INFORMATION TO USERS

This was produced from a copy of a document sent to us for microfilming. While the most advanced technological means to photograph and reproduce this document have been used, the quality is heavily dependent upon the quality of the material submitted.

The following explanation of techniques is provided to help you understand markings or notations which may appear on this reproduction.

1. The sign or “target” for pages apparently lacking from the document photographed is “Missing Page(s)”. If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting through an image and duplicating adjacent pages to assure you of complete continuity.

2. When an image on the film is obliterated with a round black mark it is an indication that the film inspector noticed either blurred copy because of movement during exposure, or duplicate copy. Unless we meant to delete copyrighted materials that should not have been filmed, you will find a good image of the page in the adjacent frame.

3. When a map, drawing or chart, etc., is part of the material being photographed the photographer has followed a definite method in “sectioning” the material. It is customary to begin filming at the upper left hand corner of a large sheet and to continue from left to right in equal sections with small overlaps. If necessary, sectioning is continued again—beginning below the first row and continuing on until complete.

4. For any illustrations that cannot be reproduced satisfactorily by xerography, photographic prints can be purchased at additional cost and tipped into your xerographic copy. Requests can be made to our Dissertations Customer Services Department.

5. Some pages in any document may have indistinct print. In all cases we have filmed the best available copy.
SHERWOOD, SUSAN NARWICZ

PLAY PSYCHOTHERAPY WITH SOCALLY MALADAPTIVE MENTALLY RETARDED CHILDREN USING SAME-AGE AND YOUNGER-AGE PEERS AS THERAPISTS

The Ohio State University

University Microfilms International

Copyright 1980 by Sherwood, Susan Narwicz
All Rights Reserved
PLEASE NOTE:

In all cases this material has been filmed in the best possible way from the available copy. Problems encountered with this document have been identified here with a check mark ✓.

1. Glossy photographs □
2. Colored illustrations □
3. Photographs with dark background □
4. Illustrations are poor copy □
5. Print shows through as there is text on both sides of page □
6. Indistinct, broken or small print on several pages ✓
7. Tightly bound copy with print lost in spine □
8. Computer printout pages with indistinct print □
9. Page(s) □ lacking when material received, and not available from school or author
10. Page(s) □ seem to be missing in numbering only as text follows
11. Poor carbon copy □
12. Not original copy, several pages with blurred type □
13. Appendix pages are poor copy □
14. Original copy with light type □
15. Curling and wrinkled pages □
16. Other

University
Microfilms
International
300 N ZEEB RD. ANN ARBOR MI 48106 (313) 761-4700
PLAY PSYCHOTHERAPY WITH SOCIALLY MALADAPTIVE MENTALLY RETARDED CHILDREN USING SAME-AGE AND YOUNGER-AGE PEERS AS THERAPISTS

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in the Graduate School of The Ohio State University

By
Susan Narwicz Sherwood, B.S., M.A.

* * * * *

The Ohio State University

1980

Reading Committee: Henry Leland, Ph.D.
Michael J. Guralnick, Ph.D.
Gerald A. Winer, Ph.D.

Approved By

Adviser
Department of Psychology
ACKNOWLEDGEMENTS

I would like to thank the members of my reading committee: Dr. Henry Leland, Dr. Michael Guralnick, and Dr. Gerald Winer, for the inspiration and guidance which they have provided in the conduct of this study. I am particularly appreciative of the special encouragement and support offered to me throughout my graduate school career by my advisor, Dr. Henry Leland, and my close friend Dr. Marilyn Deutsch.

An especially heartfelt thanks is extended to my colleagues who served as therapists and observers (Teni Garrett, Nevalyn Nevil, Annick Parker, Arlene DeRienzo, Debbie Falkner, Cil Kinast, Sandy Phalen, Ellen Smith, Margaret Fernald, Steve Fowlkes, Valerie Raspberry, Kathy Yohn); and to the Franklin County Program for the Mentally Retarded staffs and children at the Northridge, Southeast, and West Central Training Centers. Without the enthusiastic participation of these individuals this study would not have been possible.

I am also deeply appreciative of the love and nurturance offered by my husband Jim, the statistical assistance provided by June Hahn, and for the typing of the manuscript by Brenda Hammond.

Thank you all so much.
VITA

August 7, 1952 . . . . . . . . . . . . . . . . . . . . . . . . . Born - Portsmouth, Virginia

1974 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . B.S. cum laude, Psychology (Honors), St. Lawrence University, Canton, New York

1975-1976 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Psychology Trainee, The Nisonger Center, The Ohio State University, Columbus, Ohio

1976 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . M.A., Developmental Psychology/Developmental Disabilities, The Ohio State University, Columbus, Ohio

1976-1978 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . School Psychologist, Northeast Colorado Board of Cooperative Educational Services, Haxtun, Colorado

1979 to present . . . . . . . . . . . . . . . . . . . Clinical Teaching Associate, Nisonger Center Psychology Department, The Ohio State University, Columbus, Ohio

PUBLICATIONS


FIELDS OF STUDY

Studies in Developmental Psychology:
Professors Henry Angelino, John Horrocks, George Thompson, Gerald Winer

Studies in Developmental Disabilities:
Professors Henry Leland and Barbara Edmonson
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>ii</td>
</tr>
<tr>
<td>VITA</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>viii</td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>6</td>
</tr>
<tr>
<td>Purpose</td>
<td>9</td>
</tr>
<tr>
<td>Statement of Hypothetical Questions</td>
<td>10</td>
</tr>
<tr>
<td>Definitions</td>
<td>11</td>
</tr>
<tr>
<td>II. REVIEW OF THE LITERATURE</td>
<td>13</td>
</tr>
<tr>
<td>Traditional Therapeutic Play Approaches</td>
<td>13</td>
</tr>
<tr>
<td>Play Therapy with the Mentally Retarded:</td>
<td>17</td>
</tr>
<tr>
<td>Approaches and Research</td>
<td>29</td>
</tr>
<tr>
<td>Other Treatment Techniques and Approaches</td>
<td></td>
</tr>
<tr>
<td>III. METHODOLOGY</td>
<td>41</td>
</tr>
<tr>
<td>Sample Selection</td>
<td>41</td>
</tr>
<tr>
<td>Sample</td>
<td>42</td>
</tr>
<tr>
<td>Dependent Measures</td>
<td>44</td>
</tr>
<tr>
<td>Procedure</td>
<td>48</td>
</tr>
<tr>
<td>IV. RESULTS</td>
<td>54</td>
</tr>
<tr>
<td>Adaptive Behavior Analysis</td>
<td>54</td>
</tr>
<tr>
<td>Social Interaction Analyses</td>
<td>61</td>
</tr>
<tr>
<td>Posttreatment Social Interaction Questionnaire</td>
<td>81</td>
</tr>
</tbody>
</table>

iv
V. DISCUSSION .................................................. 88
    Adaptive Behavior ........................................ 88
    Social Interaction ........................................ 95
    Limitations and Implications ............................. 100
    Summary .................................................. 105

APPENDICES

A. Pretreatment and Posttreatment ABS Ratings .............. 108
B. Consent Letter ........................................... 109
C. Observation Recording Form ................................. 110
D. Posttreatment Social Interaction Questionnaire:
   Teachers .................................................. 111
E. Posttreatment Social Interaction Questionnaire:
   Therapists .............................................. 113
F. Percent Classroom Social Interactions:
   Maladaptive Children ..................................... 115
G. Percent Treatment Social Interaction:
   Maladaptive and Adaptive Children ....................... 116
H. Posttreatment Social Interaction Questionnaire Results:
   Maladaptive Children ..................................... 117
I. Posttreatment Social Interaction Questionnaire Results:
   Adaptive Children ........................................ 118

BIBLIOGRAPHY ................................................ 119
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demographic Description of Subject Sample</td>
<td>43</td>
</tr>
<tr>
<td>2</td>
<td>Behavior Categories</td>
<td>47</td>
</tr>
<tr>
<td>3</td>
<td>ANOVA F-Scores for Adaptive Behavior Scale Domains</td>
<td>56</td>
</tr>
<tr>
<td>4</td>
<td>Mean Raw Scores for ABS Part II Subject Main Effect</td>
<td>57</td>
</tr>
<tr>
<td>5</td>
<td>Percent Interaction Between Maladaptive Children and Classroom Peers According to Treatment Condition</td>
<td>65</td>
</tr>
<tr>
<td>6</td>
<td>Percent Interaction Between Maladaptive Children and Classroom Peers According to Age of Peer Therapist Condition</td>
<td>66</td>
</tr>
<tr>
<td>7</td>
<td>Percent Interaction Between Maladaptive Children and Classroom Peers According to Treatment and Age of Peer Therapist Condition</td>
<td>67</td>
</tr>
<tr>
<td>8</td>
<td>Mean Percent of Reinforcing and Punishing Interactions with Peer Therapist and Adults in Class and Treatment Sessions for Free Play and Play Therapy Groups</td>
<td>69</td>
</tr>
<tr>
<td>9</td>
<td>Mean Percent Interaction in Class and Treatment Settings for Maladaptive Children in Free Play and Play Therapy Groups</td>
<td>72</td>
</tr>
<tr>
<td>10</td>
<td>Mean Percent Interaction for Maladaptive Children with Peer Therapist and Adults in Classroom and Treatment Settings</td>
<td>75</td>
</tr>
<tr>
<td>11</td>
<td>Changes in Rates of Interaction Dispensed and Received as a Function of Treatment and Adaptive Peer Therapist Age Conditions</td>
<td>79</td>
</tr>
<tr>
<td>12</td>
<td>Increases in Appropriate and Inappropriate Interactions: Maladaptive Children</td>
<td>83</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>13</td>
<td>Increases in Appropriate and Inappropriate Interactions: Adaptive Children</td>
<td>84</td>
</tr>
<tr>
<td>14</td>
<td>Number of Maladaptive and Adaptive Children Rated as Increased in Appropriate Interactions with Peers and Adults as a Function of Respondent and Treatment Conditions</td>
<td>87</td>
</tr>
<tr>
<td>15</td>
<td>Teacher Ratings of Increased Interactions with Peers and Adults for Maladaptive and Adaptive Children in the Treatment Conditions</td>
<td>87</td>
</tr>
</tbody>
</table>
### LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mean change scores on ABS Personal Independence domain as a function of adaptive peer therapist age condition</td>
<td>58</td>
</tr>
<tr>
<td>2</td>
<td>Mean change scores on ABS Violent and Destructive Behavior domain as a function of treatment and age conditions</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>Changes in mean rates of social interaction categories for maladaptive children with classroom peers</td>
<td>63</td>
</tr>
<tr>
<td>4</td>
<td>Changes in mean rates of social interaction categories for maladaptive children with treatment and class, peer therapist and adult interactions combined</td>
<td>71</td>
</tr>
<tr>
<td>5</td>
<td>Changes in mean rates of social interaction categories between maladaptive children with peer therapist during treatment sessions and peers in class interactions combined</td>
<td>77</td>
</tr>
<tr>
<td>6</td>
<td>Mean percent of reinforcement/punishment interaction as a function of dispensed/received and treatment conditions, for adaptive peer therapists with the adult during treatment sessions</td>
<td>82</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

Throughout the course of ontogenetic development, the human organism is challenged to adapt to many critical physical and social demands of various environmental situations. The acquisition and utilization of adaptive behaviors is the essence of successful existence throughout the human lifespan. Although in our species there are some adaptive behavioral responses which are innate (i.e., reflexes), the majority of coping strategies (Leland, 1978) must be acquired through, formal and experiential learning obtained in the context of interpersonal relationships with the members of one's species. There also appears to exist a dialectic in the development of adaptive behaviors in that while many qualitatively different adaptive competencies are needed at different developmental stages, the emergence of new coping strategies have a basis in the adaptive skills acquired in prior developmental periods.

Furthermore, an increasing body of developmental research has revealed that the acquisition of adaptive coping strategies, especially those involved in the development of psycho-social competencies, occurs not only in the context of adult-child relationships but also from the learning experiences which are the products of peer relationships (Hartup, 1978). Thus, although adaptive behavior repertoires during the
first two years of life are acquired primarily within the context of an interpersonal relationship with the primary caretaker(s) who is usually an adult or older child, the child is continually expanding the contexts from which adaptive strategies are learned, to the point where, in childhood, the focus of much social learning occurs in the context of peer groups.

According to Wohlford (1975) approximately 10 to 20% of children in the general population require attention for psychological problems. Several long term studies have shown that inadequate peer relations during childhood contributes to maladaptive personal and/or social adjustments and are prognostic indicators of psychopathology in adulthood. In a three generational investigation of child guidance clinic clients, Robins (1972) found that psychopathic adults are likely to have demonstrated repeated antisocial behaviors in childhood.

Children who develop maladaptive "instead" behaviors (Leland, 1978) have limited opportunities for social learning as they become isolates among their peers. Rolf (1972) found that the risk for psychopathology is negatively related to peer acceptance. Other longitudinal studies have shown that children who demonstrate maladaptive coping strategies in response to the demands of the environment, are more likely to be identified as juvenile delinquents, to drop out of school as adolescents, and to experience mental health problems as adults, than are children who are not isolates from peer interaction and thus are able to develop appropriate coping strategies to life events (Roff, Sells, & Golden, 1972).
Hartup (1970, 1976a, 1976b, 1978) has comprehensively reviewed and been involved in much of the peer relations research which has indicated that opportunities to interact with age-mates during childhood enhances the socialization of aggression, the learning of effective communication skills, the formation of moral values, sex role learning, and cognitive development. Other studies have indicated that peer interactions can reinforce socially acceptable and/or unacceptable behavior (Kopstein, 1972; Patterson, Littman, & Bricker, 1967).

There also exists a body of research which has begun to investigate the differential functions of same-age and mixed-age socialization in facilitating learning and social-emotional development in children (Hartup, 1978). Aggressive and associative activity occurs most frequently in same-age peer situations; whereas nurturant and prosocial behaviors occur more frequently within the context of interaction with younger-age peers (Barker & Wright, 1955; Whiting & Whiting, 1975).

Hartup has noted that children may have preferences for mixed-age or same-age socialization experiences as a function of the complexity of the society in which they live. That is, children from complex, industrial societies prefer more same-age than mixed-age peer interactions; whereas mixed-age peer interactions are more adaptive in more rural cultures (Hartup, 1976a).

An area of peer interaction research which has not been adequately explored, is the developmental functions of peers in the rehabilitation of maladaptive peers. Peers have been found to be therapeutic behavior change agents in several classroom intervention studies, in which maladaptive peer behaviors have been modified using techniques such as
adaptive peer modeling (O'Connor, 1969), and training adaptive peers to selectively reinforce appropriate behaviors of maladaptive peers (Wahler, 1967; Csapo, 1972; Solomon & Wahler, 1973). Group psychotherapy techniques with children have also been found to be generally effective in modifying maladaptive behaviors (Abramowitz, 1976). Peers often communicate and understand each other's behavior in different ways than in traditional adult therapist, child-client treatment situations. In addition, it is believed that peer group treatments generalize the therapy gains into real-life situations. However, Furman (1979) has noted that very few clinical interventions have considered and empirically investigated the developmental aspects of peer interaction in group treatment interventions.

A limited number of studies have investigated the effects of same-age and mixed-age peer interaction in modifying maladaptive behavior (Furman, Rahe, & Hartup, 1979c; Novak & Harlow, 1975; Suomi & Harlow, 1972). In a classic study conducted by Suomi and Harlow (1972), a mixed-age procedure was successfully used to rehabilitate four withdrawn, autistic six month old rhesus monkeys who had spent their entire lives in total isolation. Exposure to normal adult monkeys or age-mates had failed to develop socially adaptive behaviors in these isolates. However, younger three month old normal monkeys (females) encouraged locomotion, exploration, and social play behaviors by clinging to them, thus preventing their stereotypic behaviors and forcing them to develop new adaptive coping strategies. The Novak and Harlow (1975) study also found younger-age interventions to be effective in modifying withdrawn behavior in monkeys who were isolated for twelve months.
Although these studies were conducted with infrahuman primates, there are many implications for therapy and research in the area of human developmental psychopathology. However, only one study to date has empirically investigated the comparative therapeutic benefits of using same-age or younger-age adaptive peers as therapists in treatment interventions for maladaptive human children. Furman, Rahe, and Hartup (1979c) have explored the Suomi and Harlow (1972) results in relation to socially withdrawn preschool children. They paired preschool isolate children in free play sessions with either a non-isolate child of the same age or with a non-isolate child who was 12-20 months younger in chronological age. When compared with a control group of isolate children who did not receive the treatment sessions, the isolates who were paired with the younger non-isolate children significantly increased the rate with which positive social reinforcement was emitted in the classroom; while the isolates paired with same-age non-isolate children did not differ significantly from the control group. The authors interpreted the findings as support for a leadership deficit theory of isolation, in that the isolates who had experiences with the younger-age children as contrasted with age-mates, were provided with more opportunities to initiate and direct social activity, which were the significant social competencies in which they were deficient prior to the treatment.

Although the findings to date are limited, these studies suggest that in treatment programs for withdrawn children, younger-age adaptive peer therapists may be more therapeutic than same-age adaptive peer therapists. This finding may also apply in treatment
programs for socially maladaptive children as well as for children exhibiting personal maladaptation as in the Furman, et al. study (1979c). Socially maladaptive children demonstrate significant violent and destructive, antisocial, rebellious, and/or untrustworthy behaviors which may escalate in same-age peer interactions. Based on the cross-cultured findings (Whiting & Whiting, 1975), with a younger-age adaptive child more nurturant and prosocial behaviors would be expected to be elicited and reinforced; whereas same-age peer interactions would be more likely to precipitate competition and perhaps aggressive behaviors, especially in an already socially maladaptive child. In comparing the incidence of aggressive behaviors in two normal preschool classes, Body (1955) found that aggressive incidents occurred more frequently in the class with the smaller age range (13 months) than in the one with the broader range (26 months), with increased competition for the same materials noted in the more homogeneous age class. While the socialization of aggression in the normally developing child may be dependent on same-age peer interaction experiences in early childhood, this may be a 'sensitive' period in that if these same-age interaction opportunities are not provided at that time, they may not be the treatment of choice in socializing the school-age socially maladaptive child.

Statement of the Problem

In response to an increased national focus on mental health and deinstitutionalization, community agencies are being called upon to provide increased psychological services to persons with adaptive behavior deficits. Mentally retarded persons, who have significant
intellectual functioning deficits as well as adaptive behavior deficits, are being assimilated into their local neighborhoods where they need to utilize the local resources and services of the community.

It has been found that the retarded individual has difficulty using the cues and stimuli of the surrounding environment which hinders the development of appropriate coping strategies (Edmonson, Leland, de Jung, & Leach, 1967). Retarded persons who are unable to receive appropriate habilitation programming which focuses on the training of adaptive coping skills, will most likely become visible, as significant demonstrations of coping failures lead to maladaptive behavior patterns in the community. It then becomes these individuals, with personal and/or social maladaptation interfering with the development of the basic areas of adaptive behavior (independent functioning, personal and social responsibility), who are brought to the attention of the community psychologist. Furthermore, psychotherapeutic intervention is especially indicated for the socially maladaptive retarded individual whose inability to comply to socially acceptable standards of behavior is particularly visible and disturbing to the community. A primary role of the community psychologist should thus be to provide early psychotherapeutic intervention to mentally retarded children who are displaying socially maladaptive behavior, before a long history of failure experiences and inappropriate social interactions evolves.

There are several comprehensive reviews of empirical research in which psychotherapy has been shown to be an effective treatment intervention with the mentally retarded (Bialer, 1967; Bialer & Sternlicht, 1977; Stacey & De Martino, 1957; Sternlicht, 1966). Despite the
documented effectiveness of this approach which is in agreement with the belief that personalization, as well as socialization and normalization, should be the goals in any habilitation program for the retarded (Gunzburg & Gunzburg, 1973), the majority of treatment approaches for social maladaptive behavior (chemotherapy, behavior modification, seclusion, restraint) have used an external rather than internal control orientation. Such approaches reinforce the maintenance of an external locus of control which is present in the majority of mentally retarded persons (Bialer, 1967).

Although the socially maladaptive retarded child is limited intellectually and may be nonverbal, several clinically effective and humanizing approaches to psychotherapeutic intervention have utilized various play techniques to increase adaptive functioning. However, most of these approaches (Axline, 1947; Ginott, 1961; Moustakas, 1953; Slavson & Schiffer, 1975) have little empirical research to support successful outcomes and they have primarily limited psychotherapeutic intervention with the mentally retarded to the higher functioning, mildly retarded and "functionally" retarded child. These and other individual research studies using play psychotherapy have for the most part found success in achieving intellectual and/or adaptive behavior changes (Cowen & Trippe, 1963).

