Investigation of a modeling conditioning paradigm applied to a social learning program to facilitate social interaction in chronic psychiatric patients.

Miriam Leveton

University of Massachusetts Amherst

Follow this and additional works at: http://scholarworks.umass.edu/dissertations_1

Recommended Citation
http://scholarworks.umass.edu/dissertations_1/2480
INVESTIGATION OF A MODELING CONDITIONING PARADIGM
APPLIED TO A SOCIAL LEARNING PROGRAM TO FACILITATE
SOCIAL INTERACTION IN CHRONIC PSYCHIATRIC PATIENTS

A Dissertation Presented
By
Miriam Leveton

Submitted to the Graduate School of the
University of Massachusetts in
partial fulfillment of the requirements for the degree of
DOCTOR OF EDUCATION

June, 1970
Counseling and Guidance
INVESTIGATION OF A MODELING CONDITIONING PARADIGM
APPLIED TO A SOCIAL LEARNING PROGRAM TO FACILITATE
SOCIAL INTERACTION IN CHRONIC PSYCHIATRIC PATIENTS

A Dissertation Presented
By
Miriam Leveton

Approved as to style and content by:

[Signatures of the committee members]
ACKNOWLEDGEMENTS

The author gratefully acknowledges the assistance of the members of her dissertation committee. A special thanks to Dr. Richard Haase for helping to make the statistical analyses "come alive;" to Dr. Jules Zimmer, who helped to shape an idea into a research design; and especially to Dr. M. A. Julius, for her constructive comments, her understanding, her encouragement, and for being available from the beginning to the photo finish.

I am indebted to the patients who volunteered as subjects in this study and to the social service staff of the veterans hospital for their cooperation.

I am indebted to the counselors in the Outreach Mental Health Centers whose participation in this research demonstrated the effectiveness of the para-professional in an innovative training program for psychiatric patients.

I am indebted to Dr. John Larson, Director of the Para-Psychiatric Training Project, for his interest and cooperation.

I am especially indebted to Elaine Quinn for her expertise in typing the manuscript and for her helpful suggestions.

Most of all, I thank my husband and children for their patience, understanding and encouragement.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ACKNOWLEDGEMENTS</th>
<th>ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
</tbody>
</table>

## CHAPTER

### I. INTRODUCTION

| Statement of the Problems     | 4   |
| Purpose of the Study          | 4   |
| Hypothesis                    | 8   |
| Significance of the Problem   | 8   |
| Definition of Terms           | 13  |
| Limitations of the Study      | 14  |
| Summary                       | 15  |

### II. REVIEW OF LITERATURE

| Section One: The Psychiatric Patient | 16  |
| Section Two: Behavior Modification  | 24  |

**Reinforcement Principles:**

<p>| Theory                         | 24  |
| Conditioning of Deviant Behavior | 26  |
| Verbal Conditioning            | 26  |
| Conditioning in Social Interaction | 28  |</p>
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modeling Principles:</td>
<td></td>
</tr>
<tr>
<td>Theory</td>
<td>32</td>
</tr>
<tr>
<td>Observational Learning Versus Performance Learning</td>
<td>34</td>
</tr>
<tr>
<td>Psychotherapeutic Use</td>
<td>35</td>
</tr>
<tr>
<td>Summary</td>
<td>37</td>
</tr>
<tr>
<td>III. METHOD</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>38</td>
</tr>
<tr>
<td>Social Learning Program</td>
<td>38</td>
</tr>
<tr>
<td>Modeling Procedures</td>
<td>41</td>
</tr>
<tr>
<td>Reinforcement Procedures</td>
<td>42</td>
</tr>
<tr>
<td>Subjects</td>
<td>45</td>
</tr>
<tr>
<td>Treatments</td>
<td>46</td>
</tr>
<tr>
<td>Assignment of Subjects</td>
<td>46</td>
</tr>
<tr>
<td>Training Procedures</td>
<td>47</td>
</tr>
<tr>
<td>Criterion Measurement</td>
<td>49</td>
</tr>
<tr>
<td>Rating Procedures</td>
<td>49</td>
</tr>
<tr>
<td>Criterion Variables</td>
<td>52</td>
</tr>
<tr>
<td>Analysis of Data</td>
<td>53</td>
</tr>
<tr>
<td>IV. RESULTS</td>
<td></td>
</tr>
<tr>
<td>Nonverbal Approach Behavior</td>
<td>55</td>
</tr>
<tr>
<td>Greeting Behavior</td>
<td>58</td>
</tr>
<tr>
<td>Initiation Behavior</td>
<td>61</td>
</tr>
<tr>
<td>Questioning Behavior</td>
<td>66</td>
</tr>
<tr>
<td>CHAPTER</td>
<td>PAGE</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Opinion Behavior</td>
<td>68</td>
</tr>
<tr>
<td>Feeling Statements</td>
<td>70</td>
</tr>
<tr>
<td>Number of Verbal Exchanges</td>
<td>72</td>
</tr>
<tr>
<td>Number of Persons Subject Interacted With</td>
<td>74</td>
</tr>
<tr>
<td>V. DISCUSSION</td>
<td>77</td>
</tr>
<tr>
<td>Conclusions</td>
<td>88</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>92</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>94</td>
</tr>
<tr>
<td>Suggestions for Further Research</td>
<td>96</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>98</td>
</tr>
<tr>
<td>APPENDIX A</td>
<td>114</td>
</tr>
<tr>
<td>APPENDIX B</td>
<td>115</td>
</tr>
<tr>
<td>APPENDIX C</td>
<td>143</td>
</tr>
<tr>
<td>APPENDIX D</td>
<td>144</td>
</tr>
<tr>
<td>APPENDIX E</td>
<td>145</td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intraclass Correlations Between Raters for Each Criterion Variable</td>
<td>51</td>
</tr>
<tr>
<td>2. Means, Variances and Standard Deviations of Approach Behavior, for Groups and for Treatments</td>
<td>56</td>
</tr>
<tr>
<td>3. Analysis of Variance for the Differences Between Groups and Between Treatments for Nonverbal Approach Behavior, with Repeated Measures on Treatments</td>
<td>57</td>
</tr>
<tr>
<td>4. Newman-Keuls Test for Ordered Means of Treatments for Nonverbal Approach Behavior</td>
<td>58</td>
</tr>
<tr>
<td>5. Means, Variances and Standard Deviations of Greeting Behavior for Groups and for Treatments</td>
<td>59</td>
</tr>
<tr>
<td>6. Analysis of Variance for the Difference Between Groups and Between Treatments for Greeting Behavior with Repeated Measures on Treatments</td>
<td>60</td>
</tr>
<tr>
<td>7. Newman-Keuls Test for Ordered Means of Treatments for Greeting Behavior</td>
<td>61</td>
</tr>
<tr>
<td>8. Means, Variances and Standard Deviations of Initiation Behavior, for Groups and for Treatments</td>
<td>62</td>
</tr>
<tr>
<td>9. Analysis of Variance for the Difference Between Groups and Between Treatments for Initiation Behavior with Repeated Measures on Treatments</td>
<td>63</td>
</tr>
<tr>
<td>TABLE</td>
<td>PAGE</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>10.</td>
<td>Tests of Simple Main Effects of Interaction Between Groups and Treatments as Measured by Initiation Behavior</td>
</tr>
<tr>
<td>11.</td>
<td>Means, Variances and Standard Deviations of Questioning Behavior, for Groups and for Treatments</td>
</tr>
<tr>
<td>12.</td>
<td>Analysis of Variance for the Difference Between Groups and Between Treatments for Questioning with Repeated Measures on Treatments</td>
</tr>
<tr>
<td>13.</td>
<td>Newman-Keuls Test for Ordered Means of Treatments for Questioning Behavior</td>
</tr>
<tr>
<td>14.</td>
<td>Means, Variances and Standard Deviations of Opinion Behavior for Groups and for Treatments</td>
</tr>
<tr>
<td>15.</td>
<td>Analysis of Variance for the Difference Between Groups and Between Treatments for Opinion Behavior, with Repeated Measures on Treatments</td>
</tr>
<tr>
<td>16.</td>
<td>Means, Variances and Standard Deviations of Feeling Statements for Groups and for Treatments</td>
</tr>
<tr>
<td>17.</td>
<td>Analysis of Variance for the Difference Between Groups and Between Treatments for Feeling Statements, with Repeated Measures on Treatments</td>
</tr>
<tr>
<td>18.</td>
<td>Means, Variances and Standard Deviations of the Number of Verbal Exchanges for Groups and for Treatments</td>
</tr>
<tr>
<td>19.</td>
<td>Analysis of Variance for the Difference Between Groups and Between Treatments for the Number of Verbal Exchanges with Repeated Measures on Treatments</td>
</tr>
</tbody>
</table>
20. Means, Variances and Standard Deviations for the Number of Persons Subject Interacted With .............................. 75

21. Analysis of Variance for the Difference Between Groups and Between Treatments with Repeated Measures on Treatments for the Number of Persons Subject Interacted With ......................................................... 77
<table>
<thead>
<tr>
<th>FIGURE</th>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Means of Treatment Groups 1, 2 and 3 in Initiation Behavior for Sequence I, Sequence II and Sequence III</td>
<td>65</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

The traffic of patients in and out of mental hospitals is much greater today than it has ever been in the history of mental illness. The flux of present psychiatric in-patient populations contrasts sharply with the isolated, "closed-world" mental hospital of yesterday when the ever-increasing number of chronic patients was hopelessly condemned to a lifetime of "patienthood", custodial care and seclusion.

Acceleration of patient mobility into and out of the hospital community can be attributed to a multitude of specific factors, but all have one denominator in common--change. Yolles (1967) states:

People are changing their attitudes about mental illness; psychiatrists and other mental health professionals are changing their methods of treatment; governments at all levels are changing their ideas about governmental responsibility to help provide mental health services; insurance carriers are changing their ideas about the size of risk in funding health benefits programs that include treatment of mental disorders. Ideas about industrial and occupational mental health are beginning to change, too.

The impact of federal mental health legislation provided for the planning, funding, and development of community mental health centers. Indirectly it involved the community in assuming the responsibility for the problems of mental illness and, at the same time, in providing opportunities to insure the development and maintenance of mental health. Thus, treatment programs became only one phase of the attack on mental disorder; preventive programs as well as rehabilitation and resocialization were earmarked as equally important components of
comprehensive mental health. Social action was encouraged promoting environmental changes such as city planning, urban renewal, war-on-poverty; as well as early childhood education, Headstart, Concentrated Employment Program, Job Corps Training, pre-care and after-care treatment centers, rehabilitative and correctional services; and, in top priority, establishing a nationwide system of comprehensive mental health centers (Kraft, Benner, Dickey, 1967).

Greater interest in the disadvantaged social status of the ex-mental patient has sponsored a plethora of "pathway organizations" to help patients gain reentry into the community. Included are half-way houses, day-care centers, foster homes, sheltered workshops, outreach clinics, and social clubs. Unfortunately, few of these community-based programs are geared for the chronic patients who are labeled "high risks" in treatment outcomes (Kraft, Benner, and Dickey, 1967; Gurel and Jacobs, 1961; Fairweather, 1969).

Variables, other than the patient's psychological condition, are suspected as having greater relevance to his prognosis as an ex-patient (Waldron, 1965; Fairweather, 1964; Vitale, 1962). The status of patient-hood requires the suppression of individualized modes of behavior and the extinction of independent behavior such as initiative, self-reliance, and self-determination. It is these behaviors which are necessary for satisfactory readjustment after discharge. Thus, the return of the chronic patient to the community does not "stick" as shown by the rising relapse rates. Approximately seventy percent return within eighteen months, regardless of the type of treatment received during the period of
hospitalization (Fairweather and Simon, 1963).

An examination of after-care facilities reveals that they provide the chronic patient with a protective and socially insulated situation which allows the subject to temporarily remain in the community, but impervious to active readmission (Vitale, 1962). Bellak and Black (1960) feel the patient is enmeshed in a system of dependency upon professional aid and interaction.

Fairweather, Sanders, Maynard and Cressler (p. 17, 1969) conceive of the development of "a new social institution which creates a new network of social relationships that represent more participative statuses". Parsons (1951) stresses that mental illness implies not only physical and emotional changes, but also altered social responsiveness and relationships. Thus the patient may be symptom-free but unable to cope with the demands of outside environment and social interactions. Behavioral maladaptation is thus viewed by many as social-psychological and the "problem-in-living" is largely within the learned response capacity of the individual (Szasz, 1960; Guerney, 1965). Carter (1968) insists that "taking care of people in distress by doing something to them one at a time in private is not a satisfactory solution to community mental health problems" especially if such people were "shut-out" by family and community and the dissociation was long term. They must be given the means to learn and relearn social and occupational skills (Wooten, 1967). Bandura (1969) implies professional neglect of social variables as influential determinants of deviant
behavior patterns and consequently points out the need to develop effective methods of change in social behavior.

Statement of the Problem

1. Development of a program in social learning to teach basic social skills to discharged psychiatric patients. The program consisted of a graduated series of exercises which (a) increased in level of difficulty and (b) proceeded from object-oriented to person-oriented subject matter.


3. Exploration and specification of social skill criteria that are applicable to former psychiatric patients.

4. Development of methods of observation of treatment and treatment effects and ascertainment of the reliability of the methods.

Purpose of the Study

The purpose of the study was to utilize and evaluate the effects of three treatment methods on the acquisition of basic social skills with discharged psychiatric patients. The three treatment groups were:

1. Reinforced participation in imitation learning.


In addition, the sequence effects of the training program were evaluated on the subsequent learning of social skills by psychiatric patients.

One main concern was the establishment and maintenance of patterns of response through systematic application of positive reinforcement. In the treatment of persons who indicate behavioral deficits in social development, the question of motivation is crucial. Extrinsic reinforcement procedures appear most promising in effecting behavioral modification. Lovaas, Berberich, Perloff and Schaffer (1966) found primary reinforcers effective in sustaining a high level of responding. King, Armitage and Tilton (1960) working with acute schizophrenics induced increases in interpersonal responsiveness with the reinforcement methods. Isaac, Thomas and Goldiamond (1960) extended verbal communication in a mute catatonic. Ayllon and Azrin (1964) were able to reinstate acceptable eating habits in adult schizophrenics. Theoretically, behavior is largely controlled by its consequences. When a desired mode of response is followed by a positively reinforcing consequence, that behavior is more likely to reoccur. The anticipation of the reinforcement provides the incentive for behavioral change. Reinforcement techniques were utilized in the present study in order to determine whether positive reinforcements would provide the incentive conditions to effect changes in social behavior.

Research related to social-learning theory (Bandura, 1965; Bandura and Walters, 1963) demonstrates the efficacy of learning phenomena by observing the performance of appropriate models. Miller and Dollard (1941)
theorize that the occurrence of observational learning is contingent upon reinforcement of imitative behavior. Lovaas, in working with autistic children, found that rehabilitation can be best achieved through the establishment of stimulus functions which make one amenable to social influence (Lovaas, 1968). Bandura (1969) states:

Except for a few minor applications (Sherman, 1965; Wilson and Walters, 1966) there has been no systematic use of modeling procedures in the treatment of adult psychotics. The relative neglect of this powerful approach probably results in large part from therapists' strong allegiances solely to operant conditioning methods or to interview procedures in which a great deal of time is devoted to analyzing patients' ineffectual behavior (p. 158).

In view of the case presented by the social learning investigators in support of observational learning, a modeling paradigm was used and evaluated in the present study in the training of social skills.

In dealing with chronic psychiatric patients, the order of presentation of the training exercises in social skills was considered important. In the social learning training program, the exercises were presented in a graduated sequence in order of difficulty. The total program was divided into three daily sessions which permitted the evaluation of the training effect from one sequence to the next. In addition, the exercises dealing with object-oriented subject matter were presented before the exercises dealing with more subjective, person-oriented topics in order to permit the gradual involvement of the patient in personal material.

Another concern related to training in behavior modification was the evaluation of the outcome to determine the effect of the training
program. This involved the exploration and identification of social skill criteria according to the following: (1) criteria should be appropriate to the response level of chronic psychiatric patients; (2) criteria should be indigenous to the training program in social learning; (3) criteria should be observable and measurable. The present study measured the sequence effects of the three parts of the training program, Sequences I, II, and III, in terms of eight criterion variables that were abstracted from the training in social skills. The criterion variables were: (1) nonverbal approach behavior; (2) greeting behavior; (3) initiating interaction; (4) questioning behavior; (5) opinion statements; (6) feeling statements; (7) total number of verbalizations; (8) number of persons with whom subject interacted.

A final consideration was the problems in observation and measurement of outcome behavior in field studies. Methods were developed within the present design to assess the treatment effects by controlling the place and time factors in the observation of subject behavior. Furthermore, pre- and post-observations were made with each training sequence to measure differential effects in behavior change. The reliability of the observations made by raters was established by the pretraining of the raters and the ongoing measurement of rater reliability.
Hypothesis

1. There are no significant differences, as measured by each of the criterion variables, between the three treatment groups: (a) reinforced participation in imitation learning; (b) non-reinforced participation in imitation learning; (c) non-reinforced observation in imitation learning.

2. There are no significant differences, as measured by each of the criterion variables, between the effects of the three sequences of the social learning program: Sequence I; Sequence II; and Sequence III.

3. There are no significant interaction effects, as measured by each of the criterion variables, between group and sequence effects.

Significance of the Problem

The failure of chronic mental patients to make a satisfactory adjustment in the community has resulted in a high readmission rate. The mental hospitals are thus faced with the problem of a constantly growing population of chronic residents. Patients exhibit a progressive loss of social and vocational competencies which makes them unable to cope with the demands of living on the outside.

One of the first steps in the "requalifying-for-community-life" process is to modify behavior in terms of self-management and self-initiative, thus making social intercourse a primary requirement.
Perceived as the foundation for the development of further self-management skills such as information seeking, problem solving and decision making, facilitation of social interaction was selected as the focus for this study.

Training in social skills should be commensurate to the functioning level of the chronic psychiatric patient whose behavior is frequently manifested by apathy, passivity, compliance and depression (Downey, 1958; Semrad, 1954). This study attempted to teach social skills by (1) fundamental training in the initiation and maintenance of social interaction; (2) presentation of the training exercises in a graduated order of difficulty; (3) presentation of the training exercises in object-oriented topics before subjective, person-oriented situations.

Reactivating the patient's social involvement with others, although on an elementary level, would hopefully stimulate him to extend his social experiences and development. It is conceivable that the acquisition of basic social skills would prompt the patient to participate more in social subsystems outside the hospital, group activities and even work involvement. Research suggests that such training to be effective should not only take place in the community, but should approximate the realistic demands of the environment as demonstrated by the programs of Fairweather (1970) and Atthowe and Krasner (1968). Therefore, the present training in social interaction took place in a community-based facility, in a realistic setting, and it presented training exercises characteristic of the problems-in-living of discharged patients. The primary purpose was to facilitate the
community readjustment of the former patients.

