TAIT, Pearl Frei, 1932-
AN EXPLORATORY STUDY OF THE PLAY BEHAVIOR
OF YOUNG BLIND CHILDREN.

The Ohio State University, Ph.D., 1970
Education, special

University Microfilms, A XEROX Company, Ann Arbor, Michigan

© 1971
Pearl Frei Tait

ALL RIGHTS RESERVED

THIS DISSERTATION HAS BEEN MICROFILMED EXACTLY AS RECEIVED
AN EXPLORATORY STUDY OF THE PLAY BEHAVIOR
OF YOUNG BLIND CHILDREN

DISSERTATION

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

By

Pearl Frei Tait, B.A., M.A.

The Ohio State University
1970

Approved by

[Signature]
Adviser
College of Education
Man is by nature a playing creature. When playing he is not being like an animal; rather, he is most like himself, as man is meant to be. To speak again in terms of intentionality, play is what man is made for. In play, as it is grounded on love, man reaches into his fullest possibilities as an individual sustained and liberated by another in a truly personal world. In this modern era, which still suffers from a hangover of the Puritan suspicion that somewhere someone might be having a good time, and in which the ethic of work has been absolutized as that activity where man proves his worth, we are dangerously close to losing our awareness of the vital importance of play for authentic existence. To become human, to find the meaning of life, we must learn to play—to play not merely alone but more basically to play together in the ecstatic, boundless, carefree, riotous world of love [Sadler, 1966, p. 244].
ACKNOWLEDGMENTS

It is a pleasure to acknowledge the cooperation and understanding of all those who have made this study possible. In particular, I would like to express my appreciation

To my adviser, Professor Viola Cassidy, for her encouragement and patience in directing this study;

to the members of my committee, Professors Charles Huelsman and Charles Wenar, for their suggestions and comments;

to Loetta Hunt, Associate Professor, for her help in understanding the problems of blind children;

to the personnel of the Florida State School for the Deaf and Blind, St. Augustine; and especially to William McClure, President; and Walter Davis, Principal;

to the personnel of the Guerin-Dare Nursery School, Melbourne, Florida, for allowing me to observe their children at play;

to the personnel of the Minnesota Braille and Sight Saving School, Faribault; and especially to Melvin Voxland, Superintendent; and Dorothy Thompson, Child Care Supervisor;

to the personnel of the Services for the Blind, Department of Public Welfare, St. Paul, Minnesota; and especially to C. Stanley Potter,
Director; and James O'Keefe, Assistant Director;

to the personnel of the School for the Blind, Grand Forks, North Dakota; and especially to Herbert Jeffrey, Superintendent;

to the personnel of the Wisconsin School for the Visually Handicapped, Janesville, Wisconsin; and especially to R. E. Long, Superintendent; and Robert Okray, Principal;

to the personnel of the Drayton Schools, Drayton, North Dakota; and especially to Edward Hammer, Superintendent;

to the personnel of the Minto Schools, Minto, North Dakota; and especially to George Brooks, Superintendent;

to the personnel of the Lincoln Elementary School, Grand Forks, North Dakota; and especially to Wayne Peterson, Principal;

to the personnel of the State Library of Olympia, Washington, to whom I am indebted for their assistance while conducting the research of the literature;

to the children and their parents who participated in this study;

to my colleagues at the University of North Dakota who assisted me in this project; and especially to Dr. Richard Landry, who rendered valuable help in the statistical aspects of the data handling;

to my two sons, Ivar and Hogar, who gave me vivid examples daily of the importance of play in the life of growing children;

and above all to my husband, without whom there would have been no beginning and no end to this study.
VITA

May 19, 1932 . . . . Born - Jersey City, New Jersey

1953 . . . . . . . B.A., College of Notre Dame for Women, Baltimore, Maryland

1954 . . . . . . . Post graduate Diploma, Pius XII Institute of Fine Arts, Florence, Italy

1958-1959 . . . . Instructor, Native School, English Bay, Alaska

1960-1962 . . . . Teacher, First Grade, Peru, South America

1962-1963 . . . . Teacher, First Grade, Wrangell, Alaska

1964 . . . . . . . M.A., Colorado State College, Greeley, Colorado

1964-1965 . . . . Teacher, Nursery for Deaf Children, Colorado State College, Greeley, Colorado

1965-1966 . . . . Research Associate, Programmed Instruction Project, Language Improvement for Hearing Impaired Children, The Ohio State University, Columbus, Ohio

1966-1967 . . . . Director, Reading Clinic, and Instructor, Special Education, Florida Memorial College, St. Augustine, Florida

1969 to present . . . Assistant Professor, Special Education, and Director, Learning Potential Center, The University of North Dakota, Grand Forks, North Dakota
FIELDS OF STUDY

Major Field: Exceptional Children

Studies in Education of the Blind and Partially Seeing. Professor Loetta Hunt

Studies in Education of the Deaf and Acoustically Handicapped. Professor Patrice Costello

Studies in Education of the Mentally Retarded. Professor Reginald Jones

Minor Field: Human Development

Studies in Child Growth and Development. Professors John E. Horrocks, George G. Thompson, and Charles Wenar

Minor Field: Educational Television

Studies in Educational Television. Professor I. Keith Tyler
TABLE OF CONTENTS

ACKNOWLEDGMENTS ................................................................. iii
VITA ................................................................................................. v
LIST OF TABLES .............................................................................. ix

Chapter

I. INTRODUCTION ................................................................. 1
   Preliminary Statement
   Purpose of the Study
   Definition of Terms
   Reasons for the Study
   Rationale for the Design of the Study
   Hypotheses
   Procedure
   Handling of the Data

II. SURVEY OF LITERATURE ............................................. 21
   Introduction
   The Play of the Blind Child
   The Importance of Play as it Relates to the Blind Child
   Summary

III. PROCEDURE ................................................................. 70
   Introduction
   Pre-Experimental Procedure
   The Experimental Process
   Handling the Data
   Analysis of the Data
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV. FINDINGS</td>
<td>88</td>
</tr>
<tr>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>Identification and Classification</td>
<td></td>
</tr>
<tr>
<td>Analysis of the Statistical Data Pertaining to the Hypotheses</td>
<td></td>
</tr>
<tr>
<td>Analysis of the Statistical Data Pertaining to the Play Session</td>
<td></td>
</tr>
<tr>
<td>Descriptive Analysis of the Play Sessions</td>
<td></td>
</tr>
<tr>
<td>V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS</td>
<td>134</td>
</tr>
<tr>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>Conclusions</td>
<td></td>
</tr>
<tr>
<td>Recommendations</td>
<td></td>
</tr>
<tr>
<td>APPENDIX</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>157</td>
</tr>
<tr>
<td>B</td>
<td>183</td>
</tr>
<tr>
<td>C</td>
<td>189</td>
</tr>
<tr>
<td>D</td>
<td>194</td>
</tr>
<tr>
<td>E</td>
<td>209</td>
</tr>
<tr>
<td>F</td>
<td>214</td>
</tr>
<tr>
<td>G</td>
<td>216</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>234</td>
</tr>
</tbody>
</table>
### LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Causes of Blindness and Frequency Encountered</td>
<td>91</td>
</tr>
<tr>
<td>2. Description of Blindness Encountered</td>
<td>93</td>
</tr>
<tr>
<td>3. Means and Standard Deviations (S.D.) of the Age of the Male and Female Blind Subjects and the Male and Female Seeing Subjects</td>
<td>94</td>
</tr>
<tr>
<td>4. Means and Standard Deviations (S.D.) of the Intelligence of the Male and Female Blind Subjects and the Male and Female Seeing Subjects</td>
<td>95</td>
</tr>
<tr>
<td>5. Summary Table for the Two-Way Analysis of Variance Relative to the Intelligence of the Blind and Seeing Subjects</td>
<td>96</td>
</tr>
<tr>
<td>6. Themes Expressed in the Longest Dramatic Unit by Blind and Seeing Subjects</td>
<td>100</td>
</tr>
<tr>
<td>7. Summary Table for the Analysis of Variance Relative to the Time Spent in Dramatic Play by Blind and Seeing Subjects</td>
<td>102</td>
</tr>
<tr>
<td>8. Summary Table for the Analysis of Covariance Relative to the Time Spent in Dramatic Play by Blind and Seeing Subjects</td>
<td>104</td>
</tr>
<tr>
<td>9. Means Adjusted for the Covariate Intelligence Relative to the Time Spent in Dramatic Play by Blind and Seeing Subjects</td>
<td>104</td>
</tr>
<tr>
<td>10. Summary Table for the Analysis of Variance Relative to the Time Involved in the Longest Dramatic Unit by Blind and Seeing Subjects</td>
<td>105</td>
</tr>
</tbody>
</table>
22. Contingency Table Showing the Observed (O) and Expected (E) Frequency of Blind and Seeing Subjects' Non-Involvement in Play ........................................ 117

23. Summary Table for the Analysis of Variance Relative to the Time Spent in Manipulative Play by Blind and Seeing Subjects ........................................ 118

24. Summary Table for the Analysis of Covariance Relative to the Time Spent in Manipulative Play by Blind and Seeing Subjects ........................................ 119

25. Means Adjusted for the Covariate Intelligence Relative to the Time Spent in Manipulative Play by Blind and Seeing Subjects ........................................ 119

26. Summary Table for the Analysis of Variance Relative to the Time Spent in Play Other Than Manipulative and Dramatic by Blind and Seeing Subjects ........................................ 121

27. Summary Table for the Analysis of Covariance Relative to the Time Spent in Play Other Than Manipulative and Dramatic by Blind and Seeing Subjects ........................................ 122

28. Means Adjusted for the Covariate Intelligence Relative to the Time Spent in Play Other Than Manipulative and Dramatic by Blind and Seeing Subjects ........................................ 122

29. Summary Table for the Analysis of Variance Relative to the Number of Vocalizations Uttered during Play by Blind and Seeing Subjects ........................................ 123

30. Summary Table for the Analysis of Covariance Relative to the Number of Vocalizations Uttered during Play by Blind and Seeing Subjects ........................................ 124

31. Means Adjusted for the Covariate Intelligence Relative to the Number of Vocalizations Uttered during Play by Blind and Seeing Subjects ........................................ 124

32. Contingency Table Showing the Observed (O) and Expected (E) Frequency of Blind and Seeing Subjects' Request for the Involvement of the Observer in Dramatic Play ........................................ 125
33. Roles Assigned to Play Materials during the Longest Dramatic Unit by Blind and Seeing Subjects
34. Comparison of the Ages in Months of Blind and Seeing Subjects
35. Means and Standard Deviations (S.D.) of the Age of Minto and Drayton Subjects
36. Summary Table for the Analysis of Variance Relative to the Age of Minto and Drayton Subjects
37. Means and Standard Deviations (S.D.) of the Intelligence of Minto and Drayton Subjects
38. Summary Table for the Analysis of Variance Relative to the Intelligence of Minto and Drayton Subjects
39. Contingency Table Showing the Representation of Males and Females in the Minto and Drayton Groups
40. Contingency Table Showing the Observed (O) and Expected (E) Frequency of Minto and Drayton Subjects' Involvement in Manipulative Play
41. Contingency Table Showing the Observed (O) and Expected (E) Frequency of Minto and Drayton Subjects' Involvement in Dramatic Play
42. Contingency Table Showing the Observed (O) and Expected (E) Frequency of Minto and Drayton Subjects' Involvement in Play Other Than Manipulative and Dramatic
43. Contingency Table Showing the Frequency of Minto and Drayton Subjects' Non-Involvement in Play
44. Means and Standard Deviations (S.D.) Relative to the Time Spent in Manipulative Play by Minto and Drayton Subjects
45. Summary Table for the Analysis of Variance Relative to the Time Spent in Manipulative Play by Minto and Drayton Subjects
46. Means and Standard Deviations (S.D.) Relative to the Time Spent in Dramatic Play by Minto and Drayton Subjects .......................... 227

47. Summary Table for the Analysis of Variance Relative to the Time Spent in Dramatic Play by Minto and Drayton Subjects. ......................... 228

48. Means and Standard Deviations (S.D.) Relative to the Time Spent in Play Other Than Manipulative and Dramatic by Minto and Drayton Subjects .................................................. 229

49. Summary Table for the Analysis of Variance Relative to the Time Spent in Play Other Than Manipulative and Dramatic by Minto and Drayton Subjects .................................................. 229

50. Means and Standard Deviations (S.D.) Relative to the Number of Vocalizations Uttered by Minto and Drayton Subjects .......................... 230

51. Summary Table for the Analysis of Variance Relative to the Number of Vocalizations Uttered by Minto and Drayton Subjects .......................... 231
CHAPTER I

INTRODUCTION

Preliminary Statement

Young children are, by nature, endowed with an insatiable curiosity about the world in which they live. Paralleling this urge to expand their horizons, they also are possessed of the necessary high energy level which allows them to explore and investigate their surroundings at every opportunity. Children play by themselves, with others, with toys, with nothing. They wiggle, jump, skip, hop, climb, fall. They make up games and act out roles. They are father, baby, bus driver, policeman, doctor, school teacher. They build; they knock down. With hugs and pokes, giggles and smiles, they reach out seeking playmates. It may be a pleasant world, or a frightening world, but children are always aware of their surroundings ready to advance, or retreat, according to their experiences and the degree of confidence in their abilities. Their environment beckons to them and they react by investigating it, always trying to become more familiar with it.

Observation of a group of blind children in a classroom reveals striking differences between such a group and a typical class of seeing
children. These differences have little to do with the more evident effects of blindness. Blind children appear to be able to sit and do nothing, or resort to rhythmical self-play, for great lengths of time. They seem not only unable to keep themselves occupied constructively, but unable, or unmotivated, toward contacting a classmate also equally unoccupied at the moment. Groups are rarely formed spontaneously for cooperative pursuits. Almost no fantasy or role playing is observed, in the individual or group situation. Toys often remain unused or enjoy a brief importance only if someone else is using them at the moment. An observer gets the impression that for the blind child the world is not fascinating; it is dangerous and must be shut out. The urge to explore, become familiar with, with the idea of enjoying, controlling or meaningfully manipulating the environment, all actions based on confidence in one's own abilities, appears lacking.

What is the importance of the child's, any child's, constant, ever expanding, investigation and exploration, the drive to try anything, examine new things, seek novel experiences, satisfy a craving for change, to reach out and learn more about the world around them? One of the common criticisms of formal traditional educational practice has been the dichotomy between the desire of the child to learn actively, to be free to move around, to spontaneously investigate and study what he was currently interested in and to function in a peer group with all it entails as opposed to sitting in seats in a row, studying a prescribed thing
according to a rigid schedule, forced to keep quiet, to respond only when called upon, and to suppress much of his spontaneous inquisitive-ness. Incompatible with the nature of children as it may seem, one of the acceptable objectives of early education is to prepare children for academic study which involves training them to sit quietly and be receivers of education rather than creative finder-outers. The desired behavior is to listen to the teacher and to ponder upon the information dispensed. There are all degrees of this restrictiveness as one goes from traditional to progressive and experimental classrooms. Blind children, because of their reduced drive toward exploration, would seem to be more advanced from a sit still and listen aspect and, thus, better prepared for classroom academic learning than their inquisitive, experience-seeking sighted peers. Blind children can sit quietly for hours. They do not exhibit much desire to communicate with their playmates as they appear to relate to and be more dependent upon their teachers. If this is the case, then should educators and those concerned with child development be troubled by the apparent lack of curiosity, the reduction in seeking or exploratory behavior, or paucity of peer interactions as evinced by blind children? These concepts, in the broader, more fundamental perspective, are investigated in this study; however, they will be referred to in this work under the more comprehensive, inclusive phenomenon--play, itself a process urgently needing more explicit explanation and clarification.
In education, play is acknowledged as taking a meaningful place in instruction. However, this play must usually serve some specifically useful purpose. Children play bingo to learn their numbers, ring-a-round the rosy to improve coordination, lotto, Simple Simon, and others, to teach something academically respectable. These exercises provide an opportunity for learning with a candy covered coating. To explain the objective of play in the more free environment of kindergarten and preschool becomes more difficult. Here the child learns to "express himself," "get along with others," "become accustomed to the discipline of school routine," and to "develop acceptable behavior patterns." There appears to be a tacit agreement that play behavior, often untimely and spontaneously initiated by children, is inevitable and extremely difficult to control or eradicate, therefore, it is manipulated to channel it, directly or indirectly, to serve some useful purpose. But what happens when play behavior as a personality trait is not present or it is reduced to a degree where it becomes readily obvious that it is absent for all practical considerations? Is play of sufficient significance in itself to warrant the establishment of a certain level of play behavior before meaningful academic learning can, or should, be pursued? It exists to some degree in all children, but there appear to be observable differences. In blind children it is obvious by its relative absence.

Various theories of the consequences of play have been proposed. No one theory is all inclusive. However, the importance of play is
expounded in each theory which involves one or more aspects of play. When all the facets explained in the various theories of play are considered, it becomes evident that play behavior is a vital element in the normal development of the child. Without this vital element, development of the child may be retarded, or distorted, in ways which may not appear related to play. The educator may find that play in its fullest meaning must be present before any meaningful academic learning behavior in the classroom or even a satisfactory life adjustment can be accomplished. It may be necessary, especially when working with disabled children, for the educator to foster undirected play activities in the classroom in such a way that these children may pursue, to a much higher level and incidence, play activities both creatively and independently. A child with a handicap may have to develop his own play activities in a different manner using his available functioning senses to the maximum degree. In the case of the blind, those senses, other than vision, will be used where the seeing person would resort to visual involvement and hence different play patterns would result.

This study of the play behavior of young blind children concerns itself with the role of play in the intellectual, emotional and social growth of young children as it relates to the blind child. It especially concerns itself with analyzing in detail the play of blind children in order to provide basic information on which to construct educational programs designed purposefully to enhance the role of play in the
classroom. At the present time such a body of information does not exist.

**Purpose of the Study**

The purpose of this study is to investigate the importance of play in the development of children as it relates to blind children in particular, to determine whether or not the play patterns of blind children exhibit a lack of typical play activity, and to analyze quantitatively, and qualitatively, the play patterns in which blind children participate as compared to peer seeing children.

It is believed that the information resulting from such an investigation may, by providing greater understanding of this facet of the life of the blind child, lead to the improvement of educational programs for the blind child which in turn will foster a more active and creative role in society by the blind.

This study was designed to be exploratory since the questions raised appeared too profound and encompassing to be exhaustively examined by one single study particularly in view of the absence of other studies specifically researching this subject. As an initial study, this particular one must also attempt to point up areas needing further investigation and provide information on which to base subsequent in-depth studies. It was also felt that the initial study should focus on the more practical aspects of the problem which may lead to immediate
changes rather than on theoretical questions which, while important, would not as expeditiously prepare the way for the betterment of the education of the blind child. Hence, in designing and conducting the study, and in reporting on the various findings, a deliberate effort was made to keep the potential users of such a study in mind, namely, the parents, educators, and child development specialists.

**Definition of Terms**

For the purposes of this study, these terms have been used specifically as follows:

1. **Dramatic play**—this refers to that play in which the child engaged during the experimental session wherein the objects and persons involved participated in make-believe situations.

2. **Legally blind child**—this is a child with (Hatfield, 1966) "visual acuity for distant vision of 20/200 or less in the better eye, with best correction; or visual acuity of more than 20/200 if the widest diameter of field of vision subtends an angle no greater than 20 degrees [p. 10]."

3. **Manipulative play**—this refers to that play in which the child engaged during the experimental session wherein the object and persons involved did not assume or participate in roles or make-believe situations but remained in their real life status.

4. **Partially seeing child**—this refers to the child with (Hatfield,
1966) "a visual acuity greater than 20/200 but not greater than 20/70 in the better eye after correction [p. 10]."

5. **Secondary disability**--this refers to any disability which is not considered to be the primary disability, blindness.

6. **Totally blind child**--this refers to the child who is (Hatfield, 1966) "unable to distinguish light from darkness or with no light perception [p. 10]."

**Statement of the Problem**

This study sought to ascertain, by means of observation during an experimental situation, whether or not the play of blind children differs from that of peer seeing children.

This involved the detailed documentation of the play activities engaged in by blind children presented with special play materials during individual fifteen minute experimental sessions. Twenty-nine legally blind children within the age range of four years through nine years were investigated. In addition, in order to relate the play of blind children to that of peer seeing children, an equal number of seeing children matched for age and sex were similarly observed and their activities recorded.

**Reasons for the Study**

During the writer's years of experience as a teacher of young children, which included work with such varied groups as eskimos, Indians, United States Americans isolated in a foreign country, foreign
nationals, the acoustically handicapped (deaf and hard-of-hearing), experience in the more typical United States public school setting, and as a mother with intimate daily contact with normal children from the moment of birth plus innumerable contacts with the peers of these growing children, a familiarity with the child in a play situation evolved.

When observing various groups of blind children, the writer was startled by the strikingly evident lack of play and lack of interest in fellow classmates. While a greater interaction with the teacher may be expected due to the restriction of blindness and the smaller ratio of students to teachers, this did not seem to explain the lack of communication of the blind pupils with their fellow classmates. Deaf children the writer has worked with also shared a small teacher student ratio and certainly were restricted in their ability to communicate, but they still exhibited a forceful interest in their classmates and in the activities of these peers.

It was disturbing to see one child sitting at his desk doing nothing while next to him might be another child similarly unoccupied. There was little chatter, idle talk, or interaction. These children were free to move about, to talk, and to play with available objects. When they did reach out to their classmates it was generally to grab objects with which another child was playing, or insulting the peer verbally. While all children may occasionally resort to these methods of interaction, the degree to which this behavior was exhibited by the blind children was
more extreme. It was as if the blind child were bereft of the joys of childhood and was left only with the disadvantages inherent in being a child, and was reacting overtly to this situation.

It was felt by the writer that these children needed an active educational program designed specifically to establish more functional play patterns, behaviors which while they might incorporate academic learning, must surely take precedence over subjects such as braille reading or writing. An attempt to find any information in the field of the education of the blind failed to uncover any practical suggestions for the teacher or even to point out that such a situation might exist. Numerous articles were found on the teaching of braille, arithmetic, and the advantages of various methods of recording. Other educational materials which might apply, such as those dealing with young preschool, or nursery children, pursued a different type of problem. Articles tended to concern themselves with ways in which the teacher could direct a high level of child activity into educationally approved undertakings. The problem here is that the active participation of the blind children will not be sustained unless the teacher is in direct contact with each individual—an obviously impossible situation in a classroom. Hence, while the one with whom the teacher is working directly is actively participating, the rest of the class withdraws individually until the teacher in turn works directly with them.
A search of pertinent literature produced some evidence that this reduced play of blind children was not a phenomenon limited to the particular classes which the writer has observed. Several articles were found which paralleled the observations of the writer to a substantial degree. These writings tend to deal with impressions rather than fact. However, the impressions help to spotlight an interesting phenomenon which appeared to present a potentially fruitful area for further research and analysis.