Leland and Smith (1965) have developed a comprehensive theory and system of play therapy for use with emotionally disturbed, mentally retarded and developmentally disabled children of all levels of developmental functioning. The general goals of this approach are to increase levels of functioning and adaptive behavior skills by
a) increasing recognition of self, b) understanding that impulses can be
controlled, and c) learning to live within social boundaries. The
theoretical approach is basically that the manipulation of structure,
in both the play materials and the role of the therapist, will lead to
differential therapeutic outcomes. Depending on the client's level of
functioning and specific needs, one of four different play therapy
procedures based on either structure or unstructure in play materials
and therapist approach is utilized. The facilitation of adaptive
coping strategies is achieved through the techniques of reinforcing
(rewarding) behavior that is congruent with the therapy goals and in-
truding (withholding, punishing) upon behaviors that are contrary to
the therapeutic goals (Leland and Smith, 1972). Although the Leland
and Smith (1965) play psychotherapy approach has seen much clinical
success with mentally retarded children exhibiting social maladapta-
tion, there has been little empirical research since a study by Leland,

Purpose

The application and extension of developmental concepts and find-
ings in the literature regarding the effects of same-age and mixed-age
peer socialization experiences, and the urgent clinical need for
empirically effective treatment interventions for use with socially
maladaptive mentally retarded children, provided the basis for the
present investigation. The purpose of the present study was a) to
investigate the comparative effectiveness between a dyadic free play
treatment and a group play psychotherapy treatment approach; and b) to
investigate the therapeutic role of same-age and younger-age adaptive
mentally retarded peer therapists in increasing appropriate adaptive behaviors and social interactions in socially maladaptive, moderately 
retarded school-age children.

Statement of Hypothetical Questions

The present study was designed to investigate the following hypothetical questions:

1. a) Will a free play and/or play therapy treatment approach result in significant changes in adaptive behavior for socially mal-adaptive children and/or socially adaptive peer therapist children?
   b) Will there be significant changes in adaptive behavior for the children in same-age and/or younger-age peer therapist treatment groups?
   c) Is there a significant relationship between the type of treatment approach and age of the socially adaptive peer therapist in changing adaptive behavior?

2. a) Within treatment sessions, what significant changes in peer and adult social interaction will be seen in socially maladaptive and socially adaptive children?
   b) Will there be significantly more changes in peer and adult social interaction within the treatment sessions for children in same-age and/or younger-age peer therapist treatment groups?
   c) Is there a significant relationship between the type of treatment approach and age of the socially adaptive peer therapist in changing the social interaction during treatment sessions?
3. a) Within the classroom setting, will significant changes in peer and/or adult social interaction be seen in socially maladaptive children as a result of participation in free play or play therapy treatments?

b) Will peer interaction within the classroom significantly change within the dyads of children who were paired for the treatment sessions?

c) Within the classroom setting, will there be significant changes in peer and/or adult social interaction for the socially maladaptive children in the same-age and/or younger-age peer therapist treatment groups?

d) Is there a significant relationship between the type of treatment approach and age of the socially adaptive peer therapist in changing the maladaptive children's social interaction in the classroom setting?

4. Is there a significant relationship between changes in social interaction during the treatment sessions and in the classroom setting?

5. Will follow-up classroom observations of social interaction reveal a maintenance of the significant changes in social interaction demonstrated in the classroom immediately following the treatment sessions?

Definitions

Mental retardation: Refers to significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior, and manifested during the developmental period (Grossman, 1973).
Adaptive behavior: Refers to the effectiveness or degree with which an individual meets the standards of personal independence and social responsibility expected of one's age and cultural group (Grossman, 1973).

Social maladaptation: An inability to comply with the socially accepted standards of behavior for one's age and cultural group. As indicated on the Adaptive Behavior Scale (Mihira, Foster, Shellhaas, and Leland, 1975), scores above the 80th percentile on the Part II domains of Violent and Destructive Behavior, Antisocial Behavior, Rebellious Behavior, Untrustworthy Behavior, and/or Psychological Disturbances.

Psychotherapy: Any organized procedure which has goals of facilitating adaptive behavior and/or personality change and which places emphasis on attempting to establish a close interpersonal relationship between the client and the therapist. The procedure may include verbal or nonverbal techniques and the client may or may not be aware of the dynamics of the therapy process (Bialer, 1967).
CHAPTER II

REVIEW OF THE LITERATURE

The present chapter will present first, traditional psychotherapeutic play techniques used in the treatment of maladaptive behavior in children; second, a discussion of psychotherapeutic play approaches, which have been used with maladaptive mentally retarded children and a review of the research conducted in this area with socially maladaptive mentally retarded children; and third, a section on other treatment techniques and approaches used with socially maladaptive mentally retarded or nonretarded children.

Traditional Therapeutic Play Approaches

Play is an intrinsically motivated behavior which is integrally involved in the development of a child's physical, intellectual, and social-emotional development. Play is considered to be the most natural mode of expression and communication for a child. It allows for the expression of emotion, discharge of energy, and the testing of skills and social roles.

Historically, Plato and Aristotle were among the first to recognize the practical value of play as practice for future behaviors of adulthood (Jackson & Angelino, 1974), while Groos (1901) stressed the survival function inherent in the mastery of skills through practice in play. Play also reflects the cognitive level of development
of the child (Piaget, 1962). Piaget refers to mastery play as an attempt to accommodate the environment while symbolic play is pure assimilation. Psychoanalytic theories emphasize that play represents wishfulfilling tendencies, the need for mastery, and frequently serves a cathartic function for the conflicting and anxiety producing life experiences of the child.

Recognizing that play is the child's natural way of expression, and the limited developmental level of verbal expression in the child, psychotherapeutic treatment approaches with children have frequently relied on various uses of play in the treatment of maladaptive behavior (Jackson & Todd, 1946; Schaefer, 1976). Client-centered psychotherapy and classical psychoanalytic principles have been most represented in play psychotherapy approaches.

Psychoanalytic child therapists, such as Melanie Klein and Anna Freud, were among the first to utilize play media in the treatment of disturbed children. Klein (1975) uses play as a means to gain an understanding of the maladaptive child's feelings and conflicts. She views one child's play activities as similar to the free associations in adult analysis. Klein regards play as symbolically representing unconscious content which is interpreted to the child in order to aid the acquisition of insight into the nature of the maladaptation.

Anna Freud (1928, 1946) has used play primarily in the pre-analytic phase of therapy, in order to establish a strong rapport with the child which is necessary in order for psychoanalytic techniques to be used effectively. The analysis itself utilizes a case history, analysis of drawings, and interpretation of dreams. Play aids in both
understanding the nature of the child's problem and then dealing with the problem through the interpretation of unconscious material. Freud emphasizes progressive interpretation of emotions rather than the symbolic interpretation used by Klein. Freud feels these techniques are not appropriate for children who are psychotic or those who have extreme difficulty in establishing relationships due to early emotional deprivations.

In 1934, Slavson (1943, 1952) began using a psychoanalytically oriented group psychotherapy approach with latency age children (CA = 7-14), called activity group therapy (AGT). In AGT, approximately eight children meet weekly with a therapist for about 6-8 months. Therapeutic processes such as emotional release and insight occur, but the focus of AGT is on the group activity and the communications which are exchanged between the group members as they participate in the group activity. The group is considered to be a substitute family with the therapist assuming the role of a mature, understanding parent substitute. During the first phase of AGT an atmosphere of acceptance is created followed by the second and third phase in which the therapist assists the group in working on their expressed conflicts. The goal is to help the children acquire new modes of coping, and Slavson believes that within the context of the group setting, relative control of impulses can be learned. AGT has been used primarily with children who exhibit primary behavior and character disorders, and it is contraindicated with psychotic or extremely uncontrollable, hostile children.
Play group therapy (Schiffer, 1969; Slavson & Schiffer, 1975) is a psychoanalytic group treatment method used with prelatency children (CA = 4-6). Using various age-appropriate play materials, the therapist communicates with an individual child or the group, explaining and interpreting feelings and behavior. A group is terminated when the children demonstrate the ability to cope effectively with the demands of the group activities. Ginott (1961) sees the goal of group play therapy as changing the child's intrapsychic equilibrium through relationship, catharsis, insight, reality-testing, and sublimation. The mechanism of identification is emphasized as the child identifies with the other group members and the therapist.

Based on Rogers' philosophy of client-centered psychotherapy with adults, Axline (1947) developed a non-directive individual and group play psychotherapy approach for use with emotionally disturbed children. While the psychoanalytic approaches indicate the need for directiveness and interpretation, the client-centered approach assumes that individuals have within themselves the ability to solve problems and develop more mature coping behaviors. The goal of this approach is "To provide a relationship with a client that will enable him to utilize the capacities that are within him for a more constructive and happier life as an individual and as a member of society" (Axline, 1976, p. 210).

The maladaptive child's behavior is viewed as an expression of resistance to the blocking of maturity and independence imposed by significant others in the environment. In therapy it is necessary to develop an atmosphere favorable for the release of the child's internal
growth forces. As the child plays out feelings, the therapist uses reflection not interpretation, to acknowledge understanding and acceptance of those feelings. The client-centered therapist is non-directive but not passive. That is, through the use of reflection the therapist is continually helping the child to clarify feelings and develop a positive self concept. Using these procedures, children learn to understand and control their problems, realize selfhood, and become more personally mature.

The relationship therapy approach developed by Moustakas (1953, 1973) is closely related to Axline's non-directive approach in its philosophical tenets. However, Moustakas feels that the relationship formed between the child and the therapist within the context of play is both the means and the end in the therapeutic process. By establishing and maintaining a deep, understanding, personal relationship with the child, the therapist helps the child release the hostility and anxiety related to earlier relationships. Moustakas is more active than the client-centered therapist. The therapist responds to the child's play and feelings by listening, understanding, clarifying, accepting, and interpreting. This leads the child to develop feelings of adequacy and security through emotional insight. Moustakas becomes both emotionally and physically involved with a child, and at times this involvement takes the therapist outside of the therapy setting with visits to the child's school or home.

Play Therapy with the Mentally Retarded: Approaches and Research

The play therapy approaches discussed above have not been used extensively with the emotionally disturbed, mentally retarded child,
and where they have been employed, it has been with the mildly re-
tarded or 'functionally' retarded child. Leland and Smith (1965)
have developed a theoretical framework and play psychotherapy approach
specifically for use in the habilitation of the mentally retarded
child displaying personal and/or social maladaptation. Working with
mentally retarded children at all levels of retarded intellectual and
adaptive functioning (mild to profound), the focus of this approach
is on the child's present level of functioning. Within the context
of an interpersonal relationship, the therapist utilizes "cognitive
stimulation" and learning principles in order to effect behavior
change and decrease the child's level of "visibility" in the com-
munity.

Emphasis is placed on helping the child gain cognitive and be-
havioral control of behavior and generalizing these gains to every-
day life situations. The therapeutic process involves the unblocking
of cognitive functions using the procedures of reward (allowing be-
havior to continue), punishment (intrusion, not allowing behavior
to continue), and cognitive stimulation (talking about what the child
is doing, questioning the child, modeling, imitating). The emotion-
ally disturbed, mentally retarded child's cognitive blocking is felt
to be the result of organic, sociological, or psychological inter-
ferences (Leland & Smith, 1965). Many of the concepts and tecniqes
involved in "forcing the child to think" and assume greater cognitive
awareness and control of behavior are very similar to the current,
popular cognitive behavior therapy discussed by Meichenbaum (1977).
In the Leland and Smith approach, therapeutic progress is determined by the manipulation and control of structure in the play materials and the therapist. It is felt that a single approach cannot be utilized with all children, and that different degrees of structure are required for different coping problems. Based on a child's developmental level of functioning and degree of maladaptation, one of four different play therapy procedures based on either structure or unstructure in play materials and therapist behavior is utilized. The four approaches, as discussed by Leland and Smith (1965, 1972) are: Unstructured materials-Unstructured therapist approach (U-U), Unstructured materials-Structured therapist approach (U-S), Structured materials-Unstructured therapist approach (S-U), and Structured materials-Structured therapist approach (S-S).

In reviewing the literature with regard to the use of play psychotherapy approaches with mentally retarded children, several anecdotal and case study reports have found play psychotherapy to be an effective treatment in changing behavior in socially maladaptive mentally retarded children. Axline (1949) conducted 8-20 individual, non-directive play therapy sessions with 15, six and seven year old children referred because of behavior problems, emotional disturbance, or speech problems. Ten of the children were mildly retarded and the remaining five had normal or superior intelligence, but were living in a residential treatment center for emotionally disturbed children. Of the 10 retarded children, five showed no appreciable change in intelligence test scores (WISC) obtained before and after therapy (-3 to +4 point changes), while the other five children showed 15 to
24 point gains after therapy. No appreciable gains were found in the average intelligence group. Axline felt that family problems precluded the five retarded children from making appreciable gains in intellectual functioning. Within the play sessions with the mentally retarded children it was noted that play was initially destructive but became more controlled and outgoing as therapy progressed.

In 1950, Maisner described the use of play psychotherapy as part of the habilitation program for 15, institutionalized, mentally retarded children (8-13 years old) who demonstrated personal and/or social maladaptation according to teacher reports or Rorschach test results. The range of intellectual deficit was moderate to non-retarded with only seven children having IQ's below 70. It was not reported how the sample was chosen (random or ad hoc) or how many of the children were socially maladaptive. All children were seen for a minimum of six individual play therapy sessions emphasizing clarification of feelings, desensitization, and interpretation. It was stated that some children had additional individual or group play therapy treatment, or counseling sessions. Maisner noted improved behavior (not specified) in all 15 children and suggested that future research be conducted in this area.

Abel (1953) discussed the use of a group psychotherapy approach in which play materials were incorporated, with three mildly retarded, restless and destructive boys, 11, 13 and 14 years old. The group met two hours a week for three months. Abel noted that through the use of role-playing techniques and expressive media, the boys gained acceptance and derived satisfaction from the constructive group
activities, which in turn generalized to improved behavior in the school setting where the boys became leaders among their peers and functioned more adaptively. Using a relationship therapy approach, Glass (1957) reported a case study in which individual psychotherapy was conducted with a mildly retarded 12 year old boy who was living in a residential treatment facility. There were 58 sessions conducted over an eight month period. Progress was seen in the elimination of the original concerns which were truancy and destruction of public property; however the boy's parents terminated therapy due to financial reasons and two weeks later his aggressive acts re-occurred.

Chess (1962) reported on 19 maladaptive, severe to mild mentally retarded children (ages 4-16) who received six or more group psychotherapy sessions at an outpatient mental retardation clinic. Improvement in both behavior and intellectual functioning was noted in all the children. Davidson (1975) presented three case studies from a sample of 12, non-institutionalized school-age maladaptive children functioning in the mild to moderate range of intellectual functioning, who were seen for individual psychotherapy over a four year period. The children were all English speaking, but were attending a special education day school in France. Davidson discussed the psychotherapeutic play techniques used (including puppets, clay, water) and concluded that mentally retarded children do benefit from psychotherapy as seen in improved relationships with others.

Seven studies were found which employed more sophisticated methodological designs and frequently used statistical analyses of
objective outcome criteria to investigate the effectiveness of play
psychotherapy treatments with socially maladaptive, mentally retarded
children. Four of these studies used primarily individual psycho-
therapy approaches. Mundy (1957) reported a study in which individual,
non-directive play therapy modified by an analytic therapist with
emphasis on transference was used, over a period of nine months to one
year, with 15, institutionalized retarded children. The children were
functioning in the mild to severe range of retardation, and were be-
tween 5-12 years old. They were all diagnosed as neurotic based on
the judgment of a psychologist, and all displayed "behavior problems". A
control group of 10 untreated children matched for age and level of
disturbance was employed. Analysis of pre- and posttreatment scores
on the Stanford-Binet (Form L) revealed significantly greater increases
for the treatment group than for the control group. Anecdotal obser-
vations of the institutional staff members also revealed greater gains
in social adjustment (conduct, attention, etc.) and verbal abilities
for the children who received the play therapy treatment. Mundy also
presented a detailed case summary of one child who, despite the lack
of IQ change, changed dramatically in terms of more appropriate be-
behavior following therapy. One year follow-up re-evaluation with 10
of the 15 original children who received treatment revealed that four
maintained their improved status and six showed further increases in
IQ; however, it was noted that these latter six children had also been
transferred to better living environments. The follow-up evaluations
of 8 of the original 10 control group children indicated that all re-
mained the same except for one child who "significantly deteriorated".
Johnson (1953) investigated the relationship between test scores of 18, institutionalized, mentally retarded children (IQ = 61-81, CA = 9-16) on the Raven's Progressive Matrices Test, the Stanford-Binet Intelligence Scale, and the Arthur Performance Scale, with improvement in individual play therapy. Although the tests were all administered prior to treatment, they were not all given at the same time, and the period of time between each test administration was not stated. Also, the referral reasons and play therapy orientation were not delineated; and the number of play therapy sessions was extremely varied for each child (13-31 sessions). Improvement was based on projection of emotion and insight into problems during therapy; quality of relationships with others and academic progress in school; and Rorschach protocol changes.

Subotnick and Callahan (1959) investigated the effectiveness of short-term, individual play therapy with eight, institutionalized, mentally retarded boys who were between 8 and 12 years old. According to teacher and cottage parent reports, all had "severe emotional problems", and psychometric testing revealed moderate to no deficits in intellectual functioning (IQ's = 53-88). An eight week control period was utilized prior to the eight week treatment session period, during which time each child was seen twice a week for 45 minute sessions. The specific therapy approach was not explicated nor was the nature of the "severe emotional problems". The following tests were given at the beginning and end of the eight week treatment period, and again after an eight week follow-up period: WISC - Vocabulary, WISC - Digit Span, Children's Anxiety Pictures, The Bender Visual Motor
Gestalt Test, Draw-A-Person Test, and a behavior rating scale using parents and two teachers as informants. No significant differences were found in any of the measures, though tendencies were in the predicted direction of improvement.

Albini and Dinitz (1965) conducted both individual and group play therapy sessions with a group of 37 institutionalized, aggressive mentally retarded boys. A comparison group consisted of 36 nondisturbed, institutionalized retarded boys matched on age, IQ, and length of institutionalization. The entire sample ranged in age from 7-15 years with intelligence test scores ranging from 40 to 78. A maximum of 48, half-hour sessions were conducted. Analyses were based on daily teacher ratings on a classroom behavior checklist; biannual teacher ratings on the Pupil-Evaluation Schedule; and child and parent responses to an Acceptance-Rejection Attitude Scale. No significant changes in behavior were found during or subsequent to therapy. Although not statistically significant, Albini and Dinitz noted improvement for both groups in terms of teacher ratings on the behavior checklist, along with an observed decrease in negative classroom behaviors. The authors suggested that failure to see significant changes may have been due to insensitivity of the dependent measures, a lack of integration of the therapy program into other spheres of programming, or the possibility that more sessions may be needed to realize gains.

Leland, Walker, and Taboada (1959) conducted intensive short-term, group play therapy with eight, mild and moderate mentally retarded, institutionalized boys who were 4-10 years old. Previous treatment
techniques had reportedly failed to facilitate behavior change. The children were referred by various institutional personnel due to problems with social adjustment, emotional maturity; and all were described as behavior problems. Four of the boys were described as aggressive and destructive (socially maladaptive), while the other four were described as withdrawn (personally maladaptive). An Unstructured materials-Unstructured therapist approach (Leland & Smith, 1965) was basically used whereby the group received approximately 90 hours of treatment over a six week period. Evaluation was based on pre- and posttreatment results on the Vineland Social Maturity Scale and the Wechsler Intelligence Scale for Children (WISC), staff observations, notes of the group therapist, and follow-up observations conducted seven months after the treatment sessions terminated. Statistical analysis did not reveal significant changes in social maturity based on the Vineland, however there was observed evidence that the withdrawn children increased somewhat more in social maturity than did the aggressive children. Results also indicated that the therapy significantly promoted intellectual growth as measured by changes on the WISC Verbal Scale, although Full Scale score changes were not statistically significant. Based on staff reports, six of the eight boys were rated as better adjusted and no longer considered behavior problems. Two of the aggressive children were considered to have increased in maladaptive behavior and were rated as maintaining the behavior at the seventh month follow-up observation. The follow-up indicated that of the six who had improved, two were being discharged, two were improving, and two were basically the same as when observed
at posttreatment.