Reinforcement procedures have shown promising results in modification of the social behavior of psychotic adults and children. In many of the treatment programs, reinforcement contingencies were combined with extinction, modeling or, in some cases, negative or aversive consequences. The present study followed the format of Ayllon and his associates who developed positive reinforcement procedures which included social attention and food rewards in working with adult psychotics (Ayllon and Michael, 1959; Ayllon and Houghton, 1964; Ayllon and Azrin, 1965, 1968). By selectively reinforcing rational behavior and verbal response patterns, other investigators succeeded in significantly reducing or completely eliminating psychotic verbalization or other bizarre behavior. An extension of the use of positive incentives to a group basis led to the learning and establishment of social and even vocational competencies in chronic patients. In the few studies which explored diverse methods of therapy, results with schizophrenics (King, Armitage and Tilton, 1960; Schaefer and Martin, 1966) indicated "that treatment based upon reinforcement principles produces greater change in interpersonal behavior than in programs following conventional lines" (Bandura, 1969, p. 246). Thus, the present study explored the use of positive reinforcement in the learning of social skills in adult psychiatric outpatients. Although the Fairweather group-managed contingency program favored social reinforcements (1967), this study utilized
positive reinforcements that included both social and material rewards. In accordance with the research of Ayllon and Azrin (1968) on the scheduling of reinforcement with psychiatric populations, reinforcements given in this study were presented immediately consequent to the desired behavior.

The application of modeling procedures in combination with reinforcement practices was investigated to determine the efficacy of imitation learning versus observation learning. Social learning theorists indicate that in social situations behavior always remains partly under modeling stimulus control. Much social learning apparently occurs through actual exposure to behavioral modeling cues (Bandura, 1969; Bandura and Walters, 1963). In experimental investigation of modeling processes, the model demonstrates a limited set of responses and observers are then tested for the exact imitation. Further studies extending this paradigm indicate that innovative behavior as well as generalization of response can be elicited by exposure to modeling cues (Bandura, Ross and Ross, 1963). It was one of the aims of this study to evaluate the use of modeling procedures in the learning of social skills by determining the effects of (1) active participation in imitation learning and (2) observation in imitation learning. Future programs in learning social skills or other self-management skills would be arranged to emphasize the observation or the performance in imitation learning.

A training program in social learning required the specification
of criteria variables to evaluate the training effects. The social skills presented in this training program included the skills used in initiation and maintenance of social interaction. These were considered fundamental to social interaction which, in turn, has been recognized as a significant factor in community readjustment (Goffman, 1961; Albee, 1969; Carter, 1968; Fairweather and Simon, 1963). There are many other social skills that could be presented in a social learning program for psychiatric patients. The present social skill criteria were selected on the basis of: (1) the presentation of the social learning program; (2) the relevancy to realistic social situations; (3) the ease of observation and measurement. Identification of social skill criteria thus permits evaluation of treatment effects.

Finally, outcome studies constantly pose problems in the evaluation of behavioral results. It is a particularly difficult problem in the investigations of post-hospital adjustment of psychiatric patients where the drop-out rate of subjects is often as high as thirty to forty percent (Fairweather, 1970; Bandura, 1969). The design of this study arranged for observation of the effects of the training experience immediately after each training session in a pre-arranged room for a specified period of time. The observations were made by raters who were trained to observe behavior in terms of the criterion variables formulated in this study. The ratings were subject to reliability checks prior and during the training program. In this
way, observation and measurement of treatment effects were objectively controlled.

Definition of Terms

Several terms need to be clarified for the purposes of this study. Positive reinforcement is defined as the operation of presenting a subject with a rewarding stimulus after the subject has made the appropriate response. Imitation learning is often referred to as vicarious learning; identification or copying is used in the present context to mean learning that is based on matching another person's behavior. However, a distinction is made, within the design of this experiment, to partial out imitation learning that is a result of merely observing the behavior of another without performance and imitation learning that involves observation and matching performance.

The criteria measures also need further definition. Criterion 1, approach, refers to nonverbal behavior that involves (1) physical body movement to move in closer proximity to individual; (2) turning body to position oneself to face the individual; and (3) eye contact between individuals. Criterion 2, greeting, involves a verbalized greeting such as "Hello," "How are you?," "Hi," etc. Criterion 3, initiation, is used to indicate the individual who begins a conversation with another or who, in any way, initiates social interaction. Criterion 4, question, identifies any utterance in the form of a question. Criterion 5, opinion, identifies the substance of a verbalization in
terms of making a statement that is representative of a personal attitude, belief, judgment, evaluation, etc. Criterion 6, feeling, again identifies the substance of a verbalization in terms of some expression of affect or emotion: "I feel that..." or "You feel that..."

Criterion 7, number of interchanges, is a tabulation of the number of verbal exchanges the subject made with another individual regardless of the substance or nature of the exchange. Criterion 8, persons, refers to the number of different persons the subject had an interaction with during a given period.

Limitations of the Study

The following limitations of the study are recognized at the outset:

1. Will the acquisition of social skills in chronic psychiatric patients generalize to other populations?
2. What will be the result of any newly acquired behavior once the reinforcements are no longer forthcoming?
3. What is the effect of the model's attributes, such as sex and age, in imitation learning with a psychiatric population?
4. Does the learning of basic social skills lead to more complex social interactions?
5. What is the relationship between improvement in social skills and community readjustment of psychiatric patients?
6. What is the difference in the effect of social reinforcement as compared to material reinforcement with a psychiatric population?

Summary

The marginal status of the discharged psychiatric patient is recognized as a serious psychosocial problem. Innovative treatment programs are needed to promote competence in social interaction to facilitate community readjustment. A social learning program was developed to teach basic social skills to former psychiatric patients housed in a community-based facility. The study utilized and evaluated the effects of reinforcement and modeling procedures on the acquisition of basic social skills. In addition, the sequence effects of the training program were evaluated on the subsequent learning of social skills by psychiatric patients.
CHAPTER II
REVIEW OF LITERATURE

The present study has two primary points of focus: one, the behavioral deficit of social interaction skills in former mental patients; two, the application of learning principles to teach basic social skills to chronic patients. The review of literature is correspondingly divided into two main sections. The first section presents a survey of the literature related to the post hospital adjustment of mental patients in order to determine the crucial factors in community readjustment. Section Two surveys the literature concerning effective use of behavior modification techniques in the training of social interaction skills with deficit populations.

Section One: The Psychiatric Patient

Despite the formidable problems of research design, criteria measures and high subject "drop-out" rates, there are several significant outcome studies with psychiatric patients. A review of the literature indicates that long-term hospitalization is not only ineffective but detrimental to the social readjustment of the psychiatric patient. In fact, the longer the period of hospitalization, the poorer is the prognosis for adjustment.

A discussion of the relevant studies will be presented as follows: 1) an analysis of dynamics between the patient and the mental hospital; 2) a review concerning the post hospital adjustment of psychiatric
patients; 3) a summary of innovative treatment programs emphasizing social factors.

Results based on follow-up studies reveal that, regardless of the type of treatment received, almost seventy percent of the chronic patients who are discharged from mental hospitals return within eighteen months (Fairweather and Simon, 1963). The extremely high readmission rate has directed the attention of several investigators to the debilitating effects of the relationship between the patient and the hospital. "The patienthood" of the mental patient begins when he enters an institution. He learns to adapt to patient status by way of the institution's social processes, by the staff and by his fellow patients, which robs him of all incentive and molds him into the "well-institutionalized type" (Klapman, 1957; Morgan and Johnson, 1957). This process is often manifested behaviorally by apathy, passivity, compliance and depression (Downing, 1958; Semrad, 1954). He acquires a professional label of "mentally ill" and accordingly assumes the role of a "sick" person needing care, treatment, and services for the provision of which he is dependent upon others. The longer the period of hospitalization, the more likely the social status of chronic mental patients will become terminal, and concommitantly, the less likely are his chances for recovery. Consequently, the "socialization" process of the transition of the person to the role of patient is complete (Goffman, 1961; Vitale, 1962; Greenblatt, Levinson and Kiernan, 1961; Gradnick and Duncan, 1966).
Thus, many observers are in agreement that the dynamics between the patient and the hospital progressively deteriorate to the point that the social behavior of the mental patient is inadequate to cope with the demands of the outside environment and social interaction. Therefore, one of the more difficult tasks is preparing the patient for his return to the community. For the long-term patient, this "requalifying-for-community-living" has often been impossible to achieve.

Instead of focusing on the institutionalization process, other investigators approach the problem of recidivism by longitudinal, follow-up studies of discharged patients in order to identify some of the preconditions of "unsuccessful" community adjustment. Their findings repeatedly indicate the significance of social factors in post hospital adjustment. Evidence available at the end of one year in an intensive investigation by Michaux, Katz, Kurland and Gansereit (1969) indicated rehospitalization occurred more often for: (1) schizophrenics than non-schizophrenics; (2) provisional discharge patients than those discharged outright; (3) those patients with more limited education; (4) those patients who had more and longer prior hospitalizations. These investigators concluded that hospital readmission is more contingent on "social difficulties than on purely psychopathological factors; that it is preceded by progressively disjunctive interchanges between the patient and his social environment; and that repeated hospital treatment may actually be detrimental rather than therapeutic.
Similar results emphasizing social factors were found by Rajotte and Denber (Greenblatt, Levinson, and Klerman; 1961). Eighty-seven percent of the patients admitted to their hospital were former patients, thirty-seven percent of whom were returned within a year following their hospital release. A carefully documented follow-up study of fifty of their female patients led to the conclusion that hospital treatment is without effect unless it is followed by strong social supports when the patient is discharged.

Another follow-up investigation of post hospital adjustment was completed at the Phipps Clinic of the Johns Hopkins Hospital. The five-year investigation was primarily concerned with evaluating the efficacy of various forms of therapy against post hospital readjustment. The criteria measures were changes in personal discomfort and social ineffectiveness. Results indicated no differential effects between groups at the five-year evaluation period. The improvement gains in social effectiveness occurred slowly and were substantially greater at the end of five years than at the beginning six-month period beyond discharge (Frank, Stone, Nash and Imber, 1961). Another group of patients in a supplement to the above study was evaluated ten years after their original therapeutic contact. Patients who had the least amount of interaction with therapists showed a "negative decline in social effectiveness at ten years just as they had immediately after treatment terminated. Patients who rated themselves as improved attributed their progress to a change in socio-economic conditions and to acceptance of their life situation" (Imber, Nash, Gliedman, Stone and Frank, 1966,
This longitudinal investigation thus further supported the determining effect of social behavior in readjustment to the community.

The search for social factors in the etiology of mental illness has prompted some investigators to utilize an epidemiological approach. One of the conclusions indicated that incidence of hospitalization shows much higher rates for urban areas than for rural areas. Recognizing that urban living per se is not more conducive to mental breakdown, Belknap and Jaco (1953) found correction indices with "social isolation, such as fewer friends, less knowledge of neighbors, less visiting, and greater unemployment and job turnover" (Leighton, Clausen and Wilson, p. 325). A further investigation was related to the first hospital admission of male schizophrenics who had moved from family settings into the central, deteriorated areas of the city. As a result of this study, an interpretation was offered by investigators Gerard and Huston (1953) that residential instability may serve as a protective mechanism against becoming involved in close interpersonal relationships. These studies further substantiate the relevancy between mental illness and inadequate social relationships.

Numerous investigators, realizing the importance of interpersonal relationships in dealing with mental illness, have made the efficacy of psychotherapy a central issue. In separate and independent investigations of treated psychotherapy patients and untreated patients, Eysenck (1952, 1960) and Levitt (1957) concluded that there are no
significant differences in terms of client change as a result of psychotherapeutic treatment. This challenging statement generated a series of investigations to attempt to resolve the issue. Three of the more comprehensive analyses (Bergin, 1963; Cartwright, 1956; Truax, 1963) conclude that therapeutically treated persons demonstrate both constructive as well as deteriorative changes in patients which tend to cancel each other out. As a result, many researchers from multitheoretical orientations in psychotherapy have been attempting to define the components which facilitate constructive client change. Within the dimension of interpersonal relationships, investigators have concentrated on the concepts of empathic understanding, positive regard and facilitative genuineness as integral features of interactions (Rogers, 1957; Truax, 1961). An extension of this work produced a host of research in the development of an integrated didactic and experiential training program in the discrimination and communication of facilitative dimensions (Berenson, Carkhuff and Myers, 1966; Carkhuff and Truax, 1965, 1967; Bierman, Carkhuff and Santelli, 1969). Two studies applied these training procedures to psychiatric inpatients (Pierce and Drasgow, 1969; Vitale, 1969). The investigators found that training in the facilitative dimensions was effective in increasing patients' interpersonal functioning in the hospital. However, Pierce and Drasgow underscore that such training should be modified to accommodate the low functioning level of the chronic patient by implementing the training with exercises in specific skills.

Under the impetus of the Joint Commission Report (1961) there have
evolved several residential social treatment programs for chronic patients. Early results do indicate a remission of symptomatology and favorable preparation of patients for community living (Weinman, Sanders, Kluner, Wilson, 1970). Although there is some measure of improvement in social interaction of patients, research has shown that hospital-based social treatment programs have not provided any solution to the problem of relapse and rehospitalization (Freeman and Simmons, 1963; Veterans Administration Psychiatric Evaluation Project, 1963).

Several new studies suggest the importance of utilizing innovative treatment programs in non-medical, community-based settings. The possibility that a community-based service would prove more effective in helping the chronic patient cope with everyday problems of living was investigated by the Philadelphia State Hospital. One of the innovative aspects in terms of staffing was that community members were trained to act as change agents in directly modifying patients' behavior in the community allowing the limited number of professional staff to act as supervisors. Individual counseling and group meetings for planning and discussion were deemed essential elements of the program. A comparison of the placement rates of the community-based program with the hospital social treatment program indicated a significantly greater number of patients were returned to the community from the community-based treatment programs. Furthermore, the readmission rate was significantly lower for the community-based treatment program.
(Weinman, Sanders, Kleiner, Wilson, 1970). Finally, tapping the resource of para-professionals in mental health makes possible many new programs of treatment intervention. For all these reasons, the "push" is on to provide a graded series of care-taking services outside of hospitalization to try to maintain the mentally ill person in the community and, furthermore, in planning patient discharge, to maximize the role of community involvement. (Fairweather, 1969; Carter, 1968; Yolles, 1967; Greenblatt, 1961).

The review of literature concerning the readjustment of the chronic psychiatric patient underscores the ineffectiveness of long-term hospitalization. The significance of social factors in determining relapse or readjustment is revealed in many studies. In order to qualify the chronic patient for community living, he needs training in basic social skills to encourage social interaction. According to several investigators, such training should be relevant to the chronic patient. Furthermore, a greater possibility of generalizing to the community setting is indicated if this training is conducted outside the hospital in a community-based facility. The lack of professional staff for these innovative programs can be partially overcome by utilizing the services of trained non-professionals as change agents.

Thus, it is concluded from the literature survey that training programs in social skills may be more appropriate and effective in increasing interpersonal interaction in psychiatric patients than the traditional treatment approaches.
Section Two: Behavior Modification

Development of a treatment program to teach social skills to psychiatric patients must deal with problems in methods of training and changing human behavior. One of the more effective methods is the application of learning principles in behavior modification. There are two learning principles that are particularly appropriate to the present study: one is the method of positive reinforcement; the other is the modeling procedure in imitation learning. A survey of the literature will indicate the feasibility of teaching social skills by utilizing these principles of behavior modification. The discussion will proceed as follows: 1) a brief theoretical orientation of behavior modification principles; 2) a summary of reinforcement studies applied to deviant behavior; 3) a summary of reinforcement studies in verbal conditioning; 4) a summary of reinforcement principles applied to social interaction.

Reinforcement Principles:

Theory. The underlying theories of behavior modification will be discussed as it verifies the relevancy of this approach to the problems of behavioral change in psychiatric patients. Psychodynamic theories of personality view mental disturbance as a result of unknown, uncontrollable, potent internal forces. The social learning approach, on the other hand, reorients treatment programs as significant experiences in interpersonal relations subject to some degree of management
and control through external stimuli. The studies of deviant behavior conducted by psychologists following learning theory (Bijou and Baer, 1961; Dollard and Miller, 1950; Rotter, 1954; Skinner, 1963) stress environmental contingencies in directing behavior modification in a desirable direction. Bandura (1969) states:

...psychological functioning, in fact, involves a continuous reciprocal interaction between behavior and its controlling conditions. Although actions are regulated by their consequences, the controlling environment is, in turn, often significantly altered by the behavior (p.46).

Thibaut and Kelly (1959) advance the social action theory of reciprocal control. Supportive research indicates that in dyadic interactions, the reinforcement contingencies of each individual influence the behavior of his partner (Rausch, 1965; Levy, 1943). Therefore, if the social responses of an individual are very limited, he may force reactions from others by the use of aversive behavior controls such as attention-getting behaviors (temper tantrums, somatic complaints, nagging and helpless suffering). The treatment strategies would then focus on the elimination of undesirable, socially incapacitating behavior and reinforce patterns of responding that "create favorable reciprocal reinforcing processes" (Bandura, 1969, p. 48).

Social learning theory thus suggests the possibility of reversing the debilitating effect of long-term hospitalization on the chronic patient. By appropriately reinforcing desirable behavior under controlled conditions, the deficiency in social behavior could be reduced or possibly eliminated.
**Conditioning of deviant behavior.** Principles of reinforcement have been used extensively in research with a wide range of deviant behavior. The present discussion is limited to the more significant studies utilizing positive reinforcement techniques to determine how effectively operant conditioning techniques can be employed to instate social skills. Many investigators have demonstrated the effectiveness of reinforcement techniques in eliminating deviant behavior.

By reinforcing rational responses with social attention and food rewards, the change agents succeeded in reducing or eliminating the following undesirable behaviors: psychotic verbalization (Ayllon and Háughton, 1964); chronic anorexia (Ayllon, Haughton and Osmond, 1964); pathological behaviors of long-standing (Ayllon, 1963; Ayllon and Michael, 1959); autistic behavior (Lovaas, 1968); school phobias (Patterson, 1965); psychogenic seizures (Gardner, 1967); self-mutilative activities (Allen and Harris, 1966).

Reinforcement procedures can therefore be used with a diverse population to eliminate many different kinds of undesirable behavior. It is likely that the deficit in social behavior in the chronic psychiatric patient would be amenable to change through the application of reinforcement contingencies.

**Verbal conditioning.** Training in social behavior, however, would require some modification of verbal behavior. A host of studies which focused specifically on verbal and vocal behavior change demonstrated the usefulness of operant conditioning techniques. By selectively
responding to the content of the subject's verbal behavior (Kanfer, 1968; Krasner, 1962; Greenspoon, 1962; Salzinger, 1959; Sarason, 1962) the experimenter can direct the substance of the response. The list of reinforced responses is lengthy, but it includes: affective expressions, positive or negative self-references; neurotic verbalizations (Everstine and Bendig, 1960); emotional words (Krasner, Ullman, Weiss and Collins, 1961); hallucinations (Dobie, 1959); confiding, hostile, affiliative verbalizations, expressions of opinion or beliefs, maternal references, early childhood memories (Kanfer, 1968; Krasner, 1962; Salzinger, 1959). Verbal conditioning occurring in psychotherapeutic interactions has been analyzed in terms of therapists positively reinforcing certain types of verbal behavior (Goldman, 1961; Truax, 1966; Bandura, Lipscher and Miller, 1960).