Objective study of the play behavior of young blind children will focus attention upon several questions which are presently not answerable, for example: Does the play of the blind child differ from that of those with sight? If a difference does exist, is this difference due to the loss of sight or to environmental causes? Is there a difference in the play patterns of the blind child interacting with other blind children and the blind child interacting with seeing children? Does the blind child substitute a different set of play activities for those which may be denied him due to his visual loss, or is there a void instead of logical substitution? Is there any evidence that the lack of play, if such a condition is determined to exist, has affected the development of the blind child? There is currently little information to be found in the literary works to which one would turn when seeking answers to questions such as these. What references and inferences that do relate to these questions are set forth and reviewed in detail in Chapter II of this study.
Rationale for the Design of the Study

In view of the function of play in the emotional, social, and intellectual aspects of the development of any child, it appears logical that the blind child should also engage in these play activities possibly to an even greater extent than seeing children, but at least to the same extent as seeing children. Yet, observations of blind children during free play and available literature on this subject indicates that the blind child engages not only less frequently in play activities, but engages in less complex play activities than the seeing child.

Some common play activities would seem to be of limited value to the blind child due to the particular characteristics of the activity and the nature of the child's disability. Art activities, such as painting, drawing, cutting, and pasting, are of limited use with blind children due to the high requirements for visual participation as these activities are currently being presented. This is not to infer that a very satisfactory expressive art form could not be created to be enjoyed through the tactile sense by both the seeing and the blind, however, to date a total tactile art form has not yet been developed. Experiments being conducted with new art forms involving other than the visual sense appear very promising.

There are indications that other play activities would seem to be of limited value to the blind child primarily because of the inability of those working with the child to understand and present materials in a
way suited to the blind child's particular life style. An example of this is described by Burlingham (1967).

Building is another activity that plays a large part in both sighted and blind children, but there is a significant difference in the way in which the blind carry out this activity. The building of the seeing child is normally guided by some inner image which the child attempts to reproduce in the outside world. Such an image may be retained from actual experience or may be wholly or in part the product of the child's imagination. The more faithfully this inner image has been reproduced, the more will the builder be pleased with the result of his efforts.

Apart from very exceptional cases, the imagination of the blind child does not seem to work on the same level, nor are there any visual images to be retained. Accordingly, with many such children, building may proceed aimlessly and consist essentially of knocking or throwing blocks about rather than be an organized activity. This is remedied in part by the teacher's verbal explanations. The child is taught what is high or low, underneath or on top, etc., and if he is willing to follow instructions, the result can be a pretense of spontaneous building, which in turn is praised and encouraged by the sighted adult. There is no doubt that the child "learns" a good deal about space in this manner and that this is a necessary prop for the orientation of the blind.

What I have in mind is that this can hardly be classed as play in the first instance, since it does not give expression to any of the child's instinctual needs. It is acquired rather than spontaneous, a learning activity rather than a play activity [p. 197].

Other play activities which would appear to be of great value, such as music and dancing, are, for the purposes of this study, of limited value because of the difficulty involved in measuring such behavior. A dance may be very expressive for the child yet the observer can only guess as to its meaning. It is also, to some extent, structured by the mood presented in the music.

Therefore, in order to avoid these limitations, it was decided that to investigate the play behavior of the blind child it would be
advantageous to focus on one play activity; namely, spontaneous dramatic play. The study of spontaneous dramatic play has several advantages. First, it is a widespread activity frequently enjoyed and engaged in by many children. It may be undertaken by an individual separately or in a group. It is not necessarily limited by the physical loss of vision. In addition, it is very feasible to observe dramatic play and attempt to evaluate it in a more or less concrete manner.

A good deal has been written about dramatic play and its importance in the child's life by such specialists as Susan Isaacs (1933, 1950), Erik Erikson (1950), Margaret Lowenfeld (1935), S. R. Slavson (1943), and Virginia Axline (1947). Dramatic play has been described as a means by which the child can grow in social areas, relieve tensions, discriminate between reality and non-reality, and adapt to the real world with its inevitable frustration.

In view of the importance and popularity of dramatic play, it was interesting to note that during previous controlled observations of the play behavior of blind children previously conducted by the writer, only one instance was recorded of a dramatic play situation occurring. Six blind children (ages six and seven) were observed for fifty minutes a day for a total of five days. Of this total time, five minute observations of each child were recorded in detail for four days. This example referred to describes what might be called an attempt at dramatic play by the one
child in the population studied who exhibited this phenomenon during the entire recorded time (see Appendix D).

Ellen finds a small cradle with a doll in it. She takes the doll out, sets it on the floor and then puts the cradle over her arm. She sings out, "Cracky corn for sale." Tom comes over and holds the cradle. Ellen says, "You're not a baby." Then she says to Tom, "Now you get in here." Tom puts the doll in the cradle. Ellen says, "No, don't put her in there. You get in yourself." She finds a piece of plastic material used as a blanket in the crib. Repeatedly sings, "Cracky corn for sale." Tom puts the blanket over her hair, rubs it around. Ellen tries to get it off. Then sits hunched over giggling and chanting. Tom and Ellen tussle (good naturedly) over a musical egg. Ellen sings, "Hot potatoes for sale." Tom leaves. Ellen now chants, "Crocodiles for sale," then, "Blankets for sale," and she takes the doll blanket and wraps it around her like a bib.

In contrast to this, practice observations had been made the previous week of a group of five and six-year-old seeing children during a forty-five-minute period of free play. Throughout this entire time, one group of four children acted out a scene in which they were engaged in war maneuvers. This included secret discussions, assigning of specific duties, and various changes of location. Another group composed of three girls played a game in which one girl died after going through expressive death throes, whereupon, the "doctor" examined her, gave her an injection, and then with ceremony swung a corded belt (symbol of life perhaps) over the dead girl. The girl stirred, and looked about her as one who sees the world afresh.

Regardless of any interpretations one would make about any of the play sequences, it is very obvious that the scenes of the seeing children were far more complex, intense, and lengthy.
It seemed logical to conclude that if such a paucity of dramatic play did exist in blind children as a group, the effects of this might be exerting a substantial influence on their subsequent development. A review of the literature concerning the blind suggests this possibility. However, for this particular study the research was designed to identify the play activities that blind children engage in and compare these activities to those carried on by their sighted peers. In addition, in view of the importance of spontaneous dramatic play, it was decided to focus attention upon any spontaneous dramatic play which might be expressed and evaluate it in a concrete manner.

Hypotheses

With the confines of this study, the null hypotheses are:

1. There is no substantial difference in the **content** of the dramatic play of young blind children and seeing children.

2. There is no substantial difference in the **amount of time** spent in the dramatic play of young blind children and seeing children.

3. There is no substantial difference in the **complexity** of the dramatic play of young blind children and seeing children.

4. There is no substantial difference in the **intensity of the personal involvement** exhibited in the dramatic play of young blind children and seeing children.

It was felt that this particular study of the nature of the play of
blind children as compared to that of seeing children, due to its being one of so very few studies relating to this topic, would be unduly restricted by incorporating additional hypotheses into this aspect of the study. Without the structuring effect of additional preconceived hypotheses, which would of necessity at this time be promulgated on impressions rather than on fact regarding the characteristics of play of the group studied, it was believed that a more sensitive, unbiased, interpretation would be accomplished. Hence, the design of the study was structured only where structure was deemed feasible and pertinent, but left unrestricted where less restriction and freer interpretation would enhance the gathering of information which is not presently available.

In view of the dearth of usable resource data presently available, it was considered important at this time to collect, analyze, and interpret the data resulting from the study from the position of what is the situation rather than to determine whether or not specific speculations are, or are not, substantiated, except for those portions of the study which lend themselves to the formal hypotheses set forth at the beginning of this section.

Procedure

In order to investigate the play behavior of young blind children twenty-nine legally blind children, fifteen males and fourteen females between the ages of four through nine, were selected for this study. The
same number of seeing children matched for sex and chronological age to
their counterparts also took part in the same experiment.

This experiment required a separate room such that the observer
and child were completely alone and undisturbed during the session. The
room was one with which the child was familiar. This room was found
either in the child's school or in his home, such as the living room. In
order to retain an environment that was well known to each child and yet
provided an environment which was the same for all the children, a
parti-room (a portable enclosure made of partitions) was set up within the
chosen room to define a boundary within which the child was able to play
without external distractions.

The observer became acquainted with the child during the adminis-
tration of the Slosson Intelligence Test (1963) which took approximately
fifteen minutes to complete. After this the observer and child played with
blocks together within the parti-room until a friendly relationship was
established and the child felt free to verbalize and express himself
creatively. The time involved in this step differed according to the need
of each child.

When rapport had been established, the observer then removed the
blocks, and offered the child the fundamental play materials which were
a cardboard box, a wooden dowel, a nondescript hat, and a piece of
cloth. After the presentation of these materials to the child, the
observer said, "Let me see you play with these," at which time the
timer was set for a fifteen minute period and the tape recorder was turned on.

The play period was terminated after fifteen minutes by the observer. However, the child was able to terminate the play period at any previous time by abandoning the toys or by a verbal statement such as, "I don't want to play anymore."

The interaction and verbalization that took place during the entire play period were recorded on tape. The examiner also took notations concerning the actions of the child which would not be picked up by a tape recorder. After the play period was completed and the child had left the observation room, those general impressions received during the play period were also recorded.

Handling of the Data

The data to be analyzed were comprised of tape recordings and brief notations made during the play sessions, general impressions of the play sessions noted at the end of the sessions, and identification information obtained from the case record sheet on each child.

The observer reviewed all the information on each case and compiled a narrative case record. These narratives were then studied and a check sheet was developed which set forth quantitatively the significant information on each case. In addition to the objective data such as age, sex, degree of blindness and so forth, play patterns were identified and
the resulting information extracted and related to the appropriate hypothesis. Information not suitable for statistical treatment was analyzed and presented in descriptive form.

The items that were identified and quantified in each case were coded for punch card electronic data processing handling. From these cards compilations and calculations were made. Intelligence was covaried out as a factor in the interpretation of the results. The analysis of variance and chi square were used when applicable. From the resulting compilations and calculations, conclusions were drawn and related to the descriptive findings. Recommendations were based on the findings.
CHAPTER II

SURVEY OF LITERATURE

Introduction

It is not the purpose of this chapter to present a definition of the term "play," to critique the various theories which have been presented, nor to attempt to describe any of these theories in depth. This chapter will attempt, by reference to various studies and theories presented in literature, to suggest that play may be vital to the development of the blind child if he is to achieve full participation in a dynamic world; that a lack of play has unfavorably influenced the development of blind children; and that this lack of play may be caused by factors other than blindness per se.

Although the word "play" has been used for a long time, and numerous theories have been propounded, the term itself has not been defined satisfactorily to cover all of the complex aspects of this behavior. Johan Huizinga (1950), in his classic work on play and culture, states that "play is a function of the living, but is not susceptible of exact definition either logically, biologically, or aesthetically [p. 7]." Lowrey (1955) states that "play . . . is not exactly the simplest
word in our language. The definitions and synonyms take up two columns in Webster's Unabridged Dictionary [p. 574]." Again (Sadler, 1966), while play is a significant form of behavior "it is nevertheless a phenomenon which puzzles and confounds many who study it, as evidenced by a general inability to define it [p. 237]." Slobin (1964), in his discussion of play in childhood, does not attempt to define the word but does not feel this to be detrimental to the discussion of the behavior. As he explains, "we are unable to define precisely most of the words we use in everyday speech, yet this in no way interferes with our ability to use them consistently [p. 61]." It has even been suggested by Berlyne (1968) that play is no longer a useful category in psychology and it might be well to give it up since it seems that ignorance is the main factor that holds it together. However, Mason (1965) believes that "it is the peculiar quality of this behavior that it can usually be recognized and labeled as play [p. 528]." And Sutton-Smith (1967, p. 98) feels it is best to persist with a general category which most people believe they are able to observe even if the definition is inadequate.

For the purposes of this study, the term "play" will be considered in its most general, all-encompassing meaning, including within its sphere, the terms "exploratory behavior," "curiosity," and similar terms. The literature supports this broad use of the term. Sutton-Smith (1967) states that in current research "play has generally been identified with exploratory behavior [p. 98]." Burgers (1966) states that "terms such as
'curiosity,' 'diversive exploration,' 'disturbance by a lack of information,' 'attraction emanating from objects which offer more varied or more irregular stimulation,' 'epistemic curiosity,' and 'conceptual conflict' appear as consequences of a tendency toward play [p. 1681]." In addition, various studies investigating a variety of behaviors involving young children often resort to examining some type of play behavior. This can be seen in such studies as those of social participation in which the free play activities of nursery children are examined (Parten, 1932, 1933), and Rubenstein's study (1967) of maternal attentiveness and subsequent exploratory behavior in which exploratory behavior was measured by "presenting play opportunity [p. 1093]" and the "availability of toys within reach [p. 1093]." Taking into account the fact that the term is presently so ill defined and that it is extremely difficult to separate activities of children into play and non-play (Eat your food, don't play with it!), it is felt prudent to err on the side of including too much under this term rather than exclude that which may prove significant. Hence, the word play is used throughout this study in the broadest sense.

The Play of the Blind Child

Several reports in the literature indicate that the play of blind children is limited. Anne-Marie Sandler (1963), discussing the development of blind children as observed at a nursery in England, states that
on entering the Hampstead Blind Nursery (this has also been reported by observers at many other institutions for the blind) one is soon struck by the phenomenon which seems to be characteristic of most blind children as compared with sighted children of the same age. This phenomenon is the tendency of these children, no matter how much they are stimulated by their teachers, to lack any sort of real creative drive toward, or interest in, the progressive mastery of the outside world. . . . It appears that many of these children are abnormally content to be left alone, and to indulge in repetitive self-stimulating movements or stereotyped nonadaptive activities. Strenuous efforts on the part of the teacher may often elicit the cooperation of these children, and they may even appear to enjoy such activities as group games, but this enjoyment is rather shallow, and the moment the teacher's efforts slacken, they appear to sink back into a state of lethargy [pp. 344-345].

Burlingham (1965) compares the pupil in a normal nursery school who is "invariably active and spontaneously occupied [p. 196]" with the children in the Nursery for the Blind who will sit, if not compelled otherwise, "motorically idle, on the floor, in a corner, often with their heads on the table [p. 196]." She refers again (1967) to this lack of the desire to play which is found to be a problem to mothers and nursery school teachers when she discusses the play activities of the blind child. "The children seem to lack any desire for the objects surrounding them and consequently show no sign of a wish to play [p. 187]."

Rothschild (1960) practiced play therapy with blind children over a period of five years at the Service Bureau for Blind Children, a department of the Industrial Home for the Blind, Brooklyn, New York. He states (1960, p. 329) that while play is normally used as the basis for therapy with children because it is assumed to be the most spontaneous, natural
and unguarded medium of expression of children, he found it often necessary when dealing with blind children, to introduce the blind child to play first before play could be used as a therapeutic tool. "The blind child may not be accustomed to express and to involve himself in play. Play . . . may be a far less frequently pursued endeavor and considerably less important in the blind child's life than in the life of the child with full vision [p. 330]."

Singer and Streiner (1966) investigated the imaginative content in the dreams and fantasy play of blind and sighted children. Interviews and spontaneous accounts of the play, fantasies, and dreams of blind and sighted children (aged eight to twelve) were recorded and rated independently by judges for imaginativeness. The results indicated that sighted children proved more imaginative in all three areas while the form and content of the stories, dreams, and play accounts of the blind children "suggest greater concreteness and lack of flexibility or associational variety [p. 479]." The blind children rarely used material that deviated from their day-to-day life experiences and the content did not differ from story to story, usually being restricted to one or two characters. Singer and Streiner conclude with the following recommendation:

To the extent that for the child a varied and rich fantasy life may be a valuable addition to the cognitive repertory and increased affective enjoyment, one might hope that special attention to the training of the blind to imaginative story-telling and practice of fantasy play would be desirable. . . . If future research supports
the evidence of this study on the imaginative limitation of the blind child, a more conscious effort at imaginative stimulation in the educational curriculum and in the pattern of parent-child relations may prove desirable [p. 481].

Cowen (1968) examined the sex-role typing of elementary blind students with the use of a questionnaire based on Rosenberg & Sutton-Smith's list of games preferences. She states that "the visually handicapped children often responded more slowly to the questionnaire, asked more questions about the activities, and frequently said something like 'Oh, I've played that a few times, and I liked it.' Such remarks impressed the examiner that their world of play was certainly more limited than the results of this study revealed [p. 41]."

The following picture of the characteristics of that play in which blind children do participate is drawn up from accounts in the literature.

The range of materials used by blind children is reduced because toys require vision for meaningful manipulation (Rothschild, 1960, p. 329). Motor activity is reduced and the blind child will tend to walk quietly and carefully (Burlingham, 1965, p. 196). Aggressive acts such as throwing, hitting, and kicking are restrained (Burlingham, 1961, pp. 131-132). The intensity and the degree of personal involvement in play is reduced (Rothschild, 1960, p. 329). There is a limited interest in the outside world and a turning toward the self for pleasurable bodily sensations (Sandler, 1963, p. 355). There is an absence of creative drive (Sandler, 1963, p. 359). Curiosity is more quickly satisfied
(Deutsch, 1940, p. 128). Play is less imaginative or flexible than that of comparative sighted peers (Singer & Streiner, 1966, p. 479). The freedom, relaxation, and peaceful state of mind which is conducive to "playfulness" may not be experienced by these children (Rothschild, 1960, p. 329). Play may include anxiety-laden ideas which may lead to chronic "play disruption" (Rothschild, 1960, p. 329). Repetitive behavior is adhered to beyond the time required for mastery or pleasure in the familiar and retards progression to the next function as evidenced by choice of activities suitable for a younger age (Burlingham, 1965, p. 198). Progression is accomplished by personal attachment to the teaching adult rather than through interest in the activity or peer group (Burlingham, 1965, p. 198).

The Importance of Play as it Relates to the Blind Child

Social Development

Control of the environment

Erikson (1950) proposes the theory that "the child's play is the infantile form of the human ability to deal with experience by creating model situations and to master reality by experiment and planning [p. 195]." While "the playing adult steps sideward into another reality; the playing child advances forward to new stages of reality [p. 194]." Erikson presents three stages in the development of the child in which by
means of play each stage must be mastered if a sense of reality and mastery is to be achieved.

The first stage begins with or centers on the child's own body. It consists of the exploration by repetition of sensual perceptions, of kinesthetic sensations, of vocalizations, and so forth. He next plays with available persons and things, primarily his mother's body. This interplay establishes the ego's "first orientation in the 'world' [p. 194]." The thing-world or the small world of manageable toys may, if used successfully, offer the pleasure of mastering toy things and the traumata which were projected on them. If, however, mastery is unsuccessful, it leads to fear or disappointment and the child may regress to the first stage which centered on his own body. Finally, at nursery-school age, playfulness reaches into the world shared with others. The child then discovers what content can be successfully represented only in the world of toys and things; and what content can be shared with others and forced upon them.

Viewing Erikson's description of the development of play, it is quite possible that in the first stage the blind and sighted infant begin life on equal terms. The explorations of the senses and his body are not hampered unduly by the lack of vision. However, it is when the child takes the next step, that is, to play with "available persons and things" that difficulties arise. While all infants use their mother's body as a play thing, it is possible that the blind child must spend a longer period
on this type of play (Burlingham, 1967, pp. 188-190). The blind child, due to the lack of vision is less attracted to the inanimate world or "things" and also may possibly require more time to explore his mother's body since he must master this part of his world without vision, which sense, while not dominant in infants at this age may supplement the other senses and lead to an earlier mastery. While there is no real difficulty at this stage of development for the blind infant, the infant cannot be considered as an entity wholly dependent on himself alone and the infant-mother relationship exerts a powerful influence over the infant biologically at conception and psychologically at birth. If this mother-infant relationship is disturbed we can expect variations in the behavior of the mother and of the infant. The most obvious disturbance in this relationship occurs when the mother realizes that the infant is blind. The adjustment she is able to make seems to depend largely on the mother's psychological make-up, her marital relationships, and her own personal and social adjustment to life (Sommers, 1944, p. 63). All too often the mother fails to make adequate adjustment resulting in the rejection, disguised or overt, of their infant (Sommers, 1944; Imamura, 1965; Cole & Taboroff, 1956). This suggests that the mother-infant relationship may, in these cases, be damaged or changed in some way. The damage which occurs is of an on-going nature: the infant, physically lacking the sense of sight begins and continues to function in the environment as an organism without sight, while the mother, who has
not adjusted, continued to operate as an organism lacking the psychological make-up which prevented the initial adjustment.

There is however a more subtle interference in the mother-infant relationship. To establish a normal child-mother interaction it is essential that the newborn baby show a certain behavior pattern. Prechtl (1963) states that "it seems important for every mother that her baby show the usual amount of mobility and activity, that he has a normal tonus and that the mother is able to pacify him when he is upset [p. 53]." Although the blind child (if lack of vision is the only factor involved) essentially follows the same developmental sequence in growth (Lowenfeld, 1963; Gesell, Ilg, & Bullis, 1949, p. 265), there is a tendency because of the lack of visual stimulation by objects in the environment for the blind child to be less active and less mobile than his counterpart (Gesell & Amatruda, 1941, p. 255; Maxfield & Fjeld, 1942, p. 26). He feels no need to grasp for or crawl toward an object which, making no sound, ceases to exist (Fraiberg, Siegal, & Gibson, 1966, pp. 348-349). Gesell and Amatruda (1941) state that "even though the [blind] infant is not wrapped in silence he lives in a world of visual nothingness which threatens to drive him into increasing introversion as he matures [p. 253]." Burlingham (1961) also speaks of "a passive attitude which seems as natural to the blind child as it is his greatest danger [p. 123]." If the mother is unable to overcome this withdrawal of her blind child she may blame herself for mishandling the child or feel
rejected by the child which in both cases may terminate in a rejection of the child by the mother.