Using an approach similar to that of activity therapy, Fisher and Wolfson (1953) conducted 36 therapy sessions with 12, institutionalized mildly and moderately retarded girls, who were 10-13 years old. Two therapy groups were formed on the basis of age. The first group contained eight members, with five aggressive and three withdrawn girls; while the second group had four members with two aggressive and two withdrawn girls. Therapy progress was evaluated in terms of therapist perception of group changes, staff personnel ratings of improved behavior outside the therapy group, and pre- and posttreatment administrations of alternate forms of the Stanford-Binet Intelligence Scale. According to the staff interviews, 8 of the 12 girls showed improved behavior and attitudes, as well as more positive feelings. Six of the 7 socially maladaptive (aggressive) girls were described as more cooperative, quiet, affectionate, less quarrelsome, more interested in academics, and more accepting of rules and regulations. In terms of therapy group progress, the therapist noted a shift from ego centered behavior to group centered behavior, and finally to out of group interests. These changes were felt to have resulted from the development of security and acceptance gained in the therapy group environment. No significant differences were found in the psychometric test scores before and after the treatment period.

A sample of 33 institutionalized, "familial" endogenous retarded children, participated in a well designed study by Mehlman (1953) which investigated the efficacy of non-directive group play therapy. The children ranged from moderate to nonretarded (IQ = 50-78) and they
were 7-12 years old. The presence and nature of the children's disorders was not specified. The sample was divided into three, individually matched groups on the basis of age, length of institutionalization, and psychometric test performance. The experimental group (N = 11) consisted of two play therapy groups which received treatment twice a week over a 16 week period, for a total of 29 sessions. The movie group consisted of children who saw movies and had stories read to them for 14, one hour sessions. The control group consisted of children who received no treatment. Within six weeks before and after the treatment period, data was collected using the California Test of Personality, Rorschach Psychodiagnostic, Haggerty-Olson-Wickman (HOW) Behavior Rating Scale, Stanford-Binet (Form L), and the Grace Arthur Point Scale of Performance. Results indicated that the play therapy group showed significant improvement in comparison to the no treatment control group on the HOW Behavior Rating Scale. No other statistically significant results were found between the groups, however, the differences between the play therapy and movie groups favored the play therapy group in terms of improvement.

In addition, where the three groups were compared simultaneously, the $F$ ratio for the $F^2$ on the Rorschach approached significance. In regard to the therapeutic process, Mehlman indicated that the groups were too large for optimal therapeutic success. There was a statistically significant difference between the two play therapy groups on the HOW Behavior Rating Scale, with the group that was more aggressive, less cohesive, and more involved with therapist contact, showing the greatest gains in adjustment.
In summary, those studies basing play psychotherapy effectiveness primarily on anecdotal observations, have found this approach to be generally effective in increasing intellectual functioning and/or adaptive behavior in socially maladaptive, mentally retarded children (Abel, 1953; Axline, 1949; Chess, 1962; Davidson, 1975; Glass, 1957; Maisner, 1950). The outcome results of the more tightly designed studies have been more inconsistent in comparison to the outcome reports noted in the case study and anecdotal report based literature, but which however, have been primarily based on test scores (Albini & Dinitz, 1965; Fisher & Wolfson, 1953; Johnson, 1953; Leland et al., 1959; Mehlman, 1953; Mundy, 1957; Subotnick & Callahan, 1959).

However, due to a lack appropriately designed studies and/or failure to fully report methodological parameters, it is difficult to come to any definitive conclusion regarding the efficacy of play therapy with socially maladaptive mentally retarded children. Five of the studies (Albini & Dinitz, 1965; Johnson, 1953; Maisner, 1950; Mehlman, 1953; Subotnick & Callahan, 1959) had nonretarded children in their subject samples. The type of treatment approach and length of the treatment period are frequently not specified; and often it is not clear if the sample even displayed socially maladaptive behavior. There is a general absence in the use of objective dependent measures, and the use of IQ changes as a measure of therapeutic success is questionable. While most of the studies have included non-quantifiable reports of changes in adaptive behavior only two have used well developed instruments (Leland, et al., 1959; Mehlman, 1953).
Eight of the studies reviewed used individual therapy approaches whereas only five used a group play psychotherapy approach. Only three of the studies used samples of socially maladaptive, mentally retarded children who were not institutionalized (Axline, 1949; Chess, 1962; Davidson, 1975). The groups themselves have had anywhere from 5-12 members, and none of the studies used adaptive peers or specifically studied the developmental aspects of the peers in the group in regard to therapy outcome only. Three of the studies employed a control group (Albini & Dinitz, 1965; Mundy, 1957; Subotnick & Callahan, 1959); however the use of nondisturbed children as a control group (Albini & Dinitz, 1965) is highly questionable. In groups with both withdrawn and aggressive children in them, Leland, et al. (1959) noted more behavioral improvement with withdrawn than aggressive group members, while Mahlman (1953) observed greater improvement in the aggressive children in her group.

Thus, while it is difficult to state conclusively the effects of using play psychotherapy with socially maladaptive mentally retarded children, it does appear from the studies reviewed, that further research in the area is indicated and desired. More meaningful results will require the use of more sophisticated designs, which specifically state methodological parameters, and utilize more objectifiable dependent measures in the area of adaptive behavior.

Other Treatment Techniques and Approaches

Theraplay (Jernburg, 1979) is a new treatment approach suggested for use with children who, as a result of early emotional deprivation
have low self confidence and little trust in the world. Based on the work of Des Lauriers (1962), this approach focuses on the amelioration of early disturbances in the parent-child relationship using the techniques of "structuring, challenging, intruding, and nurturing". It is conceived as a short-term approach which can be taught to paraprofessionals. Jernberg briefly mentions use of the technique with severely mentally retarded children. Indicated for the socially maladaptive child is the need for structure (limits, quieting down, firm organization) and regressive, indulgent nurturance.

Robertson (1964) has found therapeutic success using a Shadow Therapy technique with mentally retarded children who present themselves as indifferent to their environment. The procedure consists of creating various types of shadows using a light from a projector in a darkroom. Robertson's article presents case studies in which this approach has reportedly facilitated interpersonal communication and reality contact in maladaptive retarded children. Gardner (1971) has developed a "mutual storytelling technique" for use in combination with other psychotherapeutic techniques, in order to gain insight into a child's inner conflicts, frustrations, and defenses. With this method, the child is asked to tell a novel story which is tape-recorded. As the child tells the story and discusses the moral of the story, the therapist interprets its meaning. Then the therapist tells a story using the same characters but with the introduction of healthier adaptations and resolutions of the conflicts found in the child's story. Hopefully these more appropriate solutions will be generalized to life situations.
Chidester and Menninger (1936) presented a classic case study utilizing psychoanalytic techniques with an eleven year old mildly retarded boy, focusing on the development of a therapeutic relationship and the boy's egocentric denial of his problems. Behavioral gains were seen over a four year period, as well as a S-B IQ gain from 62 to 90.

Thorne (1948) designed a systematic program of individual and group psychotherapy using psychoanalytic and nondirective approaches, with 68 institutionalized mentally retarded individuals (ages 1 to 29) with serious conduct disorders. After two years of intensive treatment, gains were measured in terms of conduct and school records as well as clinical judgments. Thorne reported that 66% improved, 23% were unchanged, and 10% were worse than when they began treatment. Thorne noted overall marked improvement in the morale of the whole institution as well as in individual client behavior.

Cotzin (1948) conducted group psychotherapy with 8 mild and moderate retarded, institutionalized boys and 1 nonretarded boy, ages 11 to 15, who were referred due to aggressive and antisocial behaviors. Procedures utilized structured activities including boxing matches, storytelling, work with expressive media, and a courtroom scene technique in which the therapist acted as judge and the boys acted as defendants, etc. Cotzin indicated these procedures lead to release and insight, and improvement in behavior was observationally noted in all clients, two months following therapy. A one year follow-up indicated that six of the children had maintained their improved behavior.
Appel and Martin (1957) conducted three discussion groups with institutionalized, socially maladjusted mentally retarded "children" (ages not specified) in order to develop positive coping strategies needed for community living. Twenty males and females were in each group. The groups were conducted within a democratic atmosphere using visual aids and actual experiences in the community. The authors reported that the group interaction provided for emotional release and allowed the participants to develop more realistic and natural modes of social interaction. The children reportedly indicated that the group help them overcome their fear of the unknown, develop insight, and become more self confident.

Utilizing a quasi-experimental design, Hayes (1977) compared gains in individual psychoanalytic treatment between 20 familial retarded children (15 mild, 2 moderate, 2 borderline) and 20 non-retarded children, matched for diagnostic category (neurosis, personality disorder, borderline state, psychosis), age (6-16), and socio-economic status. Length of treatment ranged from 8 to 48 months and was conducted in an outpatient setting. Based on therapist ratings, results indicated that approximately 75% of the clients in each group showed improvement, indicating to the author that mentally retarded children can benefit from psychoanalytic psychotherapy to the same extent as nonretarded children.

Art and music therapy techniques have also been found to be useful treatment approaches especially with nonverbal mentally retarded children. Kadis (1957) feels that activities such as drawing and painting allow a child to express feelings and develop a communicative
relationship with the therapist. While creative, accurate productions are not the immediate goals of art therapy, Gondor and Levbarg (1958) noted that in 950 cases, expression through drawings and paper cutouts facilitated better reality adjustment in children (ages 3-10).

Several music therapy approaches have been presented in the literature. Joseph and Heimlich (1959) discussed the use of a music therapy program with three retarded adolescents (ages 16, 13, 13; level of functioning unspecified) who lived in a residential institution and had difficulties relating with adults and/or peers. The therapist played piano, guitar, or autoharp while the therapy group clients (N = 3) used percussion instruments for expression of emotion through sound. The group met twice a week, for thirty-minute sessions, throughout the school year, with slight to marked improvement in interpersonal relationships reported at the close of the school year. Working with groups of 5-10 children (ages 5-15, moderate to nonretarded) for 45 minutes weekly, Weigl (1959) utilized a structured approach which encouraged rhythmic movement, humming and singing. The author stated 70% of the children who had participated in the program showed positive changes in behavior and attitudes, 20% showed improvement in therapy but it was not generalized to the classroom setting, and 10% of the children who participated had not changed. Alvin (1959) described the use of a 'concert technique' in which six, short weekly musical performances (cello and accompaniest) were presented to 24 moderate and severely retarded children (ages 6-16) with observations of increased relaxation and social integration. Sternlicht (1977) mentions the use of an instrumental band with maladaptive mentally retarded children
in enhancing self concept and creative self expression.

Sternlicht (1977) has also discussed several novel techniques which he has utilized in his psychotherapy sessions with mentally retarded clients. Sternlicht describes the use of balloons as a tranquilizing agent, mirrors for self awareness, and magic tricks for building ego support and confidence. In addition, he has utilized audio-visual feedback using cameras, photographs, and tape recorders in order to produce behavior change in maladaptive mentally retarded individuals.

Treatment approaches to social maladaptation may involve parents or a family therapy approach. Sternlicht (1966) discusses the many ways in which parents can be involved in the child's psychotherapeutic treatment. Included may be educational group counseling in which techniques of child rearing and development may be addressed, group counseling in which parents explore their feelings and attitudes as related to the child, or group psychotherapy whereby parents explore their own emotions and problems, only incidentally related to the child. In filial therapy (Guerney, 1964) parents are trained by a therapist in group sessions to become nondirective parent therapists with their emotionally disturbed children. The parents are trained in groups of 6-8, in weekly sessions, however Guerney does not feel this approach is appropriate with the mentally retarded (not specified why) or with parents who are pre-psychotic or suicidal.

Williams and Singh (1976) have discussed the use of hypnosis with children with various types of problems, including behavior disorders. Hypnotic relaxation exercises are used to increase self control, in a
very similar manner to procedures used by some cognitively oriented behavior therapists. Hypnotherapy may be a future area which should be explored with socially maladaptive mentally retarded children, as Sternlicht and Wanderer (1963) have found that institutionalized mentally retarded children (IQ 37-68) were able to be hypnotized.

Kneedler (1980) has reviewed several studies in which cognitive behavioral interventions have been used to modify socially maladaptive behavior in non-retarded children. Meichenbaum (1977) has done much of the work in this area and discusses clinical applications of self instructional training with hyperactive, impulsive, and withdrawn children. Based on the work of the Soviet psychologists (Luria, Vygotsky) on the role of inner speech and thought in the control of behavior and socialization of children, Meichenbaum's procedures teach a child to think aloud, initially, using self verbalizations, in order to develop cognitive self control over tasks. Of particular interest is Camp's (1977) study in which young aggressive boys (77-97 months of age) failed to use verbal mediational activity in many situations, and when it was utilized, covert mediational activity often failed to achieve functional control over behavior. Camp, Blom, Herbert, and Doorwick (1977) developed a "think aloud" training program to improve self control in 12, 6 to 8 year old aggressive boys. Daily, 30-minute sessions were conducted for six weeks involving modeling and verbalization of cognitive activity in order to facilitate the use of verbal mediation skills in dealing with both cognitive tasks and interpersonal problems. Normal and aggressive control groups received no treatment. Results indicated that teachers rated both groups of aggressive boys
as decreasing in aggressive behaviors, but they rated the treatment group as showing improvement on a significant greater number of pro-social behaviors, as measured by Miller's School Behavior Checklist. Furthermore, before the treatment program began the treatment group's cognitive test performance resembled that of the aggressive control group and differed from that of the normal control group, but following treatment their pattern resembled the normal control group and differed from the aggressive control children.

Psychopharmacological approaches have also been used, alone or in conjunction with psychotherapeutic approaches, in the treatment of children displaying socially maladaptive behaviors. The most frequently used chemical agents with children have been tranquilizers, stimulants, and antidepressants. The purpose of a psychopharmacological treatment approach is to either remedy the physiological cause of the maladaptive behavior and/or modify behavior in order that psychotherapeutic procedures can be employed. Most frequently discussed in the literature has been the controversial use of stimulants (amphetamines) which have the paradoxical effect of reducing activity levels, with side effects of appetite loss and insomnia in hyperactive children. The major tranquilizers, especially phenothiazines (Thorazine, Mellaril, Stelazine), have been used to control aggressive, violent and destructive behavior, due to the calming effect produced.

Reviewing the literature, Connors (1975) indicated that while many early uncontrolled studies reported positive results using phenothiazines, and extensive use with institutionalized mentally retarded children, and children in outpatient setting with behavior disorders
and poor peer relations; more recent better controlled studies have revealed the negative effects in relation to learning and cognitive functioning. Another major tranquilizer, Haldol, has been used with aggressive adolescents who do not respond to phenothiazines. Although it acts more quickly than phenothiazines, Haldol is not as yet recommended for use with children (Connors, 1975). Most experts in the field of psychopharmacology agree that knowledge regarding the effects of chemical agents upon specific disorders in children is presently limited and often controversial in terms of behavioral and physiological changes. There is also general agreement that chemical agents should only be used in conjunction with psychotherapy and environmental management.

In reviewing the recent literature on psychological approaches used to modify social maladaptation in mentally retarded individuals, behavioral modification approaches, involving the application of operant conditioning principles are most frequently discussed. Behavior therapists feel that most all maladaptive behavior is generated and maintained by environmental events and that treatment involves the measurement and control of the stimulus and response consequences surrounding the maladaptive target behavior using the principles of learning. Forehand and Baumeister (1976) discuss three primary behavior modification approaches used to modify maladaptive behavior. They are: a) differential positive reinforcement of behaviors; b) withdrawal of positive reinforcement following the target behavior (ignoring, timeout and response-cost procedures); and c) punishment (shock, aversive auditory stimuli, overcorrection). In
reviewing the literature, these authors found that the treatment of choice in modifying disruptive classroom behaviors has been the reinforcement of alternate behavior, or withdrawal of reinforcement when the target behavior occurs. However, in reviewing studies dealing with antisocial behavior they note that a combination of these two approaches is more effective than programs using only one of the above approaches.

In a more recent review of the literature, Mulick and Schroeder (in press) found that timeout procedures were most frequently used in treating antisocial behavior in the mentally retarded, however, the quality and rate of reinforcement available in 'time in' is rarely addressed. Mulick and Schroeder note the need for greater emphasis on delineating antecedent events or ecological variables (crowding, social organization, availability of materials and staff) and building repertoires of prosocial behavior in behavior management approaches to social maladaptation. Behavioral management techniques, appear particularly useful for decreasing high frequency behaviors which are harmful to the client or others in the environment. However, most of the approaches are still very external in control orientation rather than focusing on the development of personal cognitive control over behavior, and the importance placed on the development of a close, interpersonal relationship with the therapist is not a prioritized procedure as it is in psychotherapeutic approaches.

The use of peers as therapists is another approach which can be used in the modification of maladaptive behavior in children. In therapy approaches in which groups are composed of maladaptive children
(Abramowitz, 1976), or a combination of maladaptive and adaptive children (Clement, 1977; Furman, et al., 1979c), it is believed that the identification and modeling processes within the group facilitate therapeutic progress and generalization to other settings.

Furman, Binger, and Rosen (1979b) have distinguished unstructured and structured peer intervention approaches based on the degree to which the adult controls the interactions between the target child and the peer(s). Structured approaches are typically used in classroom peer intervention. Studies as reviewed by Strain, Cooke, and Apolloni (1976), and in peer tutoring approaches (Feldman, Devin-Sheehan, & Allen, 1976), to decrease maladaptive behavior and increase appropriate social behavior in children. Fewer studies have employed unstructured peer intervention strategies, however, many group psychotherapy approaches (Abramowitz, 1976) would be considered unstructured, as interactions are not typically elicited by explicit instructions to the group members but instead, are developed by establishing a situation in which the desired interchanges are likely to occur. In a classic study conducted by Sherif, Harvey, White, Hood, and Sherif (1961), an unstructured peer intervention approach was used in which intergroup conflict was reduced between two groups of boys by exposing the groups to various problems which required cooperation between the groups in order for successful solution to ensue.

There has been little research in regard to the developmental aspects of the peers in peer intervention studies. One study (Furman, et al., 1979c) has investigated the age of adaptive peer therapists in rehabilitating socially withdrawn preschool children. In this study
it was found that withdrawn children paired with younger-age peer therapists in play treatment sessions increased significantly in rates of positive social interaction compared to a control group of withdrawn preschool children; however, withdrawn children paired with same-age peer therapists did not increase significantly more than the control group in terms of rate of positive interactions.

In summary, the present chapter has presented various treatment approaches which have been used or show potential for application in habilitation programs for socially maladaptive, mentally retarded children. All of the approaches discussed have the common goal of behavior change in order that adaptive competencies increase and 'visibility' in the community decreases. Recognizing the need for more developmentally oriented research (Achenbach, 1978; Furman, 1979a), and clinical studies specifying methodological parameters (Garfield, 1978), the present study was designed in order to investigate the therapeutic effectiveness of same-age and younger-age peer therapists in increasing adaptive behavior and social interaction in socially maladaptive, mentally retarded children, within the context of different play environments.
The present study was designed in order to investigate the comparative effectiveness of free play and play therapy treatment approaches using same-age and younger-age adaptive peer therapists, in developing appropriate social interactions and adaptive behavior in socially maladaptive, mentally retarded school-age children living in the community. Behavioral changes were measured using the Adaptive Behavior Scale (Nihira, et al., 1975) and social interaction ratings conducted during the treatment sessions and classroom free play periods.

Sample Selection

The sample was chosen from nine classrooms (5 primary, 4 intermediate) in three of the four Franklin County Program for the Mentally Retarded (FCPMR) community training centers. One training center declined the invitation to participate in the study.

The socially maladaptive and socially adaptive children were selected using Adaptive Behavior Scale (Nihira, et al., 1975) ratings which were completed for programming purposes on the primary and intermediate students ($N = 70$) by the FCPMR classroom teachers at the beginning of the academic year (September, 1979). Each child's protocol was tabulated by the author for the number of Part II social
maladaptation domains which were at or above the 80th percentile. The five Part II domains used to assess social maladaptation were as follows: Violent and Destructive Behavior (Domain I), Antisocial Behavior (Domain II), Rebellious Behavior (Domain III), Untrustworthy Behavior (Domain IV), and Psychological Disturbances (Domain XIII).

Within each classroom the two children with the greatest number of social maladaptation domains at or above the 80th percentile were classified as the most socially maladaptive children for that particular class. Each socially maladaptive child was then paired with an appropriately matched socially adaptive peer therapist based on class placement, sex, and chronological age requirements.

Specifically, a socially adaptive peer therapist had to be the same sex and from the same class as the socially maladaptive child; and also have a fewer number of ABS Part II social maladaptation domains which were at or above the 80th percentile, compared to the socially maladaptive child with whom they were paired. In addition, it was necessary that the adaptive peer therapist be either the same-age (within 6 months) or at least 12 months younger than the socially maladaptive child. The younger-age adaptive therapists chosen were not only chronologically younger but also younger in adaptive age category placement grouping in regard to the ABS norming procedures (Leland, 1975a).