One of the important features of verbal conditioning is the question of the subject's awareness of reinforcement contingencies. A sufficient number of studies indicates that subjects who are informed of the responses required for reinforcement show a substantial increase in the proper responses, whereas those subjects who are uninformed indicate little behaviour change (Adams, 1957; Dulany, 1962; Spielberger and Denike, 1966; Krasner and Ullman, 1962). Therefore, the present study incorporated in the research design the means to make subjects aware of the response contingencies.

The investigations in verbal conditioning have also noted the poor generalization effects of the conditioning process. One of the explana-
tions offered is that modification of verbal behavior usually occurs in a hospital or in an office setting which is sufficiently different from the natural environment to make transfer of training rather difficult. Bandura (1969) states "that it would be more desirable to effect changes by providing subjects with graduated performance tasks to carry out in their social milieu" (p. 260). It is one of the aims of the present study to train subjects in social skills in their own naturalistic setting which in turn would maximize generalization of new responses. The present training exercises will be presented in a graduated series through the use of graduated modeling exercises to attempt to shape the social behavior of the subjects.

**Conditioning in social interaction.** Research in reinforcement procedures also demonstrates the possibility of behavior change in the direction of increased social behavior and responsiveness. King, Armitage and Tilton (1960), using the method of successive approximations, increased the social behavior of severely withdrawn schizophrenics. Ferster (1961) believed that autistic behavior resulted from parental extinction of social behavior and succeeded in reversing the trend by stimulating socialization through social reinforcers. Comparable findings have been reported with regressed adult psychotics (Lindsley, 1956; Skinner, Solomon and Lindsley, 1954). Other investigators were able to modify dependency (Nelson, 1960), cooperation (Azrin and Lindsley, 1956) and achievement behavior (Keister, 1938) in a predicted direction by using positive reinforcement. Basic social and self-
management skills were established in severely retarded children (Giles and Wolf, 1966; Hundziak, Mowrer and Watson, 1965). Researchers also demonstrated that persistent problem behavior can be eliminated, reinstated and extinguished a second time by systematically controlling the amount of adult social response elicited by the undesirable behaviors. These include changes in extreme withdrawal behavior (Brawley, Harris, Allen, Gleming and Peterson, 1969; Johnston, Kelley, Buell, Harris and Wolf, 1963): regressive crawling and extreme passivity (Harris, Johnston, Kelly and Wolf, 1964, 1966); hyperactivity and aggressive behavior (Allen, Henke, Harris, Vaey and Reynolds, 1967) and overdependency (Wahler and Pollio, 1968). These studies support the use of reinforcement techniques in inducing effective social behavior in subjects with extremely limited capacity for learning.

There are few studies that systematically evaluate the various forms of therapy. However, the results of three studies indicate that treatment based upon reinforcement methods produce greater change in interpersonal behaviors than the traditional treatments (King, Armitage and Tilton, 1960; Peter and Jenkins, 1954; Colman and Baker, 1968). Patterson, Ray and Shaw (1968) utilized reinforcement contingencies in an innovative family setting approach. The aim of the study was to change deviant social interaction patterns of the family members. The results indicated a reduction of deviant responses and, concomitantly, an increase in positive reciprocal interactions.

Success in modification of social behavior in individuals and small groups through the application of reinforcement techniques has encouraged
investigators to apply the same methods to larger social systems. The use of contingent reinforcement on a group basis has been applied to hospital wards for mental patients (Atthowe and Krasner, 1968; Ayllon and Azrin, 1965); alcoholics (Narrol, 1967); in social programs for school dropouts and low achievers (Wolf, Giles and Hall, 1968); in rehabilitative institutions for delinquent adolescents (Cohen, 1968).

The requirements of group-oriented reinforcement methods include the availability of extrinsic rewards for reinforced responses. The latter are defined as behaviors necessary for daily functioning such as work performance, social behaviors and self-management. A token system and an exchange token system are used to simulate monetary transactions in the community. One of the prominent studies in this area is that of Ayllon and Azrin (1965). By alternating incentive conditions, they were able to increase or decrease the patient participation in ward activities.

Atthowe and Krasner (1968) introduced an incentive program in a population of 86 chronic schizophrenic patients whose hospital residency ranged from four to forty-nine years. The behavioral aim was to improve interpersonal and self-directing behavior. Change indices were recorded in the direction of more social communication, more social involvement and greater self-regulation of behavior. Further affirmation of the success of the contingency system is indicated by the subsequent hospital discharge of twenty-one of these patients. Although these studies were long term and in a hospital setting, they nevertheless indicate the appropriateness of the response-reinforcement systems in large groups. A token system was used to sponsor self-management as well as build up
incentives. The possibility of using a token system in a short-term study to increase motivation and sustain interest in the training program is suggested by the study as both effective and practical in a social interaction training program for psychiatric patients.

The next step in the contingent reinforcement on a group basis was a social system in a community setting. Fairweather and his collaborators (1969) established a treatment center for predominantly schizophrenic patients where they can learn the necessary self-management skills to cope with the demands of the community. A group-managed contingency system was built into the treatment program. Significant outcomes resulted in the form of group cohesiveness, self-administered educational programs, a higher rate of employment for the patients, improved interpersonal relations and increased level of verbal interactions. The authors emphasized the need to clearly define the incentive system, specific performances, and goal behaviors for the subjects and to apply immediate reinforcement practices in the initial stages of training the severely deficient persons. As competencies improve, reinforcement scheduling may be changed (Fairweather, Sanders, Maynard and Cressler, 1969). The initial program was extended to include a second phase. This was a semi-autonomous community-based system called a lodge where the "acceptably trained" patients were housed to continue incentive programs of group responsibility. The patients successfully operated an income-producing janitorial business under minimal supervision and guidance. After a year of operation, the investigators concluded that "chronic marginal individuals can manage their own
affairs and be gainfully employed" (Fairweather et al, 1969).

The preceding review indicates that more effective treatment procedures in dealing with persons deficient in social behavior are contingent reinforcement practices utilized in a natural setting in a community-based facility. The further application of a token exchange system, even on a short-term basis, appears to be a useful method in maintaining subject motivation. Therefore, application of contingent reinforcement practices to the present study appears to be a reasonable method to use in the training of discharged psychiatric patients in the development of social skills. The use of a token system and a community-based setting in which the training will take place should further reinforce the behavior changes and hopefully generalize to similar situations.

Modeling Principles:

The effective application of modeling procedures in training programs has been established by many investigations. Adoption of the modeling techniques in the present study is based on several reasons. These will be discussed in the following order: 1) theoretical orientation; 2) observational learning versus performance learning; 3) psychotherapeutic use of modeling.

Theory. Social learning theorists view the modeling process as the vehicle in which unique or novel forms of response, not in the behavioral repertoire of the viewer, can be acquired. The present study is concerned with the acquisition of social skills to offset the
deficiency of social behavior in psychiatric patients. A fundamental question, however, is involved. Does the absence of social behavior signify some inadequacy in the initial learning experience of the mentally ill or does it suggest that the behavior was initially acquired but not actively transferred or utilized in performance? In other words, is the response contained in the subject's present behavioral repertoire, either on a mediational level or on a behavioral level, or is the response non-existent for that subject? The question concerns one of the central issues in the phenomena of the modeling process and its relation to observational learning.

In regard to this study, the central issue can be bypassed as the criteria for learning is the performance of the relevant social behavior. Furthermore, the deficiency in social responsiveness in chronic patients may require the acquisition of new behaviors or skills or the recovery of already existing but inhibited responses. The latter is a result of the long-term institutionalization. What is required in the study is a learning vehicle which would permit the attainment of new forms of response or overcome the blocking effect by strengthening existing responses. By observing other persons' behavior and matching or imitating the modeling both of the requirements can be satisfied. This is the second reason for utilizing the modeling procedures in training in the social learning program.

The theoretical explanations of the dynamics of the modeling phenomena are varied. The associative orientations accepted the modeling
stimuli and imitative response as a sufficient condition for learning (Allport, 1926; Piaget, 1952). Skinner and his collaborators used the principle of discrimination and generalization of stimuli to account for modeling phenomena. By observing the modeling, discriminative learning of differences and of similarities of response cues takes place. The elicitation of similar responses is then generalized to appropriate conditions (Skinner, 1953; Millenson, 1967).

Observational learning versus performance learning. Experiments by Miller and Dollard (1941) and Skinner (1953) assume that the observational learning in modeling is "contingent upon reinforcement of imitative behavior" (Bandura, 1969, p. 121). Thus the matched performance of the learned material is a prerequisite to reinforcement of response. The subsequent work of Gewitz and Stingle (1968) and Baer and Sherman (1964) which did not reinforce observed phenomena and new learning, thus raised the question of the necessary conditions between response acquisition (the degree to which the modeled behavior is learned) and response performance (the willingness to perform what has been learned). The present study in part attempts to research the issue of the effect of observation in imitation learning as compared to the effect of performance in imitation learning by differential treatment groups.

It is likely that most social learning is not acquired by the slow shaping process of successive approximation with differential reinforcement. Modeling cues probably represent a larger part of social
behavior learning. Research indicates that gross behavioral deficits are amenable to change through the utilization of modeling procedures.

**Psychotherapeutic use.** Laboratory studies of modeling processes find the effective program of behavior modification is one in which the desired behavior is modeled by the change agents. More recently, these procedures have been adopted to effect psychotherapeutic changes. Lovaas (1967) has demonstrated the usefulness of this approach with a severely self-isolated population, autistic children. He emphasizes stimulus functions such as modeling cues, discrimination of stimuli, attentional factors and appropriate response. Similar studies (Sloane, Johnston and Harris, 1968) use the same approach in working with speech deficient children. The results of both studies indicate that modeling, along with reinforcement methods, appears to facilitate social learning.

Modeling processes have also been successful in dealing with maladaptive behavior problems. Hyperaggressive children showed greater cooperation and domineering behavior after experiencing symbolic modeling treatments (Chittenden, 1962); withdrawn children increased social interaction (O'Connor, 1969).

Many psychotherapeutic treatment approaches use some form of modeling technique (Moreno, 1958): behavior desensitization and rehearsal (Wolpe and Lazarus, 1966); role playing (Corsini and Putsey, 1957). Schwartz and Hawkins (1965) found that affective verbalizations of adult schizophrenics could be increased or decreased according to the verbalization of models participating in group therapy. A series
of experiments by Marston and Kanfer (1963) used modeling procedures to compare observation learning with direct participation in verbal conditioning experiments. They found the observation and participation groups differed significantly in their improvement. Although the participation group did much better, the observation group did show important changes in verbal conditioning.

The issue of which discriminative modeled cues are expected in the imitative behavior can be overcome by making subjects aware of the desired outcomes beforehand (Marlatt, 1968; Truax and Carkhuff, 1967). This problem was discussed previously in relation to reinforcement methods. Acknowledgement of the importance of subject awareness of response cues is acknowledged in the present study by direct instructions of expected modeling responses.

Modeling procedures in the treatment of adults have been applied in too few studies, among which are Sherman (1965) and Wilson and Walters (1966). According to Bandura (1969):

...this is all the more surprising considering that a majority of the chronic cases suffer from debilitating behavior deficits which must be overcome if they are to function effectively in community life (p. 158).

The present study will attempt to demonstrate that modeling procedures can be effectively utilized to teach discharged psychiatric patients fundamental social skills. Based on previous research, especially in the area of social interaction, the modeling procedures will be combined with reinforcement practices to determine their usefulness in social interaction learning. This combination should serve to
maximize the observation learning effect as well as performance learning effect.

Summary

It is concluded from this review of literature that one of the critical factors in the readjustment problems of discharged psychiatric patients is the deficiency in social interactions. Since traditional hospital programs have proven inadequate, the present study offers an innovative treatment program which stresses training in social skills in a community-based facility. This training program will attempt to demonstrate that learning principles can be utilized in behavior modification. Modeling procedures will be combined with reinforcement practices to determine their effectiveness in learning social interaction skills.
CHAPTER III

METHOD

Introduction

The methodology of the present study is presented in the following order. First, the social learning program will be discussed including related modeling procedures and reinforcement procedures. The next section will deal with the selection of subjects in this study. A third section on treatment will discuss subject assignments to treatment groups and the training procedures. Another section on criterion measures will involve a discussion of the rating procedure and specification of the criterion variables. The last section will concern the analysis of data.

Social Learning Program

The Social Learning Program (Appendix B) was designed to facilitate social interaction in former psychiatric patients by training in basic social skills. The program was arranged in three sessions, lasting about thirty minutes each, and emphasizing a dimension of dyadic social behavior. Each session, or sequence, was composed of a series of social skill exercises which were presented in a progressive order of difficulty. The direction of the training of the various skills proceeded from the impersonal and object-oriented topics to subjective and person-oriented situations. This was based on the
rationale that former psychiatric patients might find it easier to engage in topics that related to impersonal objects before they could "comfortably" handle more personal material. Using objects as stimuli was accomplished in Sequence I by directing attention to the objects in the room: chairs, tables, color of the walls, and pictures on the walls. In Sequences II and III the object-stimuli introduced were ill-defined and "ambiguous" in order to elicit several different opinions and feelings regarding the nature, function or purpose of the object. These "projectives" included: an unopened can without a label; a twelve-inch red plastic tube; a flat wire brush; a fancy-wrapped package; and a box of camphor balls. In addition, a series of pictures were introduced, similar to the Thematic Apperception Test pictures, which were vague and ambiguous enough to elicit different descriptions and outcomes.

Sequence I focused mainly on nonverbal and verbal approach behavior preparatory to extended interactions. Nonverbal approach behavior was presented within the training context as: (1) move to within two feet of the person you are going to talk to; (2) face him; (3) look him in the eyes (eye contact). The general aim of the nonverbal approach components was to make the trainees aware that body movement, position, facial expression and eye contact are important indices of social communication. They are intended to indicate, in a general, introductory manner, "I am interested in interacting with you" or the opposite message, "I am not interested in interacting with you". The
importance of putting oneself in a strategically communicative position was stressed to the subjects in order to convey interest and attentiveness in the other person. It was viewed as a necessary condition to further verbal interchanges. The face-to-face stance and eye contact was a particularly necessary basic exercise for the psychiatric patient who has had long years of non-communicating and avoiding social contact in the mental hospital. The verbal introductory behavior consisted of verbalized greetings, personal introductions and appropriate responses. The latter part of Sequence I included briefing in skills involved in initiating interactions other than the greeting behavior. The use of questions was introduced to demonstrate seeking information, expanding social interchange by open-ended questions, and the use of questions to maintain interest.

Sequence II reviewed the material in the first session and then continued to extend maintenance skills in social intercourse. It included training in the use of expressing one's opinion as well as attending to and understanding the opinions communicated by others. Sentences were prefaced with "I think" or "You think". They progressed in graduated approximations, as demonstrated by the modeling, from impersonal, objective subject matter to more personal and introspective opinions.

Sequence III reviewed again the skills advanced in the first two sessions and continued with the skills involved in the maintenance of social interaction. The training focused on the communication of how
one feels about something as well as attending to how the other person feels about something. The training in "I feel" and "You feel" communication skills proceeded from subjects dealing with external objects such as the weather, the color of the wall, a picture, to the expression of feelings about persons.

**Modeling procedures.** The methodology employed in the social learning training program relied on a modeling and reinforcement paradigm. Laboratory and field studies have yielded promising findings that an effective program of behavioral modification is one in which trainers model the behaviors they wish their subjects to acquire (Lovaas, 1966; Risley and Wolf, 1967; Bandura, 1969). Furthermore, such studies indicate that innovative behavior as well as generalization of behavioral orientations can be transmitted through the medium of modeling cues. Within this study, the contingent responses of each modeling episode were arranged in a hierarchy beginning with simple and short responses and gradually increasing in length and complexity. Thus the modeling in essence aimed to shape the subjects' behavior in the direction of desired outcome of response.

There is also ample evidence indicating that awareness of response reinforcement contingencies can significantly expedite behavioral change (Ayllon and Azrin, 1964). According to the cognitive view (Dunlany, 1962, 1968; Speilberger and Denike, 1966), awareness is considered a prerequisite for learning and improvement in performance.
In view of this, the present research attempted to maximize the facilitative influence of the predisposed set to observational learning in the following way: each modeling sample was preceded and succeeded by the experimenter who acted as the "coordinator" in identifying the pertinent response contingencies for each training exercise.

Two persons, a male and a female, were selected to perform both as models and reinforcers in the study. The male was a 25-year old college senior. The female was a 37-year old Neighborhood Aide Counselor who worked in the Outreach Counseling Center. Previous studies (Bandura, Ross and Ross, 1963; Ofstad, 1967; Rosenblith, 1959) had found differential probabilities of reinforcement occur with sex differences between the model and the emulator. Therefore, in order to maintain some degree of model-observer identification, both a male and a female model were utilized.

A period of pre-training of the model-reinforcers included familiarization with the modeling script for each of the three sequences, and with the requirements of the response-contingent behavior and appropriate reinforcement. This included the verbal reinforcements as well as the token rewards. Each model-reinforcer had a copy of the modeling script and the accorded reinforcements for contingent responses.

Reinforcement procedures. Following the widely used practice of applying reinforcement practices in the modification of gross behavior disorders, a systematic method of positive reinforcement was applied to establish desired modes of response. In acknowledgement of the value
of appropriately powerful incentives to initiate and sustain new behavioral development, two kinds of reinforcers were given; one, a positive and social verbal reinforcer such as "That was well done," or "You are doing a good job" accompanied by the reinforcer's attention to the subject; two, a specified number of credits or tokens which were later exchangable for a choice of cigarettes, candy or potato chips. In this way both verbal and material reinforcements were utilized.

The material rewards were presented through the use of a token incentive system. The reinforced subject was given a token card representing a particular number of earned credits. The subject accumulated credits, or tokens, during each training session. The tokens were exchanged after the post-observation period of that session for object reinforcement. He could then choose from three kinds of rewards: cigarettes, candy or potato chips.

There was one exception to the delayed token exchange system. In order to insure full understanding and confidence in the token system, all the subjects were presented at the beginning of each meeting with a specified number of tokens along with the explanation that "This is your reward for coming to the meeting". The token was then immediately cashed in for one of the three rewards in order to provide: (1) rewards for attending; and (2) reinforcement of the token exchange system. Also, in an attempt to counteract the expected high drop-out rate of psychiatric subjects when used in research,
estimated from thirty to forty-five percent, there was an incentive system for attendance. Subjects were informed that the token credits for attendance would increase for each session; i.e., two tokens for Sequence I, three tokens for Sequence II, and four tokens for Sequence III.

