ACCURACY OF INTERPERSONAL PERCEPTION IN SMALL GROUPS AS A FUNCTION OF INDUCED, THERAPEUTIC "HERE AND NOW" INTERACTION

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Scope and Method of Study: The purpose of this study was twofold: (1) to induce varying amounts of therapeutic "here and now" responses in small group discussions by replicating a previous research study which found that both a group therapist and a reinforcement paradigm were effective in significantly increasing a group's production of desired verbal responses, and (2) to determine how various measures of interpersonal perception were affected by the design variables and how they were related to dependent variables and number of desired responses emitted. Group members were instructed to use four categories of responses during their interaction. Half the groups received reinforcement for these responses and half received no reinforcement. Three therapist conditions were used: (a) direct elicitation, (b) role modeling, and (c) no therapist. Interpersonal perceptions were measured by the Group Perceptions Inventory which was devised for use in this study, and several other post-tests.

Findings and Conclusions: The results of the study indicated that the design variables were significantly related to several important measures of interpersonal perception, including empathy and a measure of the degree to which group members felt understood. While direct elicitation therapist conditions were more effective in eliciting the desired responses, the role modeling conditions plus reinforcement were more strongly related to accuracy of interpersonal perception.

ADVISER'S APPROVAL Donald K. Fromme

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CHAPTER I

INTRODUCTION

Literature Review

Interpersonal perception, or the interpretation and evaluation of social and interactional cues, is a process that lies at the heart of human intercourse. As Cline (1964, p. 221) has put it, "The evaluation and assessment of others by all men is such a consistent and ongoing process that it operates almost automatically at times, commonly at nonverbal and sometimes at almost unconscious levels." Implied in Cline's statement is that interpersonal perception begins at a very early, pre-verbal stage of development, and is therefore an important part of personality development. Support for such a notion can be found in the work of a succession of influential personality theorists beginning with neo-Freudian Horney (1963), who emphasized the developmental importance of early interpersonal relationships rather than the traditional Freudian instinct theory. Klein (1960) claimed that the roots of personality are to be found in the earliest mother-child interactions. Fromm (1970), Erikson (1950), Sullivan (1964), and Murray (1938) were other neo-Freudians who expanded on this trend toward viewing personality development as a function of interpersonal experiences. Such non-analytic theorists as Mead (1934), Allport (1960), and Leary (1957) followed a parallel course.

Sullivan was the first personality theorist to place the self concept at the core of his theory. Since then, theorists as diverse as Laing (1966), Goffman (1959), and Rogers (1951, 1961) have similarly emphasized the self concept, which is thought to develop directly from the process of interpersonal perception. In explaining its origin, most theorists accept some variant of Cooley's (1922) "looking glass self." Through imitation, role-taking, or an empathetic "feeling with" the other person (usually a "significant other"), we come to adopt others' views of ourselves as our own self view. If we perceive that others think badly of us, then we develop a poor self concept. If we perceive that others accept us only when we perform in certain ways, then guilt ensues when we fail to measure up.

Such conceptions form the basis for many current approaches toward understanding and treating psychopathology. Jourard (1964) noted that when a person is unaware of who, what, and how he is, he is out of touch with reality. More specifically, he stated,"Every maladjusted person is a person who has not made himself known to another human being and in consequence does not know himself" (p. 32). He explained further that when we present distorted views of ourselves to others we receive feedback that is itself distorted, and thus develop self views that are distorted. Such denial of reality, or distorted perception, as Coleman (1964) has pointed out, is a means of defending the self from stress and does not allow the individual to recognize those cues necessary for effective functioning and adjustment. Carson (1969) has contended that individuals who grossly misinterpret information and feedback about themselves through the process of selective inattention or

enhancement will be considered psychologically disordered by others and will experience severe limitations in the quality of their social interactions. Leary (1955, 1957) emphasized the importance of interpersonal interaction in his early work and developed a system of psychiatric diagnosis based in part on the degree of discrepancy between the patient's self views and views of him by others. In his 1968 review, Campbell stated, "A major aim of the T-group method is to increase skill and accuracy in interpersonal perceptions" (p. 91). It is a well documented fact that group psychotherapy is the treatment of choice in dealing with alcoholics (Hartocollis and Sheafer, 1968; Stein and Friedman, 1971). Concerning such treatment, O'Leary (1974, p. 145), who has done extensive research with alcoholics, wrote,

> A primary aim of group therapy with such individuals, particularly the more psychologically disturbed, is to decrease the degree of personal distortion with a resulting increase in the accuracy of self perception. It is through self-disclosure, reciprocal feedback, and the consensual validation provided in the interactional context of the group that one comes to recognize his relative position along a given psychological dimension, and the potential for both personal and interpersonal problem solving is increased.

There is scientific evidence to support the notion that distortions in interpersonal perception are directly related to the presence of psychopathology. Spiegal (1970) investigated the accuracy of self-other judgments of psychiatric patients along the dimension of "health-sickness." Psychiatric in-patients rated by staff members as relatively healthy rated themselves as slightly less healthy. Patients rated as sicker rated themselves as much more healthy. The degree of perceptual distortion was more marked in the more severely ill patients who attempted to present a favorable self-image. Donovan (1976), working

with general psychiatric in-patients, and O'Leary (1974), working with hospitalized alcoholics, found that the inability to perceive oneself accurately or to predict how others see oneself is related to the level of depression. In both studies, severely depressed patients were found to underestimate their depression level as rated by staff members, fellow patients, and the Beck Depression Inventory. Slightly depressed patients tended to overestimate their depression level. Paykel et al. (1973) found that depressed patients who overestimated or exaggerated the severity of their depression tended to be more neurotic, more hysterical, and less obsessive than patients who underestimated the severity level.

The theoretical importance of interpersonal perception has generated a vast number of studies in the area. The most common questions asked have been (a) Are some people better at interpersonal perception than others? (b) What types of people are best at interpersonal perception? and (c) Under what conditions is interpersonal perceptivity enhanced? Although some definitive answers are available to questions (a) and (c), attempts to answer (b) have produced a muddle of conflicting results.

The scientific approach to this problem area was first given impetus by Darwin's work (1872) on emotional expressions and their recognition. After only occasional notable studies in the early 1900's, there developed by the mid-1950's a sizeable literature utilizing a myriad of experimental techniques. One of the most popular approaches to the study of interpersonal perception during this era is typified by Dymond's (1949, 1950) attempts to measure empathetic ability. She

devised a test made up of four parts, each containing six character traits. In the first part an individual was asked to rate himself, on a five point scale, on each of the six character traits. In the second part he was asked to rate some other individual on the six traits. In the third part he was asked to rate the other individual as he believed the other would rate himself. In the fourth part he rated himself as he thought the other would rate him. Thus, an ingenious measure of a person's empathetic ability could be derived from seeing how closely his predictions of another's rating corresponded with the other's actual ratings. Simple difference scores formed the basis of the analysis. In 1950, she used this test in a study concerning personality type and interpersonal perceptivity.

In 1955, Taft reviewed the literature, crediting Dymond for her "landmark" 1950 paper. Although he found no consistent pattern of results concerning personality type and accuracy of interpersonal perception, he concluded that the ability to judge people is a valid concept; that is, some people are better at it than others. He sounded a caution in interpreting such research, citing several studies, including Green (1948), which indicated that people tend to "assume similarity," or attribute to others the same response on these tests that they would make themselves. Taft warned that this artifact could have major implications in interpreting future research.

In the same year, 1955, Cronbach published an article which challenged the interpretation not only of Dymond's work, but virtually all the preceding studies in interpersonal perception. The typical accuracy scores to that time involved a "judge" who predicted another

person's responses on a Likert type rating scale. As in Dymond's test, simple difference scores between these yielded what were thought to be pure accuracy scores. Cronbach showed that these simple difference scores concealed hidden variables which depended heavily on unwanted components.

Cronbach described the following components which apply when two or more subjects are rated on a single trait: (a) mean or level. If the mean of the judge's ratings deviates, either higher or lower, from the mean of the criterion scores, his difference score will be higher and his apparent accuracy lower. (b) spread. The spread or variance of the judge's ratings may be large or small. Judges who tend to make extreme ratings of others will tend to make larger errors, which will, in turn, result in larger difference scores. If the variance is relatively small the judge will get a much smaller difference score, assuming his estimation of the mean is correct. (c) correlation. The judge's ratings may correlate with the criterion scores of not. He may have ranked the subjects in correct order concerning the particular trait or not, which will affect his difference score.

In the case where the judge rates two or more subjects on a number of traits and a single, grand difference score is extracted, Cronbach described four components: (a) elevation. This is the difference between the grand mean of all ratings, for all subjects on all traits, and the grand mean of the criterion scores. (b) differential elevation. This term has spread and correlation terms, and reflects how closely a judge's average predictions of another person's scores on all items correspond to the mean of that person's actual responses.

(c) stereotype accuracy might be called the ability to predict how others in general rate themselves. It corresponds to the mean term in the analysis for one trait (but has correlation and spread terms, because there are a number of traits and a number of means). (d) differential accuracy also has spread and correlation terms, and reflects ability to predict differences between others on any item. The component is averaged over items. This "pure" accuracy score is achieved by removal of the elevation and stereotype accuracy terms from the data, and the pooling of remaining factors.

In addition to "Cronbach's components," several response set artifacts came to be recognized by other researchers. Although a large number of these have been identified, only the most prominent will be mentioned. Assumed similarity, mentioned above, makes it difficult in some cases to determine whether a judge's correct predictions are accuracy or assumed similarity. Edwards (1957) found high positive correlations between social desirability of personality inventory items and the likelihood that subjects will rate the items as descriptive of themselves. It would follow that a subject's assumed similarity score would be higher for people he regards favorably. Rogers (1959) found support for this notion when he controlled for favorability and found no relationship between real similarity and assumed similarity. Wolfe (1977) has complicated the interpretation by showing that if a judge is actually similar to the target on a particular trait, he will be able to more accurately perceive that trait in another person.