Sample
A sample of 24 moderate mentally retarded children (14 males, 10 females) was selected for participation in the study. Twelve dyad groups each consisting of a socially maladaptive child and a socially adaptive peer therapist were formed. Six of the groups consisted of
socially adaptive peer therapists who were the same age as the socially maladaptive child, while the other six groups consisted of socially adaptive peer therapists who were younger than the socially maladaptive child ($X = 17.5$ months younger; range = 13-22 months). All met the selection requirements described above except for one same-age adaptive peer therapist who was eight months younger than the maladaptive peer with whom he was paired.

Table 1 summarizes the demographic data for the socially maladaptive and adaptive children in the sample with regard to sex, mean age in months, age range, race, and the number of children receiving medication for seizure and/or behavioral control. The individual ages and ABS ratings for each of the 24 children can be found in Appendix A. None of the children had major sensory or physical handicaps, except for one female who was both hearing impaired and used a wheelchair. Written parent or guardian consent was obtained for each of the children who participated in the study. A copy of the consent letter can be found in Appendix B.

**TABLE 1**

**DEMOGRAPHIC DATA FOR SUBJECT SAMPLE**

<table>
<thead>
<tr>
<th></th>
<th>CA</th>
<th>Race</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sex</td>
<td>Mean Range</td>
<td></td>
</tr>
<tr>
<td>Maladaptive</td>
<td>7-M, 5-F</td>
<td>124.5, 100-149</td>
<td>10-Caucassian, 2-Black</td>
</tr>
<tr>
<td>(N = 12)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptive</td>
<td>7-M, 5-F</td>
<td>113.0, 85-141</td>
<td>9-Caucassian, 2-Black, 1-East Indian</td>
</tr>
<tr>
<td>(N = 12)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Dependent Measures

AAMD Adaptive Behavior Scale (ABS) (Nihira, et al., 1975)

The ABS is a behavior rating scale designed to provide an objective measurement of the adaptive behavior of mentally retarded, emotionally maladjusted, and/or developmentally disabled individuals. The ABS has been designed for use with persons over six years old and it can be administered to anyone who has closely observed or personally knows the daily behavior of the person being rated.

Part I of the ABS contains ten domains organized developmentally as important to the behavioral factors of independent functioning and personal responsibility (Leland, Shoaee, & Vayda, 1975b). The following Part I domains were used in the present study: Independent Functioning, Economic Activity, Language Development, Numbers and Time, Domestic Activity, Self-Direction, Responsibility, and Socialization.

Part II is comprised of thirteen domains related to personality and behavior disorders that are considered personally and socially maladaptive (Nihira, 1969). Social maladaptation is demonstrated by extrapunitive, aggressive or conduct-deviant behavior. The five Part II domains and related subdomains which were used to measure social maladaptation are elaborated below:

Domain I. Violent and Destructive Behavior

1. Threatens or Does Physical Violence
2. Damages Personal Property
3. Damages Others' Property
4. Damages Public Property
5. Has Violent Temper, or Temper Tantrums
Domain II. Antisocial Behavior

1. Teases or Gossips About Others
2. Bosses and Manipulates Others
3. Disrupts Others' Activities
4. Is Inconsiderate of Others
5. Shows Disrespect for Others' Property
6. Uses Angry Language

Domain III. Rebellious Behavior

1. Ignores Regulations or Regular Routines
2. Resists Following Instructions, Requests, or Orders
3. Has Impudent or Rebellious Attitude Toward Authority
4. Is Absent From, or Late For, the Proper Assignments or Places
5. Runs Away or Attempts to Run Away
6. Misbehaves in Group Settings

Domain IV. Untrustworthy Behavior

1. Takes Others' Property Without Permission
2. Lies or Cheats

Domain XIII. Psychological Disturbances

1. Tends to Overestimate Own Abilities
2. Reacts Poorly to Criticism
3. Reacts Poorly to Frustration
4. Demands Excessive Attention or Praise
5. Seems to Feel Persecuted
6. Has Hypochondriacal Tendencies
7. Has Other Signs of Emotional Instabilities

Studies reported in the ABS Manual (Nihira, et al., 1975) indicate that interrater reliabilities for Part I ranged from .93 to .71 ($\overline{X} = .86$). The reliabilities for Part II domains ranged from .77 to .37 ($\overline{X} = .57$).

Social Interaction Observations

An observational coding system was adapted from one originally developed by Furman and Masters (1978), for use in coding the social interactions of the socially maladaptive and socially adaptive children
during classroom free play periods and treatment sessions. A time-
sampling procedure was used with ten seconds for observing and ten
seconds for recording the interactions of an individual target child
with others in the environmental setting. Within the classroom a
target child could have interactions with an adult(s), peer(s), and/or
the target peer (child paired with for the treatment sessions); whereas
in the treatment session codings, interactions only involved the target
peer and/or the adult therapist. A sample of the recording form can
be found in Appendix C.

An interaction was recorded whenever any verbal, vocal, motor, or
gestural behavior of the target child was directed to another person
or when a person directed one of the above behaviors toward the target
child. Interactions were specifically coded as a) dispensed or received
by the target child, b) containing reinforcement or punishment, and
c) to which individuals were involved in the interaction. The specific
behaviors which defined Dispensed/Received and Reinforcement/Punishment
are shown in Table 2. These specific behavior categories are more

If there were no social interactions dispensed or received by the
target child for an entire interval, this was coded in the "no inter-
action" column on the recording form. An additional coding of
"inability to code" was used when the observer was unsure a) if an
interaction occurred, b) if the interaction was reinforcing or punish-
ing, or c) which individuals were involved in an interaction.
TABLE 2
BEHAVIOR CATEGORIES

<table>
<thead>
<tr>
<th>I. REINFORCEMENT</th>
<th>RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECANTED</td>
<td></td>
</tr>
<tr>
<td>1. $ offers instrumental help</td>
<td>1. $ receives instrumental help</td>
</tr>
<tr>
<td>2. $ offers guidance</td>
<td>2. $ receives guidance</td>
</tr>
<tr>
<td>3. $ offers an object (gifts)</td>
<td>3. $ is offered an object</td>
</tr>
<tr>
<td>4. $ extends an invitation or permission</td>
<td>4. $ receives an invitation or permission</td>
</tr>
<tr>
<td>5. $ praises</td>
<td>5. $ is praised</td>
</tr>
<tr>
<td>6. $ nominates another for a status role</td>
<td>6. $ receives a status role</td>
</tr>
<tr>
<td>7. $ warmly greets another</td>
<td>7. $ is warmly greeted</td>
</tr>
<tr>
<td>8. $ smiles or laughs at another's behavior</td>
<td>8. $'s behavior is smiled or laughed at</td>
</tr>
<tr>
<td>9. $ gives reassurance</td>
<td>9. $ receives reassurance</td>
</tr>
<tr>
<td>10. $ gives protection</td>
<td>10. $ receives protection</td>
</tr>
<tr>
<td>11. $ gives physical affection</td>
<td>11. $ receives physical affection</td>
</tr>
<tr>
<td>12. $ accepts help or gift</td>
<td>12. $'s help or gift is accepted</td>
</tr>
<tr>
<td>13. $ complies with another's request</td>
<td>13. $'s request is complied with</td>
</tr>
<tr>
<td>14. $ accepts another's idea</td>
<td>14. $'s idea is accepted</td>
</tr>
<tr>
<td>15. $ plays cooperatively or associatively</td>
<td>15. Someone plays with $ cooperatively, etc.</td>
</tr>
<tr>
<td>16. $ promises a reinforcer (reward)</td>
<td>16. $ is promised a reinforcer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II. PUNISHMENT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DECANTED</td>
<td></td>
</tr>
<tr>
<td>1. $ responds to another's behavior negatively</td>
<td>1. $'s behavior is responded to negatively</td>
</tr>
<tr>
<td>2. $ rejects or denies a privilege</td>
<td>2. $ is rejected or denied a privilege</td>
</tr>
<tr>
<td>3. $ annoys or teases another</td>
<td>3. $ is annoyed or teased</td>
</tr>
<tr>
<td>4. $ snatches or damages another's property</td>
<td>4. $'s property is snatched or damaged</td>
</tr>
<tr>
<td>5. $ physically attacks another</td>
<td>5. $ is physically attacked by another</td>
</tr>
<tr>
<td>6. $ disapproves of another's behavior</td>
<td>6. $'s behavior is disapproved of another's behavior</td>
</tr>
<tr>
<td>7. $ blames another for some deed</td>
<td>7. $ is blamed for some deed</td>
</tr>
<tr>
<td>8. $ yells at another</td>
<td>8. $ is yelled at</td>
</tr>
<tr>
<td>9. $ and peer quarrel</td>
<td>9. $ and peer quarrel</td>
</tr>
<tr>
<td>10. $ ignores another's verbalization or gesture</td>
<td>10. $'s verbalization or gesture is ignored</td>
</tr>
<tr>
<td>11. $ threatens another with a punisher</td>
<td>11. $ is threatened with a punisher</td>
</tr>
<tr>
<td>12. $ insults another</td>
<td>12. $ is insulted</td>
</tr>
</tbody>
</table>
Posttreatment Social Interaction Questionnaire

A social interaction questionnaire was developed by the author for use with classroom teachers (Appendix D) and treatment therapists (Appendix E), in order to obtain a measure of observed changes in an individual child's appropriate and inappropriate social interactions following participation in the treatment sessions.

Teachers were asked to indicate the degree of change (significant, slight, no change) observed in a specific child's appropriate and inappropriate social interactions in the classroom setting; with adults, peers, and the target peer with whom the child was paired with in therapy. Therapists were requested to base their responses on interaction changes observed with the target peer and adult therapist during the treatment period.

Procedure

Pretreatment

The ABS data routinely collected by the FCPMR at the beginning of the academic year, constituted the pretreatment ABS data and was used in selecting the sample. The 12 treatment groups were randomly assigned to either free play or play therapy treatment conditions with an equal number of same-age and younger-age adaptive peer therapist groups in each condition. Teachers were aware of the children participating in the study, but they did not know the specific treatment group condition to which the children were assigned nor were they told that the ABS was used for subject selection.

The classroom and videotape social interaction ratings were made by four, senior undergraduate and graduate students who were unaware
of the nature of the study. The investigator was also trained to
criterion as it was necessary for her to conduct seven of the pre-
treatment observations due to scheduling conflicts of the other
observers. Approximately 20 training session hours were conducted by
the investigator using the previously discussed social interaction
observation rating system. The training sessions consisted of
didactic and practicum experience using videotapes and actual class-
room observations.

The reliability for each behavior category was obtained by cal­
culating the number of agreements, dividing by the total number of
observations and then transforming the score to a percentage. Prior to
the actual pretreatment observations, the observers reached the overall
category interrater reliability criterion of 80% for two consecutive
observations in the classroom ($\overline{X} = 96.5\%$) and on the videotapes ($\overline{X} =
87\%$). At least two reliability checks occurred within each pre- and
post- phase of classroom and videotape rating with overall averages
at each check at or above 80% agreement.

Each observer was provided with a portable cassette player equipped
with an earphone and a cassette tape which indicated 60, 10 second re­
cording intervals. The classroom observations were made during free
play periods. The observational ratings began 2-3 minutes after the
start of the free play period in order to allow for transition between
activities. Observations were not conducted when the socially mal­
adaptive child left the room or when the socially adaptive peer ther­a­pist was not in attendance. The classroom teachers were asked to
interact with the children as they normally would during these times.
They were told that the raters were observing the social play behaviors of the children.

During the pretreatment classroom observation phase of the study, two, 10 minute observation ratings were conducted on each of the twelve socially maladaptive children. The two observations on each child were conducted by independent observers, within the same week but not more than two weeks prior to the beginning of the treatment sessions.

Treatment

Eight, female graduate students, trained in the Leland and Smith (1965) play therapy approaches with at least one year of supervised experience, served as the therapists for the play therapy and free play groups. Each group was to meet for 10, 30 minute treatment sessions. However, one free play group had only nine sessions due to absences, and one play therapy group met for only seven sessions as the adaptive peer therapist moved to another school. The therapists were told that within each group, one child had been identified as socially maladaptive and that the other child was more socially adaptive and was to serve as a peer therapist. If one of the children in a group was absent, the treatment session was rescheduled. Therapists were asked not to discuss the specific therapy progress or course of events until the entire study was completed, so as not to divulge which children were in the free play or play therapy treatment groups.

Each of the twelve groups conducted their sessions in rooms standardized for the types of unstructured play materials they contained. Materials used were sand, water, sponges, buckets, shovels, a sieve, a mirror, wooden blocks, clay, play-do, crayons, construction
paper, two tennis balls, a plastic kickball, tongue depressors, and rhythm instruments (xylophone, bells, tambourine).

The free play groups demanded minimal therapist involvement. The therapist introduced the playroom materials to the children and indicated they could play together with any of the materials. The therapist then sat in the corner of the room and did not interact with the children, unless a child's personal safety was at risk, or when it was time to escort the children back to their classroom.

The therapists assigned to the play therapy groups were active participants in the group, following the "Unstructured materials-Structured therapist approach" (Leland & Smith, 1965; Deutsch & Leland, 1976). Predetermined group goals were formulated for each session based on the therapists' previous knowledge and play therapy experience. The therapist were instructed to use the socially adaptive child as a "co-therapist" model of desirable behavior as much as possible.

The therapists were told that 20 minutes of two of their sessions were to be videotaped. Due to the special therapeutic dynamics surrounding the initial (Session #1) and final (Session #10) therapy sessions, the second and ninth sessions of each free play and play therapy group were videotaped. In the one play therapy group which terminated early (child moved), the seventh session was videotaped. The videotaping was done in the treatment room using a Sony portable video-recorder with 30 minute videotapes. The second session videotapes were reviewed by the investigator and a licensed psychologist with feedback given to each therapist.
Posttreatment

Within two weeks after the last treatment session, the four trained observers conducted two, 10 minute classroom free play observations on each of the 12 socially maladaptive children using the social interaction observation rating system.

Each teacher and therapist was requested to complete the Post-treatment Social Interaction Questionnaire. Teachers were also asked to complete an Adaptive Behavior Scale on both socially maladaptive and adaptive children. Each therapist submitted a brief one-page treatment report. A licensed psychologist reviewed and signed the reports, and they were then forwarded to the appropriate Instructor Supervisor at each of the three participating schools. Staff psychologists who had served as therapists and desired to continue therapy services, were requested not to resume sessions until after the follow-up classroom observations were completed. All of the posttreatment information was collected prior to the Christmas holiday recess.

Follow-Up

Two, 10 minute classroom free play observations were scheduled to be conducted with a random sample of six of the socially maladaptive children, one month after the completion of the therapy sessions. However, during the course of this three week period, only one, 10 minute classroom observation was made on five of the six children, due to frequent absences and scheduling difficulties. Two, 10 minute observations on independent days were completed with one child.
Videotape Ratings

The 24 treatment session videotapes were rated by three of the original four trained observers, however none of the videotapes were rated until all classroom observations were completed. This procedure was followed so that the observers would not know which children were in the free play or play therapy treatment conditions when they were conducting the classroom observations.

Twenty minutes (60 intervals) of each Session 2 and Session 9 videotape were coded twice; once using the socially maladaptive child as the 'target child' and once using the socially adaptive child as the 'target child'. This procedure allowed for observations between the socially adaptive child and the adult therapist.
CHAPTER IV

RESULTS

The data was analyzed in order to examine change scores in adaptive behavior and social interaction for the socially maladaptive and adaptive peer therapist children. Factors were type of treatment (free play/play therapy) and age (same-age/younger-age) of the adaptive peer therapist. The presentation of the results will be as follows: Adaptive behavior analysis, Social interaction analyses, and Posttreatment social interaction questionnaire analysis.

Adaptive Behavior Analysis

In order to investigate changes in adaptive behavior, a four-way (three between and one within) analysis of variance was performed using the pretreatment and posttreatment scores obtained on the Adaptive Behavior Scale (ABS). There were four dependent measures from Part I (percentiles) and five from Part II (raw scores) of the ABS. In order to reduce the number of significance tests the Part I domains were combined into categories as described by Leland, Shoae, and Vayda, 1975b. Specifically, Personal Independence includes the Independent Functioning and Domestic Activity domains; Cognitive Triad includes the domains of Economic Activity, Language Development, Numbers and Time; Social Motivation includes the Responsibility and Socialization domains; and the Self Direction domain comprises the
Personal Motivation dependent measure. Only the five domains related to social maladaptation were analyzed on Part II of the ABS (Violent and Destructive Behavior, Rebellious Behavior, Antisocial Behavior, Untrustworthy Behavior, and Psychological Disturbances).

Table 3 shows the $F$-ratios obtained from the four-way analysis of variance. Individual raw scores can be found in Appendix A. Table 3 indicates six significant main effects, five involving the subject factor (maladaptive/adaptive) and one with the time factor (pretreatment/posttreatment). A significant subject main effect was found on the Social Motivation domain ($F\ (1,\ 16) = 5.02, \ p < .05$). The mean percentile score for the adaptive children ($\bar{X} = 73.56\%$) was significantly higher than that of the maladaptive children ($\bar{X} = 52.96\%$). The significant time effect involving the Part I Cognitive Triad domain ($F\ (1,\ 16) = 6.77, \ p < .05$) revealed that the percentile scores from pretreatment to posttreatment periods increased significantly for both maladaptive and adaptive children ($\bar{X}_{\text{pre}} = 45.69\%, \bar{X}_{\text{post}} = 49.92\%$). There were no significant interactions involving the Cognitive Triad domain ($p > .05$) which indicated that the main effect increases over time occurred irrespective with regard to the type of treatment approach or age of peer therapist condition.

The four other significant subject main effects ($p$'s $< .05$) were found on all of the ABS Part II domains except for Psychological Disturbances ($p > .05$). Table 4 shows that the mean raw scores on these Part II domains were significantly higher for the maladaptive than the adaptive children. This finding was expected in regard to pretreatment Part II domain scores as these domains were used as part
### TABLE 3

**ANOVA F-Scores for Adaptive Behavior Scale Domains**

<table>
<thead>
<tr>
<th>Source</th>
<th>Part I</th>
<th></th>
<th>Part II</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment (T)</td>
<td>.83</td>
<td>.00</td>
<td>.85</td>
<td>.18</td>
</tr>
<tr>
<td>Age (A)</td>
<td>.11</td>
<td>1.99</td>
<td>2.11</td>
<td>1.56</td>
</tr>
<tr>
<td>Maladaptive/Adaptive (M)</td>
<td>2.45</td>
<td>.91</td>
<td>2.28</td>
<td>5.02*</td>
</tr>
<tr>
<td>Treatment X A</td>
<td>.00</td>
<td>2.18</td>
<td>.62</td>
<td>.39</td>
</tr>
<tr>
<td>Treatment X M</td>
<td>.13</td>
<td>.08</td>
<td>.00</td>
<td>.30</td>
</tr>
<tr>
<td>Peer therapist age X M</td>
<td>.47</td>
<td>.10</td>
<td>.00</td>
<td>.13</td>
</tr>
<tr>
<td>Treatment X A X M</td>
<td>.02</td>
<td>.06</td>
<td>.00</td>
<td>.98</td>
</tr>
<tr>
<td><strong>Within</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>.03</td>
<td>6.77*</td>
<td>1.01</td>
<td>2.21</td>
</tr>
<tr>
<td>Time X T</td>
<td>.26</td>
<td>.00</td>
<td>3.64</td>
<td>.89</td>
</tr>
<tr>
<td>Time X A</td>
<td>9.83**</td>
<td>1.69</td>
<td>.00</td>
<td>.48</td>
</tr>
<tr>
<td>Time X M</td>
<td>.62</td>
<td>.65</td>
<td>2.80</td>
<td>.05</td>
</tr>
<tr>
<td>Time X T X A</td>
<td>2.05</td>
<td>.01</td>
<td>.05</td>
<td>.56</td>
</tr>
<tr>
<td>Time X T X M</td>
<td>.04</td>
<td>.30</td>
<td>.49</td>
<td>.09</td>
</tr>
<tr>
<td>Time X A X M</td>
<td>.00</td>
<td>1.02</td>
<td>.22</td>
<td>.25</td>
</tr>
<tr>
<td>Time X T X A X M</td>
<td>.46</td>
<td>.85</td>
<td>.01</td>
<td>2.64</td>
</tr>
</tbody>
</table>

*P < .05  
**P < .01  
***P < .001
of the sampling criteria.