The subject who was a non-reinforced participant (Treatment Group 2) was not rewarded after his performance but received a prescribed number of tokens for role participation. These tokens were exchanged for object rewards at the same time the other subjects "cashed-in". The subject (Treatment Group 3) who was a non-reinforced observer was informed that his "job" as recorder would bring him tokens at the end of the post-observation period of each session and could be exchanged along with the other subjects. Thus the response of the Group 2 and Group 3 subjects were not contingent to any reinforcement, but they received the same number of tokens. However, in order to motivate and sustain the attentiveness of these subjects to relevant stimulus behavior of the models, they could anticipate post-session rewards. In the case of the reinforced participant (Group 1), the contingency between specific performance response and reinforcing consequence was prearranged. This subject was accordingly instructed to expect a token-reinforcement immediately upon demonstrating the required response in the subject dyadic interaction. Thereupon, the Group 1 subjects only experienced reinforcement contingent upon specific response and such reinforcement scheduling was immediate and one hundred percent.
The reinforcements were bestowed at the designated times by the model-reinforcer assigned to the triad.

Subjects

A total of twenty-four discharged psychiatric patients were contacted for participation in this study. Fourteen of these patients were discharged from the Leeds' Veterans Administration Hospital and ten from the Northampton State Hospital. The group consisted of sixteen males and eight females between the ages of twenty-five and fifty-four years of age. Although the number and length of previous hospitalizations varied, no one subject after his last discharge had been out of the hospital less than one month or more than six months. The periods of hospitalization for these patients ranged from six to twenty-two years. The criteria used for disposition from the mental hospital were: (1) the patient be free of acute psychopathology; (2) the patient has "reasonably" good contact with reality; (3) the patient be capable of assuming at least limited self-management of his welfare. The only limitations imposed on the selection of patient-subjects were: (1) patients must not be diagnosed or suspected of brain damage or mental retardation; (2) patients upon last discharge must be living alone, in a community-based facility.

The subjects were contacted in two different ways. The veterans hospital patients were approached at one of their weekly meetings. The purpose and the nature of the study were presented in a short "talk"
and volunteers were requested. Those patients that agreed to participate in the research were signed up and told they would be contacted in two weeks. The state hospital discharges were outpatients in an outreach counseling center. Each one was contacted individually by his counselor and asked if he wanted to participate in the Social Learning Program. If he agreed, he was told he would be contacted again within two weeks. A notification (Appendix A) followed indicating the date, time and place of the initial training session.

Treatments

**Assignment of subjects.** The subjects were randomly assigned to one of three treatment conditions: (1) a Reinforced Participant Group; (2) a Non-reinforced Participant Group; (3) a Non-reinforced Observer Group.

Subjects in Group 1 and Group 2 functioned as participants in imitating the social behavior that was presented in a modeling format. However, only Group 1 subjects were positively reinforced after performing those responses which matched the modeling behavior. The Group 2 subjects did not receive any response-contingent reinforcement. The subjects in Group 3 were observers only to the modeling. They were not given any opportunity to match the modeling behavior during the training session proper nor did they receive any positive-contingent reinforcement.

During each training session, one subject from Group 1, one
subject from Group 2, and one subject from Group 3 worked together as a triad. Two triads or six subjects, two from each treatment group, were trained in a single session. A Group 1 subject and a Group 2 subject functioned as a dyad in matching the previously modeled interaction, while the Group 3 subjects were observers to the dyads and to the models.

The training program involved three training sessions, one session scheduled each day for three consecutive days. On one given day, each training sequence was thus presented four different times to four different training groups in order to accommodate two triads of experimental subjects at each sitting. The limit of six subjects, or two triads per training session, was necessary in order to satisfy the factor of immediate response-reinforcement required in the present research design. An increase in trainees per session would have inserted a waiting-to-respond factor which might contaminate the experimental variable. The present arrangement allowed immediate matching behavior by the subjects and immediate reinforcement when it was appropriate.

Training procedures. Each training sequence consisted of two triads or six subjects, two model-reinforcers, and a coordinator. The experimenter acted as coordinator of the various parts of the training program. The sessions proceeded as follows:

1. Subjects were directed to the observation room for a ten-minute pre-observation rating period. In Sequence I,
subjects were given general instructions concerning the program and its procedures.

2. Subjects were then redirected to the adjoining training laboratory and were instructed by the coordinator as to their roles during the training period. Group 1 subjects and Group 2 subjects were identified as participants in the dyadic interactions. Group 3 subjects were identified as observers, given a record form and told their function was to record the number of verbalizations of the members of their group. The differential procedure for reinforcement was explained. Group 1 subjects would receive immediate social and token-reinforcement for their performance. Group 2 and Group 3 subjects would not receive any reinforcement until the end of the session.

3. The coordinator identified the response contingent behavior in the ensuing modeling interaction.

4. Two model-reinforcers demonstrated the social behavior exercise.

5. The coordinator again identified the response contingent behavior in the preceding modeling exercise.

6. Group 1 and Group 2 subjects imitated the modeling.

7. Immediate reinforcement for Group 1 subject presented by designated model-reinforcer.

8. Steps 3 through 7 were repeated for each one of the program exercises.
9. At the end of the session, subjects were redirected to the observation room for the post-observation period.

10. At the end of the post-observation period, Group 2 and Group 3 subjects were given token reinforcements by the model-reinforcers.

11. The subjects returned to the training laboratory to exchange the tokens for material rewards.

Criterion Measurement

The purpose of this study required an evaluation of the effect of the training program in social learning on the acquisition of social skills in discharged psychiatric patients. Therefore, the research design provided for a ten-minute observation period immediately preceding and succeeding each training session during which the social interaction of the subjects was observed and rated. Two triads or six subjects participating in each training session were directed to a room adjoining the training laboratory for each one of the six observation periods.

The first observation period served as a base line and was subsequently compared to the outcome ratings of the three post-observation periods. Each subject thereby was his own control in the experiment as well as adding to the group results.

Rating procedures. The raters used in the study were trained in
observation of unit behavior for two weeks prior to the actual subject training. A total of six raters were selected as each subject was assigned the same rater throughout the six observation periods. Thus each rater observed a total of four subjects, each subject rated six times.

The raters selected were non-professional "Neighborhood Aides" who were working as community counselors in the Outreach Counseling Centers in Springfield, Massachusetts. They had received a year of training in fundamentals of counseling theory and techniques through the Para-Psychiatric Training Program, which was funded by a WIN grant from the Manpower Training Act. For the past ten months they were working as Outreach Counselors in follow-up treatment for patients discharged from the Northampton State Hospital. The raters that were selected for the present study, however, were not involved and did not know any of the patients who participated in the research program.

The raters were pre-trained in behavioral observations in accordance with the directions used in Bales Interaction Process Analysis (Bales, 1970). A modified version of the directions for scoring interactions is given in Appendix C. The raters learned the eight criterion variables used in the study and repeatedly observed and rated role-playing dyadic interactions in terms of the criterion variables. They learned to record the ratings on the Rater's Interaction Scoring Form (Appendix D). The training continued for two weeks until the raters reached a required standard of rater-reliability of
+ .75. The rater reliability score for each criterion variable was obtained by an intraclass correlation (Ebel, R. in Guilford, 1954, p. 395) and is presented in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intraclass Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nonverbal approach</td>
<td>.88</td>
</tr>
<tr>
<td>2. Greeting behavior</td>
<td>.89</td>
</tr>
<tr>
<td>3. Initiation of interaction</td>
<td>.91</td>
</tr>
<tr>
<td>4. Asking questions</td>
<td>.83</td>
</tr>
<tr>
<td>5. Opinion statements</td>
<td>.79</td>
</tr>
<tr>
<td>6. Feeling statements</td>
<td>.78</td>
</tr>
</tbody>
</table>

Table 1
Intraclass Correlations Between Raters
For Each Criterion Variable

During the actual observation periods, each subject was assigned a letter, A, B, C, D, E, or F, which was indicated on a card and pinned to his clothing throughout the entire session. In this way the raters could easily identify the subjects by letters and record the substance as well as the subjects involved in the interaction.

The minute intervals of the ten-minute observation periods were denoted by a timekeeper striking a gong. One of the model-reinforcers
in the adjoining laboratory acted as timekeeper during the observation period. Each rater recorded the time signal as it occurred on the rater observation form.

**Criterion variables.** A total of eight criterion variables were specified to measure the effect of the training program. These criteria were used to rate the patients' behavior during the observation period. They measured social skills in initiation and maintenance of social interaction. The criterion variables specified in this study are:

1. Nonverbal approach behavior - includes appropriate body movement, position and eye contact as necessary components of effective communication on a nonverbal level.

2. Greeting behavior - includes such introductory remarks as "Hello," "Hi," "How are you?" and responses such as "I am fine," "Good," "Things are okay," etc. Personal introductions and introducing a third party such as "Hi, my name is Bill" and appropriate response such as "Hi, Bill. My name is John". Also introducing a third party such as "Bill, I'd like you to meet my friend, Joe" and appropriate response: "Hi, Joe. I'm glad to meet you."

3. Initiation of interaction - refers to the number of times the subject initiated or started a verbal interchange.

4. Asking questions - refers to the substantive aspect of the interchange in terms of the number of utterances that can be
5. Opinion statements - refers to the substantive aspect of the interchange in terms of the number of utterances made by the subject that can be classified as giving an opinion; i.e., "I think the food in the cafeteria is good" or "You think that the room is too small." Statements denoting opinions without the introductory phrase of "I think" or "You think" are still rated as opinions.

6. Feeling statements - refers to the substantive aspect of the verbal interchange in terms of the number of utterances made by the subject that can be classified as a communication of feeling; i.e., "I feel I am learning something" or "You feel angry at being kept waiting". Statements denoting feelings without the introductory phrase of "I feel" or "You feel" were also rated as feelings.

7. Interchanges - refers to the total number of verbalizations recorded during the observation period.

8. Person-to-person - refers to the number of different persons the subject interacted with during the observation period.

Analysis of Data

A trend analysis of variance was used to analyze the data. For each one of the twenty-four subjects there were eight criterion measures.
In addition, there were three differential scores for each criterion variable based on the difference between the baseline measurement in observation period 1 and post-observation periods 1, 2 and 3. Thus each criterion measure was compared three times for each subject.

The mean scores of the three treatment groups and the three sequences of the training program were analyzed for each of the criterion variables for significant differences. This was performed by a 3600 CDC computer.

An F value was obtained for each measure and interpreted for statistical significance from a table of F values. A post hoc comparison of mean difference of groups and treatments was made to determine where the differences existed.
CHAPTER IV

RESULTS

An analysis of variance, trend analysis design, was used to test the hypotheses in this study. For each analysis in which significant differences were found, a Newman-Keuls test of ordered means was applied (Winer, 1962). An F test for differences among variances was also performed for each criterion measure.

A summary Table 1A for the eight criterion variables has been included in Appendix E. It presents the base rates, means, variances, and standard deviations of the groups, Reinforced Participant Group, Non-reinforced Participant Group, and Non-reinforced Observer Group, and of the three sequences of the social learning program. In addition, the table includes the base rate means as determined by the pre-observation period in Sequence I for each of the groups, for each criterion variable.

The statistical analyses are presented separately for each of the eight criterion variables.

Nonverbal Approach Behavior

The hypotheses tested regarding nonverbal approach behavior were:

Hypothesis 1: There are no significant differences in nonverbal approach behavior between the three groups.

Hypothesis 2: There are no significant differences in nonverbal approach behavior between the three treatments.

Hypothesis 3: There are no significant interaction effects in
nonverbal approach behavior between groups and treatments.

The means, variances and standard deviations for Reinforced Participant Group, Non-reinforced Participant Group and Non-reinforced Observer Group, and for Sequence I, Sequence II and Sequence III of the training program for nonverbal approach behavior have been presented in Table 2.

Table 2
Means, Variances and Standard Deviations of Nonverbal Approach Behavior for Groups and for Treatments

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Variance</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforced Participant Group</td>
<td>0.08</td>
<td>11.12</td>
<td>3.34</td>
</tr>
<tr>
<td>Non-reinforced Participant Group</td>
<td>0.13</td>
<td>1.24</td>
<td>1.12</td>
</tr>
<tr>
<td>Non-reinforced Observer Group</td>
<td>0.29</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Sequence I</td>
<td>1.00</td>
<td>9.57</td>
<td>3.09</td>
</tr>
<tr>
<td>Sequence II</td>
<td>-0.08</td>
<td>1.82</td>
<td>1.35</td>
</tr>
<tr>
<td>Sequence III</td>
<td>-0.42</td>
<td>.86</td>
<td>.93</td>
</tr>
</tbody>
</table>

A trend analysis of variance was performed to test Hypotheses 1, 2 and 3. Results of this analysis appear in Table 3.
Results presented in Table 3 indicate Hypothesis 1 was not rejected. No significant differences existed between the means of each of the three groups in terms of nonverbal approach behavior. Hypothesis 2, however, was rejected. A significant difference (\(p < .025\)) was found between the means of each of the three treatments as measured by nonverbal approach behavior. A Newman-Keuls test for ordered means was performed to determine where the differences existed. The results of this analysis have been presented in Table 4.
Table 4

Newman-Keuls Test for Ordered Means of Treatment for Nonverbal Approach Behavior

<table>
<thead>
<tr>
<th>Ordered Means</th>
<th>Sequence III</th>
<th>Sequence II</th>
<th>Sequence I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.42</td>
<td>-0.08</td>
<td>1.00</td>
</tr>
<tr>
<td>$S_3$</td>
<td>$S_2$</td>
<td>$S_1$</td>
<td></td>
</tr>
</tbody>
</table>

Differences Between Sequence Means

<table>
<thead>
<tr>
<th>Differences Between Sequence Means</th>
<th>$S_3$</th>
<th>0.34</th>
<th>1.42*</th>
</tr>
</thead>
<tbody>
<tr>
<td>$S_2$</td>
<td></td>
<td>1.08</td>
<td></td>
</tr>
<tr>
<td>$S_1$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p = <0.05

A significant difference (p= <0.05) occurred between two of the ordered means, Sequence I versus Sequence III of the training program. Subjects demonstrated greater learning of nonverbal approach behavior in Sequence I than in Sequence III. No significant differences existed between Sequence II and Sequence I.

Hypothesis 3 was not rejected. There were no significant interaction effects, as measured by nonverbal approach behavior, between groups and treatments.

Greeting Behavior

The hypotheses tested regarding greeting behavior were:

Hypothesis 4: There are no significant differences in greeting behavior between the three groups.

Hypothesis 5: There are no significant differences in greeting behavior between the three treatments.
Hypothesis 6: There are no significant interaction effects in greeting behavior between groups and treatments.

The means, variances and standard deviations for Reinforced Participant Group, Non-reinforced Participant Group and Non-reinforced Observer Group, and for Sequence I, Sequence II and Sequence III of the training program for greeting behavior have been presented in Table 5.

Table 5

Means, Variances and Standard Deviations of Greeting Behavior for Groups and for Treatments

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Variance</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforced Participant Group</td>
<td>.42</td>
<td>1.91</td>
<td>1.38</td>
</tr>
<tr>
<td>Non-reinforced Participant Group</td>
<td>.08</td>
<td>.34</td>
<td>.58</td>
</tr>
<tr>
<td>Non-reinforced Observer Group</td>
<td>.17</td>
<td>.32</td>
<td>.56</td>
</tr>
<tr>
<td>Sequence I</td>
<td>.83</td>
<td>1.71</td>
<td>1.31</td>
</tr>
<tr>
<td>Sequence II</td>
<td>.00</td>
<td>.17</td>
<td>.42</td>
</tr>
<tr>
<td>Sequence III</td>
<td>-.17</td>
<td>.14</td>
<td>.38</td>
</tr>
</tbody>
</table>

A trend analysis of variance was performed to test Hypotheses 4, 5 and 6. Results of this analysis appear in Table 6.
Table 6
Analysis of Variance for the Difference Between Groups and Between Treatments for Greeting Behavior with Repeated Measures on Treatments

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>2</td>
<td>1.44</td>
<td>.72</td>
<td>2.68</td>
</tr>
<tr>
<td>Subjects within groups</td>
<td>21</td>
<td>5.67</td>
<td>.27</td>
<td></td>
</tr>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>2</td>
<td>13.78</td>
<td>6.89</td>
<td>8.81****</td>
</tr>
<tr>
<td>Groups x Treatments</td>
<td>4</td>
<td>6.72</td>
<td>1.68</td>
<td>2.15</td>
</tr>
<tr>
<td>Subjects within Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>x Treatments</td>
<td>42</td>
<td>32.83</td>
<td>.78</td>
<td></td>
</tr>
</tbody>
</table>

****p=*.001

As the results in Table 6 indicate, Hypothesis 4 was not rejected. No significant differences existed between the means of each of the three groups as measured by greeting behavior. Hypothesis 5 was rejected. A significant difference (p=*.001) did exist between the means of each of the three treatments with respect to greeting behavior. A Newman-Keuls test for ordered means was performed to determine where the differences existed. The results of this analysis are presented in Table 7.
Table 7
Neuman-Keuls Test for Ordered Means of Treatment for Greeting Behavior

<table>
<thead>
<tr>
<th>Ordered Means</th>
<th>Sequence III</th>
<th>Sequence II</th>
<th>Sequence I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(-.17)</td>
<td>.00</td>
<td>.83</td>
</tr>
<tr>
<td>Differences</td>
<td>(S_3)</td>
<td>(S_2)</td>
<td>(S_1)</td>
</tr>
<tr>
<td>Between Means</td>
<td>(S_3)</td>
<td>.17</td>
<td>1.17**</td>
</tr>
<tr>
<td></td>
<td>(S_2)</td>
<td></td>
<td>.83**</td>
</tr>
</tbody>
</table>

***\(p < .01\)

A significant difference occurred between three of the ordered means, Sequence I versus Sequence III and Sequence I versus Sequence II of the training program, both at the .01 level of significance. Subjects demonstrated greater learning of greeting behavior in Sequence I as compared to Sequences II and III.

Hypothesis 6 was not rejected. There were no significant interaction effects, as measured by greeting behavior, between groups and treatments.

Initiation Behavior

The hypotheses tested regarding initiation behavior were:

Hypothesis 7: There are no significant differences in initiation behavior between the three groups.

Hypothesis 8: There are no significant differences in initiation behavior between the three treatments.
Hypothesis 9: There are no significant interaction effects in initiation behavior between groups and treatments.

The means, variances and standard deviations for Reinforced Participant Group, Non-reinforced Participant Group and Non-reinforced Observer Group, and for Sequence I, Sequence II and Sequence III of the training program for initiation behavior have been presented in Table 8.