Cline (1964) identified several potential sources of contamination of accuracy scores, with social desirability foremost. Social desirability bias makes subjects reluctant to give certain answers, so a

particular item is answered the same way by most subjects. If the judge perceives this fact or if he reacts to social desirability set himself, he can accurately predict what most subjects will say. The halo effect has long been recognized as a response set in which judges tend to be less discriminating in their ratings on the various traits, and instead use some single impression to determine the pattern of trait ratings for a particular subject. Rommetveit (1960) found support for his hypothesis that the dominant and easily discriminable irrelevant attribute "breaks through" in attempts at judgments of the subjectively less important and less easily discriminable attribute. For instance, subjects who emphasize "good looks" as a basis for choosing friends (dominant attribute) will allow that attribute to break through when trying to rate others on intelligence level.

Cronbach's work had an immediate impact on interpersonal perception research, at first bringing it almost to a halt. Several workers in the field (Crow and Hammond, 1957; Cline and Richards, 1960; Bronfenbrenner et al., 1958; Chance and Meaders, 1960; Sechrest and Jackson, 1961) continued to publish articles, but others were apparently discouraged. For example, in 1964 Vernon asked, "Might we not question whether the whole area has not been shown to be so complicated that it is hardly possible to interpret the true psychological significance of any experimental findings?" (p. 66).

Despite this air of pessimism, various attempts have been made to avoid the problems created by "Cronbach's components" and response set artifacts. Bronfenbrenner (1958) introduced a technique for controlling stereotype accuracy, by which each prediction was expressed as a deviation from the mean of estimates made by the judge for all subjects on

that item. Christensen (1970) devised a similar technique using the judges' own admitted norms rather than the average of their actual predictions. Gage and Cronbach (1955) pointed out that it is quite possible that the stereotypes obtained by these two methods would not coincide, and they suggested studies which obtain both measures on the same judge.

With respect to Cronbach's differential accuracy term, Bronfenbrenner (1958), Hatch (1962), Cline (1964), and Christensen (1970) have each devised elaborate procedures for calculating their own pure accuracy terms. Each claims that their procedure yields a score which is superior to Cronbach's in accuracy.

Cook and Smith (1974) utilized a group ranking technique to control for response set bias and Cronbach's components. They used rank order correlations calculated for each subject, for each of four attributes, between that subject's ranking of the group and the criterion ranking, derived from the Eyesenck Personality Inventory. Studies using correlations between judges' ratings on more traditional numerical scales and the criterion include Richards et al. (1962) and Gabennesch and Hunt (1971). Another approach, which is employed in the present study, is to analyze the data in more sophisticated ways, separately identifying Cronbach's components. No examples of this approach could be found in the literature, although Cook and Smith (1974) suggested that if each trait is analyzed separately, simple standard scores can be used, eliminating the level and spread components.

These studies in the "post-Cronbach" era unanimously support the notion that accuracy of interpersonal perception is a valid concept.

For instance, Bronfenbrenner (1958) found that judges differ significantly from one another in ability to predict others' self ratings, but had virtually no demonstrated ability to predict how others would rate them. In the succeeding years no researchers have reported evidence to refute either of Bronfenbrenner's findings. Christensen (1974) found evidence for the generality of perceptual accuracy scores across persons and their reliability over time. Cook and Smith (1974) used four traits--extraversion, neuroticism, authoritarianism, and intelligence, and found that subjects could predict others accurately only on the extraversion-introversion dimension.

Other research has sought to clarify the conditions under which interpersonal perceptivity is enhanced. Bronfenbrenner (1958) produced evidence for a complex interaction effect between the sexes in small groups. He found that when males and females fall into a complementary relationship with respect to power roles (particularly when the males fail to assume a leadership role and the females assist in leading), greater accuracy in interpersonal perception results. However, conflict in power roles produces perceptual blind spots. Brewer and Brewer (1968) and Powell et al. (1976), utilizing different methodologies, produced evidence to suggest that interpersonal perceptivity is enhanced when the judge and target are in direct reciprocal communication rather than viewing each other on videotapes, films, or other indirect means. Mehrabian and Reed (1968) summarized evidence that when a communicator receives feedback from his target, the target is able to more accurately translate the communicated message than when the communication is attempted without interpersonal feedback. It is thought that the communicator learns from various forms of

feedback that his target is not accurately decoding his communication, in which case the communicator may then modify his communication until accurate decoding is achieved.

In a slightly different vein, Hayes (1972) found that the sheer amount of talk between the judge and target is directly related to accuracy. Stryker (1962) found a direct relationship between frequency of contact and accuracy. Taft (1966) determined that acquaintanceship is an aid to accuracy. In an unusual finding from an early (pre-Cronbach) study, Gage (1952) showed that under some circumstances judges do better predicting responses of people they have never seen than they do after actually seeing the others' behavior. This result was explained as being an example of stereotype accuracy, which is believed to be a skill independent from the ability to predict individual differences (Bronfenbrenner, 1958; Cline, 1964).

The studies mentioned above form the backbone of attempts to study interpersonal perceptions within the limitations imposed by Cronbach's analysis. The complexity of this type of research is illustrated by the fact that none of the authors claim to have achieved a perfect accuracy score (with all unwanted components eliminated) or to have developed a methodology that successfully controls for the many hidden artifacts. The inescapable conclusion is that there does not exist a fully satisfactory and validated test or procedure for measuring judging accuracy.

Purpose of the Study

Rogers (1951) suggested that psychopathology, in the form of high levels of tension and defensive behavior, is increased to the extent

to which a person perceives the incongruencies and discrepancies between his self concept and feedback about the way he functions in real social situations. The perception of such incongruous feedback is threatening and tends to be denied or distorted, and even more rigid and pathological behavior results. According to Rogers, if such a person can learn to disclose himself authentically in a warm, accepting, therapeutic atmosphere, the firm boundaries of the self-structure begin to relax and the person begins to construct a new, more realistic configuration of the self. He will be more open to feedback from others, and better able to both sense and assimilate how others actually feel about him. As the person's internal tension is reduced his behavior becomes socially more sound and he is more capable of empathizing with others.

It is this basic view of human behavior and psychotherapy which forms the rationale for the present study. The purpose of this study is to investigate interpersonal perception, including the ability to understand others and to correctly sense and assimilate feedback from others, and its relationship to the therapeutic quality of interaction in small groups. A unique methodology and system of data analysis was used in this regard.

Background of Methodology

The paradigm used in this experiment is based on work by Fromme et al. (1974). The content of small group interaction was altered in a more therapeutic direction through the use of differential reinforcement of observable response classes. In choosing which response classes

to reinforce, they relied heavily upon Yalom (1970), who suggested that in order for group therapy to be a corrective experience, the group members must express their feelings toward the others in the group as these feelings arise ("here and now"). Further, it is necessary that group members provide feedback and consensual validation for each other so that they can test the appropriateness of their behavior. Finally, Yalom stated that group members must attempt to understand each others' actions and feelings. Truax and Carkhuff (1967) amassed much support for the contention that interactions characterized by empathy, nonpossessive warmth, and genuineness are the most significant factors related to client improvement in both individual and group psychotherapy.

With these factors in mind, Fromme et al. sought to use the techniques of verbal conditioning in a group setting to enhance the interpersonal interaction process. Five observable classes of verbal responses were selected that could be easily and reliably judged. These included "here and now" expressions of feeling, giving and asking for feedback, and the use of two types of empathy statements representing two levels of empathetic involvement. Four person groups of college students were instructed to engage in interpersonal interaction using these five categories. These instructions were considerably detailed, and a summary of the response categories was listed on an index card in front of each subject as well. Whenever a subject said something that corresponded to one of the reinforceable categories his counter was advanced one digit. The counter made an audible click so the other group members could learn vicariously what was expected of them. The groups were given the same instructions and observed for the same

period of time. A tally was made during observation of the instructions-only control groups and compared with the data from the experimental groups.

Results over one session for each group indicated, as predicted, that the experimental groups with the feedback apparatus present did emit significantly more of the categorizable responses, an average of 9.75 per person in a one hour session. In fact, the subjects in the control condition emitted scarcely any responses that would have been reinforceable, 0.85 per person.

In a partial replication of this study, Fromme and Close (1974) found similar results adding a warm-up procedure to the instructions. Groups with the feedback apparatus averaged 10.04 responses per person; groups without feedback averaged 2.58.

In the Fromme et al. study (1974), therapists were used to facilitate group discussion, and it was found that groups with a therapist produced over three times as many reinforceable responses as the groups without a therapist. Also, the therapist who made the fewest interventions was the most effective in facilitating the desired "here and now" interaction. This was consistent with work by Salzberg (1961), who found that the more a therapist verbalizes, the less the group members verbally interact. Another result of the Fromme et al. study was that the number of reinforceable responses emitted by the group members when both a therapist was present and reinforcement was used was approximately equal to the sum of the totals of such responses when therapists and reinforcement were used separately.

The Present Study

Phase I of the present study was a partial replication of the Fromme et al. (1974) study. Three distinct therapist modalities were utilized with and without reinforcement. The therapeutic effect of directive vs. role modeling group leaders has been debated in the literature by many authors, including Danskin and Robinson (1954), Porter (1943), and Gordon (1957). It was these two modes, plus a no-therapist condition, which made up the three levels of the independent variable, therapist modality. Following Phase I, in which group discussions with differing amounts of "here and now" content were induced as a function of differential reinforcement and therapist modality, Phase II consisted of a post-test called the Group Perception Inventory (GPI), which was designed to measure the accuracy of interpersonal perceptions. Also, measures of group cohesion, self disclosure, and empathy were administered. The accuracy scales derived from the GPI were analyzed with the independent variables in a maximum R^2 procedure.

CHAPTER II

METHOD

Phase I

Subjects

Thirty-six male and thirty-six female undergraduate volunteers at Oklahoma State University received extra course credit for participation in a "human relations" experiment. Assisting the two experimenters were two female and one male third year graduate students in clinical psychology who each served as therapists for four different experimental groups.

Response Categories

As in previous research using the "operant group" paradigm (Fromme et al., 1974), each of the 18 experimental groups was instructed to talk with each other for 50 minutes using certain categories of statements designed to keep them in the "here and now." (See Appendix B for complete instructions.) The four categories were operationally defined as follows: (a) Feeling. Subject labels his own current affective state produced by interaction with other group members. (b) Empathy. Any attempt, successful or not, to clarify the nature or source of another group member's current affective state. (c) Behavioral Observation. Subject tells another group member how he perceives

his current behavior or body language. (d) Seeking Feedback. Subject seeks information regarding his own current behavior. In the contextual sequence of interactions, only those statements that added new or additional information about ongoing processes or accompanying affective states were defined as scorable.