**TABLE 4**

**MEAN RAW SCORES FOR ABS PART II SUBJECT MAIN EFFECTS**

<table>
<thead>
<tr>
<th>Subjects</th>
<th>N = 12 (Maladaptive)</th>
<th>N = 12 (Adaptive)</th>
<th>MS&lt;sub&gt;e&lt;/sub&gt;</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violent and Destructive Behavior</td>
<td>4.33</td>
<td>1.42</td>
<td>16.56</td>
<td>.05</td>
</tr>
<tr>
<td>Antisocial Behavior</td>
<td>5.71</td>
<td>2.13</td>
<td>35.04</td>
<td>.05</td>
</tr>
<tr>
<td>Rebellious Behavior</td>
<td>8.46</td>
<td>3.50</td>
<td>13.00</td>
<td>.001</td>
</tr>
<tr>
<td>Untrustworthy Behavior</td>
<td>.92</td>
<td>.04</td>
<td>1.90</td>
<td>.05</td>
</tr>
<tr>
<td>Psychological Disturbances</td>
<td>6.50</td>
<td>3.75</td>
<td>39.52</td>
<td>NS</td>
</tr>
</tbody>
</table>

In addition to the significant main effects, two significant interactions were also obtained from the ABS ANOVA analysis. A highly significant difference was found between the pretreatment and post-treatment Personal Independence domain percentile scores as a function of participation in same-age or younger-age peer therapist treatment groups ($F(1, 16) = 9.83$, $p < .01$). Figure 1 depicts the interaction in which children in the same-age group increased in Personal Independence ($\bar{X}$ pre = 46.63%, $\bar{X}$ post = 52.38%) while children in the younger-age group decreased ($\bar{X}$ pre = 55.63%, $\bar{X}$ post = 49.25%). Two post-hoc pairwise comparisons using a Dunn's Test indicated that the change scores were significant for both the same-age group ($t = 3.17$, $p < .05$) and the younger-age group ($t = 2.02$, $p < .10$).
Figure 1. Mean change scores on ABS Personal Independence domain as a function of adaptive peer therapist condition.
A three-way interaction was found between the pretreatment and posttreatment raw scores on the Violent and Destructive Behaviors domain as a function of treatment group and adaptive peer therapist age ($F(1, 16) = 4.38, p < .05$). As depicted in Figure 2 adaptive and maladaptive children in both same-age and younger-age free play groups increased in violent and destructive behavior ($\bar{X}$ pre = .67, $\bar{X}$ post = 1.33; $\bar{X}$ pre = 1.5, $\bar{X}$ post = 4.33, respectively); whereas in the play therapy groups, children in the same-age group increased ($\bar{X}$ pre = 2.0, $\bar{X}$ post = 3.33) while children in younger-age group decreased ($\bar{X}$ pre = 5.5, $\bar{X}$ post = 4.33).

In order to further examine the nature and direction of this interaction, six pairwise comparisons were computed using the Dunn's Test with significant differences found in two of the comparisons. The younger-age, free play group increased significantly while the younger-age, play therapy group significantly decreased in violent and destructive behavior ($t = 2.01, p < .10$). Furthermore, the increase in violent and destructive behavior for the younger-age, free play group was significantly greater than the increase for the same-age, play therapy group ($t = 2.19, p < .10$). The comparisons above were marginally significant at the .05 level of significance and because of the conservative nature of post-hoc analyses it is appropriate to use the .10 level of significance (Myers, 1972). The remaining four comparisons were not significant ($p > .10$). That is, the changes of the same-age, free play group were not significantly different from those of the same-age, play therapy group; younger-age, play therapy group; or younger-age, free play group. The comparison between the two treatment
Figure 2. Mean change scores on ABS Violent and Destructive Behavior domain as a function of treatment and age conditions.
groups was also not significant.

**Social Interaction Analyses**

Four analyses of variance with repeated measures were conducted in order to analyze changes in social interaction with regard to rates of reinforcement and punishment which were dispensed and received; during pretreatment and posttreatment periods in the classroom, and during Session 2 and Session 9 of the treatment sessions; for maladaptive and adaptive children in free play or play therapy groups, with same-age or younger-age peer therapists. As a large number of significance tests were involved in these analyses, where significant main effects and interactions were incorporated in higher order interactions, only the latter will be discussed.

a) The initial analysis of variance was conducted in order to investigate the changes in rates of social interaction which the maladaptive children had with peers (including the adaptive peer therapist) during the play periods in the classroom setting. Specifically, a two between (Treatment X Age) and three within (Time X Dispensed/Received X Reinforcement/Punishment) analysis of variance was performed using the individual rates of social interaction for each maladaptive child (Appendix F).

The results of this analysis revealed a significant reinforcement/punishment main effect ($F(1, 8) = 15.16, p < .01$) indicating that the maladaptive children had significantly more reinforcing interactions ($\bar{X} = 20.76\%$) than punishing interactions ($\bar{X} = 4.93\%$) with peers during the classroom free play periods. Also indicated was a significant three-way interaction (Dispensed/Received X Reinforcement/Punishment X
Time), $F(1, 8) = 6.96, p < .05$. Figure 3 graphically shows that between pretreatment and posttreatment periods of observation the rates of social interaction dispensed changed more than the rates of social interaction received. The rate of reinforcement dispensed increased ($\bar{X}_{\text{pre}} = 20.00\%, \bar{X}_{\text{post}} = 22.92\%$) while the rate of punishment dispensed decreased ($\bar{X}_{\text{pre}} = 8.20\%, \bar{X}_{\text{post}} = 4.72\%$). However, the posttreatment rates of reinforcement and punishment received ($\bar{X}'s = 20.56\%, 3.47\%$, respectively) represented a change of less than 1% from the pretreatment rates received ($\bar{X}'s = 19.56\%, 3.34\%$, respectively).

Post-hoc analyses involving five pairwise comparisons, using the Dunn's Test, revealed the nature of the interaction. Reinforcement dispensed did significantly increase ($t = 2.77, p < .10$) while the rate of punishment dispensed significantly decreased ($t = 3.30, p < .05$). The posttreatment rate of reinforcement dispensed was not found to be significantly higher than the posttreatment rate of reinforcement received, $t = 2.24, p > .10$. Furthermore, while the pretreatment rate of punishment dispensed was significantly greater than the pretreatment rate of punishment received ($t = 4.62, p < .01$), the posttreatment rate of punishment dispensed and received was not significantly different ($t = 1.19, p > .10$).

The anticipated interactions involving pretreatment and posttreatment changes in social interaction as a function of adaptive peer therapist age and/or treatment condition were not found (all $p$'s $> .10$). However, the only other $F$-ratio which approached significance was found for the Dispensed/Received $X$ Reinforcement/Punishment $X$ Treatment $X$ Time interaction, $F(1, 8) = 2.95, p = .12$. The pretreatment and
Figure 3. Changes in mean rates of social interaction categories for maladaptive children with classroom peers.
posttreatment rates of reinforcement and punishment which were dispensed and received can be found in Tables 5 and 6 for the treatment and age conditions, respectively; and in Table 7 for the combined treatment and age conditions.

Table 5 reveals that rates of reinforcement dispensed and received were similar at both pretreatment and posttreatment periods while rates of punishment were more variable. For children in the free play condition rates of reinforcement dispensed and received increased while the rates for play therapy children remained basically the same as at the pretreatment period. However, all children in play therapy showed decreases in rates of punishment dispensed and received, while children in free play showed decreases in rates of dispensing punishment but increased in rates of receiving punishment.

Table 6 also shows that in regard to the same-age and younger-age peer therapist groups, rates of reinforcement which were dispensed and received were more similar than the rates of punishment dispensed and received. The maladaptive children in the younger-age group tended to show greater increases from pretreatment to posttreatment periods in both percent increase of reinforcement dispensed (+61%) and received (+36%), as compared with the increases in the same-age children group (dispensed, -8%; received, -14%).

For the combined treatment and age conditions, as shown in Table 7, it can be seen that the play therapy/younger-age group showed the greatest percent of increase in reinforcement dispensed (+111%) and reinforcement received (+90%). However, the play therapy/younger-age group was also the only group that demonstrated an increase in punishment
<table>
<thead>
<tr>
<th>Condition</th>
<th>Pretreatment</th>
<th>Posttreatment</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reinforcement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispensed to peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free play</td>
<td>19.72%</td>
<td>25.84%</td>
<td>+31%</td>
</tr>
<tr>
<td>Play therapy</td>
<td>20.28%</td>
<td>20.00%</td>
<td>-1%</td>
</tr>
<tr>
<td>Received from peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free play</td>
<td>20.84%</td>
<td>23.34%</td>
<td>+12%</td>
</tr>
<tr>
<td>Play therapy</td>
<td>18.34%</td>
<td>17.78%</td>
<td>-3%</td>
</tr>
<tr>
<td><strong>Punishment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispensed to peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free play</td>
<td>5.56%</td>
<td>1.39%</td>
<td>-75%</td>
</tr>
<tr>
<td>Play therapy</td>
<td>10.84%</td>
<td>8.06%</td>
<td>-26%</td>
</tr>
<tr>
<td>Received from peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free play</td>
<td>3.06%</td>
<td>4.45%</td>
<td>+45%</td>
</tr>
<tr>
<td>Play therapy</td>
<td>3.61%</td>
<td>2.50%</td>
<td>-31%</td>
</tr>
</tbody>
</table>
TABLE 6
PERCENT INTERACTION BETWEEN MALADAPTIVE CHILDREN
AND CLASSROOM PEERS ACCORDING TO AGE
OF PEER THERAPIST CONDITION

<table>
<thead>
<tr>
<th>Condition</th>
<th>Pretreatment</th>
<th>Posttreatment</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reinforcement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispensed to peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same-age</td>
<td>26.67%</td>
<td>24.45%</td>
<td>-8%</td>
</tr>
<tr>
<td>Younger-age</td>
<td>13.33%</td>
<td>21.39%</td>
<td>+61%</td>
</tr>
<tr>
<td>Received from peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same-age</td>
<td>24.45%</td>
<td>21.11%</td>
<td>-14%</td>
</tr>
<tr>
<td>Younger-age</td>
<td>14.73%</td>
<td>20.00%</td>
<td>+36%</td>
</tr>
<tr>
<td><strong>Punishment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispensed to peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same-age</td>
<td>5.84%</td>
<td>2.23%</td>
<td>-62%</td>
</tr>
<tr>
<td>Younger-age</td>
<td>10.56%</td>
<td>7.22%</td>
<td>-32%</td>
</tr>
<tr>
<td>Received from peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same-age</td>
<td>3.56%</td>
<td>3.06%</td>
<td>-14%</td>
</tr>
<tr>
<td>Younger-age</td>
<td>3.62%</td>
<td>3.89%</td>
<td>+8%</td>
</tr>
</tbody>
</table>
### TABLE 7

PERCENT INTERACTION BETWEEN MALADAPTIVE CHILDREN AND CLASSROOM PEERS ACCORDING TO TREATMENT AND AGE OF PEER THERAPIST CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Pretreatment</th>
<th>Posttreatment</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reinforcement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispensed to peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free play/Same-age</td>
<td>23.33%</td>
<td>31.11%</td>
<td>+ 33%</td>
</tr>
<tr>
<td>Free play/Younger-age</td>
<td>16.11%</td>
<td>20.56%</td>
<td>+ 28%</td>
</tr>
<tr>
<td>Play therapy/Same-age</td>
<td>30.00%</td>
<td>17.78%</td>
<td>- 41%</td>
</tr>
<tr>
<td>Play therapy/Younger-age</td>
<td>10.55%</td>
<td>22.22%</td>
<td>+111%</td>
</tr>
<tr>
<td>Received from peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free play/Same-age</td>
<td>23.89%</td>
<td>26.89%</td>
<td>+ 21%</td>
</tr>
<tr>
<td>Free play/Younger-age</td>
<td>17.78%</td>
<td>17.78%</td>
<td>0%</td>
</tr>
<tr>
<td>Play therapy/Same-age</td>
<td>25.00%</td>
<td>13.33%</td>
<td>- 47%</td>
</tr>
<tr>
<td>Play therapy/Younger-age</td>
<td>11.67%</td>
<td>22.22%</td>
<td>+ 90%</td>
</tr>
<tr>
<td><strong>Punishment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispensed to peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free play/Same-age</td>
<td>2.78%</td>
<td>1.67%</td>
<td>- 40%</td>
</tr>
<tr>
<td>Free play/Younger-age</td>
<td>8.33%</td>
<td>1.11%</td>
<td>- 87%</td>
</tr>
<tr>
<td>Play therapy/Same-age</td>
<td>8.89%</td>
<td>2.78%</td>
<td>- 69%</td>
</tr>
<tr>
<td>Play therapy/Younger-age</td>
<td>12.78%</td>
<td>13.33%</td>
<td>+ 4%</td>
</tr>
<tr>
<td>Received from peers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free play/Same-age</td>
<td>.56%</td>
<td>5.00%</td>
<td>+793%</td>
</tr>
<tr>
<td>Free play/Younger-age</td>
<td>5.56%</td>
<td>3.89%</td>
<td>- 30%</td>
</tr>
<tr>
<td>Play therapy/Same-age</td>
<td>5.55%</td>
<td>1.11%</td>
<td>- 80%</td>
</tr>
<tr>
<td>Play therapy/Younger-age</td>
<td>1.67%</td>
<td>3.89%</td>
<td>+133%</td>
</tr>
</tbody>
</table>
dispensed (+4%) and the rate of punishment received also increased (+133%), although this was not as dramatic an increase as that demonstrated by the free play/same-age group (+793%).

b) The second social interaction analysis was conducted in order to examine changes in social interactions for maladaptive children in the classroom and treatment settings, with the adaptive peer therapist and adults. A two between (Treatment X Age) and five within (Time X Peer therapist/Adult X Class/Treatment X Dispensed/Received X Reinforcement/Punishment) factor analysis of variance was employed using the individual subject scores found in Appendix F (classroom social interaction data) and Appendix G (treatment session social interaction data).

The first significant finding of interest from this analysis was a four-way interaction (Peer therapist/Adult X Class/Treatment X Reinforcement/Punishment X Treatment), $F(1, 8) = 13.22, p < .01$. Post-hoc analyses using the cell means shown in Table 8 revealed the nature of the interaction. The rate of reinforcement between the maladaptive children and therapists involved in play therapy sessions (67.99%) was significantly higher than any of the other conditions in which reinforcement occurred (all $t$'s < .01). Although there were no other significant differences in rates of reinforcement, the second highest rate of reinforcement was seen with the peer therapist in play therapy sessions ($\bar{X} = 23.47\%$), and this rate approached being significantly different from the rate of reinforcement these maladaptive children had with the peer therapist in the classroom setting ($\bar{X} = 2.85\%$), $t = 3.19, p > .10$. There were no significant differences between the mean cell rates of punishment (all $p$'s > .10).
TABLE 8

MEAN PERCENT OF REINFORCING AND PUNISHING INTERACTIONS
WITH PEER THERAPIST AND ADULTS IN CLASS AND TREATMENT
SESSIONS FOR FREE PLAY AND PLAY THERAPY GROUPS

<table>
<thead>
<tr>
<th></th>
<th>PEER THERAPIST</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FREE PLAY</td>
<td>PLAY THERAPY</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CLASS</td>
<td>TREATMENT</td>
<td>CLASS</td>
</tr>
<tr>
<td>Reinf. Punish.</td>
<td>3.68 .28</td>
<td>19.37 7.78</td>
<td>2.85 1.88</td>
</tr>
</tbody>
</table>

|                     | ADULTS         |                      |
|                     | FREE PLAY      | PLAY THERAPY         |
|                     | CLASS          | TREATMENT            |
| Reinf. Punish.      | 13.47 1.81     | 3.82 .76             |

|                     | PLAY THERAPY   |
|                     |                |
| Class               | 13.26 3.54     |
| Reinf. Punish.      | 67.99 8.12     |
Although it can be seen from Table 8 that in both the classroom and treatment settings, the maladaptive children had more reinforcing than punishing interactions with both adults and the peer therapist in all conditions; post-hoc analyses revealed only one of these comparisons to be significantly different. That is, the only significant difference between rates of reinforcement and punishment was found with adults during the play therapy sessions, where the rate of reinforcement ($\bar{X} = 67.99\%$) was significantly higher than the rate of punishment ($\bar{X} = 8.12\%$), $t = 9.25, p < .01$. The rate of reinforcement with the peer therapist during play therapy sessions ($\bar{X} = 23.47\%$) approached being significantly higher than the rate of punishment ($\bar{X} = 2.57\%$), $t = 3.23, p > .10$.

The second significant finding from this analysis was seen in a three-way, Time X Dispensed/Received X Reinforcement/Punishment interaction ($F(1, 8) = 9.05, p < .05$). As shown in Figure 4, the rates of reinforcement which were dispensed and received, increased and were higher than the rates of punishment which were dispensed and received. The rate of punishment dispensed decreased ($\bar{X}$ pre = 4.31%, $\bar{X}$ post = 3.09%), while the rate of punishment received increased slightly ($\bar{X}$ pre = 2.74%, $\bar{X}$ post = 3.23%). However, four pairwise comparisons using the Dunn's Test indicated that none of the above changes were statistically significant (all p's > .10).

Table 9 shows the cell means for another significant four-way interaction which was noted from this analysis of variance (Class/Treatment X Dispensed/Received X Reinforcement/Punishment X Treatment), $F(1, 8) = 6.99, p < .05$. Overall the maladaptive children had more
Figure 4. Changes in mean rates of social interaction categories for maladaptive children with treatment and class, peer therapist and adult interactions combined.
### TABLE 9
MEAN PERCENT INTERACTION IN CLASS AND TREATMENT SETTINGS FOR MALADAPTIVE CHILDREN IN FREE PLAY AND PLAY THERAPY GROUPS

<table>
<thead>
<tr>
<th></th>
<th>FREE PLAY</th>
<th></th>
<th>PLAY THERAPY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CLASS</td>
<td>TREATMENT</td>
<td>CLASS</td>
<td>TREATMENT</td>
</tr>
<tr>
<td></td>
<td>DISPENSED</td>
<td>RECEIVED</td>
<td>DISPENSED</td>
<td>RECEIVED</td>
</tr>
<tr>
<td>Reinf. Punish.</td>
<td>8.13</td>
<td>.42</td>
<td>7.78</td>
<td>2.43</td>
</tr>
<tr>
<td></td>
<td>9.03</td>
<td>1.67</td>
<td>8.33</td>
<td>2.99</td>
</tr>
<tr>
<td></td>
<td>11.74</td>
<td>4.79</td>
<td>42.15</td>
<td>7.15</td>
</tr>
<tr>
<td></td>
<td>11.46</td>
<td>3.75</td>
<td>49.31</td>
<td>3.54</td>
</tr>
</tbody>
</table>
interactions in the treatment sessions than in the classroom setting. However, less punishment was dispensed and received in the classroom than in the treatment sessions. Within the treatment sessions, the maladaptive children in play therapy dispensed and received more reinforcement than those children who were in free play, but rates of punishment were similar in both free play and play therapy sessions. However, despite the differences in rates of reinforcement in the treatment sessions, in the classroom setting the maladaptive children interacted at similar rates, regardless of treatment condition.

Twelve post-hoc pairwise comparisons using the Dunn's Test were then computed to confirm as significant the above observations. Significantly more reinforcement was dispensed during play therapy sessions ($\bar{X} = 42.15\%$) than during free play sessions ($\bar{X} = 11.74\%$, $t = 16.66$, $p < .05$). Also, significantly more reinforcing interactions were received in play therapy sessions ($\bar{X} = 49.31\%$) than in free play sessions ($\bar{X} = 11.46\%$, $t = 20.74$, $p < .05$). Rates of punishment which were dispensed and received in the two types of treatment sessions did not differ significantly (all $p$'s $>.10$). Within the classroom, there were no significant differences in the rates of interaction (dispensed/received, reinforcement/punishment) between the children in the two treatment conditions (all $p$'s $>.10$). The maladaptive children dispensed significantly more punishing interactions in the treatment sessions than in the classroom, for children in play therapy ($\bar{X}$'s = 7.15%, 2.43% respectively), $t = 2.59$, $p < .10$, and free play conditions ($\bar{X}$'s = 4.79%, .42% respectively), $t = 2.39$, $p < .10$. However, no significant differences were found between the rates of punishment
received in the treatment and classroom settings, for children in either treatment condition (all p's > .10).

The final significant finding from this analysis was a Peer therapist/Adult x Class/Treatment x Dispensed/Received x Reinforcement/Punishment interaction ($F(1, 8) = 8.23, p < .05$). As shown in Table 10, the mean rates of both reinforcing and punishing interactions were generally higher in the treatment setting than in the class setting. Within each condition, the rate of reinforcement was greater than the rate of punishment. Overall, more punishing interactions were dispensed and received in the treatment sessions than in the classroom, with both the peer therapist and adults. The table also indicates that the maladaptive children interacted more with adults than with the peer therapist, in both class and treatment settings. The maladaptive children received higher rates of punishment from adults than from the peer therapist in the classroom setting, whereas during the treatment sessions similar rates of punishment were received.