Table 8

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Variance</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforced Participant Group</td>
<td>1.58</td>
<td>23.99</td>
<td>4.90</td>
</tr>
<tr>
<td>Non-reinforced Participant Group</td>
<td>2.42</td>
<td>14.95</td>
<td>3.87</td>
</tr>
<tr>
<td>Non-reinforced Observer Group</td>
<td>4.50</td>
<td>29.39</td>
<td>5.42</td>
</tr>
<tr>
<td>Sequence I</td>
<td>3.33</td>
<td>18.49</td>
<td>4.30</td>
</tr>
<tr>
<td>Sequence II</td>
<td>3.00</td>
<td>31.13</td>
<td>5.58</td>
</tr>
<tr>
<td>Sequence III</td>
<td>2.17</td>
<td>22.67</td>
<td>4.76</td>
</tr>
</tbody>
</table>

A trend analysis of variance was performed to test Hypotheses 7, 8 and 9. Results of this analysis appear in Table 9.
Table 9
Analysis of Variance for the Difference Between Groups and Between Treatments for Initiation Behavior with Repeated Measures on Treatments

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>2</td>
<td>108.33</td>
<td>54.17</td>
<td>1.23</td>
</tr>
<tr>
<td>Subjects within groups</td>
<td>21</td>
<td>923.33</td>
<td>44.02</td>
<td></td>
</tr>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>2</td>
<td>17.33</td>
<td>8.67</td>
<td>.73</td>
</tr>
<tr>
<td>Groups x Treatments</td>
<td>4</td>
<td>130.58</td>
<td>32.65</td>
<td>2.75*</td>
</tr>
<tr>
<td>Subjects within Groups x Treatments</td>
<td>42</td>
<td>499.42</td>
<td>11.89</td>
<td></td>
</tr>
</tbody>
</table>

*p = <.05

As the results in Table 9 indicate, Hypothesis 7 was not rejected. No significant differences existed between the means of each of the three groups as measured by initiation behavior. Hypothesis 8 was also not rejected. No significant differences existed between the means of each of the three treatments in respect to initiation behavior. Hypothesis 9 was rejected. The interaction effect between the groups and the treatments was significant at the .05 level of significance as measured by initiation behavior. Tests of simple main effects (Winer, 1962) were performed to determine where the differences existed. The results of this analysis are presented in Table 10.
Table 10

Test of Simple Main Effects of Interaction Between Groups and Treatments as Measured by Initiation Behavior

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups within Sequence I</td>
<td>2</td>
<td>42.60</td>
<td>21.30</td>
<td>24.1***</td>
</tr>
<tr>
<td>Error Group at Sequence I</td>
<td>63</td>
<td>55.91</td>
<td>.89</td>
<td></td>
</tr>
<tr>
<td>Groups within Sequence II</td>
<td>2</td>
<td>69.7</td>
<td>34.80</td>
<td>39.2***</td>
</tr>
<tr>
<td>Error Group at Sequence II</td>
<td>63</td>
<td>55.91</td>
<td>.89</td>
<td></td>
</tr>
<tr>
<td>Groups within Sequence III</td>
<td>2</td>
<td>126.6</td>
<td>21.30</td>
<td>71.3***</td>
</tr>
<tr>
<td>Error Group at Sequence III</td>
<td>63</td>
<td>55.91</td>
<td>.89</td>
<td></td>
</tr>
<tr>
<td>Sequence I within Group 1</td>
<td>2</td>
<td>129.20</td>
<td>64.60</td>
<td>5.43*</td>
</tr>
<tr>
<td>Error Sequence at Group 1</td>
<td>42</td>
<td>499.42</td>
<td>11.89</td>
<td></td>
</tr>
<tr>
<td>Sequence II within Group 2</td>
<td>2</td>
<td>11.10</td>
<td>5.55</td>
<td>.47</td>
</tr>
<tr>
<td>Error Sequence at Group 2</td>
<td>42</td>
<td>499.42</td>
<td>11.89</td>
<td></td>
</tr>
<tr>
<td>Sequence III within Group 3</td>
<td>2</td>
<td>7.80</td>
<td>3.90</td>
<td>.33</td>
</tr>
<tr>
<td>Error Sequence at Group 3</td>
<td>42</td>
<td>499.42</td>
<td>11.89</td>
<td></td>
</tr>
</tbody>
</table>

*p = .05
***p = .01

Results of the analysis in Table 10 indicate significant simple main effects for groups within Sequence I (p = .01), for groups within Sequence II (p = .01), and for groups within Sequence III (p < .01). However, for sequences within groups, only Sequence I in Group 1, the Reinforced Participant Group, showed a significant simple main effect (p = .05). Sequences within Group 2, Non-reinforced Participant Group, and sequences within Group 3, Non-reinforced Observer Group, were not significant. Thus the interaction effect is primarily due to differences between sequences within Group 1, Reinforced Participant Group.
A graphic overview of the interaction effect between treatments and groups is presented in Figure 1.

Fig. 1. Means of Treatment Groups 1, 2, and 3 in Initiation Behavior for Sequence I, Sequence II, and Sequence III.
Questioning Behavior

The hypotheses tested regarding questioning behavior were:

Hypothesis 10: There are no significant differences in questioning behavior between the three groups.

Hypothesis 11: There are no significant differences in questioning behavior between the three treatments.

Hypothesis 12: There are no significant interaction effects in questioning behavior between groups and treatments.

The means, variances and standard deviations for Reinforced Participant Group, Non-reinforced Participant Group, and Non-reinforced Observer Group, and for Sequence I, Sequence II and Sequence III of the training program for questioning behavior have been presented in Table 11.

Table 11
Means, Variances and Standard Deviations of Questioning Behavior for Groups and for Treatments

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Variance</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforced Participant Group</td>
<td>1.58</td>
<td>17.04</td>
<td>4.13</td>
</tr>
<tr>
<td>Non-reinforced Participant Group</td>
<td>2.42</td>
<td>44.51</td>
<td>6.67</td>
</tr>
<tr>
<td>Non-reinforced Observer Group</td>
<td>3.58</td>
<td>21.30</td>
<td>4.61</td>
</tr>
<tr>
<td>Sequence I</td>
<td>3.67</td>
<td>26.23</td>
<td>5.12</td>
</tr>
<tr>
<td>Sequence II</td>
<td>3.04</td>
<td>43.69</td>
<td>6.61</td>
</tr>
<tr>
<td>Sequence III</td>
<td>.88</td>
<td>10.55</td>
<td>3.25</td>
</tr>
</tbody>
</table>
A trend analysis of variance was performed to test Hypotheses 10, 11 and 12. Results of this analysis appear in Table 12.

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>2</td>
<td>48.44</td>
<td>24.22</td>
<td>.47</td>
</tr>
<tr>
<td>Subjects within Groups</td>
<td>21</td>
<td>1287.50</td>
<td>61.31</td>
<td></td>
</tr>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>2</td>
<td>103.03</td>
<td>51.51</td>
<td>4.56**</td>
</tr>
<tr>
<td>Groups x Treatments</td>
<td>4</td>
<td>37.47</td>
<td>9.37</td>
<td>.82</td>
</tr>
<tr>
<td>Subjects within Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>x Treatments</td>
<td>42</td>
<td>477.50</td>
<td>11.37</td>
<td></td>
</tr>
</tbody>
</table>

**p<0.025

As the results in Table 12 indicate, Hypothesis 10 was not rejected. No significant differences existed between the means of each of the three groups as measured by questioning behavior. Hypothesis 11 was rejected. A significant difference (p<0.025) did exist between the means of each of the three treatments with respect to questioning behavior. A Newman-Keuls test for ordered means was performed to determine where the differences existed. The results of this analysis are presented in Table 13.
### Table 13

Newman-Keuls Test for Ordered Means of Treatments for Questioning Behavior

<table>
<thead>
<tr>
<th>Ordered Means</th>
<th>Sequence III</th>
<th>Sequence II</th>
<th>Sequence I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.88</td>
<td>3.04</td>
<td>3.67</td>
</tr>
<tr>
<td>$S_3$</td>
<td></td>
<td>$S_2$</td>
<td>$S_1$</td>
</tr>
<tr>
<td>Differences</td>
<td></td>
<td>2.16*</td>
<td>2.79*</td>
</tr>
<tr>
<td>Between Means</td>
<td>$S_3$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sequence Means</td>
<td>$S_2$</td>
<td></td>
<td>.63</td>
</tr>
</tbody>
</table>

$p = <.05$

Significant differences occurred between two of the ordered means, Sequence I versus Sequence III and Sequence II versus Sequence III of the training program at the .05 level of significance. Subjects thus demonstrated greater learning of questioning behavior in Sequence I as compared to Sequence III and Sequence II as compared to Sequence III.

Hypothesis 12 was not rejected. There were no significant interaction effects as measured by questioning behavior between groups and treatments.

### Opinion Behavior

The hypotheses tested regarding opinion behavior were:

**Hypothesis 13**: There are no significant differences in opinion behavior between the three groups.

**Hypothesis 14**: There are no significant differences in opinion behavior between the three treatments.

**Hypothesis 15**: There are no significant interaction effects in opinion behavior between groups and treatments.
The means, variances and standard deviations for Reinforced Participant Group, Non-reinforced Participant Group and Non-reinforced Observer Group, and for Sequence I, Sequence II and Sequence III of the training program for opinion behavior have been presented in Table 14.

Table 14

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Variance</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforced Participant Group</td>
<td>.21</td>
<td>33.48</td>
<td>5.79</td>
</tr>
<tr>
<td>Non-reinforced Participant Group</td>
<td>4.13</td>
<td>39.24</td>
<td>6.26</td>
</tr>
<tr>
<td>Non-reinforced Observer Group</td>
<td>3.96</td>
<td>9.69</td>
<td>3.11</td>
</tr>
<tr>
<td>Sequence I</td>
<td>2.25</td>
<td>26.63</td>
<td>5.16</td>
</tr>
<tr>
<td>Sequence II</td>
<td>4.25</td>
<td>33.76</td>
<td>5.81</td>
</tr>
<tr>
<td>Sequence III</td>
<td>1.79</td>
<td>28.69</td>
<td>5.36</td>
</tr>
</tbody>
</table>

A trend analysis of variance was performed to test Hypotheses 13, 14 and 15. Results of this analysis appear in Table 15.
Table 15

Analysis of Variance for the Difference Between Groups and Between Treatments for Opinion Behavior with Repeated Measures on Treatments

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>2</td>
<td>235.44</td>
<td>117.72</td>
<td>2.18</td>
</tr>
<tr>
<td>Subjects within Groups</td>
<td>21</td>
<td>1136.21</td>
<td>54.11</td>
<td></td>
</tr>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>2</td>
<td>82.03</td>
<td>41.01</td>
<td>2.93</td>
</tr>
<tr>
<td>Groups x Treatments</td>
<td>4</td>
<td>88.89</td>
<td>22.22</td>
<td>1.59</td>
</tr>
<tr>
<td>Subjects within Groups x Treatments</td>
<td>42</td>
<td>588.42</td>
<td>14.01</td>
<td></td>
</tr>
</tbody>
</table>

As the results in Table 15 indicate, Hypothesis 13 was not rejected. No significant differences existed between the means of each of the three groups as measured by opinion behavior. Hypothesis 14 was not rejected. No significant differences existed between the means of each of the three treatments as measured by opinion behavior. Hypothesis 15 was not rejected. There were no significant interaction effects as measured by opinion behavior between groups and treatments.

Feeling Statements

The hypotheses tested regarding feeling statements were:

Hypothesis 16: There are no significant differences in feeling statements between the three groups.

Hypothesis 17: There are no significant differences in feeling statements between the three treatments.
Hypothesis 18: There are no significant interaction effects in feeling statements between groups and treatments.

The means, variances and standard deviations for Reinforced Participant Group, Non-reinforced Participant Group and Non-reinforced Observer Group, and for Sequence I, Sequence II and Sequence III of the training program for feeling statements have been presented in Table 16.

Table 16

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Variance</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforced Participant Group</td>
<td>5.67</td>
<td>323.88</td>
<td>18.00</td>
</tr>
<tr>
<td>Non-reinforced Participant Group</td>
<td>11.21</td>
<td>183.22</td>
<td>13.54</td>
</tr>
<tr>
<td>Non-reinforced Observer Group</td>
<td>14.50</td>
<td>166.09</td>
<td>12.89</td>
</tr>
<tr>
<td>Sequence I</td>
<td>1.38</td>
<td>6.42</td>
<td>2.53</td>
</tr>
<tr>
<td>Sequence II</td>
<td>1.58</td>
<td>18.69</td>
<td>4.32</td>
</tr>
<tr>
<td>Sequence III</td>
<td>2.92</td>
<td>19.82</td>
<td>4.45</td>
</tr>
</tbody>
</table>

A trend analysis of variance was performed to test Hypotheses 16, 17 and 18. Results of this analysis appear in Table 17.
Table 17

Analysis of Variance for the Difference Between Groups and Between Treatments for Feeling Statements with Repeated Measures on Treatments

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>2</td>
<td>19.00</td>
<td>9.50</td>
<td>.32</td>
</tr>
<tr>
<td>Subjects within groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>2</td>
<td>33.58</td>
<td>16.79</td>
<td>1.96</td>
</tr>
<tr>
<td>Groups x Treatments</td>
<td>4</td>
<td>23.17</td>
<td>5.79</td>
<td>.68</td>
</tr>
<tr>
<td>Subjects within Groups</td>
<td>42</td>
<td>359.25</td>
<td>8.55</td>
<td></td>
</tr>
<tr>
<td>x Treatments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As the results in Table 17 indicate, Hypothesis 16 was not rejected. No significant differences existed between the means of each of the three groups as measured by feeling statements. Hypothesis 17 was not rejected. No significant differences existed between the means of each of the three treatments as measured by feeling statements. Hypothesis 18 was not rejected. There were no significant interaction effects as measured by feeling statements between groups and treatments.

Number of Verbal Exchanges

The hypotheses tested regarding number of verbal exchanges were:

Hypothesis 19: There are no significant differences in the number of verbal exchanges between the three groups.

Hypothesis 20: There are no significant differences in the number of verbal exchanges between the three treatments.
Hypothesis 21: There are no significant interaction effects in the number of verbal exchanges between groups and treatments.

The means, variances and standard deviations for Reinforced Participant Group, Non-reinforced Participant Group, and Non-reinforced Observer Group, and for Sequence I, Sequence II, and Sequence III of the training program for number of verbal exchanges have been presented in Table 18.

Table 18

Means, Variances and Standard Deviations of the Number of Verbal Exchanges for Groups and for Treatments

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Variance</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforced Participant Group</td>
<td>2.54</td>
<td>27.22</td>
<td>5.22</td>
</tr>
<tr>
<td>Non-reinforced Participant Group</td>
<td>2.04</td>
<td>14.22</td>
<td>3.77</td>
</tr>
<tr>
<td>Non-reinforced Observer Group</td>
<td>1.29</td>
<td>4.13</td>
<td>2.03</td>
</tr>
<tr>
<td>Sequence I</td>
<td>12.21</td>
<td>237.13</td>
<td>15.40</td>
</tr>
<tr>
<td>Sequence II</td>
<td>11.92</td>
<td>276.69</td>
<td>16.63</td>
</tr>
<tr>
<td>Sequence III</td>
<td>7.25</td>
<td>184.80</td>
<td>13.59</td>
</tr>
</tbody>
</table>

A trend analysis of variance was performed to test Hypotheses 19, 20 and 21. Results of this analysis appear in Table 19.
Table 19

Analysis of Variance for the Difference Between Groups and Between Treatments for the Number of Verbal Exchanges with Repeated Measures on Treatments

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>2</td>
<td>956.58</td>
<td>478.29</td>
<td>.92</td>
</tr>
<tr>
<td>Subjects within Groups</td>
<td>21</td>
<td>10904.63</td>
<td>519.27</td>
<td></td>
</tr>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>2</td>
<td>371.58</td>
<td>185.79</td>
<td>2.05</td>
</tr>
<tr>
<td>Groups x Treatments</td>
<td>4</td>
<td>397.08</td>
<td>99.27</td>
<td>1.09</td>
</tr>
<tr>
<td>Subjects within Groups x Treatments</td>
<td>42</td>
<td>3810.00</td>
<td>90.71</td>
<td></td>
</tr>
</tbody>
</table>

As the results in Table 19 indicate, Hypothesis 19 was not rejected. No significant differences existed between the means of each of the three groups as measured by the number of verbal exchanges. Hypothesis 20 was not rejected. No significant differences existed between the means of each of the three treatments as measured by the number of verbal exchanges. Hypothesis 21 was not rejected. There were no significant interaction effects, as measured by the number of verbal exchanges, between groups and treatments.

Number of Persons Subject Interacted With

The hypotheses tested regarding the number of persons subject interacted with were:

Hypothesis 22: There are no significant differences in the number of persons subject interacted with between the three groups.
Hypothesis 23: There are no significant differences in the number of persons subject interacted with between the three treatments.

Hypothesis 24: There are no significant interaction effects in the number of persons subject interacted with between groups and treatments.

The means, variances and standard deviations for Reinforced Participant Group, Non-reinforced Participant Group, and Non-reinforced Observer Group, and for Sequence I, Sequence II and Sequence III of the training program for number of persons subject interacted with have been presented in Table 20.

Table 20

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Variance</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforced Participant Group</td>
<td>1.08</td>
<td>1.73</td>
<td>1.32</td>
</tr>
<tr>
<td>Non-reinforced Participant Group</td>
<td>1.08</td>
<td>1.47</td>
<td>1.21</td>
</tr>
<tr>
<td>Non-reinforced Observer Group</td>
<td>1.42</td>
<td>1.64</td>
<td>1.28</td>
</tr>
<tr>
<td>Sequence I</td>
<td>1.04</td>
<td>1.61</td>
<td>1.27</td>
</tr>
<tr>
<td>Sequence II</td>
<td>1.38</td>
<td>1.72</td>
<td>1.31</td>
</tr>
<tr>
<td>Sequence III</td>
<td>1.17</td>
<td>1.54</td>
<td>1.24</td>
</tr>
</tbody>
</table>

A trend analysis of variance was performed to test Hypotheses 22, 23 and 24. Results of this analysis appear in Table 21.
Table 21

Analysis of Variance for the Difference Between Groups and Between Treatments with Repeated Measures on Treatments for the Number of Persons Subject Interacted With

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>2</td>
<td>1.78</td>
<td>.89</td>
<td>.30</td>
</tr>
<tr>
<td>Subjects within Groups</td>
<td>21</td>
<td>62.17</td>
<td>2.96</td>
<td></td>
</tr>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>2</td>
<td>1.36</td>
<td>.68</td>
<td>.60</td>
</tr>
<tr>
<td>Groups x Treatments</td>
<td>4</td>
<td>.64</td>
<td>.16</td>
<td>.14</td>
</tr>
<tr>
<td>Subjects within Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>x Treatments</td>
<td>42</td>
<td>47.33</td>
<td>1.13</td>
<td></td>
</tr>
</tbody>
</table>

As the results in Table 21 indicate, Hypothesis 22 was not rejected. No significant differences existed between the means of each of the three groups as measured by the number of persons subject interacted with. Hypothesis 23 was not rejected. No significant differences existed between the means of each of the three treatments as measured by the number of persons subject interacted with. Hypothesis 24 was not rejected. There were no significant interaction effects as measured by the number of persons subject interacted with between groups and treatments.
CHAPTER V

DISCUSSION

The main purpose of this study was to investigate the application of learning principles, namely reinforcement and modeling principles, in the acquisition of social skills by discharged psychiatric patients. A secondary purpose was the development of a social learning program in which specific skills of social behavior were specified and evaluated as social skills criteria and utilized in the training of the discharged psychiatric patients.