Another problem faces the mother in this partnership. The blind child may face and adjust to a world without vision. He approaches the world as an integrated system, in spite of deficits and obstacles, and learns and acts as a system not dependent on the visual sense but on the remaining senses (Gesell & Amatruda, 1941, p. 253; Klein, 1962). The mother, however, retains her dependency on the visual sense and continues to live in a basically visually oriented world. It has been suggested that response to visual and auditory stimulation are important for attachment behavior (Walters & Parke, 1965; Rheingold, 1961).

Assuming that the blind child may make a satisfactory attachment to the mother through the available auditory channel only, may not the mother have greater difficulty in forming a satisfactory attachment without the use of the (to her) dominant visual channel?

In the study by Sadako Imamura (1965) on the influence of child-rearing practices on the behavior of preschool blind children, ages three to six, it was found that mothers of blind children tend to ignore their children's request for help more than do mothers of sighted children.

More specifically, when the mothers of sighted children do not comply, they usually refuse; ignoring is used rarely, only nine per cent of the time. The mothers of blind children, on the other hand, do not refuse requests for help quite as often as do the mothers of sighted children, but they ignore such requests three times as often (27 per cent of all noncompliant acts) as do the mothers of sighted children [p. 34].
Imamura further states that this tendency to ignore requests for help may in the light of Sommer's findings be interpreted as a "disguised expression of rejection [p. 35]." There may be an additional explanation for this ignoring behavior. It is suggested here that the sighted child very early realizes when he has the mother's attention by establishing eye contact, and only then requests help; and that the mother is more apt to respond in a definite manner when this contact has been established. The blind child has no way in which to determine when the mother's attention is directed elsewhere and consequently must repeat the request until he has gained attention. The importance of eye contact in communication is experienced by everyone. The student avoids eye contact with the professor if he does not want to be singled out of a crowd. It is irritating and difficult to carry on a satisfactory conversation with someone wearing dark sunglasses. Much of the success of television over radio depends on the eye to eye contact of the speaker with the scattered audience.

The sighted child very early learns that even though the mother may be within close range her attention may be directed elsewhere and smiles or actions had better wait if they are to be rewarded by the mother. The following observation illustrates the significance the child places on visual contact even at the age of six months.

The father was holding his six month old son while wearing a cap with a brim. The mother was watching close by. The child, possessing four sharp teeth, eagerly approached all objects with
the intent to bite. At this time he stretched up and with an aggressive, vigorous thrust of the head bit the brim of the cap with force. The mother and father both responded to this action with laughter. The child, noting the response of the mother and father, repeated the action with the same vigorous, attacking approach only this time immediately looked toward the mother. The mother again responded with laughter. The child repeated this action several times each time with the same aggressive approach, however the teeth no longer bit the brim with force but barely closed upon the cap. Each time the child immediately turned his head to see the mother's response. At this time the mother turned her head away but was called back by the father to watch since the child continued to look expectantly toward the mother. As soon as the mother again established eye contact with the child, the child turned and bit the brim.1

It can be seen here that while the child's first action was based on a physical need due to teething, the subsequent actions were performed for the sake of a social reward and the child, at the age of six months, realized that only when the mother was looking did it pay to perform the act.

While it may be possible for the blind child to be sensitive to auditory clues and establish contact in this way, the mother may not find it easy to adjust to this unnatural (to her) arrangement. In fact, her ability to respond to auditory cues rather than visual cues may very well be an important factor in establishing a satisfactory relationship with her child.

Returning to Erikson's description of the self-world, it is possible to see that while the blind child may need more time to explore his

1Observation made by the writer, November 25, 1968, of male child, age six months.
mother's body, he may actually receive less if the mother-infant relationship is disturbed. Burlingham (1967) believes it is necessary to teach mothers of blind children to lend their bodies to the child to be played with and to play with their child's body. "This comes natural to the normal mother, but may be absent when a mother is depressed, and disappointed in her child, as the mothers of blind children are [p. 189]."

If this interplay is absent, the mastery during the first stage may not be reached and the ego's first orientation in the "world" may be retarded or damaged.

However, assuming that the blind child has satisfactorily achieved autocosmic play as described by Erikson (1950), the next stage presents even more hurdles because the blind child's mastery of the thing-world is initially more difficult. The seeing infant during the first few months of life is capable of responding with head and eye movements to visual and auditory stimulation. By means of these responses he is able to explore objects at a moderate distance before he can approach them through locomotion, and in this way he can establish and maintain contact with his social environment (Walters & Parke, 1965). The sighted infant may look and explore or by turning his head away or shutting his eyes he may cause the object to cease to exist. In this way, he can achieve control over objects in the very first months of life. The blind infant cannot do this. He cannot, due to his lack of vision, respond or control visual stimulation and while he can respond to
auditory stimulation he cannot control it. There is no way to avoid or shut out sound at will.

Exploration of an object is also more difficult for the blind child. The seeing child reaches for, and attains, an object "on sight" between five and six months of age. The seeing child can, at this age, begin to control objects in his environment. The toy that drops from his poorly coordinated hands can be reached for again and explored tactually, mouthed, or banged, or dropped. The toy continues to exist for the seeing child as long as he sees it. When the toy is out of sight it ceases to exist, but as long as it remains in sight it continues to exist and may be reached for again (Fraiberg, Siegal, & Gibson, 1966). It may very well be that when the blind child drops a toy and he loses tactual control of the toy, it ceases to exist for him. He does not, therefore, reach out for a "non-existing object" but may accidentally encounter it again. The object seems to come and go as it pleases and the blind child is dependent on the vagaries of the object rather than in control of the object. The search for and subsequent reaching for an object appears to be dependent on vision until the end of the first year. Fraiberg, Siegal, and Gibson (1966) found that a blind child of superior intelligence did not reach or search for an object on sound cue until the eleventh month. Previous to this, the blind child when presented with the sound of a familiar toy behaved as if there were "nothing there." It would seem that sound alone does not confer substantially to any object.
The blind child, thus, may again be frustrated to a greater degree in his attempts to control the thing world. That this is so is reflected in statements by Lowenfeld (1946), Bauman (1954), and Jervis (1959) that the blind child is one who is restricted in his control of the environment. Land and Vineberg (1965) investigated the locus of control in blind children based on the view that blind and sighted children would differ in the feeling that they, by their own actions, could control their world. Results indicated that blind children scored lower for internal control than sighted children matched for mental age. Individuals were characterized as having an internal locus of control if "they perceive themselves as instrumental, or effective in obtaining social rewards and/or need satisfactions [p. 257]." However, Land and Vineberg noted that the range of scores was much greater for the blind than for the sighted children, some of the blind children scoring as high as the highest of the sighted children. They stated that this would seem to indicate that sensory defect alone was not the predisposing factor. Land and Vineberg continue with the statement that "this finding may reflect an apparent over-protest on the part of some blind subjects in respect to their ability to handle their world [p. 259]." It appears feasible to the writer that this finding in addition to identifying over-protest might also infer that some of the blind children may actually be expressing the feeling that they were adequately able to control their environment based on their experiences. Although the blind child faces many hurdles this does not mean
he is not able to surmount them. This applies to the mother of the blind child also. Land and Vineberg recommend on the basis of their findings that "studies of the methods by which blind children find security in their world, or of methods by which teachers and other adults can help a blind child feel more secure . . . be conducted [p. 260]." It is suggested here, that play as described by Erikson might very well be the foundation of such a method.

**Exploratory behavior**

Exploratory behavior is not separate from mastery or control of the environment; rather, exploration of the environment results in the mastery of the environment. An attempt will be made here to pursue the importance of this behavior and examine it with the blind child in mind.

Morris (1967) has described exploratory behavior as a distinct, separate drive.

Its function is to provide us with as subtle and complex an awareness of the world around us, and of our own capacities in relation to it, as possible. This awareness is not heightened in the specific contexts of the basic goals but in generalized terms. What we acquire in this way can then be applied anywhere, at any time, in any context . . . [p. 139].

White (1954, p. 189) has similarly stated that in the case of man where so much has to be learned through experience one might expect to find a very powerful drive operating to insure progress toward competence, instead we find play and leisurely exploration.
There is good reason to suppose, however, that a strong drive would be precisely the wrong arrangement to secure a flexible, knowledgeable power of transaction with the environment. Strong drives cause us to learn certain lessons well, but they do not create maximum familiarity with our surroundings [p. 189].

It is during the quieter times that

the infant can attend to matters of lesser urgency, exploring the properties of things he does not need to eat, learning to gauge the force of his string-pulling when the only penalty for failure is silence on the part of the attached rattles, and generally accumulating for himself a broad knowledge and a broad skill in dealing with his surroundings [p. 189].

It can be seen, therefore, that exploratory behavior is necessary for a knowledge of a complex, changing environment. However, this drive, in order to remain flexible, sacrifices its strength and directness of purpose. Unlike the drive hunger, for example, which if thwarted ends in death, exploratory behavior may be more easily inhibited in the individual and the result is not immediately apparent. There is, moreover, behavior which is anti-exploratory (Mason, 1965, p. 536; Morris, 1967, p. 142). Individuals indulging in this behavior (Morris, 1967) find the environment so threatening, social contacts so frightening and impossible, that they seek comfort and reassurance by super-familiarizing their behavior. The repetition of an act renders it increasingly familiar and "safe." Instead of performing a wide variety of heterogeneous activities, the withdrawn individual sticks to the few he knows best. For him the old saying: "Nothing ventured, nothing gained" has been re-written "Nothing ventured, nothing lost" [p. 142].

That blind children often indulge in acts of anti-exploratory behavior is evident as can be seen by the naming of these acts as "blindisms" even though others such as the emotionally disturbed or
mentally deficient also indulge in these acts. It is generally stated that the lack of stimulation from the external world furthers the blind child's concentration on the self and encourages the exercise of self-stimulation (Cutsforth, 1951, p. 6; Lowenfeld, 1956, p. 96). Lowenfeld (1956) questions whether blind children can be kept sufficiently stimulated to inhibit the amount of self-stimulation or if it would even be wise to attempt it.

The seeing child's many impressions cannot be equalled by those which the blind child receives from his environment, and the same holds true of his outlets for activity. Therefore, it would appear almost normal for the blind child to resort to some self-stimulation. As he grows older, he will be able to develop interest in a greater variety of activities, and in due time they will supplant his mannerisms because of their greater satisfactions [p. 96].

However, may not at least some of these repetitive self-stimulations be the same manifestations of regression of which Erikson (1950) speaks when he refers to the child who finds the thing-world too frightening and returns "into the autosphere, daydreaming, thumb-sucking, masturbating [p. 194]? And in the event that the blind child in retreating from the thing-world finds the relationship with the mother to be damaged and unsatisfactory, may it not become necessary for him to withdraw even further to the only world over which he has experienced successful control--his own body?

In Infants Without Families, Freud and Burlingham (1944) found similar behavior patterns in those seeing infants who had been unable to share bodily pleasures with their mothers.
Lack of such gratification with consequent increase of auto-erotic activities diminishes the child's interests in its surroundings: with excessive thumb-sucking, rocking or masturbating the child creates a comforting world of its own into which it may withdraw and thus become unreachable for outside influence [p. 99]. (Italics mine.)

When the child retreats to this self-world, external stimulation is disregarded or actively thrust out. "Toys are thrown out or disregarded . . . and the rhythmic movements of the body remains the sole occupation [p. 182]." The quantity of stimulation does not seem to be as significant as the fact that the child is unable to assimilate the external stimulation that does exist and either fears it or it is too removed from the child's state of development to be meaningful.

Similar repetitive movements have been found in laboratory-reared primates. While it has been suggested that these movements are made in an attempt to compensate for low levels of environmental stimulation or for restriction of movement, Mason (1965) believes that while these non-social factors may influence the level of occurrence of repetitive movements, the origin of these movements is due to early social experience. It is suggested by Mason (1965) that the general level of environmental stimulation is relatively unimportant in the development of repetitive stereotyped movements in primates. It has been found that animals reared in the laboratory with the mother tend not to rock and sway, whereas those reared apart from the mother almost invariably do, even when the animal is reared in a human household where the general
level of stimulation would be extremely high comparatively. Spatial restriction on movement also does not appear to be a primary factor since these movements appear before the animal is capable of moving about in the available space. It has also been found that severe restriction of a chimpanzee during infancy resulted in less, rather than more, stereotyped rocking, as compared to laboratory reared animals. Once these stereotyped activities have become established they show variation in amplitude, frequency and form according to varying internal factors, but appear to show limited reversibility (Mason, 1965).

Although the following points regarding the significance of stereotyped behavior presented by Mason (1965) apply to primates, it is not impossible to find significant application to stereotyped behavior in blind children and to suggest that such behavior is not caused by lack of stimulation only but possibly also by insufficient mother-infant interaction during infancy.

1. There is convincing evidence that the development of these behaviors is related to rearing conditions. Although the specific etiological factors have not yet been demonstrated, the absence of a normal association with the natural mother seems to be an important predisposing condition. The age of onset for these behaviors can be specified and their emergence can probably be related to normal developmental changes.

2. There seems to be a critical period for the development of stereotyped behaviors in the sense that an animal that has passed beyond a certain age without acquiring such responses can be permanently placed in a situation identical to that which produced them in a younger animal and they will not emerge. Moreover, stereotyped responses show only limited reversibility and may persist indefinitely, although the specific form of the response may change as the animal grows older.
the frequency of stereotyped responses tends to decrease with age, they may be observed on occasion in fully mature animals, particularly during moments of excitement.

3. There is a fundamental similarity in the form of these behaviors as they are seen in the nonhuman primates and in certain human groups, including blind . . . and schizophrenic children . . . and the severely retarded . . . . As would be expected, phylogenetic differences exist in the number and complexity of these responses and their postural concomitants . . . .

4. Because stereotyped behaviors become persistent modes of responding, they may substitute for or interfere with the development of responses which are more adaptive or appropriate, thus indirectly psychological growth [pp. 535-536]. (Italics mine.)

Examining Mason's statement that stereotyped behaviors may substitute for or interfere with the development of responses which are more adaptive or appropriate, it is possible to suggest that blind children may substitute "blindisms" for exploratory or play behavior. Judith Rubenstein (1967) measured the relationship between maternal attentiveness and exploratory behavior. She found that the group of five month old infants who received a high level of attentiveness from their mothers, defined by the number of times the mother was observed to look at, touch, hold or talk to her baby, significantly exceeded the low-attentiveness group in looking at, tactile manipulation of, and vocalizing to a novel stimulus presented alone, and exceeded both low and medium groups in looking at and manipulating novel stimuli in preference to familiar ones. The stimulation in this experiment was the availability of toys within reach and the opportunity to play with these toys. Rubenstein (1967) found this to illustrate the cause and effect relationship between maternal attention and exploratory behavior.
In considering the definition of attentiveness as defined by Rubenstein, it is possible that while the mother of a blind child may send forth a high level of attentiveness—looking at, touching, holding and talking to her child—the blind child *receives* only the touching, holding and talking, and may therefore be in a medium or low level attentiveness group unless the mother makes a definite effort to replace the looking with some one of the other attentiveness behaviors. While this is not impossible it must be remembered that the mother is still dependent on vision. She may look at her child even more frequently if she is anxious about his well being and "look" to see if he is all right but the child does not receive this message and to him it does not exist. Vision has the further advantage of not requiring full attention to make contact. The mother is able to establish eye contact with her child in the middle of a telephone conversation with no interruption. She cannot very well do this in any other way.

It is also possible that the infant-mother relationship of the blind child may not offer a secure base from which the blind child may explore his environment. The reasons for this, as has been explained previously, may be due to outright rejection or unintentional failure on the part of the mother to recognize the differences in an organism using other senses. The importance of the mother-infant attachment in exploratory behavior has been observed (Walters & Parke, 1965). When left alone in a strange room, seeing preschool children showed little exploratory behavior,
while if accompanied by their mother they moved around the room and played freely with available toys. Contact with the mother who serves as a secure base from which to explore may be maintained primarily by the distance receptors; namely, vision and hearing. The blind child would necessarily be dependent on hearing alone which may not be as efficient as the visual contact or combined strength of vision and hearing.

McAndrew (1962) investigated the satiation point of blind children who were required to model figures in clay. It was found that

the blind gladly engage in simple, repetitive activities and that they generally fear venturing into strange territory. . . . They will engage in simple, differentiated tasks for longer periods than the other groups (deaf and normal); while most of them are too helpless and insecure to attempt an undifferentiated activity. This feeling is exemplified by one blind child's statement: "I only know how to make what you taught me [p. 376]."  

McAndrew (1962) further states that

when asked if they wished to make "anything else" only seven of the blind children participating in the experiment replied in the affirmative, but three of these (not totally blind) were so venturesome that their scores dominated the whole group. . . . An all-or-none quality is suggested in which fear seems to be a large factor [p. 376].

This same quality has been observed in blind children by Burlingham (1965).

Left to their own devices, the children tend to "play safe" by repeating the familiar, such as opening and shutting doors, turning switches on and off, playing with the water faucets, letting water run over their hands, or filling and emptying containers, all of them actions suited to much younger children. Again, like much younger children, they cannot be coaxed away from repetition to constructive progress by a specific game or by offering them a toy; the achievement of this purpose has to rely
on their personal attachment to the teaching adult. They do not progress without individual help and are at their best not in the group but alone with the teacher; in an individual person-to-person relationship they function surprisingly well [p. 198].

This basic feeling of insecurity, fear, or feeling of dependence has been noted in Imamura's study (1965) of blind children. He found that "the characteristic which most clearly distinguishes the behavior of the blind children from that of the sighted children is succorance [p. 64]." The simplest and most obvious reason for this kind of behavior would ascribe these requests for help to the physical limitations of the child. "However, actual observation of the behavior of blind children reveals that they make many succorant acts which are not directed toward seeking physical assistance [p. 24]." Imamura therefore suggests that "blindness in itself cannot adequately explain the strong tendency for succorance exhibited by blind children [p. 24]."

Imamura (1965) further presents several explanations for this dependency behavior. Cole and Taboroff (1956) suggest that the infant's sense of omnipotence is correlated with its inability to see. By receiving external stimuli through its visual sense, the infant progressively enlarges its knowledge of the environment and reality is attained. When a child lacks the aid of visual perception, its understanding of the external world is handicapped and the differentiation of self and non-self becomes difficult. Another explanation advanced by Imamura, based on Hebb's theory (1949) that a certain amount of sensory
stimulation is important in the maintenance of normal, integrated behavior, is that the blind child is attempting to correct a condition of stimulus deficiency which exists due to their blindness by attempting to make the mother respond to them. Imamura also finds a strong similarity between the behavior of blind children and those overprotected children who have dominating mothers as described by Levy (1945). Imamura states that "these similarities behoove us to look upon the maternal treatment of the blind child as a possible explanation of the blind child's . . . marked tendency toward succorance [p. 28]."

In the light of the previously discussed mother-infant relationship, it appears logical to suggest that the dependency behavior of the blind child may also be due to the damaged infant-mother relationship at a time in the child's development when he would normally reach out tactually and experiment with or explore his environment. The importance of a secure relationship with the mother for exploratory behavior has been noted previously.

The theory of sensory deprivation appears significant when it is viewed in the stages of child development. In other words, the amount of sensory stimulation alone may not be as important as the amount of the right kind of stimulation at the right time in the child's development. The child does not play with the rattle until he is satisfied in relation to himself and the mother figure. Or as Erikson describes it, the
microsphere cannot be approached constructively until the autosphere is mastered and so forth up the developmental ladder.

Dependent behavior is not a characteristic limited to blind children alone. Barker and Wright (1954, p. 440) found similar behavior in a study of children disabled due to cerebral palsy, congenital heart defect, amyotomin and spina bifida. It has also been noted (Swift, 1964) among non-disabled children that the "child shows greater dependence, and tends to seek attention and approval from adults more actively when such attention has been limited or denied, than when it has been continuously available [p. 268]."

Analysis of the materials presented to this point suggests that the infant-mother relationship of the blind child may not provide the necessary personal security for the blind child to permit him to reach out and explore the expanding environment surrounding him. What is the significance of this lack of exploratory behavior and what could result from this deficiency?

Harlow (1961) describes curiosity and exploration as "basic, primate response systems--releasing systems that overcome the immediate infant-mother affectional systems and prepare the infant for a wide new world [p. 76]." The newborn monkey is born with powerful reflex mechanisms which unite the infant and mother, for example, sucking, clasping. If these reflexes continued with no counteracting force the infant and mother would show increasingly stronger attachments and "if
this were true, there would be fewer baby monkeys, and other primate forms, than there are in the world today [p. 76]."

The existence of a similar releasing mechanism in the human infant has been noted by Schaffer (1963).

It soon becomes obvious that right from the beginning the infant is no mere passive being to whom nothing matters but food and warmth. Whatever label will eventually be found most appropriate . . . --stimulus hunger, curiosity, arousal seeking, exploratory drive--it seems likely that this function is one of the most important attributes with which a child comes into the world [p. 194].

White (1954) also expresses this similar thought, "The child appears to be occupied with the agreeable task of developing an effective familiarity with his environment. This involves discovering the effects he can have on the environment and the effects the environment will have on him [p. 184]."

From these observations an interesting paradox is formed. Exploratory behavior is necessary for the releasing of attachment behavior, yet exploratory behavior is dependent on a secure and satisfying attachment of the infant and mother. If the attachment is not secure, the releasing mechanism, exploratory behavior, is not available and the infant remains dependent on an attachment which was not need fulfilling in the first place. In other words, the more satisfying the attachment the easier the attachment dissolves. That this is so can be seen by the previously mentioned statements where dependency is greatest in groups wherein the adult-infant relationship is considered faulty.
Harlow (1961) describes two stages in the development of affectional bonds. During the first stage the mother "provides the nutritional and comfort needs upon which are formed affection and security, and it safeguards its infant until effective danger signals are recognized [p. 84]." The second stage consists of "the gradual relaxation of these affectional bonds between mother and child [p. 84]."

It is possible to see that for the mother of the blind child the first stage may of necessity continue for a longer period of time. The blind child faces more dangers and has greater difficulty in recognizing these dangers. The second stage also presents added difficulty. It is suggested here that more than a relaxation of bonds is involved and that the mother is an active agent in this stage of development. It has been shown that the exploratory behavior of the child is not in itself strong enough to continue in the face of insecurity or to break the bonds of dependency.

It is therefore necessary to look to the mother for some action which may precipitate the relaxation of bonds between the mother and child. This is easily seen as the mother guides her child through various situations increasing in difficulty according to the child's ability. The mother encourages the young child to walk; however, not on the edge of a precipice. The mother of the blind child, for several reasons, may not be as active an agent in releasing the child from the first stage.