Twelve pairwise comparisons were calculated using the Dunn's Test in order to elucidate the nature of the interaction. In the classroom setting, the rate of punishment received from adults ($\bar{x} = 4.31\%$) was not found to be significantly higher than the rate received from the peer therapist ($\bar{x} = .35\%$), $t = 1.89, p > .10$. In addition, the rate of punishment received from adults in the class setting was not significantly higher than the rate of punishment dispensed by the maladaptive children to adults in the classroom ($\bar{x} = 1.04\%$), $t = -1.56, p > .10$. The rates of punishment received during the treatment sessions from adults ($\bar{x} = 3.26\%$) and the peer therapist ($\bar{x} = 4.03\%$) were not
### Table 10

Mean Percent Interaction for Maladaptive Children with Peer Therapist and Adults in Classroom and Treatment Settings

<table>
<thead>
<tr>
<th></th>
<th>Peer Therapist</th>
<th>Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class</td>
<td>Treatment</td>
</tr>
<tr>
<td></td>
<td>Dispensed</td>
<td>Received</td>
</tr>
<tr>
<td>2.85 1.81</td>
<td>3.68 .35</td>
<td>21.46 6.32</td>
</tr>
<tr>
<td>13.06 1.04</td>
<td>13.68 4.31</td>
<td>32.43 5.63</td>
</tr>
</tbody>
</table>
significantly different ($t = .36, p > .10$); nor were the differences between rates of punishment dispensed ($\bar{X} = 1.81\%$) and received ($\bar{X} = .35\%$) in the classroom with the peer therapist ($t = .69, p > .10$). Significantly higher rates of reinforcement than punishment were found in six of the eight comparisons for dispensed/received categories in each class/treatment and peer therapist/adult condition (all $p$'s < .05). The two nonsignificant findings were noted in the differences between rates of reinforcement and punishment, dispensed and received in the classroom setting with the peer therapist ($p$'s > .10).

c) In order to investigate changes between social interactions with the peer therapist during treatment sessions and with peers during classroom free play periods an analyses of variance with repeated measures was conducted. There were no significant main effects or interactions involving the Treatment/Class factor (all $p$'s > .05), however there were two significant interactions involving other factors.

A significant three-way interaction was found (Dispensed/Received X Reinforcement/Punishment X Time), $F(1, 8) = 6.02, p < .05$, which is graphically depicted in Figure 5. The rates of reinforcement which were dispensed and received increased ($\bar{X} \text{ pre} = 13.75\%, \bar{X} \text{ post} = 24.17\%; \bar{X} \text{ pre} = 18.54\%, \bar{X} \text{ post} = 22.92\%$, respectively). The rate of punishment dispensed decreased ($\bar{X} \text{ pre} = 7.36\%, \bar{X} \text{ post} = 5.42\%$), however the rate of punishment received increased ($\bar{X} \text{ pre} = 3.19\%, \bar{X} \text{ post} = 4.24\%$). Nine post-hoc analyses were conducted in order to specify the nature of the interaction. The rates of reinforcement which were dispensed and received significantly increased ($t$'s = 8.98, 3.78 respectively, $p$'s < .05). Furthermore, the change in rate of reinforcement dispensed
Figure 5. Changes in mean rates of social interaction categories between maladaptive children with peer therapist during treatment sessions and peers in class interactions combined.
(+10.42%) was significantly greater than the change in rate of rein­forcement received (+4.38%), \( t = 5.21, p < .01 \). The pretreatment rate of reinforcement received was significantly higher than the rate of reinforcement dispensed \( (t = 4.13, p < .05) \); however the posttreatment rates of reinforcement dispensed and received were not significantly different \( (t = -1.08, p > .10) \). Neither the increase in rate of punishment received nor the decrease in rate of punishment dis­pensed represented significant changes from pretreatment to posttreatment periods \( (t = 1.67, p > .10) \). However, the pretreatment rate of punishment dispensed was significantly higher than the rate of punish­ment received \( (t = 3.59, p < .10) \); but the posttreatment rates of punishment dispensed and received were not significantly different \( (t = 1.02, p > .10) \).

The other significant finding from this analysis was a four-way, Treatment X Age X Dispensed/Received X Time, interaction, \( F (1,8) = 5.05, p < .05 \). From Table 11 it can be seen that the greatest changes occurred in rates of interaction received by maladaptive children in the free play/same-age condition \( (\bar{X} \text{ pre} = 10.28\%, \bar{X} \text{ post} = 17.78\%) \) and maladaptive children in the play therapy/younger-age condition \( (\bar{X} \text{ pre} = 10.14\%, \bar{X} \text{ post} = 13.89\%) \). However, post-hoc analyses using a Dunn's Test revealed that only the change in interaction received in the free play/same-age condition was significant \( (t = 5.36, p < .01) \). The change in rate of interaction received in the play therapy/younger-age condition did approach significance \( (t = 2.68) \), while changes in the other treatment and age conditions were clearly nonsignificant \( (all p's > .10) \). The difference between the increases in rates of
TABLE 11
CHANGES IN RATES OF INTERACTION DISPENSED AND RECEIVED AS A FUNCTION OF TREATMENT AND ADAPTIVE PEER THERAPIST AGE CONDITIONS

### FREE PLAY (N = 6)

<table>
<thead>
<tr>
<th></th>
<th>SAME-AGE</th>
<th></th>
<th></th>
<th>YOUNGER-AGE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DISPENSED</td>
<td>RECEIVED</td>
<td></td>
<td>DISPENSED</td>
<td>RECEIVED</td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>13.20</td>
<td>16.39</td>
<td>Pre</td>
<td>11.67</td>
<td>13.89</td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>10.28</td>
<td>17.78</td>
<td>Post</td>
<td>11.94</td>
<td>11.25</td>
<td></td>
</tr>
</tbody>
</table>

### PLAY THERAPY (N = 6)

<table>
<thead>
<tr>
<th></th>
<th>SAME-AGE</th>
<th></th>
<th></th>
<th>YOUNGER-AGE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DISPENSED</td>
<td>RECEIVED</td>
<td></td>
<td>DISPENSED</td>
<td>RECEIVED</td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>12.64</td>
<td>12.50</td>
<td>Pre</td>
<td>14.72</td>
<td>16.39</td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>11.11</td>
<td>11.39</td>
<td>Post</td>
<td>10.14</td>
<td>13.89</td>
<td></td>
</tr>
</tbody>
</table>
interaction received in the free play/same-age and play therapy/
younger-age conditions only approached significance \((t = 2.68, p > .10)\). Further analysis indicated that the change in rate of interaction received was significantly greater than the change in rate of interaction dispensed for the free play/same-age condition, but not for the play therapy/younger-age condition \((t = 3.08, p < .01; t = 1.49, p > .10, \text{ respectively})\).

Interestingly, it was found that the change in rate of interaction received in the play therapy/younger-age condition (3.75%) was significantly greater than the change in the free play/younger-age condition (-.69%), \(t = 3.17, p < .10\); however, the change in rate of interaction received in the play therapy/same-age condition (.28%) was significantly less than the change in the free play/same-age condition (7.5%), \(t = -5.16, p < .01\).

d) Although the primary focus of the social interaction data collection and analyses involved the socially maladaptive children, it was also of interest to investigate the effects of the treatment and age conditions on changes in social interaction for the adaptive peer therapist children. The results of the second social interaction analysis presented in this section, discussed the changes in rates of classroom and treatment social interaction which were found between the adaptive children and the maladaptive children with whom they were paired with for the treatment sessions.

In order to investigate the changes in rates of social interaction which the adaptive children had with the adult therapist during the treatment sessions, the present analysis consisted of a two-between
(Treatment X Age) and three-within (Dispensed/Received X Reinforcement/Punishment X Time) analysis of variance. The most interesting finding from this analysis was a highly significant Treatment X Dispensed/Received X Reinforcement/Punishment interaction ($F(1, 8) = 25.58, p < .001$). As shown in Figure 6, the adaptive children in play therapy dispensed and received more interactions with adults than did the adaptive children in the free play condition. Within the play therapy sessions, the children received more reinforcement than they dispensed to adults; but the children dispensed more punishment than they received from adults. Eight pairwise comparisons were conducted using the Dunn's Test in order to investigate the significance of these observations. It was found that within the play therapy groups the adaptive children dispensed significantly less reinforcement ($\bar{x} = 54.59\%$) than did the adults ($\bar{x} = 63.75\%$), $t = -7.42, p < .01$; and significantly more punishment was dispensed by the children ($\bar{x} = 6.39\%$), $t = 3.38, p < .10$. In addition, within the play therapy groups there were significantly more reinforcement than punishment interactions which were dispensed and received (all $p$'s < .01); but within the free play groups, there were no significant differences in the rates of reinforcement and punishment which were dispensed and received with adults (all $p$'s > .10).

Posttreatment Social Interaction Questionnaire Analysis

The number of children who increased in appropriate and/or inappropriate social interactions with peers, the target peer, and adults; as rated by the classroom teachers and treatment therapists, can be found in Table 12 for the maladaptive children and in Table 13 for the
Figure 6. Mean percent of reinforcement/punishment as a function of dispensed/received and treatment conditions, for adaptive peer therapists with the adult during treatment sessions.
### TABLE 12

INCREASES IN APPROPRIATE AND INAPPROPRIATE INTERACTIONS: MALADAPTIVE CHILDREN

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Teacher</th>
<th>Teacher</th>
<th>Therapist</th>
<th>Teacher</th>
<th>Therapist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased with:</td>
<td>Peers</td>
<td>Peer Th</td>
<td>Peer Th</td>
<td>Adults</td>
<td>Adults</td>
</tr>
</tbody>
</table>

**Appropriate**

<table>
<thead>
<tr>
<th>Interaction</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Play</td>
<td>6</td>
</tr>
<tr>
<td>Play Therapy</td>
<td>6</td>
</tr>
<tr>
<td>Same-Age</td>
<td>6</td>
</tr>
<tr>
<td>Younger-Age</td>
<td>6</td>
</tr>
<tr>
<td>Free Pl./Same-Age</td>
<td>3</td>
</tr>
<tr>
<td>Free Pl./Younger-Age</td>
<td>3</td>
</tr>
<tr>
<td>Play Th./Same-Age</td>
<td>3</td>
</tr>
<tr>
<td>Play Th./Younger-Age</td>
<td>3</td>
</tr>
</tbody>
</table>

**Inappropriate**

<table>
<thead>
<tr>
<th>Interaction</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Play</td>
<td>6</td>
</tr>
<tr>
<td>Play Therapy</td>
<td>6</td>
</tr>
<tr>
<td>Same-Age</td>
<td>6</td>
</tr>
<tr>
<td>Younger-Age</td>
<td>6</td>
</tr>
<tr>
<td>Free Pl./Same-Age</td>
<td>3</td>
</tr>
<tr>
<td>Free Pl./Younger-Age</td>
<td>3</td>
</tr>
<tr>
<td>Play Th./Same-Age</td>
<td>3</td>
</tr>
<tr>
<td>Play Th./Younger-Age</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: Missing data noted by *
TABLE 13

INCREASES IN APPROPRIATE AND INAPPROPRIATE INTERACTIONS: ADAPTIVE CHILDREN

<table>
<thead>
<tr>
<th>Respondent:</th>
<th>Teacher</th>
<th>Teacher</th>
<th>Therapist</th>
<th>Teacher</th>
<th>Therapist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased with:</td>
<td>Peers</td>
<td>Mal. Peer</td>
<td>Mal. Peer</td>
<td>Adults</td>
<td>Adults</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appropriate</th>
<th>N</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Play</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>1*</td>
</tr>
<tr>
<td>Play Therapy</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>1*</td>
</tr>
<tr>
<td>Same-Age</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>0*</td>
</tr>
<tr>
<td>Younger-Age</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Free Pl./Same-Age</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0*</td>
</tr>
<tr>
<td>Free Pl./Younger-Age</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0*</td>
</tr>
<tr>
<td>Play Th./Same-Age</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0*</td>
</tr>
<tr>
<td>Play Th./Younger-Age</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inappropriate</th>
<th>N</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Play</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1*</td>
</tr>
<tr>
<td>Play Therapy</td>
<td>6</td>
<td>1</td>
<td>1*</td>
<td>0*</td>
<td>1*</td>
</tr>
<tr>
<td>Same-Age</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0*</td>
</tr>
<tr>
<td>Younger-Age</td>
<td>6</td>
<td>1</td>
<td>1*</td>
<td>1*</td>
<td>2</td>
</tr>
<tr>
<td>Free Pl./Same-Age</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0*</td>
</tr>
<tr>
<td>Free Pl./Younger-Age</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0*</td>
</tr>
<tr>
<td>Play Th./Same-Age</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0*</td>
</tr>
<tr>
<td>Play Th./Younger-Age</td>
<td>3</td>
<td>1</td>
<td>1*</td>
<td>0*</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Missing data noted by *
adaptive children. More specific tabulation, including differentiation between "significant" and "slight" increase, and "no change" in social interaction categories, are included in Appendices H and I for maladaptive and adaptive children respectively.

Table 12 shows that in general, the maladaptive children who received the play therapy treatment were rated by both teachers and therapists as having increased in both appropriate and inappropriate interactions more frequently than the children who received the free play treatment. From Table 13 it can be seen that the teachers and therapists rated an approximately equal number of adaptive children as having increased in appropriate interactions. Both respondents indicated very few increases in inappropriate interactions for the adaptive children. Also, it appears that a similar number of maladaptive and adaptive children were rated by both respondents as having increased in appropriate interactions. However, teachers rated more maladaptive than adaptive children as having increased in inappropriate interactions in the classroom; whereas the therapists rated very few maladaptive or adaptive children as having increased in inappropriate interactions during the treatment sessions.

Statistical analysis of the questionnaire results was limited due to the small sample size and the respondent's failure to answer some of the questionnaire items. Two chi-square analyses were conducted by first combining the teacher ratings for the frequencies of increases in appropriate interactions with peers and adults, for maladaptive and adaptive children; and then combining the frequencies of increases in appropriate interactions with the target peer and adult therapist,
based on the therapist ratings. The first analysis revealed a significant relationship between teacher and therapist ratings and the two treatment conditions \( (X^2_1 = 3.84, p < .05) \). Table 14 shows that with the children who received the play therapy treatment, the therapists had higher frequency ratings for increases in appropriate interactions during the treatment sessions than did the teachers in the classroom setting. In the second chi-square analysis, no significant relationships were found for teacher ratings between increased appropriate and inappropriate interactions and the two treatment conditions \( (X^2_1 = 1.20, p > .05) \). From Table 15 it can be seen that the cell frequencies were all approximately the same.
TABLE 14

NUMBER OF MALADAPTIVE AND ADAPTIVE CHILDREN RATED AS INCREASED IN APPROPRIATE INTERACTIONS WITH PEERS AND ADULTS AS A FUNCTION OF RESPONDENT AND TREATMENT CONDITIONS

<table>
<thead>
<tr>
<th>Rater</th>
<th>Teacher</th>
<th>Therapist</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Play</td>
<td>6</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Play Therapy</td>
<td>8</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>14</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 15

TEACHER RATINGS OF INCREASED INTERACTIONS WITH PEERS AND ADULTS FOR MALADAPTIVE AND ADAPTIVE CHILDREN IN THE TREATMENT CONDITIONS

<table>
<thead>
<tr>
<th>Increased Interactions</th>
<th>Appropriate</th>
<th>Inappropriate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Play</td>
<td>6</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Play Therapy</td>
<td>8</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>14</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>
The present study was conducted in response to a critical community mental health need which exists to develop and empirically investigate psychotherapeutic treatment approaches for use in facilitating adaptive functioning in socially maladaptive, mentally retarded children, in order that institutionalization or re-institutionalization will not ensue. The present study investigated changes in adaptive behavior and social interaction in socially maladaptive, mentally retarded children who were exposed to either a group free play or group play therapy treatment approach, using an adaptive peer therapist in each group who was either the same-age or younger than the maladaptive child. The findings as they relate to the hypothetical research questions presented in Chapter I will now be discussed.

Adaptive Behavior

Hypothetical Question #1 involved the investigation of significant changes in adaptive behavior as a function of the treatment and age conditions, for the socially maladaptive and the adaptive peer therapist children. Several interesting findings were revealed from the analysis of the pretreatment and posttreatment Adaptive Behavior Scale (Nihira, et al., 1975) teacher ratings. A significant three-way
interaction involving the Violent and Destructive Behavior domain revealed a significant difference between the increase in violent and destructive behavior demonstrated by the children (maladaptive and adaptive) in the free play younger-age groups, and the decrease in violent and destructive behavior seen in the children who received the play therapy treatment with younger-age adaptive peer therapists. The free play same-age groups and the play therapy same-age groups also increased in violent and destructive behavior, but not to the significant degree manifested by the children in the younger-age groups. Closer examination of the individual raw scores (Appendix A) revealed that only three of the twenty-four children (two maladaptive, one adaptive) decreased in violent and destructive behavior, but that all three of these children received the play therapy younger-age treatment. Within the free play younger-age condition, four of the six children increased in violent and destructive behavior.

The findings which have indicated that aggressive and competitive activities occur more frequently within the context of same-age rather than younger-age peer interactions (Barker & Wright, 1955; Body, 1955; Whiting & Whiting, 1975) may explain the increase in violent and destructive behavior seen in the same-age groups. A treatment session with a strong ambiance of competition would be difficult to decrease even with a therapist (play therapy, same-age), in that the therapist would have to expend a good deal of energy structuring situations to alleviate the atmosphere of tension, to the point where the majority of each session would be focused on this aspect, rather than on facilitating prosocial behaviors in a noncompetitive atmosphere. It is
also probable that a same-age peer therapist would be more likely than a younger-age therapist, to successfully retaliate and attempt to require termination of the child's inappropriate behaviors. This may explain why the same-age peer therapist groups increased in violent and destructive behavior but not to the degree seen in the free play, younger group. Patterson, Littman, and Bricker (1967) found increased rates of aggressive behavior in children who had primarily experienced only successful aggression in peer interactions. The absence of retaliation or intrusion from individuals of equal (same-age) or higher status (adult therapist), in the free play younger-age groups, may have accounted for the significant increase of violent and destructive behavior seen in these children.

Whereas the literature suggests that nurturant and prosocial activities occur more frequently within the context of interaction with younger-age than same-age peers (Barker & Wright, 1955; Whiting & Whiting, 1975), it is believed that when a child is significantly socially maladaptive, the opportunities to direct and control social activities in an egalitarian and nurturant manner, may not be manifested unless there is a structuring of the play session activities. This was exemplified in Subject #11 (free play, younger-age), who was very domineering, spending more of the play sessions bossing and ordering the younger adaptive child to do things, rather than in cooperative, egalitarian play or communication. It is suggested that an optimal degree of structure and therapeutic atmosphere was found in the play therapy younger-age groups. Within these groups, it appears that the adult therapist in conjunction with the mixed age child-child
atmosphere, facilitated an increase of prosocial behaviors and more appropriate coping strategies which then generalized to the classroom environment. Each of these treatment sessions was probably less hostile and competitive than in the same-age sessions, and when such situations did emerge, the adult therapist could model appropriate behavioral alternatives, intrude, or request and reinforce more appropriate behaviors in the children. The child's feeling of self worth most likely increased as the adult and peer therapists communicated their approval of nurturant and prosocial behaviors. It is hypothesized that the child was then able to go back to the class and find more enjoyment in using these newly acquired social competencies rather than in soliciting inappropriate attention through violent and destructive behaviors.

Although there were no other interactions involving the treatment and age conditions in regard to changes in adaptive behavior, a significant interaction involving pretreatment and posttreatment Personal Independence domain ratings as a function of the age condition was found. All children in the same-age groups increased while those in the younger-age groups decreased significantly in their independent functioning and domestic activity skills combined. Apparently the same-age peer therapist condition fostered the development of more mature behaviors in both the maladaptive and adaptive children, perhaps due in part to the competitive nature of the same-age interactions. The younger-age groups were designed to be more functional in creating social behavior changes rather than personal independence skills. In addition, the children in the younger-age groups may have been
reinforcing in each other more immature behavior. Although it is not exactly clear why the younger-age groups decreased instead of remaining at the same level of personal independence, it appears to be related to the unique aspects of mixed-age interactions rather than the adult therapists' behavior as no treatment interaction was found.