Four major problems were assessed in this study:

1. Development of a program in social learning to teach basic social skills. The program consisted of a graduated series of exercises which (a) increased in level of difficulty, and (b) proceeded from object-oriented to person-oriented subject matter.


3. Exploration and specification of social skill criteria that are applicable to former psychiatric patients.

4. Development of methods of observation of treatment and treatment effects and ascertaining the reliability of the methods.

The following hypotheses were tested to compare the three groups and the effects of the three sequences of the social learning program:
1. There are no significant differences, as measured by each of the criterion variables, between the three treatment groups: (a) reinforced participation in imitation learning; (b) non-reinforced participation in imitation learning; (c) non-reinforced observation in imitation learning.

2. There are no significant differences, as measured by each of the criterion variables, between the effects of the three sequences of the social learning program; Sequence I, Sequence II, and Sequence III.

3. There are no significant interaction effects, as measured by each of the criterion variables, between groups and sequences.

Hypothesis 1. In testing Hypothesis 1, it was concluded that no significant differences, as measured by any of the criterion variables, existed between the three groups: (a) reinforced participation in imitation learning; (b) non-reinforced participation in imitation learning; (c) non-reinforced observation in imitation learning. Thus, this study failed to confirm the notion that reinforcement of social skills in patients is more effective than participation and observation.

The absence of a main effect of the reinforcement procedures, used in the differential treatment groups, is at variance with previous research findings (Harris, Wolf and Baer, 1964; Ayllon and Azrin, 1965; Ayllon and Michael, 1959). Several possible reasons emerge. First, it is recognized that the reinforcing agent is one of the essential features of the reinforcement process (Bandura and Walter, 1963;
Krasner and Ullman, 1966). The attitude toward the reinforcing agent by the receiver of the reinforcement is important in helping to establish optimal motivating conditions for behavior modification. Investigators such as Patterson, Sarason, and Krasner (Krasner and Ullman, 1966) contend that the human reinforcer is a major issue in reinforcement processes. Staats (1963) suggests that the reinforcement cannot be separated from the "giver" of reinforcement.

The factors that are important to an effective reinforcing agent include his status, his ability to discriminate responses to be reinforced according to the design of the study, his ability to dispense the reinforcements for appropriate responses, and a sufficient time factor in which the subject can become aware of these important features of the reinforcing agent. In this study some of these factors may have been lacking which in turn interfered with the reinforcement process. First, the status of the reinforcing agent may not have been perceived by the subject. One of the reinforcing agents was a female para-professional counselor who was not directly involved with the patients at the Outreach Counseling Center and may not have been identified in a prestigious way by the subjects. A second reinforcing agent was a male college student. Since this individual was not a professional member of the regular staff of the counseling center, he too may not have been regarded as a prestige figure by the subjects. Second, inaccurate discriminations by the reinforcing agent may have been made and inappropriate dispensation of reinforcements may have occurred due to the limited period of pretraining for the reinforcing
agent. Finally, the total program may have been too short to permit the conditioning to effectively take place and generalize to the observation periods.

The second reason which may explain the lack of significance between treatment groups involves the procedures of reinforcement. For the Reinforced Participant Group, social reinforcements such as "That was well done" and token rewards were presented immediately after successful completion of desired behavior during the training period. No reinforcements were given to the Reinforced Participant Group during the observation period which followed the training period. The use of a continuous schedule of immediate reinforcement during the training period, followed by a period of no reinforcement for the same kind of behavior, may have been a factor in the reduced performance of skills during the observation period for the Reinforced Participant Group. In other words, the reinforced subjects may have learned to expect rewards during the training period. Thus they might have become conditioned to expect no rewards during the succeeding observation period and thus their performance subsequently decreased in the post-observation period. For the Non-reinforced Participant Group and the Non-reinforced Observer Group, the post-observation period may have merged into the training procedure since tokens were given immediately after the post-observation period to the Non-reinforced Participant and the Non-reinforced Observer Groups. These tokens were not given to the Reinforced Participant Group after their observation period. Ferster and Skinner (1957) found that subjects who are rewarded at the time when they exhibit the desired
behavior "are likely to increase responsiveness for a brief period of time and then to display a rapid decrease in performance" when the reinforcement is completely withdrawn (Bandura, 1969, p. 27).

It is also important to note the wide variability of the Reinforced Participant Group as compared to the Non-reinforced Participant and Non-reinforced Observer Groups. Although the subjects had been randomly assigned to the three treatment groups, the large variance within the Reinforced Participant Group, coupled with the limited number of subjects in this study, allows the possibility that (a) true randomization did not occur or (b) other unknown factors were operating in the Reinforced Participant Group which did not affect the Non-reinforced Participant and Non-reinforced Observer Groups. Added to these possibilities is the fact that the Reinforced Participant Group demonstrated less learning in Sequence II and Sequence III as compared to the other two groups, Non-reinforced Participant and Non-reinforced Observer Groups. As noted in the previous discussion, the responses of the Reinforced Participant Group may not have generalized to the post-observation periods whereas the responses of the Non-reinforced Participant Group and the Non-reinforced Observer Group may have generalized to post-observation periods of Sequence II and Sequence III.

A further explanation of the absence of significant differences between the Reinforced Participant Group and the Non-reinforced Participant Group and the Non-reinforced Observer Group involves the reinforcement process itself. Considering the many complex elements involved in social interaction, the question can be raised whether response-contingent reinforcement was operative in the present study. A one-trial matching response of a complex response category may not
have resulted in response conditioning, but instead resulted in responses to the social stimuli that were presented in the modeling paradigm. Furthermore, the modeling paradigm and matching subject behavior included a dyadic interaction in which each individual presented a set of social stimuli which elicited responses from the other. The subjects in this study may have learned to respond to social stimuli in the dyadic interaction, a kind of relational learning, rather than conditioning of subjects as a result of response-contingent reinforcement. Therefore, the possibility exists that the Reinforced Participant Group was not conditioned to the environmental contingencies in the training period and thus generalization did not occur for the Reinforced Participant Group in the post-observation period.

Another important factor relating to a comparison of the Reinforced Participant, the Non-reinforced Participant, and the Observer Groups is the token economy method used in the study. Token economies have been successful in programs developing self-management skills. It is important to note, however, that these programs lasted for several months. The present study may have been too short to impart the concept of tokens to the subjects in a realistic manner. Tokens were presented to all the subjects as rewards for attendance soon after their arrival in the training room. The tokens were then immediately exchanged for material rewards; i.e., food, cigarettes. However, one token exchange experience may have been inadequate in establishing the tokens as secondary reinforcers and thus reduced the effectiveness of the token economy.

An additional factor, which may have confounded the results, is the presentation of token rewards to the Non-reinforced Participant Group and the Non-reinforced Observer Group at the end of the post-observation
period. These tokens were given for attendance and role participation in the program. The importance of this factor will be discussed in the Hypothesis 3, interaction section.

Furthermore, the material reinforcements that were used in the study may not have been powerful enough to act as incentives in the modification of behavior. The reinforcements, cigarettes, candy and potato chips, were perhaps too easily available to the subjects and therefore not perceived as inducements for behavior change. During the token exchange, three of the subjects did refuse to take any material rewards. The reasons given were: "I don't smoke," "I can't have anything sweet," or simply, "I don't care for any, thank you." For these subjects, the incentives were practically useless; for the rest of the subjects, the reinforcements may not have been strong enough to provide the motivation for behavior change.

Another area of concern in this study was a comparison between the participant groups and the observer group. In examining the findings of this study, it appears that there was no significant difference between the Reinforced Participant Group, the Non-reinforced Participant Group and the Non-reinforced Observer Group. It could be argued from this finding that the subjects who were in the Non-reinforced Participant Group may have reached a point of saturation in performing the social skills during the training periods and were thus disinclined to continue to practice these behaviors during the post-observation period. The lack of response by these subjects during the post-observation period may have been counter-balanced by the increase in response of the subjects in the Non-reinforced Observer Group during the post-observation period. These subjects did not have any opportunity to perform these skills during the training period, and thus were ready to perform during the post-observation period. Also,
the subject-observers had the advantage of observing the desired behavior demonstrated first by the models and, second, by the subject-participants who were positively reinforced for reproducing the modeled behavior. Thus the observers were exposed twice to the modeling exercises, whereas the subject-participants observed these skills once and performed these skills once. Michael and Macoby (1961) found that covert rehearsal may enhance the retention of matching responses. Therefore, in the present study the lack of differences between the groups may have been a result of a balancing-out effect between the "saturation" effect of the subject-participants and the "double exposure" effect of the subject-observers.

Lastly, the absence of a main effect between the Reinforced Participant Group and the Non-reinforced Participant and Observer Groups may be due to a weak generalization effect of the conditioning process. If the conditioning of the reinforced participant subjects in the social learning program produced only a slight conditioning effect, then the generalization of response would subsequently be slight or nonexistent. Williams (1964) discusses the issue of generalization of verbal conditioning in terms of stimulus similarity, reinforcement principles and a form of role retraining shaped by environmental demands. Bandura (1969) suggests that perhaps behavioral changes established in a training situation must be supplemented with generalization training in order to ensure adequate transfer effects.

**Hypothesis 2.** In testing Hypothesis 2, there were differential results in significance between the sequences of the training program as measured by the criterion variables. No significant differences
were found between sequences for initiation behavior, opinion statements, statements of feeling, number of verbal interchanges, and number of persons subject interacted with. Significant differences were found between sequences for nonverbal approach behavior, questioning behavior and greeting behavior. All subjects demonstrated greater learning of nonverbal approach behavior in Sequence I as compared to Sequence II and Sequence III. All subjects demonstrated greater learning of questioning behavior in Sequence I as compared to Sequence II and Sequence III. All subjects demonstrated greater learning of greeting behavior in Sequence I as compared to Sequence II and Sequence III. Thus Sequence I of the social learning program was more effective than Sequence II and Sequence III in teaching the social skills of nonverbal approach behavior, greeting behavior and questioning behavior.

An additional consideration which may account for the differential learning between sequences may be attributed to two factors: (1) order of presentation of the social skills and (2) the wide range of social skill categories presented in the three-day social learning program. According to learning principles, initial tasks are learned quicker than succeeding ones. The order of presentation may have had a bearing on the results, especially for psychiatric subjects who were limited in their social repertoire. Moreover, the focus of Sequence I was on introductory social behavior; the focus in Sequence II was on maintaining social interaction by sharing opinions; the focus of Sequence III was on maintaining social interaction by expressing feelings. The difficulty in learning the social skills presented in Sequence II and
Sequence III of the social learning program may be related to the many complex factors that are involved in performance of these skills. Bandura (1969) states:

...accurate behavioral enactment of modeling cues is also difficult to achieve under conditions where the model's performance is governed by subtle adjustments of internal responses that are unobservable and not easily communicable (p. 142).

The introductory skills presented in Sequence I were simple, concrete, observable and easily reproduced. They were impersonal in nature and required minimal involvement in a social interaction. On the other hand, skills presented in Sequence II related to expressing opinions and feelings may have made greater demands on the subjects. To express an opinion a speaker must be able to understand the topic, make a judgment and then be willing to express and share this judgment with the listeners. At the same time the speaker commits himself to a particular position or attitude. Communicating feelings involves an overt expression of a covert experience, personal in nature and involving some degree of intensity of affect. Presentation of the skills involving self-expression and commitments may have been too premature for patients in this program.

**Hypothesis 3.** In testing Hypothesis 3 there was only one significant interaction effect at the .05 level of significance between the effects of sequences and groups on initiation of behavior. The interaction between sequences and groups was due primarily to one main source of variance differences between the sequences of the social learning program within the Reinforced Participant Group. Thus
the greatest amount of social skill learning was of initiation behavior found for the Reinforced Participant Group of Sequence I. The least amount of social skill learning of initiation behavior was found for the Non-reinforced Participant and the Non-reinforced Observer Groups in Sequence I as compared to Sequence II and Sequence III. The reversal phenomena for the Reinforced Participant Group was significant only in the learning of the other social skills. This may have been due to the fact that initiation of behavior was not a specific qualitative social skill as greetings or expressing opinions. Initiation was a functional behavior which focused on how to begin a social interaction as well as the subjective experience of beginning a social interaction. In view of the finding that the Reinforced Participant Group reduced their performance during the post-observation period of Sequence II, the initiation behavior would subsequently decrease. Conversely, the Non-reinforced Participant Group and Non-reinforced Observer Group, whose responses increased in the post-observation period of Sequence II, would subsequently show an increase in the number of social skills which were initiated.

Conclusions drawn from this finding indicate that the Non-reinforced Participant Group improved in initiation skills from Sequence I to Sequence II in the same direction as the Non-reinforced Observer Group. The Reinforced Participant Group did not show an increase in learning, but showed a decrease in learning from Sequence I to Sequence II (see Figure 1. on page 65). The reinforcement factor, one of the experimental variables between the three groups, interacted with the training sequence in such a way as to cause this reversal.

This might be explained by the fact that the Non-reinforced Participant Group and the Non-reinforced Observer Group received token rewards at the end of the post-observation period for their attendance and role
participation. They did not receive any reinforcememnts, social or token, during the training period. However, in the Reinforced Participant Group social and token reinforcement were contingent upon subject behavior during the training program, whereas they did not receive any social or token reinforcement at the end of the post-observation period. Thus the Non-reinforced Participant and the Non-reinforced Observer Groups may have erroneously associated the reinforcement with the post-observation periods and accordingly increased their performance of learned social skills during Sequence II and Sequence III as compared to Sequence I. On the other hand, the Reinforced Participant Group, having experienced in Sequence I a "payoff" during training and no "payoff" during the post-observation period may have quickly discerned the post-observation period as "unprofitable" (no reinforcement) and accordingly reduced their performance of the learned social skills during the post-observation period in Sequence II and Sequence III as compared to Sequence I.

Therefore, the performance of the groups during the post-observation period would appear to be influenced by the confounding of the reinforcement variable. In the case of the interaction effect found for the criterion variable, initiation of behavior, there appears to be an inhibition of performance learning for the Reinforced Participant Group and a facilitation of performance learning for the Non-reinforced Participant and Observer Groups between Sequence I and Sequence II.

Conclusions

One of the expectations of this study was that the variables of reinforcement would produce greater differences in social behavior than the variables of participation and observation in modeling procedures. The study failed to support this expectation. In relation to the sequence
variables and the criterion variables, there were significant results in initiation behavior, greeting behavior, nonverbal approach behavior and questioning behavior. Several conclusions have been drawn from this study.

First, a preliminary period prior to the initiation of the training is necessary to allow the psychiatric patient to "get to know" the training personnel. The reinforcing agent should actively generate a positive and respectful attitude from the subjects in order to effectively administer social and material reinforcements. Secondly, the reinforcement in the training period should be distinctly disconnected from performance in the observation and evaluation period. Response-contingent reinforcement should be clearly differentiated from rewards for extraneous factors such as attendance in the program. To accomplish this end, the training and observation should take place in separate rooms, as was done in the present study. Also, the observation should not immediately follow the training session. A short time period between training and evaluation of training would serve to eliminate any erroneous associations relating to reinforcements presented in the training period. Thirdly, by extending the social learning program in length and over time, a token economy could be more effectively established. Experience with tokens, cashing-in, accumulating token credits and self-management of tokens are some of the advantages of a successfully operating token economy. Finally, the material rewards chosen as reinforcements must be appropriate and appealing enough to serve as strong incentives for behavior change. Items that are not easily available to patients housed in a community facility would probably be more desirable.

In comparison to traditional treatment modes, the live modeling procedures utilized in the study appeared to be an appropriate method of demonstrating desired social behavior to psychiatric subjects. The results
confirm other research findings (Krasner and Ullman, 1963) in that observation of another person's behavior may represent an important way psychiatric subjects can learn social skills. Modeling a progressively ordered series of exercises in social skills can shape the subject's behavioral response in the direction of the desired goal. Subject performance in imitation learning, according to this study, did not indicate any significant advantages as compared to observation only in imitation learning. However, combining modeling with suggested changes in reinforcement practices may result in some significant differences between performance learning and observation learning of social skills.

With regard to the program aspect of this study, it was also concluded that a training program to teach social skills to chronic patients can be developed, and social skill criteria can be specified to evaluate the effect of training. The following conclusions based on the data were made:

First, the social learning program should be extended in the number and length of training sessions. The range of social skills to be taught in the program should be limited. The thirty minutes of training in each sequence should be increased to about forty-five minutes and should include a larger number of practice exercises. The total program should include a larger number of practice exercises. The total program should continue for at least several weeks to several months, depending on the rate of learning of the particular group of chronic patients and on the social skills to be taught. Chronic patients who had long years of hospitalization cannot be expected to demonstrate significant behavior changes within a short period of time, and furthermore, these changes cannot be expected to endure and generalize to other situations.
Secondly, too wide a variety of social skills were attempted in one program. The present study indicated significant treatment results in Sequence I for the introductory skills. Such skills as nonverbal approach behavior, greeting behavior and questioning behavior were effectively "picked up" by the subjects. The reinforced participant group added initiation of behavior to their social skills. These four social skills comprise the introductory phase of social interaction. Training psychiatric patients in these skills appeared to be appropriate and within the learning capabilities of the patients. Social skill training in other aspects of social interaction should probably be considered more advanced and complex.

Training in social skills should be postponed until the basic introductory skills are mastered. The present program included maintenance skills in social interaction such as sharing opinions in Sequence II and expressing feelings in Sequence III, but no significant learning was indicated. These social skills were more difficult to observe, to discriminate, and thus difficult to reproduce by the subjects. The skills which were unitary, concrete, and easily demonstrated, such as greeting behavior, were quickly reproduced by the subjects. It may also be argued that imitating a model's opinion statements or expressions of feelings that are contrary to the attitude or the feeling state of the subject, was too demanding and too difficult for the patients. For example, a patient who was feeling depressed and sad would find it impossible to empathize with a model's expression of happy, gay, optimistic feelings. Thus the presentation of learning tasks should be systematically arranged in order of complexity. The
training should proceed at a slow pace starting with fundamental introductory skills and advancing slowly to more complicated social behavior, including categories of differences in opinions and in feelings between the models and the subjects.

Thirdly, the subject matter of the training exercises was an important feature. The subjects effectively worked with object-oriented topics before dealing with person-oriented modeling exercises. The gradual progression of exercises from objective and impersonal to subjective and personal permitted the subjects to slowly work toward more relevant and realistic material. Furthermore, from the results of the study, modifications were suggested in the areas of the application of principles of reinforcement, principles of modeling and principles of generalization. These issues will be discussed in suggestions for further research.