Chevigny (1946) suggests this when he discusses the parent-blind child relationship.
All children hit heads and bruise shins, but in the case of a blind child allowing him such encounters seems wrong. He is told, indeed usually forced, to keep out of even such simple encounters with danger as are part of the experience of almost all sighted children. He is made to sit still much of the time, which restricts his experiences. . . . He is made to feel rejected, unwanted, or he gets an unusual showing of affection which, however, is not always a demonstration of real belief that he will ever amount to anything [p. 178].

The mother of the blind child is therefore faced with the task of preparing her child for independence in the world feeling that independence for her child is, if not impossible, at least more difficult. The task is further complicated by the fact that the mother does not really know how to teach this independence to her child who is essentially living in a different dimension. She can with her seeing children utilize her own experience and perceptions of reality—for her blind child she cannot. Wills (1965) suggests that

the mother of the blind child might have to perform two distinct roles: she has on the one hand to establish a good bodily relationship with her blind child through her handling and care, but she also has to provide the right kind of auxiliary ego for him, not in the usual sense of supplying control, but in the sense of giving him meaningful experiences of the world, something that the mother of a sighted child can do automatically on the basis of her own experience. We do not yet know exactly how she can best do this . . . . It may be that if a blind child's mother cannot help him to make this step from her to the world at the right time, he does not make up the deficit; in other words, it would seem . . . that this may be in fact a "critical period" [p. 361].

In a similar vein, Morris (1967) discusses one special aspect of exploratory behavior, the infant's social play. This play, directed first to the parents and then toward the juvenile peer group, is a "critical
"step" in the child's development with "far-reaching effects on the later life of the individual [p. 139]." Lack of satisfactory social play leads to anti-exploratory behavior and, in extreme cases, results in an individual who finds the environment so frightening that he seeks comfort in repetitive stereotypes (Morris, 1967, p. 142). Harlow (1963) studied the effects of real and inanimate mothering on the development of various play patterns in macaque monkeys. It was found that from early in life onwards the real mothered infants show superiority in social play responses over the surrogate-mothered babies both in terms of the time of appearance of the various play patterns and also in terms of the complexity of play patterns which develop during the first year of infancy. . . . As the monkeys approach the end of the first year of life, the tempo of their play activities increases and they come more and more to incorporate all available objects--animate and inanimate--into a pattern of integrated play. . . . This play is almost non-existent in the surrogate-raised infants. . . . [This finding] demonstrates clearly that the mother plays an important role in the subsequent personal-social development in her infant [pp. 13-15].

It can, thus, be seen that an unsatisfactory parent-child relationship may adversely affect the exploratory or play behavior of the blind child which, in turn, may affect the social development of the child later in life. Although several studies have examined the social adjustment of the blind, methodological differences make it difficult to draw any definite conclusions (Pringle, 1964, p. 134). However, it is generally agreed (Walters & Parke, 1965; Maxfield & Fjeld, 1942) that defects of vision are associated with social retardation.
The reason for this social retardation is not known. Walters and Parke (1965) suggest that the distance receptors (vision and hearing) play an important part in social development. In the absence of the distance receptors such as in blind, deaf, and deaf-blind infants, social interaction may be more difficult to maintain and social development would be curtailed. Sommers (1944) believes that the personal and social adjustment difficulties of the blind adolescent are due to social attitudes and conditions surrounding the blind rather than from the disability itself. Norris, Spaulding, and Brodie (1957) state that no special problems can be attributed directly to blindness. In the study of the development of the preschool blind child, they found that favorable opportunities for learning (in this case a secure emotional climate in which the child is allowed freedom to explore) are "more important in determining the child's functioning level than such factors as his degree of blindness, his intelligence as measured by psychological tests, or the social, economic, or educational background of his parents [p. 65]."

Knowledge of the mother-child relationship and exploratory behavior is not sufficient at this time to indicate whether or not the effects of one are totally tied to the other in the case of the blind child. There is reason to believe that if the blind child is secure in his parent relationship, exploratory behavior may develop normally in spite of the sensory defect (Norris, Spaulding, & Brodie, 1957). But it remains to be seen if, in spite of a damaged relationship, the blind child may with
help from outside sources develop satisfactory exploratory or play
behavior which would lead to normal social development. Harlow (1961)
has suggested that peer relationship may also be important in social
development when he states that "one should use great caution in inter-
preting the effects of mother-infant relationships or the effects of any
kind of early experience, since it is obvious that the interaction of
these two affectional systems—maternal and infant-infant—is very
important [p. 29]." Thus, it may be possible that an adequate peer
relationship may make up to some extent for a damaged infant-mother
relationship.

Intellectual Development

The most generally recognized function of spontaneous play has
been in aspects relating to the emotional growth of the child. Almy
(1967) has suggested that in fact there is such a pervasive and persistent
preoccupation with the emotional aspects of play that its intellectual
connotations have been severely neglected even though the role of
spontaneous play in intellectual development had been recognized
earlier. Isaacs (1933) has described imaginative and manipulative play
as "the starting point which leads to the child's discovery, reasoning
and thought [p. 209]." Imaginative play creates

practical situations which may often be pursued for their own sake,
and thus lead on to actual discovery, or to verbal judgment and
reasoning.... It builds a bridge by which the child can pass
from the symbolic values of things to active inquiry into their real
construction and real way of working. . . . And in his make-believe play he takes the first steps towards that emancipation of meanings from the here and now of a concrete situation, which makes possible hypothesis and the "as if" consciousness [p. 209].

Sutton-Smith (1967) in a discussion of the role of play in cognitive development suggests the possibility that play produces a "super-abundance of cognitions as well as a readiness for the adoption of an 'as if' set, both of which are potentially available if called upon for adaptive or creative requirements [p. 107]."

Piaget (1947), in his investigation of intelligence, defines it as an adaptive process. Adaptation is the equilibrium between the action of the organism on the environment, "assimilation," and the action of the environment on the organism, "accommodation." Assimilation is the action of the organism to modify the environment by imposing on it a structure of its own, while at the same time, the environment forces the organism to modify itself, accommodation, to reality. Adaptation occurs when there is an equilibrium between the action of the organism and its environment. The individual is not adapted when either process predominates.

It has been previously discussed in this paper that the blind child finds it more difficult to control or master the environment. Extrapolating from Piaget's concepts to include considerations of the blind child, it is possible to say that the blind child may be at a disadvantage when it comes to modifying the environment by imposing on it a structure of its
own and he therefore does not achieve equilibrium since the process of accommodation predominates. Piaget (1962) has described play as the "extreme pole of assimilation of the reality to the ego while at the same time it has something of the creative imagination which will be the motor of all future thought and even of reason [p. 162]." Thus, play might offer the opportunity for the young blind child to modify the environment and achieve equilibrium. However, as previously pointed out, the literature suggests that the blind child resorts to play less frequently than the seeing child. Thus one might reasonably expect to find some distortion in the sense of reality and lack of creativity in the blind child, and other related disturbances.

The sense of reality

Blind children are forced to obtain their knowledge of reality of objects and situations through the senses other than vision. To the seeing, however, the sense of vision is the unifying agent which allows the individual to observe situations in an all encompassing manner. The sense of sight also organizes discrete experiences and facilitates the reduction of form varieties to simpler patterns or schemata. The experiences of the blind child remain discrete and unorganized unless guided observation lends organization to them (Lowenfeld, 1963, p. 245). Wills (1965) has suggested that this is the second role of the mother of
the blind child. The blind child will depend on his mother to help him to
some kind of synthesis through the experiences she provides.

Otherwise he will be flooded by a wide range of perceptions from
his different senses; and, without the aid of vision, he will not
know which to attend to and so will have difficulty in organizing
them into concepts. This in turn will hold up secondary-process
thinking [pp. 361-362].

The difficulty of the blind child in achieving an understanding of
the external world has been noted by several writers (Cohen, 1966;
Lowenfeld, 1963; Wills, 1965). Lowenfeld (1963) has stated that special
opportunities for observation will help blind children "avoid falling into
a pattern of unreality which so often interferes with their later adjustment
to the requirements of life [p. 246]." Gesell, Ilg, and Bullis (1949) have
stated that "the psychological task of the blind infant is to . . . achieve
an appreciation of realities other than his own ego [p. 264]." Deutsch
(1940) investigated the sense of reality in persons born blind and found a
striking readiness to give up reality and escape into fantasy.

The seeing child, in his spontaneous play, takes in reality in his
own egocentric and affect-laden way. This is necessary because the
child cannot immediately adapt to the system of logical thought that
"this thought has not been constructed, and during development it is
inadequate to supply the needs of daily life [p. 166]." The construction
of logical thought depends not only on the child's activity with material
things, but also on his social collaboration with other children.
Interaction with his peers in the social give-and-take of spontaneous play confronts him with the necessity of accommodating himself to their ideas and since these ideas are not so strikingly different from his own, adaptation is more readily made to peer thought than to the thought of the older person (Almy, 1967).

Writers who have dealt with play behavior have recognized the importance of play in developing a sense of reality in children. Isaacs (1933) states of free dramatic play that "it furthers the development of the ego, and of the sense of reality. It helps to free the child from his personal schemas, and to enhance his readiness to understand the objective physical world for its own sake [p. 210]." According to Erikson (1950) the child must discover what potential play content can be admitted only to fantasy or only to autocosmic play; what content can be successfully represented only in the microcosmic world of toys and things; and what content can be shared with others and forced upon them. As this is learned each sphere is endowed with its own sense of reality and mastery [p. 194].

Language and abstract functioning

An important step in the development of intelligence occurs when the child is able to withdraw from the actual objects of the real world and to deal with internally organized conceptual systems which represent reality. According to Piaget (1947) this occurs when the child is able to distinguish between signifiers, which are the internal representations, such as an image or a word, that stands for some aspect of reality which
may be present or absent, real or imagined, and the *significates*, which are the objects or constructs symbolized.\(^2\) While the younger child\(^3\) can use a few rudimentary signifiers, he does not recognize them as such. The older or higher-level child is able to evoke internally an aspect of the world which is not perceptually present, and to recognize that this is what he is doing. Piaget further distinguishes two kinds of higher-level signifiers, the *symbol* and the *sign*. Symbols are the private, primarily nonverbal signifiers which the child cannot share. Signs are the largely verbal signifiers which have acquired a social meaning and allow the child to communicate with other persons. But the young child finds the system of ready-made collective signs inadequate, since they are inaccessible and hard to master, and therefore these verbal signs will remain unsuitable for a long time. Hence, the child will require "symbolic play or imaginative play, the purest form of egocentric and symbolic thought, the assimilation of reality to the subject's own interests and the expression of reality through the use of images fashioned by himself [p. 127]."

Margaret Lowenfeld (1935) has pointed out that children are unable to articulate their experiences since their experiences have a different

---


\(^3\)This includes the child from birth to two years during the first sensorimotor period in the development of intelligence.
basis than those of adults. For example, for the young child the senses of smell, taste and touch are much more important than those of hearing and vision. Therefore, the adult, who is dependent on hearing and vision, cannot imagine what the child is experiencing. This is a similar position as that of Piaget when he discusses the need of children to assimilate experiences at their own level. As noted previously, Piaget distinguishes between symbols which are the private, primarily nonverbal signifiers which the individual cannot share and signs which are largely verbal signifiers which have acquired a social meaning. The means by which a child progresses from the private to the social signifier may very well be that of play experiences. Hartley, Frank, and Goldenson (1952) state that the value of play experiences may be that "they take an intermediate place between the inarticulate, subjective impressions and the structured language and prescribed conduct of adult social communication [p. 18]."

If we now turn to Burlingham's (1961) discussion of the development of language in the blind child, it becomes apparent that an emphasis is placed on verbalization before the necessary, previous nonverbal development occurs. According to Burlingham, it appears that blind children, after an initial delay, pick up speech quickly and by the time they reach nursery school age they speak fluently and have larger vocabularies than seeing children.
This is one of the spheres that mothers encourage. Speech provides a longed-for contact that the mothers have missed. They have lacked the response to their glance and to their facial expressions. Speech not only makes up for this but also reassures the mother that her child is not backward as well as blind . . . [p. 136].

Burlingham continues that while children normally imitate their mother's speech and this leads to no discrepancy between their concepts and their mother's because the visual impressions which are verbalized are shared by both, this does not occur with the blind child and mother. The mother of the blind child may in many cases, continue to verbalize based on visual impressions which the blind child cannot share, rather than offering to the child words based on his world of sounds, tactile perceptions, and body sensations. While in this way, the words verbalized by the child are not connected to his own sensory experience and lack the emotional strength needed to incorporate these words into the child's vocabulary in an independent meaningful way, the words derive emotional meaning based on the mother's pleasure and praise for his achievement.

"The blind child who learns the mother's language takes an easy way out; that is, he appears to acquire understanding while in reality he acquires only words [p. 136]."

Lowenfeld (1963, p. 248) refers to the difficulty of the blind child to acquire adequate word concepts. Cutsforth (1932) studied "verbal unreality," that is, learning to name things without having any real experience or idea of them, and found that the blind children used visual
concepts when other sensory concepts based on familiar experiences could have been used and would have been more meaningful. A later study by Nolan (1960) indicated that visually oriented verbalism was no longer the problem discussed by Cutsforth, due, possibly, as suggested by Lowenfeld (1963, p. 249), to modern methods of instruction brought about by Cutsforth's findings. However, Harley (1963) did find that verbalism caused by the lack of concreteness and first hand experience continues to be an important problem. Harley states that "as the blind child becomes schooled in verbalisms (words and concepts to which he can attach insufficient experiential relations) he may often accept verbal descriptions of others instead of gaining the necessary impressions from concrete experiences through his senses [p. 9]." The items used in the study were items easily accessible to all the children involved. They were so familiar that a six-year old subject was able to define all of them, yet the oldest blind child of fourteen could not accurately identify twenty-four of the twenty-nine objects represented by the words. Harley states that "if intelligence consists partly of the ability to organize concrete materials in space and time so as to carry out definite aims, and if the ability to organize concrete materials depends to some extent on past experience with these materials, limited contact with the environment should have some effect upon measured intelligence of these blind children [p. 26]."
Rubin (1964) investigated the ability of the congenitally blind to abstract as measured by a series of tests including parts of the WAIS, Proverb's Test and the Kohn Test of Symbol Arrangement. He defined abstraction as "the ability to comprehend relationships and to react, not merely to concrete objects, but to concepts and abstract symbols, or to discern common elements in miscellaneous stimuli [p. 23]." He concluded that there was an indication of a deficiency in the ability of the congenitally blind subjects to abstract.

Creativity

As previously noted, Piaget (1962) describes play as having "something of the creative imagination . . . [p. 162]." Leiberman (1965) studied the relation between children's playfulness and their creativity. She found a significant relation between playfulness and ability on several creative tasks. Wallach and Kogan (1965) found that when creativity tests were given in a situation where the subjects were freed from usual test pressures and the tests were approached in a game-like manner, creativity scores differed from conventional test scores. They concluded that creativity is something different from conventional intelligence and that a playful attitude is necessary for the creative process.

Sutton-Smith (1967) presents the viewpoint that
when a child plays with particular objects, varying his responses with them playfully, he increases the range of his associations for those particular objects. In addition, he discovers many more uses for those objects than he would otherwise. Some of these usages may be unique to himself and many will be "imaginative," "fantastic," "absurd," and perhaps "serendipitous." Presumably, almost anything in the child's repertoire of responses or cognitions can thus be combined with anything else for a novel result, though we would naturally expect recent and intense experiences to play a salient role. While it is probable that most of this associative and combinatorial activity is of no utility except as a self-expressive, self-rewarding exercise, it is also probable that this activity increases the child's repertoire of responses and cognitions so that if he is asked "creativity" questions involving similar objects and associations, he is more likely to be able to make a unique (that is creative) response. That is to say that play increases the child's repertoire of responses, an increase which has potential value (though no inevitable utility) for subsequent adaptive responses [pp. 101-102].

Sutton-Smith hypothesized that children would show a greater repertoire of responses for those toys with which they had played a great deal than for those toys with which they had played less; or more specifically, boys and girls would have a greater repertoire of responses with objects of their own sex than for opposite sex objects. This proved to be the case and since the number of responses were not related to intelligence, Sutton-Smith interpreted the results as an example of the way in which responses developed in play may be put to adaptive use when there is a demand. More generally speaking, an individual who is capable of a wider range of adaptive responses may be better equipped to face situations of crisis. This, and its relation to the blind child, has been discussed under the topic of exploratory behavior.
There have been no studies specifically concerned with the creativity of the blind child. Anne-Marie Sandler (1963) states of blind children she has observed that "their activity does not appear to lead to the same creativity as in the sighted child. They show impoverishment of their inner life, which leads to the relative 'emptiness' of the blind, so often described in the literature [p. 359]." Singer and Streiner (1966) speak concerning blind children of their lack of exploratory behavior, which behavior "provides the basis for novel associative combinations that become the food of fantasy [p. 481]." McAndrew (1962) found that the blind were more rigid and feared venturing into strange territory as exemplified by the statement: "I only know how to make what you taught me [p. 376]."

Emotional Development

The role of play in emotional development has been widely accepted and much has been written concerning the involvement of play behavior in the emotional development of children. Axline (1947) states that "play is the child's natural medium of self expression and thus offers the child an opportunity to play out his accumulated feelings of tension, frustration, insecurity, aggression, fear, bewilderment, confusion [p. 16]." Isaacs (1950) describes the deep meaning found in the child's play.
If we watch . . . [the child] when he is free to play as he will, the child shows us all that he is wishing and fearing, all that he is pondering over and aiming to do. He shows us what the grown-ups are to him, what attitudes he perceives in them, what his feelings are about them, and what are the happenings in the physical world which stir him to seek understanding and control. It is through his play that the child tells us most about his needs of growth [p. 48].

Make believe play helps the child

achieve inner balance and harmony through the active expression of his inner world of feelings and impulses, and of the people that dwell in his inner world. . . . When he can, through the happy cooperation of other children, express these phantasies in active play, his inner tension is eased and a new equilibrium of mental health and happiness is attained [p. 69].

Slavson (1948) finds that "through play the child expresses traumatic fixations, conflicts and hostilities. . . . The child also uses play to disguise genuine conflicts and difficulties, or he may use play to relax tension and anxiety [p. 320]."

The literature is replete with more complete descriptions and discussions of the involvement of play in the emotional development of children. The need for the purposes of this study is to point out that play is the major single means of self-expression within the child's control, and if this play behavior, not only in its primitive form but in its more complex, intense expression, is not found to be used by blind children, and if there is no other substitute behavior available, we may suspect that the blind child may be lacking an important outlet necessary for a healthy emotional growth and development.
It has been previously discussed that the blind child may have greater feelings of frustration, insecurity, bewilderment and confusion due in part to his physical disability but also due to environmental factors. If this should be the case, it would be expected that he would need a greater opportunity to express his feelings than the seeing child rather than less.

Very little research has been done in this aspect of development in the blind child. However, there is some suggestion that the blind may have some difficulty in handling feelings of aggression.

Aggression

Burlingham (1961) has noticed a striking scarcity of free aggressive expression in the group of blind children under her observation when compared to seeing children of the same age. She attributes this in part to the blind child's greater dependency which leads to fear of abandonment if he were to express his aggressive feelings toward the person on whom he is dependent. In addition, the blind children are made uneasy by their inability to check on the consequences of an aggressive action, that imagination at times leads them to believe that what they have done has had catastrophic results, a belief which may be strengthened by either the exclamation or by the silence of the attacked child. This fear of aggression is naturally strengthened by their mothers' excessive concern about any damage that they might cause inadvertently. The mothers' protective attitude toward their blind children is matched almost in all instances by an anxiousness to prevent any damage which their child could do to others [pp. 131-133].
Jervis and Haslerud (1950) studied the reactions of blind adolescents compared to sighted adolescents during a frustrating experimental situation. The blind adolescents showed significantly more overt emotional expressions such as sighing, tongue biting, and so forth, and their verbal responses were characterized by high intropunitive ness while the sighted were highest in impunitive responses. The authors concluded that

the apparent volubility and large amount of overt emotional expression in the blind do not reduce tension because in an unhealthy and immature way they generally have intropunitive reference. The desirability of promoting more direct outlets for tensions would seem indicated in the education of the blind [p. 75].

Jervis (1959) compared the self-concept of blind and sighted adolescents by means of open-ended interviews and a modification of the Chicago Card-sort. A breakdown of the data showed that the blind adolescents tended to feel less able to control outbursts of temper or aggression than the seeing adolescents. It remains to be seen whether the blind do indulge in outbursts of temper more frequently or whether they are more concerned about their expressions of aggression as suggested by Burlingham.

Summary

There are references in the literature to indicate that blind children play less than seeing children and that what play behavior is exhibited is of relatively poor quality. These references deal primarily
with the impressions of individuals based on observation or experience gained from working with blind children. The one study which concerned itself with the play behavior of blind children gathered information from self reports and interviews of seeing and blind children and found that blind children lacked imaginativeness, flexibility and associational variety in their play behavior.

The literature is replete with the importance of play in the development of children in such areas as social, emotional, and intellectual growth. If the blind child is lacking in such important behavior it might be expected to find a disturbance in the development of blind children in those areas of growth in which play behavior is reported to contribute. The literature shows that blind children do encounter difficulties in social development, in achieving an adequate sense of reality, in dealing with language and abstract functioning, in expressions of creativity, and in controlling and expressing emotions.

While the literature indicates that blind children do have difficulties in these areas of growth there is no evidence to indicate that blindness per se is the cause of these difficulties, rather, there seems to be an indication that a damaged parent-child relationship may interfere with normal growth. This poor relationship may be due to a rejection, overt or invert, of the child by the parent, or a more subtle, unintentional disruption due to a lack of knowledge on the part of the parent.
The literature appears to indicate very strongly that play, of a high quality, contributes to the development of the child and if this play is lacking the development of the child will be disturbed. It would appear to be of primary importance that a rich, highly expressive play behavior be developed, and if necessary "taught" in its absence, and that this should be attained before the blind child is structured into an academic setting.
CHAPTER III

PROCEDURE

Introduction

The primary objective of this study was to identify the play patterns of young blind children. These play patterns were related to those exhibited by seeing children of the same age. This study did not attempt to determine the causes for any differences in play which might be manifested, nor did it attempt to infer that any differences that might be found were due to blindness. An attempt was made to avoid creating an artificial situation by arbitrary manipulation or selection of the components of either group which would destroy the typicalness factor and, hence, the practical value of the study. Also, for these reasons it was decided not to develop a check list prior to conducting the experiment in order to avoid introducing structure and bias when the primary objective was to ascertain and identify what exists naturally and to evaluate the findings. In order to accomplish these tasks, the following process was developed after considerable experimentation.
Pre-Experimental Procedure

Selection of the Population

Spontaneous free play behavior is a characteristic of very young children which is gradually replaced by group games played under specific rules. Typically, education programs generally encourage free dramatic play only during nursery school programs, and to a lesser degree in kindergarten, and tend to inhibit this behavior thereafter. It was, therefore, decided that the most fruitful age in which to investigate free play behavior would range from the time when language capable of fairly complex communication would have developed up to that time when it was felt that free dramatic play would be inhibited, or replaced, by more structured activities. For these reasons, the age range included in this study was limited to children between the ages of four through nine.