Videotapes of two operant group sessions conducted during pilot work were used for a preliminary estimate of interjudge agreement concerning the presence or absence of the categories. Verbatim transcripts were first divided into "scoring units," which were defined as any non-interrupted complete thought or statement. The few instances of disagreement between judges as to what constituted a scorabable unit were resolved in conference. The two judges scored 693 units. Of this total, 181 were determined reinforceable. This total was compared with the record of statements actually reinforced by the experimenter. One hundred and seventy-five reinforcements were actually administered, of which five were later judged erroneous. The experimenter missed giving reinforcements in 15 cases for a ratio of 20 errors in 693 judgments, or a 97% level of interjudge agreement. This compared with a 96% level of agreement in the Fromme et al., 1974 study. It should be noted that missed reinforcements have the effect of introducing an intermittent schedule and are not considered particularly serious.

Apparatus

Each experimental group was seated with two subjects, male and female, on either side of a rectangular table, with the one-way mirror

of an observation room at one end of the table. Therapists sat at the end of the table opposite the mirror. Each experimental group's conversation was monitored by the experimenters via remote speakers. Subjects were informed concerning these observations. A four channel relay control panel, with push buttons operating digital counters, was used to record those instances where the experimenter judged that a group member's statement fit one of the reinforceable categories.

In the reinforcement conditions a digital counter placed in front of each subject was advanced together with the counters on the experimenter's control panel, producing a click which was audible to the subjects. A red light attached to each subject's counter was used to provide two types of discriminative cues: (a) all four lights were automatically flashed on by an interval timer whenever three minutes elapsed with no reinforcements being given the group, and (b) each red light was individually switched on whenever any subject fell ten or more counts behind the subject with the highest count. Subjects were instructed that when all four lights flashed on they were to change the subject, since this was a signal that their conversation was not conducive to improving interpersonal communications. They were also informed that when one light was switched on, that person needed assistance in using the categories, or someone else was dominating the conversation. It was thought that this latter procedure, together with the counters, would enhance the subjects' motivation by encouraging a moderate amount of competitiveness.

Instructions

The instructions, which can be found in Appendix B, were designed

to clarify the task, explain the reinforcement apparatus for the groups which would be using it, and to maximize motivation. The basic set of instructions, which defined "here and now" communication, and the accompanying warmup procedure, were given to all groups. Those groups designated to receive reinforcement received an additional set of instructions explaining the use of the digital counters and red lights.

Procedure

Subjects were randomly assigned in groups of 4 to 18 conditions, comprising three replications of six experimental conditions: instructions only, reinforcement plus instructions, direct elicitation (DE) therapist plus instructions, DE therapist plus reinforcement plus instructions, role modeling (RM) therapist plus instructions, RM therapist plus reinforcement plus instructions. Each therapist was randomly assigned to four groups; one DE therapist plus instruction group, one DE therapist plus reinforcement plus instructions group, one RM therapist plus instructions group, and one RM therapist plus reinforcement plus instructions group.

After being seated, the subjects in all conditions were given the instructions and warmup procedure (see Appendix B) suggesting the desirability of improving interpersonal communication. Each group met for one 50 minute session. At the end of each session, one of the experimenters entered the room, terminated the session, and introduced the post-tests (see Phase II section below). Initial instructions and termination of sessions was done by the same experimenter in each case.

As mentioned above, subjects in the reinforcement conditions were given additional instructions concerning the reinforcement apparatus

(see Appendix B). Each reinforcement group received reinforcement on a continuous schedule.

Therapists

In both the DE therapist conditions and the RM conditions, the therapists intervened with four categories of responses per session, eight responses in each category, for a total of 32 interventions per 50 minute session. They were instructed to space the interventions evenly throughout the session. The therapists' interventions were limited because of the results in the Fromme et al. (1974) study, in which the therapist who was most successful in eliciting the desired responses intervened the fewest times, an average of 49 interventions per session. The therapists kept a record of the number and category of their interventions on a check sheet during the sessions (see Appendixes C and D). In the RM therapist conditions, the therapists intervened using the same four categories of responses that the subjects were asked to use: (a) feeling, (b) empathy, (c) behavioral feedback, and (d) seeking feedback. In the DE therapist conditions, the therapists used the following four categories of interventions: (a) feeling request--the therapist requests a subject to describe what he is currently feeling. (b) empathy request--the therapist requests a subject to identify what he thinks another group member is currently feeling. (c) behavioral observation request--the therapist requests a subject to describe his perception of another group member's current behavior. (d) seeking feedback request--the therapist requests a subject to seek information concerning how some other group members perceive his behavior in the group.

Phase II

Introduction

At the end of the 50 minute session, each subject was asked to complete a 178 item questionnaire consisting of a 130 item Group Perceptions Inventory (GPI) (Appendix H), a 10 item Elms Empathy Scale (Appendix F), a 30 item Jourard Self Disclosure Index (Appendix E), and a four item Group Cohesion Measure (Appendix G).

Group Perceptions Inventory (GPI)

On the GPI, subjects were asked to rate themselves and others in the group on each of 10 personality traits: strong-weak, friendly-hostile, passive-active, good-bad, dominant-submissive, cold-warm, homely-attractive, open-closed, impulsive-cautious, and dull-intelligent. On each of these traits the subject was asked to rate on a five point Likert-type scale (a) how they saw themselves, (b) how they saw each of the other group members, (c) how they would predict how each of the other group members saw them, and (d) how they would predict how each of the other group members saw themselves.

In order to derive measures of interpersonal perception, various combinations of these raw scores were correlated and transformed according to mathematical formulas. Fifteen interpersonal perception scales resulted, some of which parallel concepts found in the literature (empathy, stereotype accuracy, accuracy, assumed similarity, openness), while the others appear to have potential utility (congruence,

stereotype empathy, personal openness, felt openness, perceived realism, commonality, other acceptance, naivete, perceived naivete, and conformity).

These scales were derived by transforming intercorrelations between various combinations of the raw scores into Z scores based on three formulas. First, the raw scores were classified as shown in Table I.

TABLE I

CLASSIFICATION OF GROUP PERCEPTIONS
INVENTORY RAW SCORES

Perception	My view of me Self view (S_i)	My view of you Other view (O_{ij})
Metaperception (predicted other perception)	My view of your view of me Self as Other sees me (SO_{ij})	My view of your view of you Others' Self view ($\overline{OS}_{ij}$)

The four classifications of raw scores are S_i, O_{ij}, SO_{ij}, and OS_{ij}. The first subscript indicates who is making the rating or prediction. The second subscript indicates who is being rated or whose score is being predicted. The subscripts i and j refer to the subjects' seating position in the group. Raw scores were correlated and

transformed according to one of the following formulas, where X and Y are any two raw scores:

$$f(X,Y) = \frac{\sum_{j \neq i} z(r(X,Y))}{3} \qquad (1)$$

This f function (formula (1)) yields a Z score based on the mean of correlations between an individual's ratings or prediction of the other group members and ratings and predictions by each of the other three group members. For instance, if one wanted to determine the degree to which individual subjects can predict how the other individuals in the group rate themselves, the X variable in formula (1) would be OS_{ij}, which represents the individual predictions of other group members' self ratings. The Y variable would be the other group members' actual self ratings, S_j, and formula (1) then yields the Empathy Score (GPI scale 3). The following GPI scales were derived using formula (1) or the f function:

1. Congruence (CG): degree to which one rates others as they are perceived rating oneself.

$$CG_i = f(O_{ij}, SO_{ij})$$

2. Accuracy (A): degree to which one can predict how others rate oneself.

$$A_i = f(SO_{ij}, O_{ji})$$

3. Empathy (E): degree to which one can predict how others see themselves.

$$E_i = f(OS_{ij}, S_j)$$

4. Perceived Realism (PR): degree to which others precict that one rates oneself as they would rate one.

$$PR_i = f(O_{ij}, OS_{ji})$$

5. Commonality (CM): degree to which others rate themselves as similar to one.

$$CM_i = f(S_j, OS_{ji})$$

6. Other Acceptance (OA): degree to which one rates others as they rate themselves.

$$OA_i = f(O_{ij}, S_j)$$

7. Naivete (N): degree to which one rates others as they are perceived rating themselves.

$$N_i = f(O_{ij}, OS_{ij})$$

8. Perceived Naivete (PN): degree to which others predict that one rates them as they rate themselves.

$$PN_i = f(SO_{ji}, S_j)$$

9. Openness (O): degree to which others can predict ones' rating of them (reflects feedback).

$$O_i = f(SO_{ji}, O_{ij})$$

The second formula yields a Z score which reflects the correlation between the means of any two types of raw scores. For instance, to

determine a subject's generalized knowledge of how other group members rate themselves, one would compare the mean of the person's predictions of other group members' self views (OS_{ij}) with the mean of those others' actual views of themselves (S_j). In this case, $X = OS_{ij}$ and $Y = S_j$ in the following formula:

$$g(X, Y) = Z(r(\frac{\sum_{j \neq i} X}{3}, \frac{\sum_{j \neq i} Y}{3})) \qquad (2)$$

The following GPI scales are computed using formula (2):

10. Stereotype Accuracy (SA): degree to which the mean SO prediction correlates with the mean of how others actually perceive one (correlated over the 10 different Likert items on the GPI).

$$SA_i = g(SO_{ij}, O_{ji})$$

11. Stereotype Empathy (SE): degree to which the mean OS prediction correlates with the mean of the others' actual ratings of themselves.

$$SE_i = g(OS_{ij}, S_j)$$

The h function, or third formula, yields a Z score based on the intercorrelation between the self rating and the mean of any other rating. For instance, if it is desired to find the degree to which the rest of the group as a whole is aware of an individual's self concept, the mean OS_{ji} score (their average prediction of his self concept) would be compared with that individual's actual self rating, S_i, yielding the Personal Openness Score on the GPI. The following GPI

scales were computed using this formula:

$$h(X, Y) = a\frac{(r(\sum_{j \neq i} X, Y))}{3}$$

12. Personal Openness (PO): degree to which others can predict one's self concept.

$$PO_i = h(OS_{ji}, S_i)$$

13. Felt Openness (FO): degree to which one predicts that others agree with one's self perception.

$$FO_i = h(SO_{ij}, S_i)$$

14. Assumed Similarity AS): degree to which one rates oneself as similar to others.

$$AS_i = h(O_{ij}, S_i)$$

A separate formula is used to compute the last GPI scale, Conformity.