Significance of the Study

In regard to the major findings of this study, the study demonstrated that a social learning program is effective in teaching certain social skills. Furthermore, this study demonstrated that the program can be adapted to train a particular subject population, namely chronic psychiatric patients in a community-based facility. The study also developed methods of observation and evaluation of the outcome of the training by measuring specified social skill criteria. Lastly, the study investigated the use of learning principles in the acquisition of social skills. The implication of these developments are numerous.
There are several therapeutic uses for the current program. The first use relates to the original purpose of the study, that is, to develop innovative community-based treatment programs for the socially incompetent discharged chronic patient. If the range and nature of the deficiencies in social behavior of the chronic patient can be defined and specified in terms of social skill criteria, then these former patients can be trained in specific social skills to help facilitate readjustment to the community and reduce the chances of relapse and readmission. The training program can also function as an adjunct treatment program with a hospitalized chronic patient. This training could be modified in terms of the dominant problem area of the patient. For example, training would emphasize a renewal of social interest and involvement in preparation of future discharge for the patient. A further modification of the program could function as a component of group psychotherapy, teaching introductory skills to facilitate the effects of psychotherapy.

Lastly, it appears from the findings of the study that outcome measures of observation and frequency can be developed. This finding holds some suggested use for future outcome studies. In the study specification of social skill criteria permitted trained raters to observe and measure the effectiveness of training in social behavior. Raters can be trained within a reasonable period of time to observe behavior in terms of specific criterion variables in order to standardize and objectify the evaluation. The study demonstrated the effective use of nonprofessional mental health workers as training personnel in the social learning program. Many subjects can therefore
be involved in a social learning program which can be administered in large part by nonprofessionals, thus avoiding the problem of a lack of psychiatric professionals for treatment programs.

Limitations of the Study

There were ten major limitations indicated:

1. The term reinforcement used in an operant conditioning paradigm generally refers to rewards which are made conditional upon occurrence of the desired response in order to increase the frequency of the response during the conditioning process. In the present study, reinforcement was contingent upon a single demonstration of the appropriate response but no conditioning measures were provided during the training period to increase the frequency of response of each exercise. Therefore, a distinction should be made that the term reinforcement as used in the training of the subjects in the present study is limited to stimulus reinforcement and does not include reinforcing measures which purport to increase the frequency of response during training.

2. What is the duration of any behavior changes noted in the study? The present program operated for three days. Pre-observation periods for Sequence II and Sequence III, the second and third days of the program, indicated some carryover of learning from the previous day. However, further research is needed to investigate the duration factor of social skill learning.

3. What is the effect of the model's attributes such as sex and age in imitation learning with psychiatric patients? (Previous studies have found characteristics of models important in the process of vicarious learning.) The present study selected one male and one female adult to participate in the modeling procedure. The effects
of model attributes on psychiatric subjects remain to be demonstrated.

5. Does the learning of basic social skills generalize to more complex social interactions? The social learning program in this study was limited to basic social skill criteria. Further research is needed to demonstrate the effect of basic social skills on the learning of more involved social interactions.

6. What is the relationship between improvement in social skills and community adjustment of psychiatric patients? The purpose of the development of a social learning program is to advance community readjustment of the discharged patient. Whether such programs facilitate community adjustment is an important subject for future investigation.

7. Can training in social learning be extended to populations other than the chronic psychiatric population? The generalizability of the present study from the psychiatric population to other populations remains to be researched.

8. What is the effect of social reinforcement versus material reinforcement in social learning? It is necessary to determine the results of varying reinforcers in the training of social skills. The present study, however, did not attempt to explore any differential effects.

9. Are there any differential effects between reinforcing agents in terms of their capacity to elicit positive and respectful attitudes from subjects to whom they administer reinforcements in the training of social skills? It is evident from the findings of this study that the "sociability" of the reinforcing agents
upon the subject was an important factor in the reinforcement procedures. Further research will have to investigate the characteristics of an effective reinforcing agent.

10. The present investigation did not explore the possibility that the results of this study, which indicated significant differences between sequences in nonverbal approach behavior, greeting behavior and questioning behavior, may be due to factors comparable to the Hawthorne effect. The subjects may have responded to the extra attention, interest and special privileges afforded by participation in the experiment, rather than to the training procedures of reinforcement and modeling. Further research is needed to determine the influence of the Hawthorne effect on the social behavior of psychiatric patients.

Suggestions for Further Research

The possibilities for future research are numerous. First, the present study should be replicated along the lines of the suggested modifications in procedures that resulted from the present investigation. These include the following areas:

1. New sequences of the training program should be developed in accordance with the findings of the present study in order to maximize the learning of appropriate social skills.

2. The arrangement and makeup of the groups can be further studied. Triads were used in the current program. Perhaps a group structure can be devised to allow more subjects to be trained at one sitting. At the same time, the effect of the size of the training group should be explored to determine the maximum and minimum sized groups for effective training.

3. Reinforcement methods require further investigation to reveal the
advantages and limitations of various practices on the learning behavior of the subjects.

4. Schedules of reinforcement, as noted in this study, are a critical factor in conditioning. Further testing is needed of varying reinforcement schedules to determine the effect on social learning.

5. The length of the program and its individual sequences should be studied in order to develop the optimal conditions for social learning.

6. Investigations related to the reinforcers are needed to determine the positive, neutral and negative effects of the different incentives that could be used. Furthermore, the availability of such information would help to explore the schedules of reinforcement in order to maximize the conditions for learning.

7. Tokens as secondary reinforcers and token economies require further investigation in relation to the present program. Knowledge concerning the presentation of tokens, especially in terms of the time and place, to effectively reinforce the desired behavior would add to the usefulness of the training program.

8. Further investigation of the criteria of social behavior is needed to expand programs of social learning. Identification of specific skills and the arrangement of the training procedures in terms of these skills would greatly enhance the effect of social learning programs, possibly leading to specialized programs for special populations.

There are many further implications for future research that involve the problems of post-hospital adjustment of the psychiatric patient. Since
the big "push" is on to discharge chronic mental patients into the community, the need exists to introduce innovative programs to assist in the patient's reestablishing himself in the community. Social learning programs involving group reinforced contingencies might prove effective in the area of social interaction. Specialized programs in social behavior could be adapted to the inpatient shortly after first admission in order to avoid the debilitating effect of long-term hospitalization. Investigation of the usefulness of a social learning program presented to hospital patients awaiting discharge could prove to be a transitional bridge between the hospital and the community. Adaptation of a social learning program as a pretraining experience to further group therapy might yield fruitful results.

Research should also be expanded to investigate the possibility of developing programs of social learning to groups other than psychiatric populations. Retardates, the elderly, physically handicapped, adolescents are some of the populations that would benefit from training in social skills.

Lastly, research is needed to extend the social learning program to a series of programs in which subjects advance from one level of training to the next in terms of a wide variety of social skills. With all the problems in social adjustment in all age groups in all walks of life, a "school of social education" might be considered not too unreasonable an idea.
REFERENCES


Litwack, Lawrence; Getson, Russell; Saltzman, Glenn: Research in counseling. Itasia, Ill.: F. E. Peacock Publ., Inc., 1968.


Malzberg, Benjamin: Is there a relative increase in mental disease? J. Nerv. and Mental Diseases 87: No. 5, 1938.

Marlatt, G.A.: Exposure to a model and task ambiguity as determinants of verbal behavior in an interview. Paper read at the Western Psychological Association Meeting, San Diego, April, 1968.


Wolpe, J. and Lazarus, A.A.: Behavior therapy techniques. New York:


APPENDIX A.
Hi

We will meet on Tuesday, Wednesday and Thursday; June 2, 3, 4 at o'clock in meeting room on fifth floor.

See you there.

Mickey Leviton
APPENDIX B.
APPENDIX B.
BASIC FORMAT OF SOCIAL INTERACTION LABORATORY

A. Introductory interaction:

Non-verbal
a) Move within two feet of person you are going to talk to
b) Face him
c) Look at his face
d) Look him in the eyes — eye contact

Verbal
a) Minimal stimulus - response interchange
   \[ A \rightarrow B \rightarrow A \]
   \[ 1 \rightarrow 1 \rightarrow 1 \]

3. Extend number of verbal interchanges (interaction sequence)
   a) One interchange \[ A \rightarrow B \rightarrow A \]
   b) Two interchanges \[ A \rightarrow B \rightarrow A \rightarrow B \]
   c) Three interchanges \[ A \rightarrow B \rightarrow A \rightarrow B \rightarrow A \rightarrow B \]
   d) Four and more \[ A \rightarrow B \rightarrow A \rightarrow B \]

2. Extend length or duration of each individual verbal responses
   a) Short phrase
   b) Two statements or sentences
   c) Three statements or more

3. Initiating interaction
   a) Ask a question — information
   b) Make a suggestion
   c) Give your opinion — Begin with "I think"
   d) Begin with "I feel"

4. Maintain interaction
   a) Respond to what was just said by:
      1) i.e., "You said"
         "You think"
         "You feel"
   b) Respond to what was just said by:
      1) i.e., "I think"
         "I feel"
      2) Ask a question
Session 1

A. **Evaluation of base-line social interactions.**

Six subjects directed by two trainers into a room to be used for the training program. Chairs are arranged in a circle.

Trainer announces: "We need a few minutes to get things ready so please be seated and talk amongst yourselves until we begin."

Two raters check and record the verbal and non-verbal interactions of the waiting subjects for a period of 5-10 minutes.

B. **Brief introduction to subjects.**

I am pleased to see all of you here today. This is our first meeting, and we will have two more, one tomorrow, Wednesday, and the last one on Thursday.

The purpose of this program is to make for better social relationships. People often have difficulty in talking to and in understanding other people so that sometimes a person finds being alone is less troublesome than talking to others. So we are going to learn and have a chance to practice better social interactions. The fun part is that you will be rewarded for coming here and for participating.

For example, to start, I am going to give each of you a bar of candy (or 5 cigarettes), special ticket or token for coming here and joining us. As I explain later what we will do, I will tell you about ways of getting more rewards.

First, let me introduce some people who will be helpers. This is ___________ and ___________. They will first act out and show you sort of like a model, what to do. Then two of you together will copy or imitate what the models have said and how they say it. If
you do it like the model, one of you will get a reward right then; if you do it better than the model, you will get an extra reward. The other person that also copies what the model says and does will not get anything then, but he will get something before the end of each session.

We will also use two of you as observers or watchers. Your job will be, on a special piece of paper that I will give you, to put a check every time the person who is imitating talks. You, too, will get something at the end of each session.

Now, just to explain the reward system or the tickets. When you get a card, it will have a number on it. That stands for a number of points—i.e., 2 pts, 4 pts, etc. At the end of the session, on each one of the three days, you can change these tickets for the real reward. For 10 points, you can change it for a package of cigarettes, 15 points for a box of candy, 8 points for an orange, 6 points for an apple, 20 points for a book, etc. Any questions?

Finally, at the end of each one of the three sessions, we will have some refreshments.

C. Role assignments.

Arrange 6 subjects in two groups of three, indicating the observer and the two participant subjects. Give observer record sheet and pencil and briefly explain his role. Briefly repeat that the two participating dyads will copy the models' dyadic behavior.

D. "You have all listened to instructions so attentively, I am going to give each of you 2 tokens, that you can exchange later as we explained."
I Introductory behavior

Non-Verbal:  a) Approach to about two feet of the person you are going to talk to

b) Face him

c) Look at his face

d) Look him in the eyes - eye contact

Directions:

1) Model carries out one direction at a time while trainer identifies behavior. Subject-model stands still acting as receiver of model's behavior first, followed by imitation of model-trainer behavior. Unitize a,b,c,d.

2) Mod-tr. and mod-sub then carry out entire sequence a,b,c,d of non-verbal introductory behavior

3) 2-Subject interaction
   Reinforce: Verbal plus Tokens

4) Discuss other non-verbal, inviting, friendly behavior; ask group for suggestions:
   smiling, waving, shaking hands, placing hand on shoulder, clapping on back, putting arm around, linking arms, offering cigarett.

5) Repeat with 2 subjects — give tokens for each non-verbal supplementary behavior.
PROGRAM SCRIPT FOR SEQUENCES I, II AND III
SEQUENCE 1.

Exercise 1.

A. Stimulus - nonverbal approach behavior

B. Coordinator: Emphasize modeling cues
   1) Approach to within two feet of person to whom you will talk.
   2) Face him.
   3) Look at his face.
   4) Look him in the eyes.

C. Modeling script - nonverbal approach behavior

D. Coordinator: Repeat B.

E. Reinforcements
   1) Verbal: "That is very good."
   2) Tokens: 1.

Exercise 2.

A. Stimulus - Verbal greeting and introduction

B. Coordinator: Emphasize modeling cues
   1) Greeting.
   2) Name.
   3) Where you live.

C. Modeling script
   \[ A_1: "Hello, my name is \_\_\_."
   B_1: "Hi, \_\_\_. My name is \_\_\_."
   A_2: "I live here at Springfield House, room \_\_\_."
   \]
B₂: "I live at ____ ."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "Well done."

2) Tokens: 2.

Exercise 3.

A. Stimulus - Introducing a third person, your teacher.

B. Coordinator: Emphasize modeling cues

1) Greeting.

2) Name.

C. Modeling script

A₁: "Hi, ____ ."

B₁: "Hello, ____ ."

A₂: "I'd like you to meet ____ , our teacher. This is my friend, ____ ."

B₂: "Hi, ____ . I'm glad to meet you. Are you a real teacher?"

C₁: "Sort of. I teach machine shop. But I am not working now."

A₃: "I'm not working either. I don't know if I can work."

B₃: "I'm going to get into a training program to learn some new trade."

A₄: "I don't know if I want that."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "Very well done."

2) Tokens: 4. (2 verbal, 2 non-verbal)
Exercise 4.

A. Stimulus - Topic: Suppose you don't know where to get the bus to Leeds or Northampton. How would you find out? (Learning to ask questions)

B. Coordinator: Emphasize modeling cues
   1) 2 interchanges: at least 1 question and 1 answer

C. Modeling script
   \[ A_1: "Mister, can you tell me where to get the bus?" \]
   \[ B_1: "What bus do you want?" \]
   \[ A_2: "The bus for (Leeds) near (Northampton)." \]
   \[ B_2: "Well, you go to Main Street bus terminal. It leaves from there." \]
   \[ A_3: "Thank you." \]

D. Coordinator: Repeat B.

E. Reinforcements
   1) Verbal: "Good job."
   2) Tokens: 2.

Exercise 5.

A. Stimulus - Topic: You have a bad toothache and need a dentist. How would you find out where to go?

B. Coordinator: Emphasize modeling cues
   1) 2 interchanges: 1 question

C. Modeling script
   \[ A_1: "Bill, I have a bad toothache. What should I do?" \]
   \[ B_1: "Why don't you go to see Dr. Jones on Maple Street. I hear
he is good."

A₂: "Thanks, Bill."

B₂: "You're welcome."

D. Coordinator: Repeat B.

E. Reinforcements

1. Verbal: "Nice going."
2. Tokens: 2.

Exercise 6.

A. Stimulus - Topic: Ask someone to go for a walk with you.

B. Coordinator: Emphasize modeling cues

1) 3 interchanges

C. Modeling script

A₁: "Hi, Bill."

B₁: "Hello, Joe."

A₂: "Boy, it is a nice day outside. I feel like going for a walk."

B₂: "I think that is a good idea."

A₃: "Would you like to go for a walk with me?"

B₃: "Sure I would."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "Very good job."
2) Tokens: 3.
Exercise 7.

A. Stimulus - Topic: Suppose you are in the T.V. room downstairs and you see someone you know sitting in the other corner of the room. You want to talk to someone and you approach him.

B. Coordinator: Emphasize modeling cues

1) 4 interchanges

C. Modeling script

A₁: Nonverbal positive approach.
B₁: Nonverbal positive response.

A₂: "Hi, _____ How are you?"
B₂: "Hi. I'm okay."

A₃: "Anything good on T.V.?
B₃: "Nah. Nothing really good."

A₄: "Want to watch T.V. or go for a walk with me?"
B₄: "Guess I'll go for a walk with you."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "That was very good."

2) Tokens: 3. (1 non-verbal, 2 verbal)

Exercise 8.

A. Stimulus - Topic: Suppose you are in a bus station or some waiting room. Other people are sitting around you, but you don't know anyone. You are lonely and would like to talk to someone.
B. Coordinator: Emphasize modeling cues

1) 4 interchanges

C. Modeling script

A₁: Nonverbal approach, no touching.
B₁: Nonverbal response, positive or negative.
A₂: "Excuse me, do you mind if I sit here?"
B₂: "Not at all."
A₃: "The buses seem to come in and out of here quite often, don't they?"
B₃: "Yeah. They're pretty busy here."
A₄: "You travel by bus a lot?"
B₄: "Not too much. Usually I take the train."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "Great! Good job."
2) Tokens: 3. (1 non-verbal, 2 verbal)

Exercise 9.

A. Stimulus - Topic: Talk about coming here this morning.

B. Coordinator: Emphasize modeling cues

1) 4 interchanges

C. Modeling script

A₁: "Hello, _____."
B₁: "Hi, _____."
A₂: "You signed up for this program, too."
B₂: "Yeah. I wanted to see what it was all about."
A₃: "It's not too bad."

B₃: "It's better than doing nothing."

A₄: "In fact it is kind of fun. I guess I'll be back tomorrow."

B₄: "Me, too. People treat me nice here."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "Very, very fine."

2) Tokens: 4.
SEQUENCE II.

Exercise 1.

A. Stimulus - Greeting and statement

B. Coordinator: Emphasize modeling cues
   1) Greeting.
   2) Statement.

C. Modeling script
   \(A_1\): "Hi, _____."
   \(B_1\): "Hello, _____."
   \(A_2\): "I am glad to see you here again."
   \(B_2\): "I am glad to see you, too."

D. Coordinator: Repeat B.

E. Reinforcements
   1) Verbal: "Good."
   2) Tokens: 1.

Exercise 2.

A. Stimulus - Expressing a difference of opinion

B. Coordinator: Emphasize modeling cues
   1) 2 interchanges, including "I think"

C. Modeling script
   \(A_1\): "Hi, _____. Mind if I sit here to eat lunch?"
   \(B_1\): "Go ahead. The food here is pretty good."
   \(A_2\): "Well, I think it is actually pretty bad."
   \(B_2\): "Is that right."
D. Coordinator: Repeat B.

E. Reinforcements
   1) Verbal: "Very good."
   2) Tokens: 2 (1 nonverbal and 1 verbal)

Exercise 3.

A. Stimulus - Keeping conversations going after initial greeting-picture of room.
B. Coordinator: Emphasize modeling cues
   1) 3 statements each person
C. Modeling script
   A_1: "This looks like a big meeting room."
   B_1: "Look at the nice table and comfortable chairs."
   A_2: "Everything is so clean."
   B_2: "The color of the walls is nice."
   A_3: "I like the color of the chairs."
   B_5: "Must be for an important meeting."

D. Coordinator: Repeat B.

E. Reinforcements
   1) Verbal: "That was fine."
   2) Tokens: 3.

Exercise 4.