The age range selected for this study structured the population in such a way that the children between the ages of six and nine would generally be found attending an educational program while the children from four through five might, or might not, be attending an educational program such as kindergarten, nursery school, or day care center. Since this study investigated behavior which is not formally taught in educational programs, the type of program in which the child participated was not considered to influence the particular behavior under investigation.

The educational placement of the blind child is generally determined by the availability of various programs and attitudes existing
locally in the child's environment. Briefly, these may be state residential schools for the blind; special classes for the blind in public schools with varying degrees of participation in activities with seeing children; resource rooms in which the blind child spends part of the day learning specialized skills; an itinerant teacher program in which a specialized teacher aids the regular classroom teacher and blind child to participate in the regular classroom; enrollment of the blind child in a regular class with no specialized help; and homebound educational endeavors. There are no universal policies which determine the assignment of the blind child in an educational program. In some cases, especially in less populated areas, local public schools cannot support specialized programs for the small number of blind children in the community, a number which does not remain annually constant. Therefore, blind children in these areas will most likely be found in the state residential schools. On the other hand, some areas have developed highly organized programs for the visually handicapped in the local community and the state residential schools may accept only those children with difficulties in addition to blindness which cannot be handled in a public school setting. Because each educational institution selects its student body for a different set of reasons in order to best fulfill its locally oriented function, the types of students may vary greatly from one institution to another depending upon the locality even if they are the same type of institution and as a result are not representative of any
particular type of educational program. For this reason, a specified number, a sample, from each educational program has little meaning per se and cannot usually be compared and contrasted as the population in each universe may have been skewed to begin with by the local requirements for enrollment. It must also be realized that state schools for the blind can hardly be compared to other "institutions" such as institutions for the mentally retarded, juvenile delinquents, orphans and so forth. The blind children at state residential schools do not usually remain there during holidays or during the summer months as school is not in session. Some children, distance permitting, may spend their weekends at home. Children are placed in residential schools for a number of reasons. In some cases it is the only education available, but in other cases, the state school may offer superior specialized facilities and personnel. Therefore, for the purposes of this study, enrollment in certain types of educational programs was not considered to be a crucial factor in the selection of the population and it was not deemed essential to study equal numbers of children from each of the various segments of the educational program. The children were included in this study wherever they were found.

Since the sex of the child may influence the content of the play behavior under investigation, the population was comprised of two equal groups; one male, one female.
The blind children selected for this study came under the definition of legal blindness as reported by qualified personnel such as ophthalmologists or family physicians. Legal blindness was defined as central visual acuity which does not exceed 20/200 in the better eye with correcting lenses or a visual field less than an angle of 20 degrees. It is important to emphasize here that it was not the purpose of this study to investigate the effect of blindness on play behavior. A population based on the above definition, which usually qualifies a child with a visual impairment for participation in programs for the blind and as a recipient of materials for the blind, was considered to be suitable and acceptable for this investigation.

There is evidence that the blind child often shows a retardation upon entering school. Hayes (1942) attributes this to the lack of stimulation and restrictions placed upon them in their homes. After placement in a residential school they may advance rapidly, however, it may take several years. Therefore, the blind population selected for a study such as this, would indubitably manifest a heavy weightedness toward a below average measure of intelligence. To match the intelligence of the blind children and the seeing children in this study would result in the investigation of an atypical or below average seeing group. To restrict the blind children under investigation to only those with average intelligence would result in an atypical blind group since past studies have shown that there is a considerably larger percentage of below average blind
pupils than there is in a comparable group of seeing children.\(^1\) For these reasons the variable, intelligence, was controlled statistically.

Another point to consider concerning intelligence is that studies concerned with play behavior have found that intelligence does not appear to be an important factor in play behavior while chronological age (Parten, 1933), sex (Sutton-Smith, 1967), experience (Sutton-Smith, 1967), and emotional development (Axline, 1947; Erikson, 1950; Isaacs, 1935; Slavson, 1948) have been shown to influence play behavior in some way.

For these reasons, blind children were eliminated only if they showed evidence of being retarded to such an extent that they would be, or had been, refused admittance to an educational program for visually handicapped children. Blind children of school age enrolled in educational programs, unless these programs had been specifically designed for mentally retarded children, were included in this study. For the sake of continuity and bearing in mind the above discussion of the intelligence configuration, all the children, blind and seeing, were administered the Slosson Intelligence Test.

The number of blind children included in this study, twenty-nine, was found to be a statistically sound quantity. Efforts to increase this number, the blind population being so sparse and widely scattered, would increase the tendency to include individuals whose presence would tend to skew characteristics of the group. It was feasible to find approximately thirty who met the requirements for the blind population as set forth in this study.

The seeing children for the study were selected as follows. For each of the twenty-nine blind children, four seeing children matched for chronological age and sex were identified. From the twenty-nine groups of four, one child from each group was randomly selected to participate in this study. These twenty-nine seeing children were individually matched with their counterpart in the blind population.

To summarize, the twenty-nine blind children selected for this study consisted of an equal number of males and females. They were within the age range of four through nine and were legally blind. They were of such intelligence as to benefit from an educational program other than one for the mentally retarded. The same number of seeing children matched for sex and chronological age to their counterparts participated in the same experiment as that of the blind children.


Delimitation of the population

For the purposes of this study the following children were not included:

1. Blind children and seeing children enrolled in institutions for the mentally retarded.

2. Blind children and seeing children enrolled in institutions for the emotionally disturbed.

3. Blind children and seeing children under the age of four or above the age of nine.

4. Blind children and seeing children who had been refused admittance into their typical educational programs because of deviant behavior, for example, abnormal psychological implications. However, the blind child who was refused admittance into a public school because administrators felt that there were no personnel or facilities to handle this type of child, blind, would not necessarily be excluded from the study. A blind child refused admittance into a state school for the blind or a day school program for the blind because of severe mental retardation or emotional disturbance, would be excluded from this study.

5. Children who were partially seeing, that is by definition, with more than 20/200 vision but less than 70/200 vision with correcting lenses.
The case record sheet

The case record sheet (see Appendix C) was developed for this study in order to facilitate the matching of children and the recording of information for subsequent reference. Each sheet included name, address, telephone number, age, birthdate and sex. A case number was assigned to each child in order to insure the confidential nature of all data. In addition, information was noted concerning the following areas.

I. Intelligence. This category indicated intelligence, as determined by the result of the Slosson Intelligence Test.

II. Vision. This identified those children with normal vision, children who were partially seeing, or children who were legally blind. If the child had normal vision, he was eligible for consideration in the study. If the child had partial vision, he was excluded from the study. In both these cases, this would be the last item on the sheet to be marked concerning these children. If the child was legally blind, the following information was also recorded.

III. Program. This referred to the type of educational program in which the blind child was enrolled but only so far as it pertained to residential or non-residential status.

IV. Onset of Blindness. Information collected in this section showed at what time in development the blindness occurred.

V. Cause of Blindness. Space was provided in this section to record information relative to the cause of blindness.
VI. Description of Blindness. This was broken down to indicate the following: (a) total blindness, (b) light perception only, (c) object perception, (d) traveling vision, and (e) other.

VII. Secondary Disability. This section provided space for the recording of a secondary disability if one was present.

Gathering Data for the Selection of the Population

After data for the selection of the population were obtained, it was transcribed on the case record sheet. These data came from institutional records and parents. The Slosson Test was administered individually by the writer prior to the experimental session.

The Experimental Environment/Site

This experiment required a separate room such that the experimenter and child were completely alone and undisturbed during the session. The room also had to be one with which the child was thoroughly familiar and felt at home in so that the child was able to relax and play creatively. Obviously, since these children were chosen from a wide geographical area and a variety of environments, no one room would be familiar to them all. In order to retain an environment that was well known to each child and yet provided an environment which was the same for all the children, a parti-room (a portable enclosure made of partitions) was constructed for use in this study.
The parti-room was an enclosure which was placed within a room with which the child was familiar. The room itself was selected to be free from distractions such as people, telephones, radios, and the like. The parti-room defined an environmental boundary within this larger room so the child was not distracted by any objects which could not be feasibly removed, such as living room furniture. The parti-room was constructed of light weight partitions which came apart to form portable sections. When locked together a six foot by six foot square thirty-three inches high was formed. In this way, while the child was contained within the circumscribed area, he was not removed from his familiar surroundings. The height of the parti-room was kept purposefully low in order to avoid the feeling of being in a strange place.

The Experimental Materials

The materials used during the experimental session included a large cardboard box, a wooden dowel, a yard of cloth and a nondescript hat.

These play objects were chosen to allow the child the greatest freedom of expression and to eliminate any innate characteristics of play objects, or clues, which would suggest particular play behavior. It was felt that the following objects could be used by children of a wide age range and by both sexes to express their reactions through imaginative play actions. The objects were visually bland in order to keep the visual
stimulation to a minimum. More specific description of the objects would include the following:

The cardboard box, such as can be found in any supermarket, was large enough for a child to fit in. This box could be used as a boat, a car, a crib, a space ship, a stove, or a cave. It could also be used to drum upon, or it could be rolled around, kicked, or destroyed.

The cloth hat had no particular distinguishable characteristics, and could be folded, caved or rolled. It was equally suitable as a cowboy hat, a lady's hat, a space helmet, or turned upside down for use as a basket or pocketbook.

The three-quarter inch dowel was three feet long. It could become a sword, a broom, a paddle, or a noise maker depending on the imagination and creative expression of the child.

The cloth, approximately one square yard, could become an apron, a blanket, a tablecloth, or a cape as the child wished.

The Experimental Process

Conducting the Experiment

The observer and the child had become acquainted previously during the administration of the Slosson Intelligence Test. Then, during the experimental session, the observer further established a friendly relationship through the medium of a bag of wooden blocks and suggested that they (the observer and the child) play with these on the floor. This
first set of materials was used for approximately five minutes during which time the observer sought to draw out the child in a manner such that the child felt free to actively initiate the expression of ideas. The observer participated in the action making a definite attempt to free herself from the role of an authority figure. The child was encouraged to verbalize and take the initiative as much as possible.

This initial conditioning phase was terminated with the suggestion that the child might wish to play with something else. At this time, the observer picked up and removed the blocks so they would not be a distraction during the remainder of the experiment. Then, the observer introduced the fundamental materiel for the child for play with initiating this act with the statement, "I have something else for you to play with." The observer then gave the child the experimental materials, one at a time, allowing the child sufficient time to identify each object; namely, the dowel, the hat, the cloth, and the cardboard box. When the child had identified each object, the observer said, "Let me see you play with these," at which time the observer set the time for fifteen minutes and turned on the tape recorder. Typically, after the timer had been set, the child was expected to initiate some play activity. The observer then acted as a sounding board, commenting non-directively, neither showing approval nor disapproval, or restating what the child said or did. If the child wished the observer to participate in the play, the observer did so, but only at the request and specific direction of the child, for example,
"Sit here," or "Say Mama." During the session the observer and the child were casually sitting on the floor, free from external distractions, and the observer abstractly jotted down the actions of the child for later more detailed treatment and clarification. These notations were coordinated with the tape recorded sounds of the session. The play period was terminated after fifteen minutes by the observer. However, the child could terminate the play period at any previous time by abandoning the materials or by a verbal statement such as, "I don't want to play any more." The termination time was noted and the experiment completed.

If, however, the child was unable to, or unwilling to, initiate playing with these materials by himself following the initial presentation of materials, the observer said, "Why don't you make a story to go with these and tell me about it?" If it appeared that the child was unable or unwilling to do anything at all with the materials, the session was terminated by the observer.

Collecting the Data

The interaction and verbalization that took place during the entire play period was recorded on tape. The examiner also took notations during the play session concerning the actions of the child which would not be picked up by a tape recorder. After the play period was completed and the child had left the observation room, the observer wrote down those general impressions received during the play period.
Handling the Data

Compilation of Case Records

The resulting data to be analyzed were comprised of tape recordings of the sessions, brief notations made while the child played, general impressions of the play sessions, and identification information on each child obtained from the case record sheet. The observer reviewed all the information on each case, including the necessary playing back of the recordings, and coordinated this material into a narrative case record.

Identification of Behavior Patterns

The narrative case records were studied and behavior patterns identified. A check sheet was developed which set forth quantitatively the significant information on each case (see Appendix C).

The Relating of Behavior Patterns to the Appropriate Hypothesis

The play patterns which the children exhibited could not be described prior to the actual play session. Hence, these patterns were identified from the case records after the sessions occurred and the resulting information was extracted and related to the appropriate hypothesis, for example:

Hypothesis I. There is no substantial difference in the content of the dramatic play of young blind children and seeing children.
In this hypothesis the following type of information was considered:
the number of different creative situations developed by the child, and
the actual roles and situations created were listed and organized into
meaningful categories.

Hypothesis II. There is no substantial difference in the amount of
time spent in the dramatic play of young blind children and seeing
children.

This concerned itself with the following: the total length of time
the child was actually involved in dramatic play, and the length of time
involved in the longest dramatic play unit.

Hypothesis III. There is no substantial difference in the com-
plexity of the dramatic play of young blind children and seeing children.

The following type of information was considered in this hypothesis:
the number of discrete sub-units introduced into the longest dramatic
unit.

Hypothesis IV. There is no substantial difference in the intensity
of the personal involvement exhibited in the dramatic play of young
blind children and seeing children.

Dramatic situations were rated to determine the relative intensity
of involvement and categorized accordingly.
Development of Appropriate Compilations

Frequency tables

Frequency tables were compiled from resulting information which lent itself most readily to analysis when worked up into frequency table format.

Rating scale

As indicated in the previous paragraph relative to hypothesis IV, these data were quantified by use of a rating scale. When these data had been suitably categorized they were rated by judges.

Machine Data Processing

Mechanically, the items that had been identified and quantified in each case were duly coded for IBM card handling. A deck of cards was produced that included a series of cards on each child, and from these cards compilations and calculations were made.

Analysis of the Data

Statistical Treatment of the Data

Chi square and the analysis of variance were used where applicable. Intelligence was covaried out as a factor.
Evaluation of Material Not Suited to Statistical Treatment

Information not suitable for statistical treatment was analyzed and then presented in descriptive form.

Findings, Conclusions and Recommendations

From the statistical treatment and the analysis of the non-statistical material, the findings were identified and conclusions and recommendations were made.
CHAPTER IV

FINDINGS

Introduction

The findings of this study are set forth here in this chapter. The data presented are based on the results of a series of observations of twenty-nine subjects made during a fifteen minute free play session in accordance with the design of this study as described in detail in the preceding chapter. The population, therefore, was composed of these twenty-nine blind subjects and a group of seeing subjects matched for age and sex which served as a control group with which to compare and contrast findings.

Identification and Classification

Source of Population

The twenty-nine blind subjects selected for this study came from several sources. Seventeen subjects (9 males, 8 females) were attending the Wisconsin School for the Visually Handicapped, Janesville, Wisconsin; three subjects (males) were attending the Minnesota Braille and Sight Saving School, Faribault, Minnesota; two subjects (1 male, 1 female) were attending the School for the Blind,
Grand Forks, North Dakota; seven subjects (2 males, 5 females) were contacted in their homes under the auspices of the Minnesota Department of Public Welfare, Services for the Blind, St. Paul, Minnesota.

Of the twenty-nine matched seeing subjects living in North Dakota and selected in the manner set forth in Chapter III, a total of thirteen (8 males, 5 females) were attending the Minto Elementary School, Minto, North Dakota; ten (5 males, 5 females) were attending the Drayton Elementary School, Drayton, North Dakota; five (1 male, 4 females) were attending the Lincoln Elementary School, Grand Forks, North Dakota; and one subject (male) was contacted in his home in Grand Forks.

Permission to conduct research in the Wisconsin School for the Visually Handicapped, the Minnesota Braille and Sight Saving School, the School for the Blind, and the Drayton and Minto Elementary Schools was given by the directors and superintendents of these school districts. The observer was free to select any child who fulfilled the requirements set down for the selection of the population. The Director of the Department of Welfare, Services for the Blind, St. Paul, Minnesota, sent an official letter to the parents of approximately thirty blind children within the St. Paul-Minneapolis area requesting their cooperation in this study (see Appendix E). Of those contacted, eight responded affirmatively. One of these was not available at the time of observations due to
illness. Letters requesting cooperation were sent out to the parents of the children attending Lincoln Elementary School (see Appendix E).

Eight letters were sent out in order to obtain the five children included from Lincoln Elementary School. Verbal permission was given for the child contacted in the home.

The Blind Subjects

Residential and non-residential status

For the purposes of this study the twenty-nine blind subjects were divided into two groups: residential, those living and attending school away from home; and non-residential, those living at home but attending an education program outside of the home. Of the twenty-nine blind subjects, sixteen (9 males, 7 females) were classified as residential, while thirteen (6 males, 7 females) were classified as non-residential. Six of the non-residential group were attending state schools for the blind on a non-residential basis.

Onset of blindness

The onset of blindness in twenty-four of the twenty-nine blind subjects had occurred during a pre-natal or neonatal period. Blindness occurred or was identified in three subjects respectively; before the age of two, at the age of four and at the age of six. In two cases the records were incomplete and there was no reliable indication of the time of
occurrence of blindness. These five subjects were all in a residential program.

**Cause of blindness**

The causes of blindness in the group studied and the frequency with which they occurred is presented in Table 1.

<table>
<thead>
<tr>
<th>Causes of Blindness</th>
<th>RB</th>
<th>NRB</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batten-Mayou</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Coates disease</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Congenital amblyopia</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Congenital cataracts</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Congenital glaucoma</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Congenital myopia</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Congenital nystagmus</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Macular degeneration</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Macular dystrophy</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Marfans syndrome</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Nerves in back of eye missing</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Optic nerve atrophy</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Retinal abiotrophy</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Retinal blastoma (enucleation)</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Retrolental fibroplasia</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Uveitus of Stills</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Uveitus with cataracts</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td>13</td>
<td>29</td>
</tr>
</tbody>
</table>
Description of blindness

Of the seven subjects (4 males, 3 females) who were totally blind, four attended a residential program; three a non-residential program.

Eight subjects (1 male, 7 females) were able to perceive light only. Three of these attended a residential program; five a non-residential program.

Five subjects (3 males, 2 females) were able to distinguish objects. Four of these attended a residential program; one a non-residential program.

Nine subjects (7 males, 2 females) had travelling vision, that is, enough vision to move about freely. Five of these attended a residential program; four a non-residential program.

The description of blindness encountered in males and females, and residential and non-residential subjects is presented in Table 2.

Secondary disability

Findings related to the presence of a secondary disability indicated that three subjects, one residential and two non-residential, were considered to be so impaired. Description of these disabilities include spastic paralysis, rheumatoid arthritis, and Von Willebrand's arthritis.
TABLE 2

DESCRIPTION OF BLINDNESS ENCOUNTERED

<table>
<thead>
<tr>
<th>Description</th>
<th>RB Total</th>
<th>RB M</th>
<th>RB F</th>
<th>NRB Total</th>
<th>NRB M</th>
<th>NRB F</th>
<th>Total</th>
<th>Total M</th>
<th>Total F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total blindness</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Light perception</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Object perception</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Travelling vision</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>9</td>
<td>7</td>
<td>13</td>
<td>6</td>
<td>7</td>
<td>29</td>
<td>15</td>
<td>14</td>
</tr>
</tbody>
</table>

The Blind and Seeing Subjects

Age of the population

Relative to the variable, age, the fourteen blind females had a mean age of 85.50 months with a standard deviation of 13.21; the fifteen blind males had a mean age of 83.67 months with a standard deviation of 13.25; the fourteen seeing females had a mean age of 79.85 months with a standard deviation of 21.88; and the fifteen seeing males had a mean age of 87.25 months with a standard deviation of 12.98. Table 3 sets forth the means and standard deviations of the age of the males and females in the blind group and the males and females in the seeing group. (See Appendix F for a list comparing the ages of the blind subjects with the ages of their matched seeing subjects.)
### Table 3

**Means and Standard Deviations (S.D.) of the Age of the Male and Female Blind Subjects and the Male and Female Seeing Subjects**

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Females</td>
<td>14</td>
<td>Mean 85.50, S.D. 13.21</td>
</tr>
<tr>
<td>Blind Males</td>
<td>15</td>
<td>Mean 83.67, S.D. 13.25</td>
</tr>
<tr>
<td>Seeing Females</td>
<td>14</td>
<td>Mean 79.85, S.D. 21.88</td>
</tr>
<tr>
<td>Seeing Males</td>
<td>15</td>
<td>Mean 87.25, S.D. 12.89</td>
</tr>
</tbody>
</table>

**Intelligence of the Population**

Relative to the variable, intelligence, the fourteen blind females had a mean intelligence of 91.14 with a standard deviation of 17.02; the fifteen blind males had a mean intelligence of 100.13 with a standard deviation of 14.32; the fourteen seeing females had a mean intelligence of 105.85 with a standard deviation of 9.89 and the fifteen seeing males had a mean intelligence of 100.94 with a standard deviation of 11.19. Table 4 sets forth the means and standard deviations of the intelligence of the males and females in the blind group and the males and females in the seeing group.
TABLE 4

MEANS AND STANDARD DEVIATIONS (S. D.) OF THE INTELLIGENCE OF THE MALE AND FEMALE BLIND SUBJECTS AND THE MALE AND FEMALE SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Intelligence</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Females</td>
<td>14</td>
<td>Mean</td>
<td>91.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D.</td>
<td>17.02</td>
</tr>
<tr>
<td>Blind Males</td>
<td>15</td>
<td>Mean</td>
<td>100.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D.</td>
<td>14.32</td>
</tr>
<tr>
<td>Seeing Females</td>
<td>14</td>
<td>Mean</td>
<td>105.85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D.</td>
<td>9.89</td>
</tr>
<tr>
<td>Seeing Males</td>
<td>15</td>
<td>Mean</td>
<td>100.94</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D.</td>
<td>11.19</td>
</tr>
</tbody>
</table>

A two-way analysis of variance was used to determine if the intelligence of the blind subjects and the seeing subjects differed significantly. Results indicated that relative to the variable, intelligence, there was no significant interaction effect between male and female, no significant main effect between male and female, but there was a significant main effect between the blind subjects and the seeing subjects at the .05 level of significance. Therefore, since the intelligence of the blind and seeing groups was significantly different, intelligence was covaried out as a factor in any difference displayed in play behavior. The summary table for this analysis is shown in Table 5.
### TABLE 5

**SUMMARY TABLE FOR THE TWO-WAY ANALYSIS OF VARIANCE RELATIVE TO THE INTELLIGENCE OF THE BLIND AND SEEING SUBJECTS**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male and Female (A)</td>
<td>78.13</td>
<td>1</td>
<td>78.13</td>
<td>.44</td>
</tr>
<tr>
<td>Blind and Seeing (B)</td>
<td>782.19</td>
<td>1</td>
<td>782.19</td>
<td>4.36*</td>
</tr>
<tr>
<td>Interaction (AXB)</td>
<td>680.00</td>
<td>1</td>
<td>680.00</td>
<td>3.79</td>
</tr>
<tr>
<td>Within Cells</td>
<td>9690.19</td>
<td>54</td>
<td>179.45</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11230.50</td>
<td>57</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level.