15. Conformity (CF): degree to which one's judgment of others conforms to the group's judgment of those others.

$$CF_i = \frac{\sum_{j \neq i} \sum_{k \neq j, i} a(r(O_{ij}, O_{kj}))}{6}$$

This formula represents the correlation between one person's ratings of others in the group with ratings of those same others by the other group members.

Hypotheses

The measures of interpersonal perception most frequently mentioned in the literature correspond to GPI scales Accuracy and Empathy. Previous attempts to look at these variables have been bogged down by methodological problems and statistical procedures insufficient to control for the components identified by Cronbach. As was mentioned above, there has been no evidence reported that would indicate people are capable of accurately predicting what others think of them (Bronfenbrenner, 1958). In the present study, it was predicted that Accuracy and Empathy would be significantly related to the number of reinforceable responses emitted in the groups. In addition, it was proposed to determine which GPI scales and other post-tests (Elms Empathy Scale, Jourard Self Disclosure Inventory, Group Cohesion Measures) were the best predictors, or accounted for the most variance in the number of reinforceable responses emitted per group.

It was also proposed to determine which GPI scales and post-tests were influenced by the independent variables, reinforcement and therapist modality.

Finally, analyses of what components contribute to accuracy and empathy were conducted. With the advantage of having separate measures of the recognized components of accuracy and empathy, it was possible to find how much of the variance in each is accounted for by these components represented by the various GPI scales (i.e., stereotype accuracy, assumed similarity, etc.).

Data Analysis

A maximum R^2 stepwise regression procedure for the dependent

variable, number of reinforcements, and for the GPI scales accuracy and empathy, formed the basis of the analysis. The procedures were used to show how much of the variance in each of these variables was accounted for by the experimental design variables, the 15 GPI scales, the Jourard self disclosure scale, the Elms empathy scale, and the group cohesion measures.

In addition, using the 3x2 completely randomized design, ANOVAS were run for each of the scales of the GPI, the Elms, the Jourard, and the group cohesion measures. This determined the extent to which the independent variables influenced the various measures of interpersonal perception. In order to compare the effectiveness of individual therapists, ANOVAS were run on the same variables using a 2x2 randomized block design with the no-therapist conditions deleted.

CHAPTER III

RESULTS

Phase I

Phase I of this experiment was the basis of a separate study by the co-experimenter, George V. Dickey. A brief summary of the results of Phase I are shown in Table II and the results of the Fromme et al. 1974 study are shown in Table III. Phase I was designed to determine the relationship between the design variables and the number of reinforceable responses emitted by the groups.

TABLE II

MEAN FREQUENCY OF REINFORCEABLE RESPONSES PER GROUP (FROMME, SCHAEFER, DICKEY, 1980), PHASE I

	R	NR		
RM	16	13	14.5	with therapist 17.5
DE	26	14.8	20.4	
NF	9.8	2.2	6.0	without therapist 6.0
	17.3	10.0		

TABLE III

MEAN FREQUENCY OF REINFORCEABLE RESPONSES PER SUBJECT PER GROUP (FROMME et al., 1974)

	No Therapist	Therapist	
Without reinforcement	.8	12.8	6.8
With reinforcement	9.8	23.3	16.5
	5.3	18.1	

As shown in Table II, the groups with a therapist present produced approximately three times as many reinforceable responses as the groups without a therapist. The groups utilizing the reinforcement paradigm produced almost twice as many reinforceable responses as the groups that did not use the paradigm. Both of the findings were similar to those obtained by Fromme et al. (1974). Overall, the direct elicitation therapist groups produced 1.5 times as many reinforceable responses as the role modeling therapist groups, and the role modeling groups produced twice as many such responses as the no-therapist groups. The direct elicitation and role modeling modes were approximately equally effective in the nonreinforced condition, but with reinforcement, the direct elicitation therapists were more consistently effective in eliciting the desired responses.

Phase II

Analyses of Variance on GPI Scales

Analyses of variance based on the 3x2 completely randomized

factorial design (Kirk, 1968) were performed on the 15 GPI scales, the mean of the four group cohesion measures, the Jourard scale, and the Elms Empathy scale. Of these, only four of the GPI scales, empathy, stereotype empathy, perceived naivete, and felt openness were significantly affected by the design variables.

The GPI scale empathy (E), as seen in Table IV, was not significantly influenced by the type of therapeutic modality used, but the mean E score of 5.71 after reinforcement was significantly greater than the mean of 5.56 obtained with no reinforcement ($F = 4.35$, $df = 1,66$, $P < .05$) (see Table V). A significant interaction effect was obtained ($F = 3.78$, $df = 2,66$, $P < .05$), and a test of simple main effects (Kirk, 1968) revealed that only role modeling therapists in combination with reinforcement produced significantly higher E scores ($F = 5.53$, $df = 1,66$, $P < .05$), than when no reinforcement was administered. It is interesting to note that while the direct elicitation therapists plus reinforcement condition resulted in more reinforceable responses, the role modeling therapists plus reinforcement condition resulted in significantly more accuracy of interpersonal perception than role modeling therapists alone.

Stereotype Empathy (SE), which correlated .82 with empathy, was similarly related to the design variables (see Appendix A, Table XVI for incorrelations of all GPI scales). As shown in Tables VI and VII, the mean SE score of 6.0 after reinforcement was significantly greater than the mean of 5.79 obtained when no reinforcement was administered ($F = 5.46$, $df = k,66$, $P < .05$). A significant interaction effect was found ($F = 5.32$, $df = 2,66$, $P < .01$) and an analysis of simple main

effects showed (as was the case with empathy) that only the role modeling therapist conditions interacted with the presence of reinforcement to produce significantly higher SE scores ($F = 12.5$, $df = 1,66$, $P < .01$) than when no reinforcement was administered. This suggests that the reinforcement procedure alone, and with the role modeling therapists, induced a quality of interaction which enabled the group members to get a better sense of how the others felt about themselves.

TABLE IV

TABLE OF MEANS FOR GPI SCALE EMPATHY

		Therapy Mode			
		DE	RM	NT	
Reinforcement	R	5.62	5.82	5.69	5.71
	NR	5.70	5.44	5.55	5.56
		5.66	5.63	5.62	

TABLE V

ANALYSIS OF VARIANCE FOR GPI SCALE EMPATHY

Source	df	MS	F Value
Therapy mode	2	.009	.108
Reinforcement	1	.373	4.35*
Mode x reinforcement	2	.323	3.78*
Residual	66	.086	

*$P < .05$

TABLE VI

TABLE OF MEANS FOR GPI SCALE STEREOTYPE EMPATHY

		Therapy Mode			
		DE	RM	NT	
Reinforcement	R	5.83	6.19	6.01	6.01
	NR	6.00	5.62	5.74	5.79
		5.91	5.90	5.88	

TABLE VII

ANALYSIS OF VARIANCE FOR GPI SCALE
STEREOTYPE EMPATHY

Source	df	MS	F Value
Therapy mode	2	.0087	.05
Reinforcement	1	.876	5.46*
Mode x reinforcement	2	.853	5.32**
Residual	66	.160	

*P < .05

**P < .01

The scores on the GPI scale perceived naivete (PN), the degree to which others predict that one rates them as they rate themselves, were significantly related to therapeutic modality ($F = 5.6$, $df = 2,66$, $P < .01$), but showed only a trend toward significance with respect to presence of reinforcement ($F = 2.94$, $df = 1,66$, $P < .09$) (see Tables VIII and IX).

TABLE VIII

TABLE OF MEANS FOR GPI SCALE PERCEIVED NAIVETE

		Therapy Mode			
		DE	RM	NT	
Reinforcement	R	6.41	6.15	6.13	6.23
	NR	6.15	6.31	5.84	
		6.28	6.23	5.98	

TABLE IX

ANALYSIS OF VARIANCE FOR PERCEIVED NAIVETE

Source	df	MS	F Value
Therapy mode	2	.611	5.64*
Reinforcement	1	.317	2.94
Mode x reinforcement	2	.382	3.54**
Residual	66		

*P < .01

**P < .05

The post hoc Newman-Keuls test (Kirk, 1968) was performed on all pairs of therapeutic modality means and it was found that the RM and DE modalities did not result in significantly different PN scores, but both were significantly different from the control, or no-therapist condition, with the DE at the P < .01 level and the RM at the P < .05

level. A significant interaction between therapy mode and the reinforcement was found ($F = 3.54$, $df = 2,66$, $P < .05$), and tests of simple main effects showed that only in the conditions with no therapists did the presence of reinforcement lead to significantly higher PN scores than with no reinforcement ($F = 4.63$, $df = 1,66$, $P < .05$). It also found that the three therapeutic modalities did not produce significantly different PN scores in groups where reinforcement was used, but in the case of no reinforcement, the means were significantly different ($F = 6.34$, $df = 2,66$, $P < .01$). These means (DE - NR = 6.15, RM - NR = 6.30, NT - NR = 5.84) were analyzed by the Newman-Keuls procedure and the mean RM - NR score was significantly different from the NT - NR score at the $P < .01$ level and the DE - NR score was significantly different from the NT - NR score at the $P < .05$ level. The RM and DE conditions, without reinforcement, did not result in significantly different PN scores. These results suggest that both the reinforcement procedure and the therapists contributed to an atmosphere or type of interaction which resulted in the subjects feeling more accepted by each other.

A scale which reflects the degree to which group members felt understood, felt openness (FO), was significantly affected by the presence of reinforcement ($F = 4.53$, $df = 1,66$, $P < .05$), with the mean FO score with reinforcement, 5.5 being greater than the mean 5.34 without reinforcement (see Tables X and XI). While therapist mode had no significant main effect on FO scores, there was a significant interaction ($F = 5.8$, $df = 2,66$, $P < .01$), which led to the finding that only the RM therapist modality resulted in significantly higher FO scores

with reinforcement than without ($P < .01$). Also, it was found that in the no-reinforcement conditions, the DE therapist modality resulted in significantly higher FO scores than the RM therapist conditions and the no-therapist (NT) conditions, $P < .05$. There was no difference between RM and NT conditions in this regard.