Examination of the individual change scores on the Personal Independence domain revealed more subject variability within the younger-age than within the same-age groups. Of the 12 children in same-age treatment groups, nine increased, one decreased, and two showed no changes in pretreatment to posttreatment personal independence change scores; whereas in the younger-age groups, six children increased and six decreased in personal independence. Within the same-age groups, an approximately equal number of maladaptive and adaptive children changed in similar directions; however, there was a trend towards an inverse relationship in the younger-age groups, with twice as many adaptive (N = 4) than maladaptive (N = 2) children decreasing in personal independence; and twice as many maladaptive (N = 4) than adaptive (N = 2) children increasing in personal independence.

It will be recalled that the Personal Independence domain measures skills of independent functioning and domestic activity. These are skills which are generally not lost once they are acquired indicating that the decrease in personal independence may have been related to a decrease in personal motivation (self direction and personal responsibility). The interaction involving the time and treatment factors for the Personal Motivation domain approached significance, F (1, 8) = 3.64, p < .07, and indicated that the maladaptive and adaptive children
in the play therapy groups increased (\(\bar{X}_{\text{pre}} = 57\%, \bar{X}_{\text{post}} = 59\%\)), while
the children in the free play groups decreased in personal motivation
(\(\bar{X}_{\text{pre}} = 54\%, \bar{X}_{\text{post}} = 46\%\)). Examination of the individual change
scores revealed a similar number of same-age and younger-age children
who increased and decreased in personal motivation, except for the free
play, younger-age adaptive children, where it was noted that all three
of the adaptive children in this condition decreased in personal motiva­
tion.

While further investigation is needed, this finding appears to be
related to the fact that it was primarily the younger-age adaptive
rather than the maladaptive children in these groups who decreased in
personal independence. Furthermore, it appears to lend further support
for the hypothesis that within the younger-age free play groups, the
younger peer therapist was unable to respond appropriately to the bossy
and bullyish behaviors of the socially maladaptive child, thus result­
ing in an increase in violent and destructive behavior in the younger-
age free play groups, as well as a decrease in personal independence
and personal motivation in the adaptive children especially.

The entire sample demonstrated a significant increase in cognitive
skills (Cognitive Triad) from pretreatment to posttreatment periods of
ABS administrations. Although a control group of maladaptive and adap­
tive children who did not participate in any special treatment sessions
was not available, it is suggested that the treatment sessions resulted
in the creation of a more optimal atmosphere for learning in the class­
room, which would facilitate the acquisition of cognitive skills.
The five subject main effects from the ABS analysis revealed significant information in regard to the salient behavioral characteristics of the maladaptive and adaptive children in the sample. Overall the maladaptive children scored significantly higher than adaptive children on four of the five Part II social maladaptation domains which were used to select the twelve maladaptive-adaptive treatment dyads. However, maladaptive children did not differ significantly from the adaptive children on the Psychological Disturbances domain, which suggests that this domain does not discriminate social adaptation effectively or that it may be measuring more elements of personal maladaptation, and as such may not warrant future inclusion for selection of socially maladaptive or adaptive children. Despite the fact that five of the twelve adaptive children scored above the 80th percentile on 1-2 of the social maladaptation domains at pretreatment administration of the ABS, they were overall significantly less socially maladaptive than the maladaptive children. Only one of the adaptive children had pretreatment raw scores of zero on all five of the social maladaptation domains. The other six adaptive children scored on 1-4 of these domains, but the raw scores did not yield significantly high percentile scores (>80%). The fact that many of the adaptive children demonstrated some degree of social maladaptation may explain the absence of subject effects in several of the analyses, such as those previously discussed in regard to changes in adaptive behavior. The only ABS Part I domain which discriminated the adaptive from the maladaptive children was the Social Motivation domain. Thus, in this study the adaptive peer therapists demonstrated some degree of social maladaptation, however this was
significantly less than that demonstrated by the maladaptive children; and they were significantly more socially motivated than the maladaptive children.

**Social Interaction**

Several interesting findings emerged from the social interaction analyses conducted in order to investigate Hypothetical Questions #2-4. The social interaction analysis which examined the changes in rates of interaction between the socially maladaptive children and their classroom peers, revealed that despite the fact that these were maladaptive children, overall they dispensed and received significantly more reinforcing than punishing interactions within the classroom environment. The most interesting finding was a three-way interaction which indicated that from pretreatment to posttreatment observations the maladaptive children dispensed significantly more reinforcement and significantly less punishment, while the rates of reinforcement and punishment received from classroom peers remained the same. Further, the rates of reinforcement which were dispensed and received both before and after the treatment sessions were similar indicating similar reinforcement exchanges; however, this congruency was not seen in regard to punishing interactions until after the treatment sessions terminated. That is, while the pretreatment rate of punishment dispensed (8.2%) was significantly higher than the rate of punishment received (3.34%); the posttreatment rates of punishment, dispensed and received, were not significantly different. Using the classroom peers as a "comparison group" of maladaptive and adaptive children who did not receive
either play treatment (except for the adaptive peer therapists), it appears that the adaptive changes in interactions realized by the mal-adaptive children were due to the free play and play therapy treatment experiences. It is believed that within these special sessions more appropriate interactions and self control strategies were learned which then generalized to the classroom environment.

Working with withdrawn children, the Furman, et al. study (1979c) found that all dispensed interactions correlated with those received from the classroom peer. The fact that the present study did not find this similarity in interaction exchanges with regard to pretreatment punishment interactions, may indicate that this higher rate of punishment dispensed than received is a diagnostic characteristic of socially maladaptive retarded children. This explanation would also account for the fact that while in the Furman, et al. study both same-age and younger-age groups increased in reinforcement and neutral interactions dispensed, but rates of punishment did not change in any of the groups; the present findings with socially maladaptive children indicated an increase in reinforcement dispensed as well as a significant decrease in punishment dispensed.

The analysis of changes in the interactions which the maladaptive children had with the adaptive peer therapist and adults, in classroom and treatment settings revealed several significant findings. In both pretreatment and posttreatment classroom and treatment settings, the overall rate of reinforcement which was dispensed and received increased and was higher than the rate of punishment which was dispensed...
and received. The maladaptive children dispensed and received significantly more reinforcement than punishment with adults in both the classroom and treatment settings. However, with the peer therapist, the maladaptive children dispensed and received significantly more reinforcing than punishing interactions during the treatment sessions, but in the classroom the rates of reinforcement and punishment which were dispensed and received were similar. Furthermore, the maladaptive children dispensed significantly more punishment to the peer therapist and adult in the treatment sessions than in the classroom, while the rate of punishment received was similar in both treatment and classroom settings. Significantly more reinforcement was dispensed and received with the peer therapist and adult in the play therapy sessions than in the free play sessions, while similar rates of punishment were dispensed and received in the two treatment conditions. Although differences in social interaction were present in the free play and play therapy treatments, within the classroom there were no significant differences in social interaction rates between the peer therapist or adults, and the maladaptive children who had received free play or play therapy treatments. This finding is supported by the teacher and therapist responses to the Posttreatment Social Interaction Questionnaire, in which it was found that more therapists than teachers rated the children who were in play therapy groups as having increased in appropriate social interactions.

Whereas in both the classroom and treatment settings, the maladaptive children had more reinforcing than punishing interactions with the peer therapist and adults, only with the adult therapist
during the play therapy sessions was the rate of reinforcememt (66%) significantly higher than the rate of punishment (8%); and this overall rate of reinforcement was significantly higher than in the other reinforcement conditions. Although not significantly higher than the other reinforcement conditions the second highest rate of overall reinforcement was seen between the maladaptive children in play therapy sessions with the peer therapist (84%).

Further analysis revealed that the interactions which the maladaptive children encountered in the treatment sessions with the peer therapist were more related to the interactions that the maladaptive children had with their classroom peers in general, as opposed to classroom interactions with the peer therapist or teachers as just discussed. No significant differences were found between social interactions in the treatment sessions with the peer therapist and social interactions with peers during the daily classroom free play periods. Overall, a significant increase in the rates of reinforcement dispensed and received was found, and the change in reinforcement dispensed was significantly more than the change in reinforcement received (+10% vs. +4%, respectively), which may again be explained as reflecting therapeutic gain. It is of interest to note that the significant increases in reinforcement dispensed and received were not reflected in overall decreases on Part II domains on the ABS or Part I. Perhaps more time would reflect increases, especially on the Socialization domain.

The interaction involving the treatment and age conditions revealed that from pretreatment to posttreatment periods in the class
with peers and in the treatment sessions with the peer therapist, the maladaptive children who were in free play same-age groups received significantly more reinforcement, but this increase was significantly more than the increase in reinforcement dispensed. The maladaptive children in the play therapy younger-age groups also received more reinforcement but the pretreatment to posttreatment increase (+4%) only approached significance. However, the play therapy younger-age increase in reinforcement received was not significantly different from the increase in reinforcement dispensed, and appears to represent more parallel increases in reinforcing interactions than that found in the free play same-age groups. Perhaps the similarity of increase in reinforcement which was dispensed and received in the free play younger-age groups is related to the decrease in violent and destructive behavior found in these groups.

Overall, the adaptive peer therapists were not adversely affected by participation in a dyadic group play treatment with a socially maladaptive child, and in fact, there were many findings which indicated that they increased in adaptive functioning as previously discussed in regard to change scores on the ABS. The pretreatment and posttreatment mean rates of reinforcement dispensed to the maladaptive children during the treatment sessions were significantly higher than the mean rates of punishment which was received. Within the classroom, during free play periods, the adaptive peer therapist dispensed and received similar rates of reinforcement and punishment with the maladaptive child with whom they were paired with in therapy. Thus, participation
in treatment sessions did not seem to significantly increase or decrease rates of interaction with the maladaptive children or with the adult therapist. Within the play therapy treatment sessions the adaptive peer therapist dispensed and received significantly more reinforcement than punishment. Within the play therapy groups, it was found that the peer therapist received significantly more reinforcement than they dispensed to the adult therapist, and they dispensed significantly more punishment than they received from the adult therapist. Thus, the interactions between the adult therapist and the adaptive peer therapist were not congruent. As also found with the maladaptive children in the free play groups, there was little or no interaction with the adult as expected, since she was supposed to take a non-interactive role, intervening only when a child's personal safety was in jeopardy. Although not investigated in this study, it is recommended that in future studies observations should also be made of the classroom interactions between the adaptive peer therapist and the other classroom peers.

Limitations and Implications

Due to the frequent absences of the children, scheduling difficulties, and the loss of an observer, the two follow-up classroom observations which were to be conducted on six of the socially maladaptive children, were only completed for one child (Subject #5), thus precluding the investigation of Hypothetical Question #5 which had proposed to explore changes in classroom social interaction one month after the treatment sessions terminated. Although the results for one child cannot be conceived as representative of the sample, it was found
that this child's mean rate of interaction with classroom peers decreased ($X_{pre} = 20\%$, $X_{post} = 21.67\%$, $X_{follow-up} = 5\%$) while follow-up interaction with adults ($27\%$) was similar to the mean rate at pretreatment and posttreatment periods of observation. Furthermore, no follow-up adaptive behavior data was collected. Future studies should be aware of these procedural barriers so as to allow sufficient time for the necessary follow-up data to be collected. Follow-up information is needed in order to investigate the maintenance or change in the findings since the post-treatment period. Follow-up over long periods of time would be desirable in order to examine sleeper effects which may emerge from participation in therapy.

The findings of this study are also limited since no control group was employed. However, the question arises as to what would be the most appropriate control group and if there would be a sufficient number of children meeting the selection criteria. A small sample of socially maladaptive and adaptive children could have been chosen initially from the classrooms which participated or perhaps from other classes if necessary. However leaving them in the classroom would most likely bias the posttreatment teacher ratings on the ABS, as they would know these children were control subjects since they would not leave the classroom as would the other children. However, taking a child out of the classroom with another child and adult becomes a special treatment that the other children in the class do not experience. If resources were available, two children could be taken from their classroom and then placed in separate rooms with the toys, with an adult supervising each child through a one-way mirror.
A more practical ideal for future use is proposed by the author but would require a longer period of time for the study to be completed. Perhaps a "follow-up control" design could be employed whereby during the initial subject selection procedures an additional group of socially maladaptive and adaptive children are selected based on the beginning of the school year teacher ratings on the ABS. These children would not receive any psychotherapy services for that school year and then the ABS ratings completed at the end of the academic year would be compared with those children who had participated in the treatment sessions. In the present study, the end of the year ABS ratings could be used as a follow-up for the children who received treatment.

Although the sample for the present study was selected from three community training centers in the Franklin County Program for the Mentally Retarded, the findings appear to be generalizable and are representative of other moderate and severely retarded school-age children in Ohio. Because of the extensive sample selection criteria employed, it was not possible to control for race, sex, socioeconomic level, or surrounding life events. The usual procedures of working with the child's teacher and parents, in addition to providing the child the play therapy treatment sessions were not employed as this would have revealed which treatment condition the child was in. A short term therapy period was used (10 sessions) and it may be that a longer period is needed to see more conclusive therapeutic changes in socially maladaptive mentally retarded children. Furthermore, two of the groups only had seven and nine sessions, respectively.

1Personal communication with Franklin County Program for the Mentally Retarded 169 Board revealed that the FCPMR serves a larger number of mentally retarded persons than any other county in the state of Ohio.
The results of the present study suggest that in establishing the diagnostic criteria which defines social maladaptation using the ABS, the Psychological Disturbances domain not be used as it did not significantly discriminate between the maladaptive and adaptive children as the other Part II domains did. In addition, while each adaptive child had fewer significant (>80%) social maladaptation domain scores than the maladaptive child with whom he/she was paired with, six of the twelve maladaptive children had 1-2 domains >80% as did five of the twelve adaptive children. Although moderate and severely retarded children will always display some degree of coping difficulty which will be seen in some degree of social and/or personal maladaptation, it is suggested that future studies select adaptive peer therapists who do not display significant (personal or social maladaptation as measured by the ABS Part II domains (>80%). This may require selecting an adaptive child from a classroom other than the one in which the maladaptive child is assigned, since it was found that several classrooms appeared primarily all adaptive or maladaptive. Future studies should also consider the degree of personal maladaptation demonstrated by both adaptive and socially maladaptive children, not only for sample selection, but for therapy process and outcome information. Although this dimension was not explored it could be hypothesized that in the present study the treatment and age conditions could have facilitated decreases in personally maladaptive behaviors in those children who demonstrated these behaviors before the treatment began.
The Adaptive Behavior level (Grossman, 1973) of the adaptive children should also be considered as a potential variable which may influence therapeutic change. One therapist in the present study expressed concern that the maladaptive child (Subject #13) seemed more adaptive than the adaptive child (Subject #14). Upon closer examination of the adaptive child's ABS scores, it was found that while he had fewer significantly high domains of social maladaptation than the maladaptive child, he had several personally maladaptive behaviors and a lower Adaptive Behavior level than the socially maladaptive child. It is also hypothesized that more therapeutic gains may have been realized if much younger therapists were selected as the adaptive peer therapists since it is questionable as to whether the maladaptive children perceived the adaptive children as younger. In the successful rehabilitation of withdrawn monkeys, Harlow used peer therapists who were 50% younger than the maladaptive isolates (Suomi & Harlow, 1972).

The present study found that the ABS is sensitive to changes in personal independence and violent and destructive behaviors in retarded children who were exposed to free play or play therapy treatments. In working with socially maladaptive retarded children, especially those who demonstrate a significant amount of violent and destructive behavior, a play therapy treatment with a younger-age peer therapist appears to be the most therapeutic, based on the findings in the four treatment and age conditions compared in the present study. Of all the ABS Part II domains a decrease in violent and destructive behavior appears to be one of the most important changes as these behaviors, which usually involve harm to other people or their property, are most
unacceptable. If using a younger peer therapist, the adult therapist and classroom teacher should probably expect a decrease in personal independence, unless they make a special effort to reinforce these behaviors. The analysis of the social interaction observations in the present study, appears to imply that changes in interaction between the maladaptive and adaptive child during the treatment sessions, do not necessarily generalize to the classroom environment with the adaptive child, but rather are seen with other peers in the class.

Compared with the instruments used in previous play therapy outcome studies the ABS appears to be the most objective, practical, and sensitive instrument for measuring therapeutic change; however, it may not be sensitive enough to detect various clinically significant changes. A problem with Part II of the ABS is that behavior problems are not weighted with respect to severity such that the behaviors of a child who demonstrates "frequent crying and screaming" is seen just as maladaptive as "choking others frequently".

**Summary**

The purpose of the present study was to contribute to the understanding of how developmental variables relate to the psychotherapeutic process of behavior change in socially maladaptive, mentally retarded children. Specifically investigated was the comparative effectiveness of group free play and play therapy treatments using either same-age or younger-age socially adaptive classroom peers as therapists. Twelve dyad groups were formed, each consisting of a socially maladaptive child and a socially adaptive child. The 12 treatment groups were randomly assigned to participate in 10 free play or play therapy
treatment sessions with an equal number of same-age and younger-age adaptive peer therapist groups in each of the two group play treatment conditions. Pretreatment to posttreatment behavior changes were measured using teacher ratings on the Adaptive Behavior Scale, and social interaction observation ratings of the children during the treatment sessions and classroom free play periods.

Results indicated that the maladaptive and adaptive children in free play younger-age groups increased significantly in violent and destructive behavior, whereas in play therapy younger-age groups there was a decrease. Rates of reinforcement were higher in the play therapy sessions than in the free play sessions, while rates of punishment were similar in the two treatment conditions. Play session reinforcement interactions were more related to classroom peer interactions than to interactions with the adaptive peer therapist in the classroom. From pretreatment to posttreatment periods, the maladaptive children dispensed significantly more reinforcement and significantly less punishment to their classroom peers, whereas the rates of reinforcement and punishment received from classroom peers did not change. A significant increase in personal independence was seen in the maladaptive and adaptive children who participated in same-age groups whereas a significant decrease in personal independence was found in the younger-age groups.

It was concluded that same-age and younger-age play socialization experiences contribute in different ways to therapeutic change and should be considered more often in clinical practice and in research designs. It is hoped that the present findings will add to the body of
psychotherapeutic knowledge which clinicians will increasingly need to refer to, as they are faced with the challenge of changing behavior in socially maladaptive, mentally retarded children.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Pretreatment and Posttreatment ABS Ratings

<table>
<thead>
<tr>
<th>Part I</th>
<th>Part II</th>
</tr>
</thead>
</table>
Appendix B

Consent Letter

October 8, 1979

Dear Parent/Guardian,

My name is Susan Sherwood. I am a graduate student at Ohio State University working on my doctor’s degree in psychology.

I have received permission from Dr. Bott to conduct a study this fall in several classrooms at your child’s school. I am interested in seeing how children interact with each other and how they are able to develop their ability to play with others by participating in a play therapy program. I would like to invite your child, , to participate in ten, thirty minute play therapy sessions.

Each child in this program will be paired with a classmate and will work with a play therapist twice a week for five weeks. The sessions will take place in the play therapy room at your child’s school. Two of the sessions will be videotaped and your child will be observed in his/her classroom. The videotapes and all the results of this study will be kept strictly confidential. After the tapes are analyzed in regard to various social and play behaviors, I will erase them.

After the tenth session, the therapist will write a play therapy progress report which will be entered in your child’s school record. Of course, you will be welcome to read and/or discuss this report with me if you wish. You may also contact me at any time to discuss the therapy program or to request that your child no longer continue in the program.

Please indicate below your decision as to your child’s participation in this play therapy program and return it in the enclosed postage paid envelope. Thank you.

_____ Yes, I give my consent to have my child participate in the play therapy program.

_____ No, I do not want my child to participate in the program.

_____ I would like more information before I make a decision.

Parent/Guardian Signature

________________________________________

Date

Susan N. Sherwood, M.A.
Project Coordinator
422-6522

Dr. Henry Leland
Ohio State University Advisor

Dr. Linda Bott
Administrative Assistant
Franklin County Program Program
for the Mentally Retarded
APPENDIX C

OBSERVATION RECORDING FORM

CIRCLE ONE BELOW:

TARGET CHILD ____________________________

SCHOOL ________________________________

TEACHER - ROOM _________________________

TARGET PEER (P) _________________________

1. Classroom: a) PRE: Day 1 Day 2
   b) POST: Day 1 Day 2

2. Treatment: TAPE ø

OBSERVER ____________________________

DATE ________________________________

OBSERVATION TIME: _________________

INTERVAL |
--- |
1 |

<table>
<thead>
<tr>
<th>NOTES - CONTENTS</th>
<th>DISPENSED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>REINFORCER</td>
</tr>
<tr>
<td></td>
<td>REINFORCER</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NO PEER INTERACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D
POSTTREATMENT SOCIAL INTERACTION QUESTIONNAIRE - TEACHERS
PLAY THERAPY RESEARCH STUDY

TEACHER NAME ___________________

Please respond as completely as possible to the following statements regarding your observations of changes in social interactions since the beginning of this academic year.