**Composition of the population by sex**

As specified in the design for this study, the sexes were equally represented in the blind and seeing population. Of the twenty-nine blind subjects, fifteen were male and fourteen were female. Of the twenty-nine seeing subjects, fifteen were male and fourteen were female.

**Analysis of the Statistical Data Pertaining to the Hypotheses**

**Identification of Dramatic Play**

In order to identify those aspects of the play session which could be defined as dramatic play, the narrative case records were examined and the play behavior engaged in was organized into three categories:
dramatic, manipulative, other than dramatic and manipulative. In dramatic play a role was assigned, or implied, to the objects, to the subject, or to the observer and, in addition, an indication of some action was required. This was deemed necessary to best fulfill the meaning of dramatic as defined in Webster's Dictionary (1966), that is, "full of action; highly emotional; vivid, exciting [p. 553]." In manipulative play the subject handled the play objects, but in no identifiable way assigned a role to the objects, to the subject, or to the observer. Thus, a subject who stated, "The baby (the stick) is wrapped in a blanket (the cloth)" and manipulated these objects was defined as being involved in dramatic play; while the subject who wrapped the cloth around the stick but gave no indication that these objects were other than a cloth and a stick was defined as being involved in manipulative play.

Some subjects became involved in behavior which was identified as play but was not classified as manipulative nor dramatic. This behavior was considered to be play other than manipulative and dramatic. Two main categories were identified; naming objects and playing games. An example of naming objects follows:

I'm going to make believe the hat is a doll, the box is a house, the stick is a rope. I don't know anything else.

Since there was no action during this sequence, the subject was not considered to be involved in dramatic play. Games such as hide-and-go-seek were also recorded as other than manipulative and dramatic play.
There were some sessions in which the subject was involved in one type of play for some time during the play session, terminated this type of play, and then became involved in another type of play during the rest of the session. An example of this is as follows:

I'm going fishing. This is my fishing boat. (Child puts cloth into box, the hat on head, sits in box holding the stick like a fishing pole.) I caught one fish. (Turns box upside down. Spreads cloth over box. Sits on box and moves the box along with feet.) This is my boat now. (This action took 5 minutes and was considered dramatic play.)

(Child takes hat off head. Tells observer to put the box in the corner while child hits it with the stick. Child continues hitting the box in various positions. Asks the observer to hit the box. This episode took 10 minutes and was considered manipulative play.)

In these cases the subject was recorded as having become involved in both dramatic play and manipulative play, or any combination of manipulative, dramatic, or other, as applicable.

Within the broad category of dramatic play, single, distinct stories or actions presented during the play session were recognized. These stories or actions were able to stand alone and consisted of an identifiable beginning, middle, and end. These stories or action, for the purposes of this study, were labeled dramatic units and were used as a basis for quantitative evaluation of dramatic play. These dramatic units differed widely in complexity. An example of a simple dramatic unit would be: "Here's a major general and you're one of his men . . . Bang, Bang ... You're dead." A more complex dramatic unit is presented in
Appendix A, Example 23. This dramatic unit continued for the entire fifteen minute play session and presented an intricate story with the introduction of numerous characters and settings.

The number of dramatic units presented during individual play sessions and the length of the dramatic units differed widely. During one fifteen minute session, one subject presented thirty-two dramatic units (see Appendix B, Example 1). In contrast, another subject presented one dramatic unit which took the entire fifteen minute play session (see Appendix A, Example 23). In order to get the best sample of each subject's dramatic play for comparative purposes, the longest dramatic unit was identified and used for statistical treatment. The thirty-one longest dramatic units are presented in Appendix A.

The Hypotheses Considered

Findings relative to the hypotheses are herewith set forth.

Hypothesis I: There is no substantial difference in the content of the dramatic play of young blind children and seeing children.

The contents of the longest dramatic units of the subjects who engaged in dramatic play were examined and the themes expressed identified and categorized. The themes of both the blind and seeing subjects fell naturally into these categories; adventure, domestic, sports, world-of-work, and other. There appeared to be some indication that the blind subjects were more aware of the world-of-work as
indicated by their themes concerning a cowboy, dentist, doctor, and farmer. The seeing subjects were less concerned with this aspect of life and emphasized the domestic scene more often. Table 6 lists the themes expressed by blind and seeing subjects in the longest dramatic unit.

| TABLE 6 |
|---|---|
| THEMES EXPRESSED IN THE LONGEST DRAMATIC UNIT BY BLIND AND SEEING SUBJECTS |

<table>
<thead>
<tr>
<th>Blind</th>
<th>Seeing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adventure</strong></td>
<td><strong>Adventure</strong></td>
</tr>
<tr>
<td>Astronauts in space</td>
<td>Car accident</td>
</tr>
<tr>
<td>A bridge breaks</td>
<td>Mountain climbing</td>
</tr>
<tr>
<td>Going fishing</td>
<td>Shooting a gun--at self</td>
</tr>
<tr>
<td>Hunting</td>
<td>Shooting a gun while in a boat</td>
</tr>
<tr>
<td>Rocket journey</td>
<td>Spy/robber episode</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Total</strong></th>
<th>5</th>
<th><strong>Total</strong></th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domestic</strong></td>
<td><strong>Domestic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing house--getting dinner</td>
<td>Birth of a baby and effect on family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing house--evening activities</td>
<td>A man doing a variety of home-type activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sequence of daily routine</td>
<td>A man sleeping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A walk around a house</td>
<td>A man walking with cane</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Playing house--baking cookies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Taking care of boy/doll</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Woman/girl going to bed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Total** | 4 | **Total** | 7 |
The number of themes in each category involved was too small to be quantitatively assessed, however, analysis of the contents revealed no substantial difference between the themes expressed by the blind and seeing children. Therefore, the hypothesis that there is no substantial difference in the contents of the dramatic play of young blind children and seeing children is retained.
Hypothesis II: There is no substantial difference in the amount of time spent in the dramatic play of young blind children and seeing children.

The data were examined to determine whether or not the blind and seeing subjects differed in the amount of time spent in dramatic play.

Relative to the total amount of time spent in dramatic play, the twenty-nine blind subjects had a mean of 5.86 with a standard deviation of 2.18 and the twenty-nine seeing subjects had a mean of 4.62 with a standard deviation of 6.21. The analysis of variance was used to determine if the total amount of time spent in dramatic play by blind subjects differed significantly from the amount of time spent in dramatic play by seeing subjects. Results indicated that there was no difference at the .05 level of significance. The summary table for this analysis is shown in Table 7.

**TABLE 7**

**SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE TIME SPENT IN DRAMATIC PLAY BY BLIND AND SEEING SUBJECTS**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>22.34</td>
<td>1</td>
<td>22.34</td>
<td>.55</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2270.27</td>
<td>56</td>
<td>40.54</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2292.62</td>
<td>57</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>
The degree of relationship between the total amount of time spent in dramatic play and intelligence was described by a Pearson $r$ of .07. This correlation was tested for statistical significance by means of a $t$ test. The $t$ value of .51 ($df = 56$) was not significant at the .05 level. Nevertheless, a covariant adjustment using intelligence as the covariate was effected. Results indicated that there was no significant difference at the .05 level with a covariant adjustment for intelligence with respect to the total amount of time spent in dramatic play by the blind and seeing subjects. The summary table for this analysis is shown in Table 8. The means adjusted for the covariate, intelligence, relative to the amount of time spent in dramatic play by blind and seeing subjects are shown in Table 9.

**TABLE 8**

**SUMMARY TABLE FOR THE ANALYSIS OF COVARIANCE RELATIVE TO THE TIME SPENT IN DRAMATIC PLAY BY BLIND AND SEEING SUBJECTS**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>33.56</td>
<td>1</td>
<td>33.56</td>
<td>.82</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2248.43</td>
<td>55</td>
<td>40.88</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2281.99</td>
<td>56</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>
TABLE 9
MEANS ADJUSTED FOR THE COVARIATE INTELLIGENCE RELATIVE TO THE TIME SPENT IN DRAMATIC PLAY BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Dramatic Play</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Subjects</td>
<td>29</td>
<td>Mean 6.03</td>
</tr>
<tr>
<td>Seeing Subjects</td>
<td>29</td>
<td>Mean 4.45</td>
</tr>
</tbody>
</table>

The data were examined to determine whether or not the blind and seeing subjects who engaged in dramatic play differed in the amount of time they were involved in the longest dramatic unit.

Relative to the amount of time involved in the longest dramatic unit, the sixteen blind subjects had a mean of 325.94 with a standard deviation of 288.32 and the fifteen seeing subjects had a mean of 258.33 with a standard deviation of 311.25. The analysis of variance was used to determine if the amount of time the blind subjects were involved in the longest dramatic unit differed significantly from the amount of time the seeing subjects were involved in the longest dramatic unit. Results indicated that there was no difference at the .05 level of significance. The summary table for this analysis is shown in Table 10.

The degree of relationship between the amount of time involved in the longest dramatic unit and intelligence was described by a Pearson r of .04. This correlation was tested for statistical significance by means
TABLE 10

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE TIME INVOLVED IN THE LONGEST DRAMATIC UNIT BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>35383.18</td>
<td>1</td>
<td>35383.18</td>
<td>.37</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2783497.00</td>
<td>29</td>
<td>95982.63</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2818880.18</td>
<td>30</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

of a t test. The t value of .22 (df = 29) was not significant at the .05 level. Nevertheless, a covariant adjustment using intelligence as the covariate was effected. Results indicated that there was no significant difference at the .05 level with a covariant adjustment for intelligence with respect to the amount of time the blind and seeing subjects were involved in the longest dramatic unit. The summary table for this analysis is shown in Table 11. The means adjusted for the covariate, intelligence, relative to the amount of time involved in the longest dramatic unit are shown in Table 12.

The total amount of time spent in dramatic play by the blind and seeing children during the play session, and the amount of time spent in the longest dramatic unit were subjected to statistical analysis. Results indicated that there was no significant difference in the time spent in dramatic play by blind and seeing children. Therefore, the hypothesis
TABLE 11

SUMMARY TABLE FOR THE ANALYSIS OF COVARIANCE RELATIVE TO THE TIME INVOLVED IN THE LONGEST DRAMATIC UNIT BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>44494.00</td>
<td>1</td>
<td>44494.00</td>
<td>.45</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2769477.00</td>
<td>28</td>
<td>98909.89</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2813971.00</td>
<td>29</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 12

MEANS ADJUSTED FOR THE COVARIATE INTELLIGENCE RELATIVE TO THE TIME INVOLVED IN THE LONGEST DRAMATIC UNIT BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Subjects</td>
<td>16</td>
<td>Mean</td>
</tr>
<tr>
<td>Seeing Subjects</td>
<td>15</td>
<td>Mean</td>
</tr>
</tbody>
</table>

that there is no substantial difference in the amount of time spent in the dramatic play of young blind children and seeing children was accepted.

Hypothesis III: There is no substantial difference in the complexity of the dramatic play of young blind children and seeing children.

The longest dramatic units were further divided into sub-units. These sub-units were defined as the essential ideas or action which made
up the whole dramatic unit. For example, in the following dramatic unit
three sub-units were identified: "Che-e. A rocket (the stick). Choo-oo.
Ready to get started and it's going to go splash off and back down.
Wasn't a very, very long trip." In this example, the three essential
actions were found to be: (1) a rocket is ready, (2) it goes up, (3) it
comes down. It was determined that complexity could be quantified by
the number of sub-units involved in the unit, thus, the more sub-units
expressed in the unit, the more complex the unit.

The data were examined to determine whether or not the blind and
seeing subjects who engaged in dramatic play differed in the number of
sub-units they introduced into the longest dramatic unit.

Relative to the number of sub-units introduced, the sixteen blind
subjects had a mean of 10.63 with a standard deviation of 13.61 and the
fifteen seeing subjects had a mean of 18.93 with a standard deviation of
33.90. The analysis of variance was used to determine if the number of
sub-units introduced into the longest dramatic unit by the blind subjects
differed significantly from the number of sub-units introduced into the
longest dramatic unit by the seeing subjects. Results indicated that
there was no difference at the .05 level of significance. The summary
table for this analysis is shown in Table 13.

The degree of relationship between the number of sub-units intro-
duced and intelligence was described by a Pearson r of .0. This
correlation was tested for statistical significance by means of a t test.
TABLE 13

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE NUMBER OF SUB-UNITS INTRODUCED BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>534.41</td>
<td>1</td>
<td>534.41</td>
<td>.77</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20196.64</td>
<td>29</td>
<td>696.44</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>20731.05</td>
<td>30</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

The t value of -.03 (df = 29) was not significant at the .05 level. Nevertheless, a covariant adjustment using intelligence as the covariate was effected. Results indicated that there was no significant difference at the .05 level with a covariant adjustment for intelligence with respect to the number of sub-units introduced by the blind and seeing subjects into the longest dramatic unit. The summary table for this analysis is shown in Table 14. The means adjusted for the covariate, intelligence, relative to the number of sub-units introduced into the longest dramatic unit are shown in Table 15.

Since there was no significant difference in the number of sub-units introduced into the longest dramatic units by blind and seeing subjects, the hypothesis that there is no substantial difference in the complexity of the dramatic play of young blind children and seeing children, was accepted.
**TABLE 14**

**SUMMARY TABLE FOR THE ANALYSIS OF COVARIANCE RELATIVE TO THE NUMBER OF SUB-UNITS INTRODUCED BY BLIND AND SEEING SUBJECTS**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>574.67</td>
<td>1</td>
<td>574.67</td>
<td>.80</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20155.93</td>
<td>28</td>
<td>719.85</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20730.60</strong></td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 15**

**MEANS ADJUSTED FOR THE COVARIATE INTELLIGENCE RELATIVE TO THE NUMBER OF SUB-UNITS INTRODUCED BY BLIND AND SEEING SUBJECTS**

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Sub-Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Subjects</td>
<td>16</td>
<td>Mean</td>
</tr>
<tr>
<td>Seeing Subjects</td>
<td>15</td>
<td>Mean</td>
</tr>
</tbody>
</table>

**Hypothesis IV:** There is no substantial difference in the intensity of the personal involvement exhibited in the dramatic play of young blind children and seeing children.

Three judges were requested to rate the intensity of the longest dramatic units based on a one to five scale, one being the lowest or least intense score, five being the highest or most intense score.
Intensity was defined (Webster, 1966) as "the quality of being intense; specifically, (a) extreme degree of anything; (b) great energy or vehemence of emotion, thought, or activity [p. 954]." Judge 1, male, had an Ed.D. in education with an emphasis in vocational rehabilitation; Judge 2, male, held an Ed.D. in elementary education with a concentration in childhood education; Judge 3, female, was a mobility instructor for the blind, with an M.A. in peripatology. The longest dramatic units were arranged in a random order with no identification as to whether a blind or seeing subject had composed the unit. When two judges agreed upon a score, this score was accepted. If all three judges disagreed, the mid-score was accepted.

A Pearson product moment correlation coefficient was calculated to determine the agreement between the judges. The correlation coefficient between Judge 1 and Judge 2 was .82; between Judge 1 and Judge 3, .48; between Judge 2 and Judge 3, .40. The correlation coefficients indicated that there was a high correlation between the ratings of Judge 1 and Judge 2, while Judge 3 deviated from the ratings of Judges 1 and 2.

The data were examined to determine whether or not the blind and seeing subjects differed in the intensity shown during the longest dramatic unit.

Relative to the intensity shown, the sixteen blind subjects had a mean of 2.63 with a standard deviation of 1.05 and the fifteen seeing subjects had a mean of 2.47 with a standard deviation of 1.45. The
analysis of variance was used to determine if the intensity shown by the blind subjects during the longest dramatic unit differed significantly from the intensity shown by the seeing subjects during the longest dramatic unit. Results indicated that there was no difference at the .05 level of significance. The summary table for this analysis is shown in Table 16.

TABLE 16

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE INTENSITY OF THE LONGEST DRAMATIC UNIT SHOWN BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>.19</td>
<td>1</td>
<td>.19</td>
<td>.11</td>
</tr>
<tr>
<td>Within Groups</td>
<td>49.48</td>
<td>29</td>
<td>1.71</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49.68</td>
<td>30</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

The degree of relationship between the intensity shown during the longest dramatic unit and intelligence was described by a Pearson r of .0. This correlation was tested for statistical significance by means of a t test. The t value of -.05 (df = 29) was not significant at the .05 level. Nevertheless, a covariant adjustment using intelligence as the covariate was effected. Results indicated that there was no significant difference at the .05 level with a covariant adjustment for intelligence with respect to the intensity shown by the blind and seeing subjects.
during the longest dramatic unit. The summary table for this analysis is shown in Table 17. The means adjusted for the covariate, intelligence, relative to the intensity shown during the longest dramatic unit are shown in Table 18.

TABLE 17
SUMMARY TABLE FOR THE ANALYSIS OF COVARIANCE RELATIVE TO THE INTENSITY OF THE LONGEST DRAMATIC UNIT SHOWN BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>.19</td>
<td>1</td>
<td>.19</td>
<td>.11</td>
</tr>
<tr>
<td>Within Groups</td>
<td>49.48</td>
<td>28</td>
<td>1.77</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49.67</td>
<td>29</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 18
MEANS ADJUSTED FOR THE COVARIATE INTELLIGENCE RELATIVE TO THE INTENSITY OF THE LONGEST DRAMATIC UNIT SHOWN BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Subjects</td>
<td>16</td>
<td>Mean</td>
</tr>
<tr>
<td>Seeing Subjects</td>
<td>15</td>
<td>Mean</td>
</tr>
</tbody>
</table>

Since there was no significant difference in intensity shown during the longest dramatic unit by the blind and seeing subjects, the
hypothesis that there is no substantial difference in the intensity of the personal involvement exhibited in the dramatic play of young blind children and seeing children was retained.

Analysis of the Statistical Data Pertaining to the Play Session

Introduction

As previously indicated, in view of the death of usable resource data presently available, it was considered important at this time to collect, analyze, and interpret the data resulting from the study from the position of what is the situation rather than to determine whether or not specific speculations are, or are not, substantiated, except for those portions of the study which lend themselves to the formal hypotheses set forth at the beginning of this section. Therefore, the following data were collected and analyzed.

The Play Session

Type of play behavior exhibited

A two sample chi square test was used to determine whether or not blindness was independent of the type of play in which the subjects became involved and in the non-involvement of the subjects in play.

Table 19 shows the relationship between the blind and seeing subjects and the frequency of their involvement in manipulative play.
### TABLE 19

CONTINGENCY TABLE SHOWING THE OBSERVED (O) AND EXPECTED (E) FREQUENCY OF BLIND AND SEEING SUBJECTS' INVOLVEMENT IN MANIPULATIVE PLAY

<table>
<thead>
<tr>
<th>Manipulative Play</th>
<th>Blind</th>
<th>Seeing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (O)</td>
<td>9</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>(E)</td>
<td>(5)</td>
<td>(5)</td>
<td></td>
</tr>
<tr>
<td>No (O)</td>
<td>20</td>
<td>28</td>
<td>48</td>
</tr>
<tr>
<td>(E)</td>
<td>(24)</td>
<td>(24)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>29</td>
<td>29</td>
<td>58</td>
</tr>
</tbody>
</table>

\( df = 1 \)

\( \chi^2 = 5.921^* \)

*Significant at the .05 level.

The obtained chi square value, 5.92, was significant at the .05 level. Therefore, the null hypothesis that no difference exists between the observed and expected values was rejected and the alternative hypothesis that the two variables, blind-seeing and involvement in manipulative play, are associated, was accepted. It was inferred from these data that the blind subjects became more frequently involved in manipulative play than the seeing subjects.

Table 20 shows the relationship between the blind and seeing subjects and the frequency of their involvement in dramatic play.
TABLE 20
CONTINGENCY TABLE SHOWING THE OBSERVED (O) AND EXPECTED (E) FREQUENCY OF BLIND AND SEEING SUBJECTS' INVOLVEMENT IN DRAMATIC PLAY

<table>
<thead>
<tr>
<th>Dramatic Play</th>
<th>Blind</th>
<th>Seeing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (O)</td>
<td>16</td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td>(E)</td>
<td>(15.5)</td>
<td>(15.5)</td>
<td></td>
</tr>
<tr>
<td>No (O)</td>
<td>13</td>
<td>14</td>
<td>27</td>
</tr>
<tr>
<td>(E)</td>
<td>(13.5)</td>
<td>(13.5)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>29</td>
<td>58</td>
</tr>
</tbody>
</table>

\[ df = 1 \]
\[ \chi^2 = .04 \]

The obtained chi square value, .04, was not significant at the .05 level. Therefore, the null hypothesis that no difference exists between the two variables, blind-seeing and involvement in dramatic play, was accepted. It was inferred from these data that there was no difference in the frequency with which blind and seeing subjects became involved in dramatic play.

Table 21 shows the relationship between the blind and seeing subjects and the frequency of their involvement in play other than dramatic and manipulative.