A. Stimulus - Topic: Let's talk about the room we are meeting in now.
B. Coordinator: Emphasize modeling cues
1) 4 interchanges - at least 2 have to start with "I think"

C. Modeling script

A1: "I think this room is a nice size, not too big or too small."
B1: "The size is okay, but I feel it is dull looking."
A2: "I think the windows should have new curtains."
B2: "Yeah. I think the color of the rug is nice."
A3: "But I think the lights are too glaring."
B3: "I think the walls should be painted a bright green."
A4: "I guess I like this room."
B4: "I think it is comfortable."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "That was well done."
2) Tokens: 4.

Exercise 5.

A. Stimulus - Topic: What do you think is in this (unlabeled) can?

B. Coordinator: Emphasize modeling cues

1) 4 interchanges: 3 beginning with "I think", I agree or disagree

C. Modeling script

A1: "Well, it's a very large can."
B1: "Yes, and it sound like a liquid when I shake it."
A2: "I think it is a can of juice."
B2: "I think it is much heavier than that. It might be oil."
A3: "Oh, I don't agree. I think an oil can would be smaller."
B3: "No. Oil cans come in this quart size, too."
A₄: "Well, I think we ought to open it and find out."

B₄: "That's what I think, too."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "That's really good."

2) Tokens: 2.

Exercise 6.

A. Stimulus - Topic: What do you think this is used for?

B. Coordinator: Emphasize modeling cues

1) 4 interchanges: 3 beginning "I think" and 1 agree or disagree

C. Modeling script

A₁: "I think that is a part for a television."

B₁: "I think it is a tube for an old refrigerator."

A₂: "I think it is too light to be part of a car."

B₂: "That's right. Perhaps it is part of a vacuum cleaner."

A₃: "I agree with that. That must be what it is."

B₃: "You don't think it might be part of a filter?"

A₄: "No, I think it must be a vacuum cleaner."

B₄: "Yes. I think that has to be the answer."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "That was very good."

2) Tokens: 3.
Exercise 7.

A. Stimulus - Topic: Talk about where you eat your lunch or dinner.

B. Coordinator: Emphasize modeling cues
   1) 4 interchanges, including 2 "I think"

C. Modeling script
   \[A_1\]: "I eat my lunch here in the Springfield House cafeteria."
   \[B_1\]: "I eat here, too, because it is convenient; but sometimes I
go down to the Waldorf Restaurant."
   \[A_2\]: "I think the food is good here, but the prices are high--like
everywhere."
   \[B_2\]: "I think the apple pie is especially good at this cafeteria,
and so is the coffee."
   \[A_3\]: "But I think they could keep the place a little cleaner. It
needs a paint job."
   \[B_3\]: "Yeah. I think they need more help to keep it clean."
   \[A_4\]: "I think this is a pretty good place to eat. The veal chops
are great."
   \[B_4\]: "I think the little grinder place across the street is good, too."

D. Coordinator: Repeat B.

E. Reinforcements
   1) Verbal: "That was well done."
   2) Tokens: 3.
Exercise 8.

A. Stimulus - Topic: Let's talk about where you live.

B. Coordinator: Emphasize modeling cues
   1) 4-5 interchanges, including 2 "I think"

C. Modeling script
   
   A₁: "I think I live in a pretty good place. I have a room here at Springfield House."
   
   B₁: "My place isn't nice at all. I live in a rooming house on State Street."
   
   A₂: "My room is small, but I have a bed, two chairs, a dresser, mirror and small table."
   
   B₂: "I have a big room, but the furniture is old and needs painting, and the mattress is lumpy."
   
   A₃: "I think Springfield House tries to keep things clean."
   
   B₃: "I have to clean my own room, but I think my rent is cheaper. I pay $5 a week."
   
   A₄: "That is cheaper. I pay $12 and I have to share the bathroom on the floor. I think I would like more privacy."
   
   B₄: "I share the bathroom, too. It is so small and smelly and I don't always have hot water."
   
   A₅: "I guess Springfield House is okay."
   
   B₅: "Maybe I'll move in there, too."

D. Coordinator: Repeat B.

E. Reinforcements
   
   1) Verbal: "That was well done."
   
   2) Tokens: 4.
Exercise 9.

A. Stimulus - Topic: Suppose you meet a friend in the cafeteria. You start to talk. Keep the conversation going between you just talking about television. What could you say? Remember that you are going to communicate your ideas and opinions and are going to show an interest in the other person's opinions.

B. Coordinator: Emphasize modeling cues

1) 4 interchanges, including "I think" and questions

C. Modeling script

A₁: "I think the television this season is not as good as last year."

B₁: "Oh, I think it is just as good, maybe even better."

A₂: "What do you like to watch?"

B₂: "I like the musical shows. I think they get better every year."

A₃: "I guess I like the musical shows, too. Especially if I can watch them on a color set."

B₃: "Don't you like the westerns? I think some of the hour and a half shows are really great."

A₄: "Well, I don't think westerns are my favorite. Do you like to watch the old movies? Some of them are really good."

B₄: "Yeah. In fact there's a good one on tonight. How about watching it with me?"

D. Coordinator: Repeat B.
E. Reinforcements

1) Verbal: "That was just fine."

2) Tokens: 4.
SEQUENCE III

Exercise 1.

A. Stimulus - Topic: What do you think the men are feeling in this picture.

B. Coordinator: Emphasize modeling cues
   1) 2 interchanges, including "He feels"

C. Modeling script
   \[A_1\]: "From what is happening and the expression on his face, I'd say he is feeling pretty good."
   \[B_1\]: "Yeah, this guy looks happy, but the other man looks a little unsure."
   \[A_2\]: "I think he is happy because he feels this is a good thing."
   \[B_2\]: "He wants it, but this other man feels unsure because he doesn't know whether or not he wants this to happen. Maybe he thinks it will hurt him."

D. Coordinator: Repeat B.

E. Reinforcements
   1) Verbal: "That was well done."
   2) Tokens: 2.

Exercise 2.

A. Stimulus - Topic: What do you think this man is feeling?

B. Coordinator: Emphasize modeling cues
   1) 3 interchanges including "He feels"
C. Modeling script

A₁: "He seems to be running from something, or someone. He feels afraid."

B₁: "He is really scared. He's looking over his shoulder as if someone were following. He looks like he was running and almost tripped. Yeah - he's afraid."

A₂: "He is also wondering if he can make it up the hill, and he feels he can't."

B₂: "He is afraid the climb is too steep. He can't move fast enough."

A₃: "He is frightened about something catching up to him."

B₃: "He is afraid he'll get beat up."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "You're doing fine."

2) Tokens: 2.

Exercise 3.

A. Stimulus - Topic: How does this picture make you feel?

B. Coordinator: Emphasize modeling cues

1) 4 interchanges, including "I feel"

C. Modeling script

A₁: "This picture makes me feel sad. Something about it makes me sad."

B₁: "I feel sad, too. I guess 'cause the room is so empty and alone."

A₂: "The single bed and dresser and the man going into the room
alone. I guess he lives by himself."

B₂: "He probably has no family. Lives in a hotel--like ours."

A₃: "I feel sorry, and depressed, when I look at the picture."

B₃: "I guess it reminds me of myself. I live alone."

A₄: "I do, too. It is a sad and lonely life."

B₄: "It is too quiet, too."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "That was good."

2) Tokens. 3.

Exercise 4.

A. Stimulus - Topic: Your friend is 30 minutes late for an appointment with you. You are mad. What will you say to him?

B. Coordinator: Emphasize modeling cues

1) 5 interchanges, including 4 "I feel"

C. Modeling script

A₁: "Well, where have you been? You're 30 minutes late."

B₁: "I'm sorry. I forgot I was supposed to meet you and I went shopping."

A₂: "You forgot! Some friend! I have been standing on this corner since 1:00 o'clock. I'm damn mad."

B₃: "I understand how you feel. You have a right to be angry."

A₄: "I sure do! When I make an appointment, I keep it."

B₄: "You are right. I apologize."
A₅: "Okay, okay. But I had to let you know you made me mad."
B₅: "I guess you feel better when you get it off your chest."

D. Coordinator: Repeat B.

E. Reinforcements
1) Verbal: "You did great."
2) Tokens: 4.

Exercise 5.

A. Stimulus - Topic: Your neighbor is playing his radio too loud and you can't sleep. Let him know how you feel. Do it in a positive way.

B. Coordinator: Emphasize modeling cues
1) 6 interchanges, using "I feel" 3 times

C. Modeling script
A₁: "It's 1:00 a.m. You're radio is so loud that I can't sleep."
B₁: "So what? I can play it how I want."
A₂: "I didn't come to pick a fight. I just want you to know how I feel."
B₂: "What do you mean?"
A₃: "You make me feel as if you don't care about anybody else. No consideration."
B₃: "Why should I care?"
A₄: "You make me feel mad at you, when I really am mad at what you're doing."
B₄: "You think I am playing it loud to get you mad?"
A₅: "I feel you just didn't realize it was so loud."
B₅: "I really didn't. I didn't do it on purpose."
A₆: "Yeah. I figured that was it."
B₆: "I'll turn it down. Sorry!"

D. Coordinator: Repeat B.

E. Reinforcements
1) Verbal: "Well done."
2) Tokens: 3.

Exercise 6.

A. Stimulus - Topic: You want to tell your friend that sometimes he talks too fast and keeps changing the subject so you can't understand him. Tell him how he makes you feel.

B. Coordinator: Emphasize modeling cues
1) 6 interchanges, using "I feel" 3 times

C. Modeling script

A₁: "I feel I know you well enough to give you some criticism."
B₁: "What's that?"
A₂: "Sometimes you talk so fast and skip from one subject to another that I can't understand you."
B₂: "What do you mean?"
A₃: "It gets so confusing. I can't follow your conversation."
B₃: "Do I do that? Are you sure?"
A₄: "Yeah. That's why I get quiet and don't answer. You lose me. I feel out of it."
B₄: "I never realized I talked so fast. I usually end up talking to myself."
A₅: "That's just it. I felt I had to let you know how you were coming across."
B₅: "I feel kind of hurt, but also glad to know about it."
A₆: "I felt you could take the criticism."
B₆: "Okay. I'll try to slow down."

D. Coordinator: Repeat B.

E. Reinforcements
   1) Verbal: "Very good."
   2) Tokens. 3.

Exercise 7.

A. Stimulus.- Topic: Describe what he feels in this picture and what he is doing.

B. Coordinator: Emphasize modeling cues
   1) 4 interchanges, including 1 "I feel" or "He feels"

C. Modeling script
   A₁: "I feel he is tired, lonely--has nothing to do."
   B₁: "He thinks maybe he will go to his room for a nap."
   A₂: "I think that his room is quiet and comfortable and he feels better there than in the lobby."
   B₂: "He has a bed, dresser, chair and table in his room."
   A₃: "He wishes he had someone visiting him."
   B₃: "He feels sad because he is alone so much."
A₄: "Maybe someone will come along to talk to him."

B₄: "He feels it is too quiet."

D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "Very good."

2) Tokens: 3.

Exercise 8.

A. Stimulus - Topic: Let's talk about what you would like to do on a Sunday afternoon and how you feel about it.

B. Coordinator: Emphasize modeling cues

1) 5 interchanges, 1 "I think" and 2 "I feel"

C. Modeling script

A₁: "I think I would like to go to the park on Sunday."

B₁: "I think I would like to go to a ball game."

A₂: "I would like to see the animals. I feel good when I am outdoors."

B₂: "I feel good when I watch a real game. It is better than on t.v."

A₃: "I feel good when I walk in the park, see people, the trees, and everyone is having fun."

B₃: "I feel good when I see a home run."

A₄: "I think I like to feed the ducks in the park."

B₄: "I think I like the excitement of the game."

D. Coordinator: Repeat B.
E. Reinforcements

1) Verbal: "That was a good job."

2) Tokens: 3.

Exercise 9.

A. Stimulus - Topic: Tell your partner how you feel about this three-day experience.

B. Coordinator: Emphasize modeling cues

1) 5 interchanges, 2 "I feel" and 2 "I think"

C. Modeling script

A₁: "I think this was a good program. I liked it."

B₁: "I feel it is helpful, but not long enough."

A₂: "I feel practising conversation is important. I never knew how to begin talking to a stranger."

B₂: "I felt I couldn't keep a conversation going."

A₃: "I think talking here one at a time gave me more confidence."

B₃: "I felt uncomfortable the first time, but it was easier after that."

A₄: "I feel more sure of myself--at least with this group."

B₄: "I think talking about feelings is the most difficult part."

A₅: "It is hard to share feelings, but at least I think I could express them."

B₅: "I don't know if I can, but I'll try."
D. Coordinator: Repeat B.

E. Reinforcements

1) Verbal: "Very nice. Good work."

2) Tokens: 3.
DIRECTIONS FOR INTERACTION SCORING

FOR RATERS

Naming the members:

Assign 1 to each of members — A, B, C, D or numbers

Trainees should memorize subject reference by #

Symbol zero stands for group in general

Trainees must be able to recognize what constitutes an act to be scored.

The observer watches and listens carefully and constantly. When an act occurs, he puts down on the paper the number of the person speaking, or initiating the act, followed by the number of the person spoken to, or intended as the recipient of the communication. The latter symbol may be zero standing for the group as a whole rather than a specific member. The two symbols are separated by a dash for reasons of clarity. The pair of symbols records the fact that the person designated by the first symbol directed an act to a person or group as a whole designated by the second symbol.

"The unit to be scored is the single "act." An "act" is a communication either verbal or non-verbal, which in its context may be understood by another member as equivalent to a single simple sentence."

"Ordinarily the observer can transform fragmentary communications or indications into a form complete enough to permit classification according to the set of categories used. If a member says "what?" the observer might translate according to context. "What was that?" or "I do not understand you," or "would you repeat that?" in such a way as to represent the interpersonal meaning in the interactive context.

A single word "yes" would ordinarily be classified as Agrees. A nod of the head, without words, satisfies the definition of Agrees; just as a turning away of the head might be classified as Disagrees.
APPENDIX D.
**APPENDIX E.**

**Table 1A**

Base Rates, Means, Variances and Standard Deviations of the Groups and Sequences

<table>
<thead>
<tr>
<th>BASE RATE</th>
<th>MEAN GROUP</th>
<th>MEAN SEQUENCE</th>
<th>VARIANCE GROUP</th>
<th>VARIANCE SEQUENCE</th>
<th>ST. DEV. GROUP</th>
<th>ST. DEV. SEQUENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.12</td>
<td>.08</td>
<td>1.00</td>
<td>11.12</td>
<td>9.57</td>
<td>3.34</td>
</tr>
<tr>
<td>2</td>
<td>.75</td>
<td>.13</td>
<td>-.08</td>
<td>1.24</td>
<td>1.82</td>
<td>1.12</td>
</tr>
<tr>
<td>3</td>
<td>.25</td>
<td>.29</td>
<td>-.42</td>
<td>1.00</td>
<td>.86</td>
<td>1.00</td>
</tr>
<tr>
<td>1</td>
<td>.38</td>
<td>.42</td>
<td>.83</td>
<td>1.91</td>
<td>1.71</td>
<td>1.38</td>
</tr>
<tr>
<td>2</td>
<td>.12</td>
<td>.08</td>
<td>.00</td>
<td>.34</td>
<td>.17</td>
<td>.58</td>
</tr>
<tr>
<td>3</td>
<td>.00</td>
<td>.17</td>
<td>-.17</td>
<td>.32</td>
<td>.14</td>
<td>.56</td>
</tr>
<tr>
<td>1</td>
<td>5.00</td>
<td>1.58</td>
<td>3.33</td>
<td>23.99</td>
<td>18.49</td>
<td>4.90</td>
</tr>
<tr>
<td>2</td>
<td>4.75</td>
<td>2.42</td>
<td>3.00</td>
<td>14.95</td>
<td>31.13</td>
<td>3.87</td>
</tr>
<tr>
<td>3</td>
<td>1.12</td>
<td>4.50</td>
<td>2.17</td>
<td>29.39</td>
<td>22.67</td>
<td>5.42</td>
</tr>
<tr>
<td>1</td>
<td>3.50</td>
<td>1.58</td>
<td>3.67</td>
<td>17.04</td>
<td>26.23</td>
<td>4.13</td>
</tr>
<tr>
<td>2</td>
<td>3.87</td>
<td>2.42</td>
<td>3.04</td>
<td>44.51</td>
<td>43.69</td>
<td>6.67</td>
</tr>
<tr>
<td>3</td>
<td>1.00</td>
<td>3.58</td>
<td>.88</td>
<td>21.30</td>
<td>10.55</td>
<td>4.61</td>
</tr>
<tr>
<td>1</td>
<td>5.37</td>
<td>.21</td>
<td>2.25</td>
<td>33.48</td>
<td>26.63</td>
<td>5.79</td>
</tr>
<tr>
<td>2</td>
<td>3.37</td>
<td>4.13</td>
<td>4.25</td>
<td>59.24</td>
<td>33.76</td>
<td>6.26</td>
</tr>
<tr>
<td>3</td>
<td>.62</td>
<td>3.96</td>
<td>1.79</td>
<td>9.69</td>
<td>28.69</td>
<td>3.11</td>
</tr>
<tr>
<td>1</td>
<td>2.62</td>
<td>2.54</td>
<td>1.38</td>
<td>27.22</td>
<td>6.42</td>
<td>5.22</td>
</tr>
<tr>
<td>2</td>
<td>1.12</td>
<td>2.04</td>
<td>1.58</td>
<td>14.22</td>
<td>18.69</td>
<td>3.77</td>
</tr>
<tr>
<td>3</td>
<td>.75</td>
<td>1.29</td>
<td>2.92</td>
<td>4.13</td>
<td>19.82</td>
<td>2.03</td>
</tr>
<tr>
<td>1</td>
<td>18.00</td>
<td>5.67</td>
<td>12.21</td>
<td>325.88</td>
<td>237.13</td>
<td>18.00</td>
</tr>
<tr>
<td>2</td>
<td>14.00</td>
<td>11.21</td>
<td>11.92</td>
<td>183.22</td>
<td>276.69</td>
<td>13.54</td>
</tr>
<tr>
<td>3</td>
<td>3.75</td>
<td>14.50</td>
<td>7.25</td>
<td>166.09</td>
<td>184.80</td>
<td>12.89</td>
</tr>
<tr>
<td>1</td>
<td>1.75</td>
<td>1.08</td>
<td>1.04</td>
<td>1.73</td>
<td>1.61</td>
<td>1.32</td>
</tr>
<tr>
<td>2</td>
<td>1.62</td>
<td>1.08</td>
<td>1.38</td>
<td>1.47</td>
<td>1.72</td>
<td>1.21</td>
</tr>
<tr>
<td>3</td>
<td>1.12</td>
<td>1.42</td>
<td>1.17</td>
<td>1.64</td>
<td>1.54</td>
<td>1.28</td>
</tr>
</tbody>
</table>

Nonverbal approach
Greeting behavior
Initiation behavior
Questioning behavior
Opinion statements
Feeling statements
Number of interactions
Number of persons interacted with