Please be as objective as possible and remember that different play therapy methods were used with the various groups.

When explaining your responses, please try to be specific. For example, if a child has become more withdrawn in social situations, one might check #2a or #2b and then state, e.g., "child now prefers to play alone during recess and walks away from other adults or children when they extend invitations to play".

1. In regard to changes in appropriate social interactions:
   a. Appropriate social interactions with others have increased significantly.
      Please specify: _____ with adults _____ with children
      Please explain: ________________________________________________________

   b. Appropriate social interactions with others have increased slightly.
      Please specify: _____ with adults _____ with children
      Please explain: ________________________________________________________

   c. I have seen no changes toward increased appropriate social interactions.
      Please specify: _____ with adults _____ with children
      Please explain: ________________________________________________________

2. In regard to inappropriate social interactions:
   a. Inappropriate social interactions with others have increased significantly.
      Please specify: _____ with adults _____ with peers
      Please explain: ________________________________________________________

   b. Inappropriate social interactions with others have increased slightly.
      Please specify: _____ with adults _____ with peers
      Please explain: ________________________________________________________
c. There have been no changes in inappropriate social interactions.
   Please specify: _____ with adults _____ with peers
   Please explain: __________________________________________________

3. Please check and explain the following applicable statements in regard to
   appropriate (a-c) and inappropriate (d-f) social interactions with
   ____________________________ (child paired with in therapy).
   _____ a. Appropriate social interactions have increased significantly.
   _____ b. Appropriate social interactions have increased slightly.
   _____ c. No changes in appropriate social interactions noticed.
   _____ d. Inappropriate social interactions have increased significantly.
   _____ e. Inappropriate social interactions have increased slightly.
   _____ f. I have seen no changes in the frequency of inappropriate social
      interactions.
   Please explain checked items: __________________________________________

4. Please explain any other behavioral changes observed in this child this year
   (i.e. specific changes in academic skills, self-help, motivation, level of
   play, interests, motivation, language, etc.) ________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
APPENDIX E
POSTTREATMENT SOCIAL INTERACTION QUESTIONNAIRE - THERAPISTS
PLAY THERAPY RESEARCH STUDY

THERAPIST NAME ____________________________________________

Please respond as completely as possible to the following statements regarding your observation of changes in ____________ social interactions during this therapy period.

1. In regard to changes in appropriate social interactions:
   a. ______ Appropriate social interactions with others have significantly increased.
      Please specify: ______ With adult therapist ______ With other child
      Please explain: ____________________________________________
   
   b. ______ Appropriate social interactions with others have increased slightly.
      Please specify: ______ With adult therapist ______ With other child
      Please explain: ____________________________________________
   
   c. ______ I have seen no changes toward increased appropriate social interactions.
      Please specify: ______ With adult therapist ______ With other child
      Please explain: ____________________________________________

2. In regard to changes in inappropriate social interactions:
   a. ______ Inappropriate social interactions with others have increased significantly.
      Please specify: ______ With adult therapist ______ With other child
      Please explain: ____________________________________________
   
   b. ______ Inappropriate social interactions with others have increased slightly.
      Please specify: ______ With adult therapist ______ With other child
      Please explain: ____________________________________________
   
   c. ______ There have been no changes in inappropriate social interactions.
      Please specify: ______ With adult therapist ______ With other child
      Please explain: ____________________________________________
APPENDIX E (Continued)

3. Please explain any other specific behavior changes observed in this child during this therapy period (level of play, interests, motivation, language, etc.)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

4. If services are available, do you recommend therapy services for this child? If so, what changes if any would you recommend (group, same peer as this therapy period, same therapy approach, etc.)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

5. Please comment on the use of the peer therapist (i.e. socially adaptive child) (how used, did he/she facilitate therapy progress, social interactions, etc.)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

6. Other

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
### APPENDIX F

**PERCENT CLASSROOM SOCIAL INTERACTION: MALADAPTIVE CHILDREN**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FP</td>
<td>S</td>
<td>1</td>
<td>31.67</td>
<td>1.67</td>
<td>31.67</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>16.67</td>
<td>0.00</td>
<td>18.33</td>
<td>3.33</td>
</tr>
<tr>
<td>2</td>
<td>28.33</td>
<td>0.00</td>
<td>16.67</td>
<td>1.67</td>
<td>0.00</td>
<td>1.67</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1.67</td>
<td>0.00</td>
<td>0.00</td>
<td>1.67</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>FP</td>
<td>S</td>
<td>1</td>
<td>25.00</td>
<td>6.67</td>
<td>23.33</td>
<td>1.67</td>
<td>0.00</td>
<td>1.67</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>11.67</td>
<td>0.00</td>
<td>10.00</td>
</tr>
<tr>
<td>2</td>
<td>46.67</td>
<td>3.33</td>
<td>36.67</td>
<td>11.67</td>
<td>5.00</td>
<td>6.67</td>
<td>1.67</td>
<td>0.00</td>
<td>6.67</td>
<td>0.00</td>
<td>6.67</td>
<td>0.00</td>
<td>0.00</td>
<td>5.00</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>FP</td>
<td>S</td>
<td>1</td>
<td>13.33</td>
<td>0.00</td>
<td>16.67</td>
<td>0.00</td>
<td>11.67</td>
<td>0.00</td>
<td>16.67</td>
<td>0.00</td>
<td>11.67</td>
<td>0.00</td>
<td>18.33</td>
<td>0.00</td>
</tr>
<tr>
<td>2</td>
<td>18.33</td>
<td>1.67</td>
<td>20.00</td>
<td>1.67</td>
<td>10.00</td>
<td>11.67</td>
<td>0.00</td>
<td>11.67</td>
<td>0.00</td>
<td>11.67</td>
<td>0.00</td>
<td>10.00</td>
<td>0.00</td>
<td>20.00</td>
<td>1.67</td>
</tr>
<tr>
<td>7</td>
<td>FP</td>
<td>Y</td>
<td>1</td>
<td>3.33</td>
<td>10.00</td>
<td>5.00</td>
<td>1.67</td>
<td>1.67</td>
<td>6.67</td>
<td>3.33</td>
<td>0.00</td>
<td>6.67</td>
<td>0.00</td>
<td>5.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2</td>
<td>0.00</td>
<td>3.33</td>
<td>3.33</td>
<td>3.33</td>
<td>5.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>16.67</td>
<td>1.67</td>
<td>20.00</td>
<td>13.33</td>
</tr>
<tr>
<td>9</td>
<td>FP</td>
<td>Y</td>
<td>1</td>
<td>28.33</td>
<td>15.00</td>
<td>30.00</td>
<td>11.67</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>16.67</td>
<td>1.67</td>
<td>20.00</td>
<td>13.33</td>
</tr>
<tr>
<td>2</td>
<td>16.67</td>
<td>0.00</td>
<td>10.00</td>
<td>0.00</td>
<td>10.00</td>
<td>0.00</td>
<td>10.00</td>
<td>0.00</td>
<td>11.67</td>
<td>1.67</td>
<td>11.67</td>
<td>11.67</td>
<td>3.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>FP</td>
<td>Y</td>
<td>1</td>
<td>16.67</td>
<td>0.00</td>
<td>18.33</td>
<td>3.33</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>23.33</td>
<td>0.00</td>
<td>26.67</td>
<td>1.67</td>
</tr>
<tr>
<td>2</td>
<td>45.00</td>
<td>0.00</td>
<td>40.00</td>
<td>6.67</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>23.33</td>
<td>0.00</td>
<td>23.33</td>
<td>0.00</td>
<td>20.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>PT</td>
<td>S</td>
<td>1</td>
<td>41.67</td>
<td>3.33</td>
<td>43.33</td>
<td>3.33</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>31.67</td>
<td>0.00</td>
<td>16.67</td>
<td>3.33</td>
</tr>
<tr>
<td>2</td>
<td>30.00</td>
<td>0.00</td>
<td>28.33</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>23.33</td>
<td>0.00</td>
<td>18.33</td>
<td>5.00</td>
</tr>
<tr>
<td>15</td>
<td>PT</td>
<td>S</td>
<td>1</td>
<td>1.67</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>13.33</td>
<td>1.67</td>
<td>16.67</td>
<td>3.33</td>
</tr>
<tr>
<td>2</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>6.67</td>
<td>0.00</td>
<td>11.67</td>
<td>0.00</td>
</tr>
<tr>
<td>17</td>
<td>PT</td>
<td>S</td>
<td>1</td>
<td>46.67</td>
<td>23.33</td>
<td>31.67</td>
<td>13.33</td>
<td>3.33</td>
<td>1.67</td>
<td>0.00</td>
<td>1.67</td>
<td>13.33</td>
<td>0.00</td>
<td>3.33</td>
<td>10.00</td>
</tr>
<tr>
<td>2</td>
<td>23.33</td>
<td>8.33</td>
<td>11.67</td>
<td>3.33</td>
<td>1.67</td>
<td>1.67</td>
<td>0.00</td>
<td>1.67</td>
<td>15.00</td>
<td>3.33</td>
<td>15.00</td>
<td>11.67</td>
<td>0.00</td>
<td>28.33</td>
<td>1.67</td>
</tr>
<tr>
<td>19</td>
<td>PT</td>
<td>Y</td>
<td>1</td>
<td>3.33</td>
<td>0.00</td>
<td>3.33</td>
<td>1.67</td>
<td>3.33</td>
<td>3.33</td>
<td>1.67</td>
<td>16.67</td>
<td>0.00</td>
<td>25.00</td>
<td>26.67</td>
<td>1.67</td>
</tr>
<tr>
<td>2</td>
<td>5.00</td>
<td>0.00</td>
<td>1.67</td>
<td>0.00</td>
<td>1.67</td>
<td>5.00</td>
<td>1.67</td>
<td>0.00</td>
<td>18.33</td>
<td>16.67</td>
<td>30.00</td>
<td>10.00</td>
<td>0.00</td>
<td>8.33</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>PT</td>
<td>Y</td>
<td>1</td>
<td>28.33</td>
<td>36.67</td>
<td>30.00</td>
<td>1.67</td>
<td>15.00</td>
<td>25.00</td>
<td>26.67</td>
<td>1.67</td>
<td>3.33</td>
<td>5.00</td>
<td>10.00</td>
<td>6.67</td>
</tr>
<tr>
<td>2</td>
<td>3.33</td>
<td>31.67</td>
<td>5.00</td>
<td>8.33</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>8.33</td>
<td>0.00</td>
<td>0.00</td>
<td>10.00</td>
<td>0.00</td>
<td>20.00</td>
<td>5.00</td>
</tr>
<tr>
<td>23</td>
<td>PT</td>
<td>Y</td>
<td>1</td>
<td>0.00</td>
<td>1.67</td>
<td>1.67</td>
<td>0.00</td>
<td>1.67</td>
<td>1.67</td>
<td>1.67</td>
<td>1.67</td>
<td>0.00</td>
<td>3.33</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>58.33</td>
<td>8.33</td>
<td>60.00</td>
<td>3.33</td>
<td>1.67</td>
<td>6.67</td>
<td>5.00</td>
<td>0.00</td>
<td>6.67</td>
<td>1.67</td>
<td>3.33</td>
<td>1.67</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

aFP = Free play, PT = Play therapy
bS = Same-age peer therapist, Y = Younger-age
c1 = Pretreatment, 2 = Posttreatment
### APPENDIX G

**PERCENT TREATMENT SOCIAL INTERACTION: MALADAPTIVE AND ADAPTIVE CHILDREN**

| Subject | FP/Pt | S & T | MAC | Session # | Disengage Peer | Reinforce Peer | Disengage Adult | Reinforce Adult | Disengage Peer | Reinforce Peer | Disengage Adult | Reinforce Adult |
|---------|-------|-------|-----|----------|---------------|--------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|
| 1 FP S M 2 | 0.00 | 0.00 | 0.00 | 3.33 | 1.67 | 3.33 | 0.00 |
| 2 FP S A 2 | 5.00 | 25.00 | 16.67 | 5.00 | 11.67 | 8.33 | 0.00 |
| 3 FP S M 2 | 5.00 | 25.00 | 16.67 | 5.00 | 11.67 | 8.33 | 0.00 |
| 4 FP S A 2 | 5.00 | 25.00 | 16.67 | 5.00 | 11.67 | 8.33 | 0.00 |
| 5 FP S M 2 | 30.00 | 20.00 | 8.33 | 1.67 | 0.00 | 5.00 | 0.00 |
| 6 FP S A 2 | 20.00 | 8.33 | 3.33 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 FP Y M 2 | 1.67 | 3.33 | 1.67 | 0.00 | 1.67 | 0.00 | 0.00 |
| 8 FP Y A 2 | 3.33 | 3.33 | 1.67 | 0.00 | 1.67 | 0.00 | 0.00 |
| 9 FP Y M 2 | 1.67 | 3.33 | 1.67 | 0.00 | 1.67 | 0.00 | 0.00 |
| 10 FP Y A 2 | 0.00 | 1.67 | 1.67 | 0.00 | 1.67 | 0.00 | 0.00 |
| 11 FP Y M 2 | 58.33 | 3.33 | 3.33 | 0.00 | 1.67 | 0.00 | 0.00 |
| 12 FP Y A 2 | 3.33 | 3.33 | 3.33 | 0.00 | 3.33 | 0.00 | 0.00 |
| 13 PT S M 2 | 10.00 | 1.67 | 1.67 | 0.00 | 1.67 | 0.00 | 0.00 |
| 14 PT S A 2 | 15.00 | 1.67 | 3.33 | 0.00 | 3.33 | 0.00 | 0.00 |
| 15 PT S M 2 | 15.00 | 1.67 | 18.33 | 0.00 | 71.67 | 18.33 | 76.67 | 8.33 |
| 16 PT S A 2 | 18.33 | 1.67 | 3.33 | 0.00 | 71.67 | 18.33 | 76.67 | 8.33 |
| 17 PT S M 2 | 18.33 | 1.67 | 3.33 | 0.00 | 71.67 | 18.33 | 76.67 | 8.33 |
| 18 PT S A 2 | 6.67 | 0.00 | 6.67 | 0.00 | 43.33 | 1.67 | 81.67 | 1.67 |
| 19 PT Y M 2 | 15.00 | 6.67 | 8.33 | 0.00 | 43.33 | 20.00 | 48.33 | 3.33 |
| 20 PT Y A 2 | 6.67 | 0.00 | 6.67 | 0.00 | 43.33 | 20.00 | 48.33 | 3.33 |
| 21 PT Y M 2 | 31.67 | 16.67 | 35.00 | 0.00 | 75.00 | 33.33 | 83.33 | 15.00 |
| 22 PT Y A 2 | 35.00 | 16.67 | 31.67 | 0.00 | 46.67 | 11.57 | 59.00 | 1.67 |
| 23 PT Y M 2 | 35.00 | 16.67 | 31.67 | 0.00 | 46.67 | 11.57 | 59.00 | 1.67 |
| 24 PT Y A 2 | 35.00 | 16.67 | 31.67 | 0.00 | 46.67 | 11.57 | 59.00 | 1.67 |

*FP = Free play, PT = Play therapy
*S = Same-age adaptive peer therapist, T = younger-age
*M = Maladaptive, A = Adaptive
APPENDIX H

POSTTREATMENT SOCIAL INTERACTION QUESTIONNAIRE
RESULTS: MALADAPTIVE CHILDREN

<table>
<thead>
<tr>
<th>Respondent:</th>
<th>Teacher</th>
<th>Teacher</th>
<th>Therapist</th>
<th>Therapist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change With:</td>
<td>Peers</td>
<td>Peer Tn.</td>
<td>Peer Tn.</td>
<td>Adults</td>
</tr>
</tbody>
</table>

I. Play Therapy/Same-Age

A. Appropriate Interactions
   1. Significantly Increased: 0, 0, 1, 0, 1
   2. Slightly Increased: 1, 0, 2, 1, 2
   3. No Change: 2, 3, 0, 2, 0

B. Inappropriate Interactions
   1. Significantly Increased: 1, 1, 0, 1, 0
   2. Slightly Increased: 0, 0, 0, 0, 0
   3. No Change: 2, 2, 3, 2, 3

II. Play Therapy/Younger-Age

A. Appropriate Interactions
   1. Significantly Increased: 0, 0, 2, 0, 2
   2. Slightly Increased: 2, 2, 0, 1, 1
   3. No Change: 1, 1, 1, 2, 0

B. Inappropriate Interactions
   1. Significantly Increased: 1, 1, 0, 1, 0
   2. Slightly Increased: 1, 0, 0, 1, 0
   3. No Change: 1, 0, 3, 1, 3

III. Free Play/Same-Age

A. Appropriate Interactions
   1. Significantly Increased: 0, 0, 1, 0, 1
   2. Slightly Increased: 1, 1, 1, 0, 1
   3. No Change: 2, 2, 1, 1, 1

B. Inappropriate Interactions
   1. Significantly Increased: 0, 0, 1, 0, 0
   2. Slightly Increased: 2, 0, 0, 2, 0
   3. No Change: 0, 3, 2, 0, 2

IV. Free Play/Younger-Age

A. Appropriate Interactions
   1. Significantly Increased: 0, 0, 1, 0, 0
   2. Slightly Increased: 0, 0, 0, 0, 2
   3. No Change: 3, 3, 2, 3, 0

B. Inappropriate Interactions
   1. Significantly Increased: 0, 0, 0, 0, 0
   2. Slightly Increased: 0, 0, 0, 0, 0
   3. No Change: 3, 3, 3, 3, 3
### APPENDIX I
POSTTREATMENT SOCIAL INTERACTION QUESTIONNAIRE
RESULTS: ADAPTIVE CHILDREN

<table>
<thead>
<tr>
<th>Respondent:</th>
<th>Teacher</th>
<th>Teacher</th>
<th>Therapist</th>
<th>Teacher</th>
<th>Therapist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change With:</td>
<td>Peers</td>
<td>Mal. Peers</td>
<td>Mal. Peer</td>
<td>Adults</td>
<td>Adults</td>
</tr>
</tbody>
</table>

#### I. Play Therapy/Same-Age

**A. Appropriate Interactions**
- 1. Significantly Increased: 0 0 0 0 1
- 2. Slightly Increased: 0 0 3 0 0
- 3. No Change: 3 3 0 2 2

**B. Inappropriate Interactions**
- 1. Significantly Increased: 0 0 0 0 0
- 2. Slightly Increased: 0 0 0 0 0
- 3. No Change: 3 3 3 2 3

#### II. Play Therapy/Younger-Age

**A. Appropriate Interactions**
- 1. Significantly Increased: 1 1 0 1 0
- 2. Slightly Increased: 1 1 2 0 1
- 3. No Change: 1 1 1 2 2

**B. Inappropriate Interactions**
- 1. Significantly Increased: 1 1 0 1 0
- 2. Slightly Increased: 0 0 0 0 1
- 3. No Change: 2 0 2 2 2

#### III. Free Play/Same-Age

**A. Appropriate Interactions**
- 1. Significantly Increased: 0 0 0 0 0
- 2. Slightly Increased: 2 1 1 0 0
- 3. No Change: 1 2 2 1 3

**B. Inappropriate Interactions**
- 1. Significantly Increased: 0 0 0 0 0
- 2. Slightly Increased: 0 0 0 0 0
- 3. No Change: 3 3 3 1 3

#### IV. Free Play/Younger-Age

**A. Appropriate Interactions**
- 1. Significantly Increased: 1 0 0 0 0
- 2. Slightly Increased: 1 1 1 1 0
- 3. No Change: 1 2 2 2 2

**B. Inappropriate Interactions**
- 1. Significantly Increased: 0 0 0 1 0
- 2. Slightly Increased: 0 0 1 0 0
- 3. No Change: 3 3 2 2 2


Deutsch, M.W., & Leland, H. Play therapy with developmentally delayed children. Columbus: Nisonger Center, Ohio State University, 1976. (Videotape)


Leland, H. Adaptive Behavior Project. State of Ohio, Department of Mental Health & Mental Retardation, 1975. (a)

Leland, H., Shoae, M., & Vayda, S. Guidelines for the clinical use of the AAMD Adaptive Behavior Scales. Columbus: Nisonger Center, Ohio State University, 1975. (b)


Rolf, J.E. The social and academic competence of children vulnerable to schizophrenia and other behavior pathologies. *Journal of Abnormal Psychology*, 1972, 80, 225-243.


Weigl, V. Functional music - A therapeutic tool in working with the mentally retarded. American Journal of Mental Deficiency, 1959, 63, 672-678.

