.97
Subjects by Sessions	40	

*$p < .10$.

TABLE XXV

FELT OPENNESS (MEASURE NO. 7)

Source	df	F
Reinforcement	1	2.49
Gl/yes-no	1	0.22
Sessions	2	0.87
Reinforcement by Gl/yes-no	1	0.18
Reinforcement by Sessions	2	0.37
Gl/yes-no by Sessions	2	2.10
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	2	0.00
Subjects by Sessions	40	

TABLE XXVI

REALISM (MEASURE NO. 8)

Source	df	F
Reinforcement	1	0.02
Gl/yes-no	1	0.56
Sessions	2	3.92**
Reinforcement by Gl/yes-no	1	0.00
Reinforcement by Sessions	2	0.65
Gl/yes-no by Sessions	2	0.86
Subjects	20	
Reinforcement by Gl/yes-no by Sessions	2	0.59
Subjects by Sessions	40	

*p < .05.

APPENDIX I

NEWMAN-KEULS COMPARISON OF MEANS FROM FIVE GROUP PERCEPTION MEASURES TAKEN AT A1, A3 AND G2

TABLE XXVII

CONGRUENCY

	RA1	RG2	NRA3	NRG2	NRA1	RA3
RA1 = 19.75	---	1.08	2.17	4.92*	11.50*	12.33*
RG2 = 20.83		---	1.09	3.84*	10.42*	11.25*
NRA3 = 21.92			---	2.75	9.33*	10.06*
NRG2 = 24.67				---	6.58*	7.41*
NRA1 = 31.25					---	.83
RA3 = 32.08						---

*p < .05.

TABLE XXVIII

MUTUALITY

	NRG2	RG2	RA1	NRA3	RA3	NRA1
NRG2 = 30.17	---	1.58	1.91	5.00*	16.00*	23.66*
RG2 = 31.75		---	.33	3.42	15.42*	22.08*
RA1 = 32.08			---	3.09*	14.09*	21.75*
NRA3 = 35.17				---	11.00*	18.66*
RA3 = 46.17					---	7.66*
NRA1 = 53.83						---

*p < .05.

TABLE XXIX

EMPATHY

	NRG2	RG2	RA3	RA1	NRA3	NRA1
NRG2 = 15.83	---	6.84*	8.34*	9.00*	14.82*	16.59*
RG2 = 22.67		---	1.50	2.16	8.08*	9.75*
RA3 = 24.17			---	.66	5.58*	8.25*
RA1 = 24.83				---	5.82*	7.59*
NRA3 = 30.75					---	1.67
NRA1 = 32.42						---

*p < .05.

TABLE XXX

PERSONAL OPENNESS

	NRG2	RA3	RA1	NRA3	RG2	NRA1
NRG2 = 15.83	---	8.50*	9.00*	14.59*	15.17*	16.34*
RA3 = 24.33		---	.50	6.09*	6.67*	7.84*
RA1 = 24.83			---	5.59*	6.17*	7.34*
NRA3 = 30.42				---	.58	1.75
RG2 = 31.00					---	1.17
NRA1 = 32.17						---

*p < .05.

TABLE XXXI

REALISM

	NRG2	RG2	RA1	NRA3	RA3	NRA1
NRG2 = 18.17	---	2.16	8.33*	11.25*	11.33*	14.08*
RG2 = 21.33		---	5.17*	8.09*	8.17*	10.92*
RA1 = 26.50			---	2.92	3.00	5.75*
NRA3 = 29.42				---	.08	2.83
RA3 = 29.50					---	2.75
NRA1 = 32.25						---

*$p < .05$.

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