The obtained chi square value, .11, was not significant at the .05 level. Therefore, the null hypothesis that no difference exists between
TABLE 21

CONTINGENCY TABLE SHOWING THE OBSERVED (O) AND EXPECTED (E) FREQUENCY OF BLIND AND SEEING SUBJECTS' INVOLVEMENT IN PLAY OTHER THAN DRAMATIC AND MANIPULATIVE

<table>
<thead>
<tr>
<th>Other Play</th>
<th>Blind</th>
<th>Seeing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (O)</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>(E)</td>
<td>(4)</td>
<td>(4)</td>
<td></td>
</tr>
<tr>
<td>No (O)</td>
<td>27</td>
<td>23</td>
<td>50</td>
</tr>
<tr>
<td>(E)</td>
<td>(25)</td>
<td>(25)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>29</td>
<td>58</td>
</tr>
</tbody>
</table>

df = 1
X^2 = .11

The two variables, blind-seeing and involvement in play other than manipulative and dramatic, was accepted. It was inferred from these data that there was no difference in the frequency with which blind and seeing subjects became involved in play other than manipulative and dramatic.

Table 22 shows the relationship between the blind and seeing subjects and the frequency of non-involvement in play.

The obtained chi-square value, 1.31, was not significant at the .05 level. Therefore, the null hypothesis that no difference exists between the two variables, blind-seeing and non-involvement in play,
TABLE 22

CONTINGENCY TABLE SHOWING THE OBSERVED (O) AND EXPECTED (E) FREQUENCY OF BLIND AND SEEING SUBJECTS' NON INVOLVEMENT IN PLAY

<table>
<thead>
<tr>
<th></th>
<th>No Play</th>
<th>Blind</th>
<th>Seeing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (O)</td>
<td>5</td>
<td>7</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>(E)</td>
<td>(6)</td>
<td>(6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No (O)</td>
<td>24</td>
<td>22</td>
<td></td>
<td>46</td>
</tr>
<tr>
<td>(E)</td>
<td>(23)</td>
<td>(23)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>29</td>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>

\[df = 1\]
\[\chi^2 = 1.31\]

was accepted. It was inferred from these data that there was no difference in the frequency with which blind and seeing subjects did not become involved in play.

**Time involved in play**

The data were examined to determine whether or not the blind and seeing subjects differed in the amount of time spent in manipulative play. Relative to the amount of time spent in manipulative play, the twenty-nine blind subjects had a mean of 3.66 with a standard deviation of 5.94 and the twenty-nine seeing subjects had a mean of .03 with a standard deviation of .18. The analysis of variance was used to
determine if the amount of time spent in manipulative play by blind subjects differed significantly from the amount of time spent in manipulative play by seeing subjects. Results indicated that there was a difference at the .01 level of significance. The summary table for this analysis is shown in Table 23.

**TABLE 23**

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE TIME SPENT IN MANIPULATIVE PLAY BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>190.09</td>
<td>1</td>
<td>190.09</td>
<td>10.40*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1023.51</td>
<td>56</td>
<td>18.28</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1213.60</td>
<td>57</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .01 level.

The degree of relationship between the amount of time spent in manipulative play and intelligence was described by a Pearson r of -.07. This correlation was tested for statistical significance by means of a t test. The t value of -.51 (df = 56) was not significant at the .05 level. Nevertheless, a covariant adjustment using intelligence as the covariate was effected. Results indicated that there was a significant difference with a covariant adjustment for intelligence at the .01 level with respect
to the amount of time spent in manipulative play by blind and seeing subjects. The summary table for this analysis is presented in Table 24. Examination of the adjusted means shown in Table 25 would indicate that the blind subjects spent more time in manipulative play than the seeing subjects.

TABLE 24

SUMMARY TABLE FOR THE ANALYSIS OF COVARIANCE RELATIVE TO THE TIME SPENT IN MANIPULATIVE PLAY BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>186.15</td>
<td>1</td>
<td>186.15</td>
<td>10.02*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1021.80</td>
<td>55</td>
<td>18.58</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1207.95</td>
<td>56</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

Significant at the .01 level.

TABLE 25

MEANS ADJUSTED FOR THE COVARIATE INTELLIGENCE RELATIVE TO THE TIME SPENT IN MANIPULATIVE PLAY BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Manipulative Play</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Subjects</td>
<td>29</td>
<td>Mean</td>
</tr>
<tr>
<td>Seeing Subjects</td>
<td>29</td>
<td>Mean</td>
</tr>
</tbody>
</table>
The data were examined to determine whether or not the blind and seeing subjects differed in the amount of time spent in dramatic play. These results were described under Hypothesis II and indicated that there was no significant difference at the .05 level of significance. Tables 7, 8, and 9, set forth the summary tables for the analysis of variance, the analysis of covariance, and the means adjusted for the covariate intelligence relative to the time spent in dramatic play by blind and seeing subjects.

The data were examined to determine whether or not the blind and seeing subjects differed in the amount of time spent in play other than manipulative and dramatic.

Relative to the amount of time spent in play other than manipulative and dramatic, the twenty-nine blind subjects had a mean of .55 with a standard deviation of 2.18 and the twenty-nine seeing subjects had a mean of 1.21 with a standard deviation of 3.78. The analysis of variance was used to determine if the amount of time spent in play other than manipulative and dramatic by blind subjects differed significantly from the amount of time spent in play other than manipulative and dramatic by seeing subjects. Results indicated that there was no difference at the .05 level of significance. The summary table for this analysis is shown in Table 26.

The degree of relationship between the amount of time spent in play other than manipulative and dramatic and intelligence was described by a
TABLE 26

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE TIME SPENT IN PLAY OTHER THAN MANIPULATIVE AND DRAMATIC BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>6.22</td>
<td>1</td>
<td>6.22</td>
<td>.63</td>
</tr>
<tr>
<td>Within Groups</td>
<td>551.93</td>
<td>56</td>
<td>9.86</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>553.59</td>
<td>57</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

Pearson r of .09. This correlation was tested for statistical significance by means of a t test. The t value of .68 (df = 56) was not significant at the .05 level. Nevertheless, a covariant adjustment using intelligence as the covariate was effected. Results indicated that there was no significant difference at the .05 level with a covariant adjustment for intelligence with respect to the amount of time spent in play other than manipulative and dramatic by the blind and seeing subjects. The summary table for this analysis is shown in Table 27. The means adjusted for the covariate, intelligence, relative to the amount of time spent in play other than manipulative and dramatic by blind and seeing subjects are shown in Table 28.
TABLE 27

SUMMARY TABLE FOR THE ANALYSIS OF COVARIANCE RELATIVE TO THE TIME SPENT IN PLAY OTHER THAN MANIPULATIVE AND DRAMATIC BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>4.01</td>
<td>1</td>
<td>4.01</td>
<td>.40</td>
</tr>
<tr>
<td>Within Groups</td>
<td>549.58</td>
<td>55</td>
<td>9.99</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>553.59</td>
<td>56</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 28

MEANS ADJUSTED FOR THE COVARIATE INTELLIGENCE RELATIVE TO THE TIME SPENT IN PLAY OTHER THAN MANIPULATIVE AND DRAMATIC BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Other Play</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Subjects</td>
<td>29</td>
<td>Mean</td>
</tr>
<tr>
<td>Seeing Subjects</td>
<td>29</td>
<td>Mean</td>
</tr>
</tbody>
</table>

Number of vocalizations uttered during the play session

The data were examined to determine whether or not the twenty-four blind subjects (12 males, 12 females) who engaged in play and the twenty-two seeing subjects (11 males, 11 females) who engaged in play differed in the number of vocalizations uttered during a half-minute sample taken at the mid-point of play.
Relative to the number of vocalizations uttered, the twenty-four blind subjects had a mean of 18.50 with a standard deviation of 16.10 and the twenty-two seeing subjects had a mean of 24.05 with a standard deviation of 25.20. The analysis of variance was used to determine if the number of vocalizations uttered by blind subjects during play differed significantly from the number of vocalizations uttered by seeing subjects during play. Results indicated that there was no difference at the .05 level of significance. The summary table for this analysis is shown in Table 29.

TABLE 29

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE NUMBER OF VOCALIZATIONS UTTERED DURING PLAY BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>352.98</td>
<td>1</td>
<td>352.98</td>
<td>.77</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20190.98</td>
<td>44</td>
<td>458.89</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>20543.96</td>
<td>45</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

The degree of relationship between the number of vocalizations uttered during play and intelligence was described by a Pearson r of -.02. This correlation was tested for statistical significance by means of a t test. The t value of -.16 (df = 44) was not significant at the .05 level. Nevertheless, a covariant adjustment using intelligence as the
covariate was effected. Results indicated that there was no significant
difference at the .05 level with a covariant adjustment for intelligence
with respect to the number of vocalizations uttered during play by the
blind and seeing subjects. The summary table for this analysis is shown
in Table 30. The means adjusted for the covariate, intelligence, relative
to the number of vocalizations uttered during play by blind and seeing
subjects are shown in Table 31.

TABLE 30
SUMMARY TABLE FOR THE ANALYSIS OF COVARIANCE RELATIVE
TO THE NUMBER OF VOCALIZATIONS UTTERED DURING
PLAY BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind and Seeing</td>
<td>440.53</td>
<td>1</td>
<td>440.53</td>
<td>.94</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20091.74</td>
<td>43</td>
<td>467.25</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>20532.27</td>
<td>44</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 31
MEANS ADJUSTED FOR THE COVARIATE INTELLIGENCE RELATIVE
TO THE NUMBER OF VOCALIZATIONS UTTERED DURING
PLAY BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Vocalizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Subjects</td>
<td>24</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.03</td>
</tr>
<tr>
<td>Seeing Subjects</td>
<td>22</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24.56</td>
</tr>
</tbody>
</table>
Involvement of observer in dramatic play requested by child

A two sample chi square test was used to determine if blindness was independent of the request by the subjects for the involvement of the observer in dramatic play.

Table 32 shows the relationship between the blind and seeing subjects and the frequency with which the subjects requested the involvement of the observer in dramatic play.

**TABLE 32**

CONTINGENCY TABLE SHOWING THE OBSERVED (O) AND EXPECTED (E) FREQUENCY OF BLIND AND SEEING SUBJECTS' REQUEST FOR THE INVOLVEMENT OF THE OBSERVER IN DRAMATIC PLAY

<table>
<thead>
<tr>
<th>Involvement Requested</th>
<th>Blind</th>
<th>Seeing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (O)</td>
<td>11</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>(E)</td>
<td>(7.7)</td>
<td>(7.3)</td>
<td></td>
</tr>
<tr>
<td>No (O)</td>
<td>5</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>(E)</td>
<td>(8.3)</td>
<td>(7.7)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>15</td>
<td>31</td>
</tr>
</tbody>
</table>

\[ df = 1 \]
\[ X^2 = 3.93^* \]

*Significant at the .05 level.

The obtained chi square value, 3.93, was significant at the .05 level. Therefore, the null hypothesis that no difference exists between
the observed and expected values was rejected and the alternative hypothesis that the two variables, blind-seeing and involvement of the observer requested in dramatic play, are associated, was accepted. It was inferred from these data that the blind subjects requested the involvement of the observer in dramatic play more frequently than the seeing subjects.

Roles assigned to play materials during the longest dramatic unit

A list was compiled of the roles the blind and seeing subjects assigned to the play materials during the longest dramatic unit. This list is presented in Table 33.

Examination of Table 33 shows that the blind and seeing subjects assigned a similar number of roles to the stick and cloth. However, the seeing subjects assigned twice as many roles as the blind subjects to the hat and three times as many to the box.

Descriptive Analysis of the Play Sessions

The subjects were first introduced to the equipment used when they entered the room where the sessions were to take place. In the case of the seeing subjects, this introduction was accomplished by pointing to the various pieces of equipment and explaining their purpose. The equipment used was comprised of the parti-room, the timer, and the tape recorder. Acquainting the subject with the equipment progressed
TABLE 33

ROLES ASSIGNED TO PLAY MATERIALS DURING THE LONGEST DRAMATIC UNIT BY BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th>Stick</th>
<th>Blind</th>
<th>f</th>
<th>Seeing</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball bat</td>
<td>1</td>
<td></td>
<td>Baby</td>
<td>1</td>
</tr>
<tr>
<td>Bottom of wheelbarrow</td>
<td>1</td>
<td></td>
<td>Boy</td>
<td>1</td>
</tr>
<tr>
<td>Clock</td>
<td>1</td>
<td></td>
<td>Broom</td>
<td>1</td>
</tr>
<tr>
<td>Crutch</td>
<td>1</td>
<td></td>
<td>Cane</td>
<td>2</td>
</tr>
<tr>
<td>Fishing pole</td>
<td>1</td>
<td></td>
<td>Girl</td>
<td>1</td>
</tr>
<tr>
<td>Gun</td>
<td>1</td>
<td></td>
<td>Gun</td>
<td>2</td>
</tr>
<tr>
<td>Hammer</td>
<td>1</td>
<td></td>
<td>Hill</td>
<td>1</td>
</tr>
<tr>
<td>Part of bridge</td>
<td>1</td>
<td></td>
<td>Man</td>
<td>2</td>
</tr>
<tr>
<td>Part of crib</td>
<td>1</td>
<td></td>
<td>Pole, flower</td>
<td>1</td>
</tr>
<tr>
<td>Rocket</td>
<td>2</td>
<td></td>
<td>Pole, sliding</td>
<td>1</td>
</tr>
<tr>
<td>Spoon</td>
<td>1</td>
<td></td>
<td>Road barrier</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stick</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td></td>
<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cloth</th>
<th></th>
<th></th>
<th>Cloth</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Apron</td>
<td>1</td>
<td></td>
<td>Blanket</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Axle</td>
<td>1</td>
<td></td>
<td>Cape</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Boat seat</td>
<td>1</td>
<td></td>
<td>Clothes</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Cover of box</td>
<td>1</td>
<td></td>
<td>Dirt</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Cover of cage</td>
<td>1</td>
<td></td>
<td>Part of bed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Cover of house</td>
<td>1</td>
<td></td>
<td>Part of pillow</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Crib blanket</td>
<td>1</td>
<td></td>
<td>Pillow</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Healing cloth</td>
<td>1</td>
<td></td>
<td>Towel for sunbathing</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Part of bridge</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Towel for sunbathing</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td></td>
<td>Total</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>


TABLE 33—Continued

<table>
<thead>
<tr>
<th>Blind</th>
<th>Seeing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hat</td>
<td>Hat</td>
</tr>
<tr>
<td>Cap, baseball</td>
<td>Bed</td>
</tr>
<tr>
<td>Cap, hunting</td>
<td>Bonnet</td>
</tr>
<tr>
<td>Hat</td>
<td>Bowl</td>
</tr>
<tr>
<td>Hat, cowboy</td>
<td>Cap, bathing</td>
</tr>
<tr>
<td>Hat, fishing</td>
<td>Covers for bed</td>
</tr>
<tr>
<td>Wheel</td>
<td>Hat</td>
</tr>
<tr>
<td></td>
<td>Hat, cowboy</td>
</tr>
<tr>
<td></td>
<td>Hat, garden</td>
</tr>
<tr>
<td></td>
<td>Hat, rain</td>
</tr>
<tr>
<td></td>
<td>Hole</td>
</tr>
<tr>
<td></td>
<td>Part of bed</td>
</tr>
<tr>
<td></td>
<td>Part of pillow</td>
</tr>
<tr>
<td></td>
<td>Swing set</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>7</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Box</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boat</td>
<td>Bed</td>
</tr>
<tr>
<td>Box</td>
<td>Boat</td>
</tr>
<tr>
<td>Cage</td>
<td>Bus</td>
</tr>
<tr>
<td>Crib</td>
<td>Cradle</td>
</tr>
<tr>
<td>Dentist chair</td>
<td>Desk</td>
</tr>
<tr>
<td>House</td>
<td>Elevator</td>
</tr>
<tr>
<td>Table</td>
<td>Fox</td>
</tr>
<tr>
<td></td>
<td>Hospital</td>
</tr>
<tr>
<td></td>
<td>Hiding place</td>
</tr>
<tr>
<td></td>
<td>Man</td>
</tr>
<tr>
<td></td>
<td>Movie</td>
</tr>
<tr>
<td></td>
<td>Playcrib</td>
</tr>
<tr>
<td></td>
<td>Refrigerator</td>
</tr>
<tr>
<td></td>
<td>Stroller</td>
</tr>
<tr>
<td></td>
<td>Swimming pool</td>
</tr>
<tr>
<td></td>
<td>Table</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>7</td>
<td>20</td>
</tr>
</tbody>
</table>
very rapidly with the seeing subjects. They asked very few questions and gave every indication of accepting the equipment and its presence did not bother them. During the play sessions few references were made to the equipment. The parti-room did what it was designed to do; namely, confined the activity and eliminated distractions present in the various rooms used for the play sessions.

For the blind subjects, the same verbal explanations were used, however, in addition to this, the equipment was introduced to them tactually. For example, the blind subjects walked around the parti-room feeling the walls, the timer was placed in their hands and the bell was made to ring. The tape recorder and microphone were also handled. The blind subjects were not hurried through this explanation and were allowed to explore as they wished. In spite of this, the equipment appeared to be distracting to the blind subjects. Many of them were unable to comprehend the concept of the parti-room and because of this referred to it during the play session. The concept of an entryway, or doorway, that did not have a door (one corner of the parti-room was left ajar approximately two feet to allow entrance into the parti-room) seemed to be extremely difficult for them to understand. Activities during the play session were often introduced in such a way that an attempt to use the space outside of the parti-room was deliberately worked into the play session and the observer had to request that the subjects restrict their play to the area enclosed by the parti-room.
Example 9 in Appendix A shows this desire to go outside of the parti-room not with the intention of terminating the play session, but rather as a means of coming to grips with a perplexing situation. For example, in this sequence the parti-room becomes a house which leads to playing "outdoors" and to going out on the "backporch."

In the next example, the child uses a game in an attempt to use the area outside of the parti-room:

Oh, let's play Button, Button, Who's Got the Button. The stick is our button. Now I have to hide. I have to get it by the door and you have to go out and get it.

The next example illustrates an attempt to better comprehend the parti-room:

What's this room? This room (the parti-room).

That's a room I brought with me. Just some boards.

Did you get 'em? Is this a little pen?

Yes. That's right.

In the next example the child incorporates the parti-room into the play sequence in order to understand it more fully:

I'll put on my hunting hat and I'll take my gun and go shoot a deer. Pow! And here comes a rainstorm. It's going to take our house (the box) away. You're the round house, square, whole house. It's going to take it away. What are you going to do?

I don't know.

I know what to do. I'll take the house with me. When the storm comes who cares. We can carry the house out. Are you strong enough to carry a house?
No. I'm not. Are you?

No. I don't think I could carry this house you have here (the part-room). How many do you think could carry it? About four?

The narrative case records also show that there was more communication between the blind subjects and the observer than was found between the seeing subjects and the observer. The dramatic units in Appendix A will also illustrate this. These communications were generally in the form of questions posed by the blind subjects. In some cases, the questions sought information concerning the immediate situation, for example:

Did you make this board (the stick)? Yes.

Did you make this towel? No.

Did you make the hat? No.

Did you have these things? You had to make this board. When did you make this?

Questions were also used to further understanding of the environment. In the following sequence, the child attempts to learn about the quality of the stick:

No, I changed my mind. It's going to be a girl. This is going to be a different kind of girl. It's going to have a hat on it. (Child drapes the towel around the stick.) Give me that hat. That's going to be the coat but it's got a hat on it. There. Ha! What if I leave go?

Well, what do you think?

It (the stick) will break. Would it break?
You can try it?

What if it breaks?

That's okay.

(Child lets the stick drop.) The board didn't break, did it?

In one example, the subject tries to use the stick as a crutch, but is not sure how it is done. A classmate in this subject's group uses a crutch which probably led to this concern.

You can pretend that they're crutches. Do you do that when you have crutches? Like this?

The following example shows a subject using the play materials to work out a common, everyday situation which has not apparently been understood fully:

Let's get colors. Let's color together... I'll put this thing away. (Child puts the stick in the box.) Is that the stick... Should this roll around in it? Is that how you make your spoons fit when you don't eat?

What do you mean?

She means like--make it sit like this here near the end. Then she stops eating with her cream of wheat... like she does this.

You mean the box is like a big bowl and this (the stick) is a spoon?

Yes.

In example 1, Appendix A, the subject uses the play session to gain information concerning wheelbarrows and tractors. While questioning the observer about these objects, he also shows concern about the difference between reality and "make-believe":
My daddy bought a wheelbarrow. But this one (the one he has made from the play materials) is made out of toys, isn't it? This one won't really move. Right? If a tractor pulled it, it would pull to pieces, right? This wheelbarrow is easy to break.

The blind subjects also used questions to gain assurance from the observer before attempting an action. Several such questions follow:

What should I do if I'm a doctor . . . Anything I want?

Can we pretend this is a gun and I'm shooting at you and I'm wearing this hat?

What's the stick for? Is it to play a big drum?

At times, the blind subjects used the observer as the agent in carrying out activities, for example:

You use them two things (the hat and towel).

What do you want me to do?

You make a snowman with that towel. Then you put the hat on it. (Observer wraps the towel around her hand.)

Examination of the narrative case records shows that very little communication took place between the observer and the seeing subjects. The seeing subjects rarely asked questions of the observer nor did they require much in the way of a response. This is also brought out in the examples of the longest dramatic units set forth in Appendix A.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Introduction

The purpose of this study was to ascertain, by means of observation during an experimental situation, whether or not the play of blind children differed from that of peer seeing children. Twenty-nine legally blind children within the age range of four years through nine years were presented with special play materials (a box, a stick, a hat, and a piece of cloth) during individual fifteen minute free play sessions. The play activities during this time were observed and documented. An equal number of seeing children matched for age and sex to their counterparts were similarly observed and their activities recorded. In order to establish a similar environment for all the children involved, the play sessions were conducted in a portable enclosure, or parti-room, brought to each location.
Identification and Classification

Sources of the population

The twenty-nine blind subjects (15 males, 14 females) selected for this study came from the following sources: seventeen subjects (9 males, 8 females) were attending the Wisconsin School for the Visually Handicapped, Janesville, Wisconsin; three subjects (males) were attending the Minnesota Braille and Sight Saving School, Faribault, Minnesota; two subjects (1 male, 1 female) were attending the School for the Blind, Grand Forks, North Dakota; and seven subjects (2 males, 5 females) were contacted in their homes under the auspices of the Minnesota Department of Public Welfare, Services for the Blind, St. Paul, Minnesota.