TABLE X

ANALYSIS OF VARIANCE FOR GPI SCALE FELT OPENNESS

		Therapy Mode			
		DE	RM	NT	
Reinforcement	R	5.39	5.68	5.44	5.50
	NR	5.54	5.20	5.30	5.34
		5.46	5.44	5.37	

TABLE XI

ANALYSIS OF VARIANCE FOR GPI SCALE FELT OPENNESS

Source	df	MS	F Value
Therapy mode	2	.060	.581
Reinforcement	1	.466	4.527*
Mode x reinforcement	2	.598	5.812**
Residual	66		

*$P < .05$

**$P < .01$

Intercorrelations Among GPI Scales Significantly Related to Design Variables

The four GPI scales which were significantly related to the design variables, empathy, stereotype empathy, perceived naivete, and felt openness, were intercorrelated as shown in Table XII.

TABLE XII

INTERCORRELATIONS OF EMPATHY, STEREOTYPE EMPATHY, PERCEIVED NAIVETE, AND FELT OPENNESS

	Empathy	Stereotype Empathy	Perceived Naivete	Felt Openness
Empathy	1.00	.82	.26	.36
Stereotype Empathy		1.00	.14	.38
Perceived Naivete			1.00	.25
Felt Openness				1.00

Maximum R^2 Stepwise Regression Procedures

Maximum R^2 stepwise regression procedures were run on three primary dependent variables: (a) number of reinforceable responses emitted by the groups, (b) GPI scale empathy, and (c) GPI scale accuracy. Because of the high correlations (reported above) between empathy and accuracy and their respective stereotype scores (stereotype empathy (SE) and

stereotype accuracy (SA)), only those procedures which excluded SE and SA will be reported. Each of these three regression procedures was designed to automatically include the independent variables therapist modality and reinforcement vs. no-reinforcement. Sex of the subject was also automatically included in each regression model. In order for the three levels of therapist modality to be analyzed by the binary (0, 1) computer capability, the three modalities were translated into two variables as follows: Mode D1 compared therapist effects (DE and RM) with no therapist effects. Mode D2 compared RM effects with DE and NT combined. Reinforcement (R) was assigned a value of 1 while no-reinforcement (NR) was designated 0 in the binary language. Males were designated 1 and females 0.

Maximum R^2 Stepwise Regression Procedure for Dependent Variable, Number of Reinforcements

A maximum R^2 stepwise regression procedure was used to determine which of the design variables, GPI scales, and other post-tests significantly contributed to the variance in the number of reinforceable responses emitted by the group. An eight variable model accounting for 68.8% of the variance in the number of reinforceable responses emitted by the groups emerged as the best set of predictors in this analysis. Table XIII shows the analysis of variance table for this model.

An inspection of Table XIII shows that the design variables were strong predictors of the number of reinforceable statements. Mode D1, which compared therapist effects with no-therapist effects, was the most potent predictor, followed by reinforcement effects vs. no-reinforcement. The fact that in both cases the direction of the

relationship was positive indicates that the presence of therapists and the presence of reinforcement were positively related to number of reinforceable responses at the P < .0001 level.

TABLE XIII

ANALYSIS OF VARIANCE TABLE FOR EIGHT VARIABLE STEPWISE REGRESSION MODEL, DEPENDENT VARIABLE NUMBER OF REINFORCEMENTS

Source	df	Partial SS	F Value	Prob. < F	Std. B Values
Mode D1	1	2374.20	77.78	.0001	+.72
Mode D2	1	298.20	9.77	.0030	-.26
Reinforcement	1	930.59	30.49	.0001	.41
Sex	1	64.77	2.12	.1465	-.10
Commonality	1	372.53	12.20	.0012	.26
Empathy	1	321.18	10.52	.0023	-.24
Other Variance	1	190.94	6.26	.0143	-.18
Total Jourard	1	89.97	2.95	.0871	.13

The role modeling therapists' results, when compared with direct elicitation and no-therapist conditions, was not good. RM was a significant (P < .003) negative predictor of number of reinforceable responses,

when compared to DE plus NT. Sex was not significantly related to the dependent variable. Commonality emerged as the best predictor among GPI scales ($P < .0012$). This scale is strongly influenced by the subjects' tendency to assume similarity with each other. The fact that people tend to assume similarity with those whom they view favorably (Rogers, 1959) suggests the possibility that people are more likely to use the response categories when they feel comfortable with and accepting toward those with whom they are interacting. Surprisingly, Empathy was a significant negative predictor of the number of reinforceable responses ($P < .002$). This occurred even though the design variables were significantly associated with an increase in empathy scores and in reinforceable responses in the analysis of variance reported earlier. It may be that subjects who were most preoccupied with the reinforcement apparatus, therapists, and their own performance, and thus emitted the most reinforceable responses, were able to pay the least attention to others' subtle self expressions in the group. Another possible explanation of this incongruous result is that in the stepwise regression procedure, the variance in empathy accounted for by the design variables has been removed automatically, leaving what is probably the baseline level of empathetic ability the subjects had going into the experiment. It is possible that high empathy people simply are better listeners and tend to talk less than others. They may have found the task required in this experiment to be distasteful in some way, due to their sensitivity to others' discomfort.

Other variance, which is similar to Cronbach's (1955) spread concept, reflects the tendency of the variance or spread of the rater's scores to influence his accuracy. This result suggests that those whose

ratings vary significantly more than average are less likely to use the reinforceable categories. The total Jourard score was the final variable in the model and had only a trend toward significance. It would be expected, however, that such a measure of self-disclosure would be positively related to the extent to which subjects use the four categories of responses. These categories require much more self-disclosure than is typically used in day to day conversation.

Maximum R^2 Stepwise Regression Procedure for Dependent Variable, Empathy with Stereotype Empathy Excluded

A maximum R^2 stepwise regression procedure was used to determine which of the design variables, other GPI scales, and post-tests were significantly contributed to the variance in the Empathy scores on the GPI. Because of the high correlation (.82) between empathy and stereotype empathy, the analysis excluded stereotype empathy (see Appendix I, Table XVII for the analysis with stereotype empathy included). A seven variable model accounting for 71.8% of the variance in Empathy emerged. In this model, summarized in Table XIV, other acceptance was the strongest single predictor of Empathy ($P < .0001$). Among the design variables, only the presence of reinforcement was positively related to empathy ($P < .007$), as was the GPI scale perceived similarity ($P < .05$). Other variance, or the variance in the ratings of others by individual raters in the groups, was negatively related to empathy ($P < .05$).

The overwhelming dominance of other acceptance as a predictor of empathy was expected primarily because other acceptance encompasses

empathy in its operational definition. It is defined as the degree to which one rates others as they rate themselves. The two scales correlated .797. Reinforcement and Assumed Similarity were the other variables which were significant, positively related, predictors of empathy. The fact that empathy scores had been significantly related to the presence of reinforcement in the analysis of variance for empathy reported earlier, serves to solidify the notion that reinforcement is related to increased accuracy of interpersonal perception.

TABLE XIV

ANALYSIS OF VARIANCE TABLE FOR SEVEN VARIABLE STEPWISE REGRESSION MODEL, DEPENDENT VARIABLE EMPATHY, WITH STEREOTYPE EMPATHY EXCLUDED

Source	df	Partial SS	F Value	Prob. < F	Std. B Values
Mode D1	1	.006	.203	.66	.035
Mode D2	1	.001	.358	.56	-.047
Reinforcement	1	.229	7.792	.007	.189
Sex	1	.002	.058	.805	-.017
Other Acceptance	1	3.658	124.24	.0001	.771
Other Variance	1	.123	4.180	.0425	-.144
Assumed Similarity	1	.119	4.043	.046	.140

Assumed similarity is a measure of the degree to which one rates oneself as similar to others. This is a recognized response set which is thought to be a significant component of empathy scores. This result is consistent with such an interpretation.

Maximum R^2 Stepwise Regression Procedure for Dependent Variable, Accuracy with Stereotype Accuracy Excluded

A maximum R^2 stepwise regression procedure was used to determine which of the design variables, GPI scales, and other post-tests were significantly related to accuracy scores on the GPI. Because of the high correlation (.94) between accuracy and stereotype accuracy, the latter was excluded from the analysis (see Appendix I, Table XVIII for analysis with stereotype accuracy included.) An eight variable model accounting for 48% of the variance in accuracy scores emerged as the best set of predictors. This model is summarized in Table XV.

As Table XV indicates, the design variables and sex were not significantly related to accuracy. Two GPI scales were strong predictors; however, these were Personal Openness and Perceived Reality. Personal Openness is a measure of the degree to which others can predict one's self concept. It reflects self disclosure. Thus, the more one engages in self disclosure, the more accurate he is in predicting what others think of him. Perceived Realism is a measure of how much self understanding others see in a person. As such, this scale would be expected to be a predictor of how accurate one is at predicting how others see him. Congruence and Commonality were slightly less potent predictors of accuracy ($P < .04$). Congruence is the degree to which one rates others

as they are perceived rating onself. Apparently, those who rate others in this way tend to be better judges of how others actually rate them. Commonality, the degree to which others rate themselves as similar to one, could be described as an indicator of overall group closeness or favorability. In groups where this type of mutual favorability exists, the ability to predict what others think of you apparently becomes possible, whereas in general it is a skill that very few possess.

TABLE XV

ANALYSIS OF VARIANCE TABLE FOR EIGHT VARIABLE STEPWISE REGRESSION MODEL, DEPENDENT VARIABLE ACCURACY, WITH STEREOTYPE ACCURACY EXCLUDED

Source	df	Partial SS	F Value	Prob. < F	Std. B Values
Mode D1	1	.005	.075	.78	.029
Mode D2	1	.056	.852	.64	-.103
Reinforcement	1	.00004	.0006	.98	.002
Sex	1	.023	.343	.57	.005
Personal Openness	1	.316	20.05	.0001	.468
Perceived Realism	1	.669	10.19	.003	.365
Congruence	1	.311	4.75	.031	.221
Commonality	1	.310	4.73	.032	-.250

CHAPTER IV

DISCUSSION

The main purpose of this study was to determine if a relationship existed between accuracy of interpersonal perception and the type or quality of interpersonal communication upon which it was based. The study was at least partially successful in demonstrating such a relationship. Phase I was successful in inducing different quantities of therapeutic "here and now" type responses in small groups through the differential use of the design variables, reinforcement and therapist modality. Both the design variables and the number of reinforceable responses emitted by the groups were significantly related to subsequent measures of interpersonal perception on the Group Perceptions Inventory (GPI). Subjects' scores on three GPI scales which appear to measure very important attributes (empathy, stereotype empathy, and felt openness) were significantly higher following reinforcement than when no reinforcement was administered. A fourth GPI scale, perceived naivete, was influenced almost as much by the presence of reinforcement. The fact that these scales, which measure such important attributes as the degree to which group members can predict how others feel about themselves, and the degree to which group members feel understood and accepted, were significantly influenced by the reinforcement paradigm suggests that the procedure produced qualitative as well as quantitative changes in small group interaction.

The two therapist modalities, DE and RM, appeared to have a paradoxical effect on the dependent variables. While the task-oriented DE therapists induced significantly more reinforceable responses in their groups, particularly with reinforcement, the RM therapists seemed to create a quality of interaction which was conducive to better interpersonal perception. The DE therapists remained more aloof from the group, giving out directives, while the RM therapist was disclosing his own feelings, giving feedback to others and leading by the example of his own personal involvement. The groups with DE therapists seemed to start quickly and peak early in their use of reinforceable statements, followed by a relative decline in such statements later in the session. The RM-led groups seemed to gain momentum more slowly and peak toward the end of the session. It is possible that the DE therapists caused the reinforcement to lose its value, perhaps because the subjects experienced relatively less autonomy in the learning situation. In terms of scores on the four GPI scales mentioned above, the RM plus reinforcement condition seemed to be a particularly potent combination, leading to significant simple main effects on three of the four scales. This suggests the possibility that the RM style of therapy would be preferable over repeated sessions where momentum would continue to build, group closeness, feelings of acceptance and understanding would increase, and accuracy of interpersonal perception would be relatively enhanced. A combination of DE and RM styles, with DE being used early in the initial session followed by RM, would possibly be effective. This combination would not be effective if reinforcement is devalued by the DE modality. Further research in this area is indicated.

It was predicted that GPI scales accuracy and empathy would be significantly related to the number of reinforcements. Through the use of the maximum R^2 stepwise regression procedure, it was found that accuracy was not related to the dependent variable. This result was consistent with the findings of Bronfenbrenner (1958), who found that subjects were unable to predict what others thought of them. Surprisingly, empathy was significantly negatively related to the number of reinforceable responses, even though the analysis of variance showed it to be positively related to the design variables. The number of reinforceable responses emitted was also significantly related to the design variables. One explanation of this surprising finding is that people who emitted the most desired responses may have been so preoccupied with the reinforcement apparatus, therapists, and their own performances that they were able to pay only minimal attention to others' subtle self presentations. Another possible explanation of this is that in the regression procedure for number of reinforcements, the variance in empathy accounted for by the design variables was automatically removed, leaving a baseline empathy level. As mentioned above, this baseline appears to represent the capacity for empathy that subjects had coming into the experiment. Thus, high baseline empathy subjects did not use the desired categories as much as low empathy subjects. This may have occurred because high empathy people tend to be better listeners and tend to talk less. Also, the high empathy people may have been less susceptible to the experimental manipulations or less compliant as a group. At any rate, this result was unexpected and is difficult to understand intuitively. Further research is needed to

clarify the relationship between the number of reinforceable statements and empathy. It is clear that this relationship is much more complex than originally thought.

As expected following the results in Phase I, the design variables were significant predictors of the number of reinforcements. It also appears that the response categories are more likely to be used in groups where members look favorably upon one another and where they feel comfortable and accepted (GPI scale Commonality). This scale is closely related to a tendency to assume similarity and it appears that peer modeling is enhanced in groups which tend to look upon each other favorably. Cronbach's spread term was represented in the analysis by the measure of Other Variance, which showed the subjects' tendency to make extreme judgments about others. In this case, those who tended to make extreme judgments also used the desired response categories less than others.

This study was also designed to determine the components of empathy and accuracy. In terms of the variables available for study, the results for empathy are consistent with the findings of other researchers. Again, one of Cronbach's components, spread or Other Variance, was a significant predictor of Empathy. Assumed Similarity, a recognized response set artifact which has long been recognized as a component of judging accuracy, also showed a strong trend toward significance.

Other Acceptance was the strongest predictor of Empathy, but the two scales correlated .80 and appeared to be measuring very similar abilities. Other acceptance is the degree to which one rates others as

they rate themselves, while Empathy is the degree to which one can predict how others see themselves. To the extent that people rate others the same way they think others rate themselves, this may represent yet another response set artifact. Other acceptance may not be a valid component of Empathy; rather, it may be the result of an artifact. The same is probably true of assumed similarity. Both empathy and assumed similarity utilize O_{ij} term in their formula and differ in that Empathy uses S_j while Assumed Similarity uses S_i. To the extent that subjects are similar in their self ratings, empathy and assumed similarity will be artifactually related to each other.

The result of this analysis is that the components of empathy remain somewhat a mystery. Support was found for Cronbach's contention that the variance in ratings will affect empathy scores and the affect of response set artifact assumed similarity was seen.

The analysis of accuracy, a type of interpersonal perception which has been deemed crucial for mental health by a variety of authors (see literature review), suggested that the design variables were not significant predictors of the ability to determine what others think of you. The four GPI scales which emerged as predictors of accuracy appear to be related both because of the actual attributes they measure and because of artifactual dependencies between them. Personal Openness, which was the most significant predictor of accuracy, reflects how well others can predict one's self concept, and, as such, the scale reflects self disclosure. According to Rogers (1951), those who are high in self disclosure tend to be the least neurotic or rigid in their general behavior and perceptual capabilities. These people do not tend to distort

feedback from others and are thus better able to predict how others feel about them. Also, it is obvious that the more a person reveals about himself, the easier it is for others to accurately describe him. Compared with others, a person with high self disclosure will probably tend to have more congruence between his self presentation as perceived by others and his self concept. Thus, he will likely be more accurate in predicting how others see him because of a relatively better feel for how he comes across to others. Perceived Realism reflects the degree to which others see self understanding in a person, and it is self evident why a person with high self understanding would be able to predict how others feel about him. These two scales, Personal Openness and Perceived Realism, are significant, positive predictors of accuracy, and appear to point to significant attributes of a high accuracy person. People who engage in higher levels of self disclosure and who have more self understanding are more likely to have an accurate idea of what others think of them. Two other GPI scales were significant predictors of accuracy scores; Congruence was positively related while Commonality was negatively related. Congruence, the degree to which one rates others as they are perceived rating oneself, is closely related to assumed similarity, with a .72 correlation between them. Also, assumed similarity, while not significantly related to accuracy scores, shows a strong negative trend in that direction ($P < .18$). Thus, it could be interpreted that congruence is actually that aspect of form of assumed similarity that applies to accuracy scores, while the more traditional definition of assumed similarity applies more to empathy scores. Commonality, which indicates the degree to which other group

members assume similarity with any particular subject, is significantly negatively related to the accuracy scores of that particular subject. This suggests that those subjects who are good at predicting what others think of them (accuracy) are sensitive to individual differences in interpersonal feedback and do not tend to assume that others will automatically rate them as similar to themselves regardless of how they really feel.

Summary and Conclusions

Through the differential application of reinforcement and varying therapist modalities, small groups were trained to interact using varying quantities of therapeutic "here and now" type responses. These independent variables, reinforcement and therapist modality, were found to significantly affect scores on a Group Perceptions Inventory, which measured many aspects of interpersonal perception. Measures of subjects' ability to predict others' self concepts, group compatibility, closeness, and mutual feelings of understanding tended to be most positively related to the use of the reinforcement paradigm coupled with a role modeling therapist. Subjects who used the "here and now" response categories tended to be in therapist-led groups with reinforcement. They also tended to score high on measures of Self disclosure. Also, subjects in groups which used the categories more than others tended to assume similarity with each other more than other groups.

Analysis of the components of accuracy and empathy, two important concepts in interpersonal perception, yielded somewhat muddled results. Empathy appeared to be affected most by the subjects' tendency to make

extreme judgments about others (Cronbach's spread term) and by assumed similarity, a recognized response set artifact. As mentioned above, empathy was significantly related to the design variable reinforcement. Accuracy was most significantly related to the level of personal openness or self disclosure in the subjects and the level of self understanding as rated by others.

Future research in this area might address the questions of (a) the relative effectiveness of a combination of directive and role modeling therapist styles, (b) how to further refine to the GPI and subsequent system of analysis, and (c) how would other populations of subjects, i.e., psychiatric patients or actual therapy group members, score on the GPI over time.

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APPENDIXES

APPENDIX A

REINFORCEABLE RESPONSES

1. Feeling: An expression of feeling. For example:

   "I feel nervous."
   "I am excited."
   "You made me angry."
   "I'm glad you're in the group."
   "You're attractive to me."

2. Empathy: Clarify for another group member what you think he feels. For example:

   "You're feeling threatened."
   "You look nervous."
   "Are you bored?"
   "You're feeling good."

3. Behavioral Observations: Commenting on another group member's body language or behavior. The comment must be made to that member. For example:

   "You seem to be avoiding eye contact with me."
   "You always smile when someone asks you a question."
   "You haven't said much in the group."
   "You seem to be acting very self-conscious."

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

   "Do I make you feel uncomfortable?"
   "Do you like me?"
   "Do I seem angry to you?"
   "What do you think of me?"

APPENDIX B

INSTRUCTIONS

Instructions for All Groups

The purpose of this experiment is to help you learn a method of communicating with each other on a personal basis, and to help us to better understand the nature of communication. This method involves sharing your feelings and observations about each other arising from the current situation, the "here and now"--here in this room and now during these 50 minutes that you are together.

In order to help you more clearly understand what we are looking for, we have devised four categories of statements which are helpful in promoting open personal communications. (At this time the experimenter points to the cards in front of each subject.) These are types of statements which have been shown to be effective in helping people get to know each other on a more personal basis, and we are asking you to use these categories with each other during the next 50 minutes. I will read them aloud and you can follow along with me.

1. Feeling: This is any expression of your own feelings. Expressing feelings helps other people to know when to continue doing things you like and to discontinue doing things that annoy you. Some examples of feeling statements are:

   "I feel nervous."
   "I am excited."
   "You made me angry."
   "I'm glad you're in the group."
   "You're attractive to me."

2. Empathy: This is clarifying for another group member what you think he feels; in other words, putting yourself in someone else's shoes. Giving someone else your empathy shows that you care enough to take the time to understand. Some examples of this are:

   "It must be hard for you to say that."
   "Are you feeling embarrassed?"
   "You seem so happy."
   "You must feel uncomfortable."
   "You seem bored."

3. Behavioral Observations: This is commenting on another group member's body language or behavior. Pointing out observations about a

person's behavior clarifies for that person behaviors which he may or may not wish to continue. Examples of this are:

"You seem to be avoiding eye contact with me."
"You always smile when someone asks you a question."
"You haven't said much in the group."
"You seem to be acting very self-conscious."

4. Seeking Feedback: This is asking another group member to describe your behavior, appearance, or how he feels about you. Many misconceptions between people could be avoided if they would check out what another person thinks or feels about them. Some examples of this type of question are:

"Do I make you feel uncomfortable?"
"Do you like me?"
"Do I seem angry to you?"
"What do you think of me?"

The examples on the sheet in front of you are only a few samples of the kinds of statements that can be made in each category, and please don't limit yourself to these statements, but use them as a guide. It would be possible to say nearly anything just to fit the categories, or to limit yourself only to the examples, but this isn't what we want. Each new statement should add new information. These categories become meaningful only when they are genuine, so really put yourself into this as much as possible.

You can see that all these categories refer to the current situation: the interaction that will take place among you in this room. While you may have some very real feelings about other people or situations outside this group, this is not what we're looking for. Also, I realize it is impossible to use these categories at all times, but I hope you will use them as frequently as possible.

What I am asking you to do is interact with each other using these categories as much as possible during the next 50 minutes. I will monitor the group through the one-way mirror and the microphone. What you say will not be recorded and will be kept confidential.

Instructions for Reinforced Groups

Whenever someone makes a statement fitting any one of these categories, and is not merely a repeat of someone else's statement, I will activate the counter in front of that person. It makes a loud click which will let you know that you are in fact using these categories in your interaction. The counter registers your total and if anyone falls ten points behind the leader, the red light on his counter will be turned on. This will be a sign that either this person may need assistance, or that someone is dominating the conversation. If no one gets a click for three minutes, all lights will flash on; and they will do so every three-minute period until a click is registered. This will be a sign that the group as a whole is not using the categories and that you should change the nature of your interaction.

Finally, I realize that the apparatus makes for an artificial situation, but it's the least distracting, nondisruptive way we have found to give you information concerning your interactions while those interactions are taking place.

Warm-Up Procedure

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

(ten seconds elapses)

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

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

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

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

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

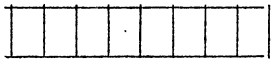
Previous participants have found this experience enjoyable, but if you feel you must leave the group, please feel free to do so. We will stop at _____.

APPENDIX C

THERAPIST INTERVENTION GUIDE: RM

I'm glad you're in the group.

I like your _____

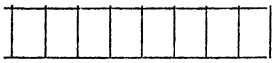
Feeling 

I feel _____ I am _____

Embarrassed	Happy	Frightened
Threatened	Excited	Glad
Anxious	Proud	Depressed
Good	Nervous	Confident

You feel _____ You are _____

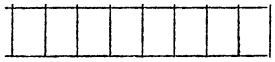
It feels _____ You look _____

Empathy 

You seem to feel _____

Are you _____? You're acting _____

Any feedback not concerning emotions.

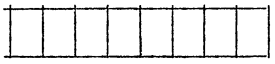
Behavioral Observation 

You seem to be _____

- Avoiding eye contact
- Tired
- Aggressive

Do you realize you're _____

Emotion or behavior or appearance.

Seeking Feedback 

Do I seem _____ to you?

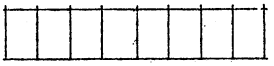
What do you think of me?

How do I strike you?

APPENDIX D

THERAPIST INTERVENTION GUIDE: DE

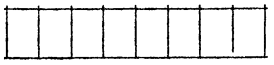
What are you experiencing right now?

Eliciting Feeling 

Could you bring that into the present?
How are you feeling now?

Where are you now?

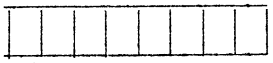
Can you put yourself in Jim's shoes?

Eliciting Sympathy 

How would you feel if the group pressured you?

What do you think Jane is experiencing?

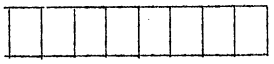
What's Jim doing right now?

Elicitation of Behavioral Observation 

What is Mary saying?

How would you describe Joe's body language?

Could you ask Jane how you're affecting her?

Elicitation of Request for Feedback 

Why don't you ask Fred to tell you what he thinks of you?

Would you ask Jane if she likes you?

APPENDIX E

JOURARD SELF-DISCLOSURE QUESTIONNAIRE

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

Rating:

0 would tell this group of people nothing about this aspect of me or would like or misrepresent myself.

1 would talk in general terms about this item to this group.

2 would talk in full and complete detail about this item to this group.

1. What I think and feel about religion; my personal religious views. ___
2. My views on the present government--the president, government, policies, etc. ___
3. My personal views on sexual morality--how I feel that I and others ought to behave in sexual matters. ___
4. The things that I regard as desirable for a man to be--what I look for in a man. ___
5. My favorite reading matter. ___
6. The style of house and the kinds of furnishings that I like best. ___
7. The kind of party or social gathering that I like best, and the kind that would bore me, or that I wouldn't enjoy. ___
8. My favorite ways of spending spare time, e.g., hunting, reading, cards, sports events, parties, dancing, etc. ___
9. What I would appreciate most for a present. ___
10. What I find to be the worst pressures and strains in my work. ___
11. What I feel are my shortcomings and handicaps that prevent me from getting further ahead in my work. ___
12. What I feel are my special strong points and qualifications for my work. ___
13. My ambitions and goals in my work. ___
14. How I feel about the choice of career that I have made--whether or not I'm satisfied with it. ___
15. Whether or not I owe money; if so, how much. ___
16. The aspects of my personality that I dislike, worry about, that I regard as a handicap to me. ___
17. What feelings, if any, that I have trouble expressing or controlling. ___

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

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

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

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

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

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

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

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

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

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

28. Whether or not I now have any health problems--e.g., trouble with sleep, digestion, female complaints, heart condition, allergies, headaches, piles, etc. ___

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

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

APPENDIX F

ELM'S EMPATHY SCALE

Fill in the appropriate letter for each item.

1. When I read an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.

extremely true	moderately true	neutral	moderately false	extremely false
A	B	C	D	E

2. When I see strangers, I almost never try to imagine what they are thinking.

A B C D E

3. I like to imagine myself as being various different types of persons.

A B C D E

4. I usually feel that I know exactly what mood my friends are in, even when nothing is said in words.

A B C D E

5. I find it hard to imagine how a poor southern negro feels about what people.

A B C D E

6. It's hard for me to act as if I'm a different kind of person than I really am.

A B C D E

7. After acting in a play myself, or seeing a play or movie, I have felt partly as though I were one of the characters.

A B C D E

8. When I disagree with a person, I do not try to feel in my own mind the reason why the person holds an opinion different from mine.

A B D D E

9. I often try to guess what people are thinking, before they tell me.

A B C D E

10. A person can't really know what is going on inside someone else's head.

A B C D E

APPENDIX G

GROUP COHESION MEASURE

On the four five-point scales below rate the way you see the group.

		extremely	moderately	neutral	moderately	extremely	
1.	attractive	A	B	C	D	E	unattractive
2.	like to continue contact with group	A	B	C	D	E	not like to continue contact with group
3.	meaningful	A	B	C	D	E	not meaningful
4.	enjoyable	A	B	C	D	E	not enjoyable

APPENDIX H

GROUP PERCEPTIONS INVENTORY

On each of a number of areas, you are to make ratings describing: 1) how you see yourself; 2) how you see each of the other group members; 3) your prediction or guess about how each group member sees you; 4) your prediction or guess about how each group member sees him/herself. These last two tasks, predicting the other's ratings, can be rather difficult. They require you to put yourself in the other group members' shoes and imagine how you appear to them and how they see themselves. Please take your time and try your very best. This information can lead to a better understanding of how people come to know one another.

Your task is to rate the degree to which one of two adjectives, opposite in meaning, is descriptive of the person or viewpoint being rated. E.g., a sample item might be:

	Very	Moderately	Neutral	Moderately	Very	
KIND:	A	B	C	D	E	:CRUEL

You might see yourself as very kind and so should mark the "A" column on the IBM card. You might see the person sitting in Chair 2 as moderately cruel and mark the "D" column for the appropriate item. If you predict that the person in Chair 3 sees you neutral on this scale, mark the appropriate "C". All marks must be made with number 2 pencils and should be a single, dark line through the center of the "circle."

You have been provided with a card, listing each group member's name and the number of the chair in which he/she was sitting. Please refer to this card so that you will know to whom each item refers. The items below describe the person for whom ratings or predictions are made only by the chair number. Items which refer to your own chair number have been marked out and should be skipped.

Please keep your answers confidential and discuss the test only with the experimenter. Please do not mark on this booklet. Do you have any questions?

	Very	Moderately	Neutral	Moderately	Very	
STRONG:	A	B	C	D	E	:WEAK

1. How strong/weak do you see yourself?
2. How strong/weak do you see the person in Chair 1?
3. How strong/weak do you see the person in Chair 2?
4. How strong/weak do you see the person in Chair 3?
5. How strong/weak do you see the person in Chair 4?
6. How strong/weak does the person in Chair 1 see you?
7. How strong/weak does the person in Chair 2 see you?
8. How strong/weak does the person in Chair 3 see you?
9. How strong/weak does the person in Chair 4 see you?
10. How strong/weak does the person in Chair 1 see him/herself?
11. How strong/weak does the person in Chair 2 see him/herself?
12. How strong/weak does the person in Chair 3 see him/herself?
13. How strong/weak does the person in Chair 4 see him/herself?

	Very	Moderately	Neutral	Moderately	Very	
FRIENDLY:	A	B	C	D	E	:HOSTILE

14. How friendly/hostile do you see yourself?
15. How friendly/hostile do you see the person in Chair 1?
16. How friendly/hostile do you see the person in Chair 2?
17. How friendly/hostile do you see the person in Chair 3?
18. How friendly/hostile do you see the person in Chair 4?
19. How friendly/hostile does the person in Chair 1 see you?
20. How friendly/hostile does the person in Chair 2 see you?
21. How friendly/hostile does the person in Chair 3 see you?
22. How friendly/hostile does the person in Chair 4 see you?
23. How friendly/hostile does the person in Chair 1 see him/herself?
24. How friendly/hostile does the person in Chair 2 see him/herself?
25. How friendly/hostile does the person in Chair 3 see him/herself?
26. How friendly/hostile does the person in Chair 4 see him/herself?

	Very	Moderately	Neutral	Moderately	Very	
PASSIVE:	A	B	C	D	E	:ACTIVE

27. How passive/active do you see yourself?
28. How passive/active do you see the person in Chair 1?
29. How passive/active do you see the person in Chair 2?
30. How passive/active do you see the person in Chair 3?
31. How passive/active do you see the person in Chair 4?
32. How passive/active does the person in Chair 1 see you?
33. How passive/active does the person in Chair 2 see you?
34. How passive/active does the person in Chair 3 see you?
35. How passive/active does the person in Chair 4 see you?
36. How passive/active does the person in Chair 1 see him/herself?
37. How passive/active does the person in Chair 2 see him/herself?
38. How passive/active does the person in Chair 3 see him/herself?
39. How passive/active does the person in Chair 4 see him/herself?

	Very	Moderately	Neutral	Moderately	Very	
GOOD:	A	B	C	D	E	:BAD

40. How good/bad do you see yourself?
41. How good/bad do you see the person in Chair 1?
42. How good/bad do you see the person in Chair 2?
43. How good/bad do you see the person in Chair 3?
44. How good/bad do you see the person in Chair 4?
45. How good/bad does the person in Chair 1 see you?
46. How good/bad does the person in Chair 2 see you?
47. How good/bad does the person in Chair 3 see you?
48. How good/bad does the person in Chair 4 see you?
49. How good/bad does the person in Chair 1 see him/herself?
50. How good/bad does the person in Chair 2 see him/herself?
51. How good/bad does the person in Chair 3 see him/herself?
52. How good/bad does the person in Chair 4 see him/herself?

	Very	Moderately	Neutral	Moderately	Very	
DOMINANT:	A	B	C	D	E	:SUBMISSIVE

53. How dominant/submissive do you see yourself?
54. How dominant/submissive do you see the person in Chair 1?
55. How dominant/submissive do you see the person in Chair 2?

56. How dominant/submissive do you see the person in Chair 3?
57. How dominant/submissive do you see the person in Chair 4?
58. How dominant/submissive does the person in Chair 1 see you?
59. How dominant/submissive does the person in Chair 2 see you?
60. How dominant/submissive does the person in Chair 3 see you?
61. How dominant/submissive does the person in Chair 4 see you?
62. How dominant/submissive does the person in Chair 1 see him/herself?
63. How dominant/submissive does the person in Chair 2 see him/herself?
64. How dominant/submissive does the person in Chair 3 see him/herself?
65. How dominant/submissive does the person in Chair 4 see him/herself?

	Very	Moderately	Neutral	Moderately	Very	
COLD:	A	B	C	D	E	:WARM

66. How cold/warm do you see yourself?
67. How cold/warm do you see the person in Chair 1?
68. How cold/warm do you see the person in Chair 2?
69. How cold/warm do you see the person in Chair 3?
70. How cold/warm do you see the person in Chair 4?
71. How cold/warm does the person in Chair 1 see you?
72. How cold/warm does the person in Chair 2 see you?
73. How cold/warm does the person in Chair 3 see you?
74. How cold/warm does the person in Chair 4 see you?
75. How cold/warm does the person in Chair 1 see him/herself?
76. How cold/warm does the person in Chair 2 see him/herself?
77. How cold/warm does the person in Chair 3 see him/herself?
78. How cold/warm does the person in Chair 4 see him/herself?

	Very	Moderately	Neutral	Moderately	Very	
IMPULSIVE:	A	B	C	D	E	:CAUTIOUS

79. How impulsive/cautious do you see yourself?
80. How impulsive/cautious do you see the person in Chair 1?
81. How impulsive/cautious do you see the person in Chair 2?
82. How impulsive/cautious do you see the person in Chair 3?
83. How impulsive/cautious do you see the person in Chair 4?
84. How impulsive/cautious does the person in Chair 1 see you?
85. How impulsive/cautious does the person in Chair 2 see you?
86. How impulsive/cautious does the person in Chair 3 see you?

87. How impulsive/cautious does the person in Chair 4 see you?
88. How impulsive/cautious does the person in Chair 1 see him/herself?
89. How impulsive/cautious does the person in Chair 2 see him/herself?
90. How impulsive/cautious does the person in Chair 3 see him/herself?
91. How impulsive/cautious does the person in Chair 4 see him/herself?

	Very	Moderately	Neutral	Moderately	Very	
DULL:	A	B	C	D	E	:INTELLIGENT

92. How dull/intelligent do you see yourself?
93. How dull/intelligent do you see the person in Chair 1?
94. How dull/intelligent do you see the person in Chair 2?
95. How dull/intelligent do you see the person in Chair 3?
96. How dull/intelligent do you see the person in Chair 4?
97. How dull/intelligent does the person in Chair 1 see you?
98. How dull/intelligent does the person in Chair 2 see you?
99. How dull/intelligent does the person in Chair 3 see you?
100. How dull/intelligent does the person in Chair 4 see you?
101. How dull/intelligent does the person in Chair 1 see him/herself?
102. How dull/intelligent does the person in Chair 2 see him/herself?
103. How dull/intelligent does the person in Chair 3 see him/herself?
104. How dull/intelligent does the person in Chair 4 see him/herself?

	Very	Moderately	Neutral	Moderately	Very	
HOMELY:	A	B	C	D	E	:ATTRACTIVE

105. How homely/attractive do you see yourself?
106. How homely/attractive do you see the person in Chair 1?
107. How homely/attractive do you see the person in Chair 2?
108. How homely/attractive do you see the person in Chair 3?
109. How homely/attractive do you see the person in Chair 4?
110. How homely/attractive does the person in Chair 1 see you?
111. How homely/attractive does the person in Chair 2 see you?
112. How homely/attractive does the person in Chair 3 see you?
113. How homely/attractive does the person in Chair 4 see you?
114. How homely/attractive does the person in Chair 1 see him/herself?
115. How homely/attractive does the person in Chair 2 see him/herself?
116. How homely/attractive does the person in Chair 3 see him/herself?
117. How homely/attractive does the person in Chair 4 see him/herself?

OPEN:	Very A	Moderately B	Neutral C	Moderately D	Very E	:CLOSED

118. How open/closed do you see yourself?
119. How open/closed do you see the person in Chair 1?
120. How open/closed do you see the person in Chair 2?
121. How open/closed do you see the person in Chair 3?
122. How open/closed do you see the person in Chair 4?
123. How open/closed does the person in Chair 1 see you?
124. How open/closed does the person in Chair 2 see you?
125. How open/closed does the person in Chair 3 see you?
126. How open/closed does the person in Chair 4 see you?
127. How open/closed does the person in Chair 1 see him/herself?
128. How open/closed does the person in Chair 2 see him/herself?
129. How open/closed does the person in Chair 3 see him/herself?
130. How open/closed does the person in Chair 4 see him/herself?

APPENDIX I

TABLES

TABLE XVI

CORRELATION COEFFICIENTS FOR GPI SCALES

	Accuracy	Empathy	Perceived Realism	Commonality	Other Accuracy	Naivete	Perceived Naivete	Openness	Stereotype Accuracy	Stereotype Empathy	Personal Openness	Felt Openness	Assumed Similarity	Conformity
Congruence	.35	.38	.04	.16	.28	.66	.14	.30	.37	.41	.33	.38	.72	.32
Accuracy		.28	.38	.09	.23	.25	.14	.25	.95	.27	.61	.34	.22	.24
Empathy			.06	.06	.80	.45	.26	.72	.24	.82	.24	.36	.25	.53
Perceived Realism				.50	.05	-.12	.33	.17	.35	.02	.31	.22	-.03	.02
Commonality					-.04	-.11	.33	.04	.16	.05	.23	.35	.15	-.15
Other Acceptance						.41	.21	.83	.21	.63	.15	.24	.07	.61
Naivete							.11	.38	.25	.46	.28	.27	.56	.47
Perceived Naivete								.37	.13	.40	.18	.25	.10	.27
Openness									.23	.56	.28	.38	.14	.58
Stereotype Accuracy										.29	.64	.38	.26	.19
Stereotype Empathy											.24	.38	.29	.45
Personal Openness												.66	.35	.17
Felt Openness													.43	.17
Assumed Similarity														.23

TABLE XVII

ANALYSIS OF VARIANCE TABLE FOR EIGHT VARIABLE STEP-WISE REGRESSION MODEL, DEPENDENT VARIABLE, EMPATHY, WITH STEREOTYPE EMPATHY INCLUDED

Source	df	Partial SS	F Values	Prob.> F	Std. B Values
Mode D1	1	.0044	.253	.62	.031
Mode D2	1	.0017	.099	.75	-.019
Reinforcement	1	.025	1.46	.23	-.066
Sex	1	.00006	.004	.949	-.003
Stereotype Empathy	1	.925	53.08	.0001	.503
Other Acceptance	1	.537	30.78	.0001	.401
SO Variance	1	.174	10.0	.003	-.172
Perceived Naivete	1	.0715	4.0	.044	.118

TABLE XVIII

ANALYSIS OF VARIANCE TABLE FOR FIVE VARIABLE STEP-WISE REGRESSION MODEL, DEPENDENT VARIABLE, ACCURACY, WITH STEREOTYPE ACCURACY INCLUDED

Source	df	Partial SS	F Value	Prob.> F	Std. B Values
Mode D1	1	.00003	.002	.957	.002
Mode D2	1	.0117	.962	.669	.044
Reinforcement	1	.0111	.915	.656	.037
Sex	1	.00004	.003	.9509	.002
Stereotype Accuracy	1	6.9593	572.145	.0001	.955

VITA

Jack Phillips Schaefer

Candidate for the Degree of

Master of Science

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