The twenty-nine seeing subjects (15 males, 14 females) selected for this study came from the following sources: thirteen (8 males, 5 females) were attending the Minto Elementary School, Minto, North Dakota; ten (5 males, 5 females) were attending the Drayton Elementary School, Drayton, North Dakota; five (1 male, 4 females) were attending the Lincoln Elementary School, Grand Forks, North Dakota; and one subject (male) was contacted in his home in Grand Forks.
The blind subjects

Of the twenty-nine blind subjects, sixteen (9 males, 7 females) were classified as residential, while thirteen (6 males, 7 females) were classified as non-residential.

Twenty four of the twenty-nine blind subjects had become blind during a pre-natal period. Blindness occurred or was identified in three subjects respectively; before the age of two, at the age of four, and at the age of six. In the remaining two cases the records were incomplete and there was no reliable indication of the time of occurrence of blindness.

The causes of blindness and the frequency with which they occurred were presented in table form (Table 1).

Of the twenty-nine blind subjects, seven (4 males, 3 females) were totally blind; eight (1 male, 7 females) were able to perceive light only; five (3 males, 2 females) were able to distinguish objects; and nine (7 males, 2 females) had travelling vision.

Three subjects were considered to have a secondary disability. The disabilities included spastic paralysis, rheumatoid arthritis, and Von Willebrand's arthritis.

The blind and seeing subjects

The seeing subjects were matched to the blind subjects relative to the variable age as specified in the design of the study. Therefore, it
was inferred that any differences in play behavior were probably not mediated by differences in age between the groups.

Results of an analysis of variance indicated that relative to the variable, intelligence, there was a significant difference at the .05 level between the blind and seeing subjects. Therefore, intelligence was covaried out as a factor in any difference displayed by the blind and seeing subjects in play behavior.

As specified in the design for this study, the sexes were equally represented in the blind and seeing population. Of the twenty-nine blind subjects, fifteen were males and fourteen were females. Of the twenty-nine seeing subjects, fifteen were males and fourteen were females.

Analysis of the Statistical Data Pertaining to the Hypotheses

Hypothesis I: **There is no substantial difference in the content of the dramatic play of young blind children and seeing children.**

The contents of the longest dramatic units of the subjects who engaged in dramatic play were examined and the themes expressed identified and categorized. The themes of both the blind and seeing subjects fell into these categories: adventure, domestic, sports, world-of-work, and other. There appeared to be some indication that the blind subjects were more aware of the world-of-work while the seeing subjects were less concerned with this aspect of life and emphasized the domestic scene more often.
The number of themes in each category involved was too small to be quantitatively assessed, however, analysis of the contents revealed no substantial difference between the themes expressed by the blind and seeing children. Therefore, the hypothesis that there is no substantial difference in the contents of the dramatic play of young blind children and seeing children was retained.

Hypothesis II: There is no substantial difference in the amount of time spent in the dramatic play of young blind children and seeing children.

The total amount of time spent in dramatic play, and the amount of time involved in the longest dramatic units were subjected to analysis. Relative to the total amount of time spent in dramatic play, results indicated that there was no difference at the .05 level of significance. There was also no significant difference at the .05 level with a covariant adjustment for intelligence.

Relative to the amount of time involved in the longest dramatic unit, results indicated that there was no difference at the .05 level of significance. There was also no significant difference at the .05 level with a covariant adjustment for intelligence.

Therefore, the hypothesis that there is no substantial difference in the amount of time spent in the dramatic play of young blind children and seeing children was accepted.
Hypothesis III: There is no substantial difference in the complexity of the dramatic play of young blind children and seeing children.

The longest dramatic units were further divided into sub-units. These sub-units were defined as the essential ideas or action which made up the whole dramatic unit and were used to quantify the complexity of the dramatic play.

The data were examined to determine whether or not the blind and seeing subjects who engaged in dramatic play differed in the number of sub-units they introduced into the longest dramatic unit. Results indicated that there was no difference at the .05 level of significance. There was also no significant difference at the .05 level with a covariant adjustment for intelligence. Therefore, the hypothesis that there is no substantial difference in the complexity of the dramatic play of young blind children and seeing children, was accepted.

Hypothesis IV: There is no substantial difference in the intensity of the personal involvement exhibited in the dramatic play of young blind children and seeing children.

Three judges were requested to rate the intensity of the longest dramatic units based on a one to five scale; one being the lowest or least intense score, five being the highest or most intense score. A Pearson product moment correlation coefficient was calculated to determine the agreement between the judges. The correlation coefficients
indicated that there was a high correlation between the ratings of Judge 1 and Judge 2, while Judge 3 deviated from the ratings of Judges 1 and 2.

The data were examined to determine whether or not the blind and seeing subjects differed in the intensity shown during the longest dramatic unit. Results indicated that there was no difference at the .05 level of significance. There was also no significant difference at the .05 level with a covariant adjustment for intelligence. Therefore, the hypothesis that there is no substantial difference in the intensity of the personal involvement exhibited in the dramatic play of young blind children and seeing children was retained.

Analysis of the Statistical Data Pertaining to the Play Session

Type of play behavior exhibited

A two sample chi square test was used to determine whether or not blindness was independent of the type of play in which the subjects became involved and in the non-involvement of the subjects in play.

The relationship between the blind and seeing subjects and the frequency of their involvement in manipulative play obtained a chi square value significant at the .05 level. It was inferred from these data that the blind subjects became more frequently involved in manipulative play than the seeing subjects.

The relationship between the blind and seeing subjects and the frequency of their involvement in dramatic play did not obtain a significant
chi square value. It was inferred from these data that there was no
difference in the frequency with which blind and seeing subjects became
involved in dramatic play.

The relationship between the blind and seeing subjects and the
frequency of their involvement in play other than manipulative and
dramatic play did not obtain a significant chi square value. It was
inferred from these data that there was no difference in the frequency
with which blind and seeing subjects became involved in play other than
manipulative and dramatic.

The relationship between the blind and seeing subjects and the
frequency of non-involvement in play did not obtain a significant chi
square value. It was inferred from these data that there was no difference
in the frequency with which blind and seeing subjects did not become
involved in play.

Time involved in play

The data were examined to determine whether or not the blind and
seeing subjects differed in the amount of time spent in manipulative
play, dramatic play, and play other than manipulative and dramatic.

Relative to manipulative play, results indicated that there was a
significant difference at the .01 level of significance. There was also a
significant difference at the .01 level with a covariant adjustment for
intelligence. Examination of the adjusted means would indicate that the
blind subjects spent more time in manipulative play than the seeing subjects.

Relative to dramatic play, results indicated that there was no difference at the .05 level of significance. There was also no significant difference at the .05 level with a covariant adjustment for intelligence.

Relative to play other than manipulative and dramatic, results indicated that there was no difference at the .05 level of significance. There was also no significant difference at the .05 level with a covariant adjustment for intelligence.

**Number of vocalizations uttered during the play session**

The data were examined to determine whether or not the twenty-four blind subjects who engaged in play and the twenty-two seeing subjects who engaged in play differed in the number of vocalizations uttered during a half-minute sample taken at the mid-point of play.

Relative to the number of vocalizations uttered, results indicated that there was no difference at the .05 level of significance. There was also no significant difference at the .05 level with a covariant adjustment for intelligence.
Involvement of observer in dramatic play requested by child

A two sample chi square test was used to determine if blindness was independent of the request by the subjects for the involvement of the observer in dramatic play.

The relationship between the blind and seeing subjects and the frequency with which the subjects requested the involvement of the observer in dramatic play obtained a chi square value significant at the .05 level. It was inferred from these data that the blind subjects requested the involvement of the observer in dramatic play more frequently than the seeing subjects.

Roles assigned to play materials during the longest dramatic unit

A list was compiled of the roles the blind and seeing subjects assigned to the play materials during the longest dramatic unit. Examination shows that the blind and seeing subjects assigned a similar number of roles to the stick and cloth. However, the seeing subjects assigned twice as many roles as the blind subjects to the hat and three times as many to the box.

Descriptive Analysis of the Play Session

The blind and seeing subjects were introduced verbally and visually/tactually to the equipment (tape recorder and timer) and to the parti-room prior to the play session. The seeing subjects displayed
little interest in the equipment and the parti-room confined the activity of the seeing subjects and eliminated distractions present in the various rooms used for the play sessions. However, the equipment appeared to be distracting to the blind subjects and they seemed to be unable to comprehend the concept of the parti-room and the entryway, or doorway that did not have a door (one corner of the parti-room was left ajar approximately two feet to allow entrance into the parti-room). Consequently, activities during the play session were often used in such a way that an attempt to use the space outside of the parti-room was deliberately worked into the play session.

The narrative case records also showed that there was more communication between the blind subjects and the observer. These communications were generally in the form of questions posed by the blind subjects. These questions appeared to seek information concerning the immediate situation, to further understanding of the environment, to work out a common, everyday situation which had not apparently been understood fully, and to gain assurance from the observer before attempting an action. There were also times when the blind subjects used the observer as the agent in carrying out activities.

Examination of the narrative case records of the seeing subjects showed that very little communication took place between the observer and the seeing subjects. The seeing subjects rarely asked questions of
the observer, nor did they require much in the way of a response from the observer.

Conclusions

The following conclusions were drawn from the data presented:

1. There was no substantial difference in the content, amount of time, complexity, and intensity of the dramatic play of blind and seeing children.

Although the analysis of the data resulted in no significant difference in any of those aspects of dramatic play considered in the hypotheses, there is some indication that some factor was present concerning the seeing subjects which influenced the behavior under study. Appendix G discussed this in detail.

2. The blind children engaged in more manipulative play than the seeing children.

During the play sessions, it was found that the blind children engaged in manipulative play, that is, handling of the play materials with no indication that the objects were given a make-believe role. This type of play was not often used by the seeing children. Several reasons may be advanced for this type of play. Manipulative play may be a source of pleasure to the blind child making use of the tactual sense. Banging on the box, folding the cloth, shoving the cloth into the hat, for example, may all contribute to the stimulation of this sense. Another reason for
this type of play may be the attempt on the part of the blind child to explore these objects, which although very common and available to all children, appeared to be less familiar to the blind children as indicated by their questions concerning the qualities of these objects, such as, "Will this board break?" It is possible that the blind children were exploring these unfamiliar objects during this play, while to the seeing children these objects were so familiar that no exploration was needed.

This kind of activity may also have been used as a means to continue the play sessions and, hence, contact with the observer. Manipulative play, unlike dramatic play, is not as demanding or revealing, and if there were some reticence toward entering into this more personal play behavior, manipulative play would offer a more safe, sterile avenue by which to keep from terminating the play session. It was noticeable upon contact with the blind children that they were interested in the observer as an individual. Questions were frequently asked concerning the observer's personal life, such as, "Are you married?" "Do you have any children?" "Where do you work?" The blind children also frequently spoke in detail about their own personal lives. These discussions began immediately upon meeting the blind child and continued after the play session. In some cases the blind child had in reality terminated the play activity but continued aimless activity rather than have the play session cease (see Appendix B, Example 2).
This personal involvement with the observer did not occur with the seeing children who exhibited very little interest in the observer as an individual. The few personal questions were asked by the youngest children. The seeing children seemed to deal with the observer more as an authority figure than as a friend. They felt that the play sessions were "fun" and the children were happy to be the ones chosen, however, there was generally a restraint which was not present with the blind children. This may be substantiated by the fact that there was a significant difference in the number of requests of the blind children for the observer to become involved in the play sessions.

3. Blind children requested the involvement of the observer in play more frequently than the seeing children.

Blind children made more attempts to become involved with the observer and to involve the observer in their activities. This was identified by the quantitative analysis of the play sessions which showed that the blind children did request the involvement of the observer in their play activities during the experimental session significantly more often than the seeing children. In addition, the researcher found that the entire contact between the blind children and the observer developed on a much more personal basis. The observer felt that she knew these children and could easily establish rapport with them. By the same token, the blind children seemed to expect such a relationship with the observer.
Conversely, the seeing children did not become involved with the observer in any way, the relationship being somewhat subdued. They seemed neither to expect anything nor want anything from the observer, but were agreeable and willing to cooperate.

This involvement of the observer by the blind children suggests that the blind children have found that adults fill an important need in their lives more so than seeing children. Blind children have a background with experience in developing relationships with adults other than parents and relatives. They have become involved with adults whose jobs have been to work with the blind child directly, thus, allowing the blind child a sense of importance which the seeing child would not normally achieve in the adult world. The blind child is worked with by medical personnel, psychologists, welfare workers, housemothers, and other volunteer type workers. Typically classrooms for the blind are small and permit a closer teacher-child relationship. As a result, the blind child has come to expect aid and concern from adults, and thus has experienced more control over adults because of his blindness.

The relationship of the seeing child to the adult world does not follow this pattern. Aside from parents and relatives, there is usually no comparable close relationship with adults whose main concern is making the seeing child's world easier. The child's peer world is so important that adults are considered outsiders and not particularly helpful nor welcome. Quite possibly, they may be perceived as detriments
formulating laws and regulations, do's and don't's, and generally inhibiting their attempts to enjoy themselves.

4. **Blind children found difficulty in understanding the concept of a boundary as illustrated by some of the aspects of their play.**

The narrative case records indicated that the blind children had difficulty in understanding the parti-room as demonstrated by the attempts to include the area outside of the parti-room in the play sessions and in their frequent referral to the parti-room. It is possible that this reaction may have been an exhibition of the inability of the blind children to really comprehend the space about them.

A related aspect of this apparent inability to comprehend spatial boundaries might be shown in looking over the role assigned by the children to the box. While seeing children assigned twenty roles to the box, the blind children assigned only seven roles to the box. This may be an indication of the blind child's inability to handle space. The box and the parti-room were similar in that they both act as enclosures of essentially nothing. The blind children gave evidence in both instances of an uneasiness when dealing with concepts involving space, spatial limitations, and boundaries.

A similar reaction may be seen in the use of the hat during play. The seeing children assigned fifteen roles to the hat, while the blind children assigned seven roles to the hat. Although it might be reasonable to expect that a hat may not be as important to a blind child since he may
not be as attracted to it without vision, examination of the roles assigned shows that seeing children used the hat more often as objects other than a hat, such as a bed, bowl, hole, while the blind children used it almost exclusively as a hat.

An interesting observation occurred during the giving of the Slosson Intelligence Test which points toward this problem. During the test, the children were requested to hold up so many fingers in lieu of the usual test procedure of identifying so many apples. Several of the children who knew the number concept involved were unable to determine when their fingers were held up in space. They drew an outline with the other hand around each finger that would be held up to complete the number concept but were unable to hold these fingers upright. This would seem to indicate difficulty in understanding the very basic concept of the relationship of their body to the space around them.

The practical aspect of this inability to comprehend space and boundary would lead to the expectation that these children would experience greater difficulty in mobility at a later time when such training was begun. Difficulty in handling such basic space/boundary problems, or even the lack of confidence which would limit exploring such problems, could lead to difficulty in handling the concept of city blocks or building layouts which are all problems of space that have to be mastered by the blind in order to achieve independent travel.
5. **Blind children asked questions more frequently than seeing children during play.**

The case records showed that blind children asked questions more frequently than seeing children. As indicated in the findings, the questions grouped themselves into those seeking information and those attempting to establish contact with the observer.

It would be reasonable to assume that asking questions would be a valuable device for blind children to use in order to gather information. However, it was felt by the observer that while the questions were asked, the answers to the questions were not of particular interest to the child. This was evident, for example, in such cases where a child asked question after question leaving no opportunity for the observer to answer any of the questions. In those instances when the observer did attempt to answer a question there was frequently no follow up to the response.

It appeared that questions were often used to keep open lines of communication between the subject and the observer. It is possible that the blind children have become accustomed to receiving answers to their questions which were not a suitable reply to someone without vision and therefore, for the blind child, the question-answer technique was not a particularly effective method for gathering information. Further investigation into this phenomenon may show a use of questions similar to that found in the very young child who asks questions of adults, questions
adults find difficult to answer on the child's level. Like the blind
children in the study, the young child seems to be satisfied with any
answer even if it is not understood.

6. Intelligence, as indicated by the analysis of covariance
statistic, did not exert any measurable effect on the play behavior
studied.

Those portions of the study in which intelligence was covaried out
as a factor, showed very little change in the results.

Summary

The conclusions drawn from this exploratory investigation into the
play behavior of young blind children were:

1. There was no substantial difference in the dramatic play of
blind and seeing children as measured by content, amount of time
involved, complexity, and intensity of dramatic play.

2. The blind children engaged in more manipulative play than the
seeing children.

3. Blind children requested the involvement of the observer in
play more frequently than the seeing children.

4. Blind children found difficulty in understanding the concept of
a boundary as illustrated by some of the aspects of their play.

5. Blind children asked questions more frequently than seeing
children during play.
6. Intelligence, as indicated by the analysis of covariance statistic, did not exert any measurable effect on the play behavior studied.

Recommendations

The following recommendations were based on the narrative case records, the statistical data, and the general impressions resulting from the total contact with the children, prior to, during, and after the experimental play session.

1. Investigators dealing with blind children should take into account the references in the literature indicating that blind children appear to relate very well on a one-to-one basis with an adult rather than in a peer group situation. Since most investigations usually involve a subject—adult investigator, the reports on blind children are probably not producing an accurate picture of total performance. It might prove informative to replicate this study replacing the adult observer with a child trained to take the role played by the observer in this study. Observations of children in a mixed, informal play group by this investigator indicate that it is feasible to find a child of approximately ten years of age who is mature and sensitive enough to understand what would be expected of him and yet who is young enough to be able to relate to other children as a peer.
2. It is suggested that future studies of the play behavior of blind children be investigated with the intention of observing groups of blind children at play in their natural habitat attempting to gather information which might eventually lead to the possibility of designing a study of play groups which lends itself to statistical analysis. Investigation of the group play of blind children should be considered of paramount importance. However, there are great difficulties in designing such a study that would be statistically sound. While from the present knowledge about play it is known that sex and age affect play behavior, there are also indications (see Appendix B, Observations at the Florida State School for the Blind) that the degree of blindness is also a factor that would have to be considered. In view of the small number of children involved, their wide geographical distribution, the rather narrow age range in which spontaneous play is most important, the difficulty in gathering together groups reasonably matched for age, sex, degree of blindness, and similar environment, it appears improbable that projects of this scope could be handled by a single investigator. However, to hold off longer from gathering information on this extremely important aspect of a child's life because of problems in design seems incompatible with sociological advancement and detrimental to the well being of the blind.

3. Play should be used as an important tool by the classroom teacher. The play situation reveals whether or not a blind child really
understands a concept being taught rather than simply giving the response the teacher is looking for. Play allows the blind child the opportunity to explore very basic concepts in a wide variety of aspects without the inhibiting fear of their being considered right or wrong. Play gives the blind child a safe means to bring to the surface and deal with facettes of life which he does not fully understand or which may be troublesome. These may be simple questions concerning daily living which are not being adequately answered by the teaching adult as they are not readily identified.

4. Blind children need much more specific training in understanding the concepts of space and boundaries beginning with a thorough knowledge of their own body in relation to space. To begin academic training before this has been satisfactorily achieved may lead to superficial knowledge and response which are often accepted as a satisfactory mastery by their instructors.

5. The use of questions by blind children should be studied in more depth. The blind child may need specific training in developing a questioning technique that will uncover for them the information they (individuals who rely on senses other than vision) need from individuals who think and respond as individuals who rely primarily on vision.

6. More objective investigation of dramatic play rather than subjective analysis of the emotional content appears to offer a potentially fruitful approach to finding information relating to dramatic play behavior.
7. The investigator was impressed by the differences shown by individual children. Some children immediately engaged in complex, involved dramatic play. Others verbalized cheerfully and continually throughout contact with the observer but engaged in no play of any type. Some children engaged very quietly in seemingly purposeful manipulative play, while others responded negatively. The investigator was unable to determine from initial contact with the child or during the block play period with the child, how that child would react during the recorded experimental play session. Further investigation could lead to the identification of indicators or related variables.
LONGEST DRAMATIC UNITS

Key to the Longest Dramatic Units as Presented Here

The longest dramatic units of the play sessions for the blind and seeing subjects are presented here. Words in parenthesis are explanatory in nature and have been added by the writer for the purpose of clarity. Words in quotation marks indicate that the child used a noticeably different voice when speaking these words. Words in brackets indicate that the writer was not quite sure that the words were fully understood. Underlined words indicate that these words were spoken by the observer. Spacing has been used to indicate pace. Solid block typing indicates a rapid pace. Paragraph type spacing serves to indicate a slower or interrupted pace. Every attempt in presenting the material has been made to transmit the mood and flavor of the unit.

The longest dramatic units are presented according to the following system. First, all the units of the male blind subjects are included here beginning with the most intense to the least intense unit. In the event of equal intensity a descending order of age is used. The units of the female blind subjects and the male and female seeing subjects are similarly handled.

Key to the code used in presenting the longest dramatic units:

NRB - non-residential blind
RB - residential blind
F - female
M - male
S - seeing
Number preceding parenthesis indicates intensity rating based on a five point scale where 1 is minimum and 5 is maximum.

The number within the parenthesis indicates age in months.

Longest Dramatic Units

1. RB.M.4(92)

I'm going to make something different now. Put the hat like that and the towel and I'm going to put this... make believe this is the tire (the hat) and this will be the axle. (The hat is the wheel, the cloth is the axle.) This is a wheelbarrow. A wheelbarrow only has one wheel doesn't it? I made a wheelbarrow, didn't I? Here is the wheel and here is the axle. Here is where you sit. You sit right in here. And the stick is the bottom part which is right next to the wheel. Can a tractor pull a wheelbarrow?

I think so.

Anyway, you would have to have a four wheel to hitch up to a tractor. (Discusses how many wheels a tractor has.)

I think he's going to pull a wheelbarrow. This wheelbarrow won't move. This wheelbarrow comes apart easy doesn't it. This hat won't roll, won't it?

You can try.

It will move a little bit. If I took the axle off the wheel would fall down. (Tries it.) Nope. This cloth fits in the bottom. Would you try to hitch a wheelbarrow to a tractor with children in it?

No. I don't think so.

I could (drive a tractor). I know how to drive one. I'm [blind?] but I know how to drive one. I could drive one down the lane if there wasn't anything to bump into.

It's not easy to drive a tractor.

When there's nothing hitched to it. The wheelbarrow's stuck to the floor. The wheelbarrow's going away. Now the wheelbarrow broke. This bottom is supposed to hold it.

I wonder what this stick could hold?

The wheelbarrow moves, doesn't it?
This is our tent, isn't it? Do people sleep overnight in this?
(Discuss how the parti-room is made.)

Oh-h. The wheel fell off. Gotta get the axle stuck on the wheel.
There it is. Isn't this a fine wheelbarrow? Is this how wheelbarrows
are made?

How are real wheelbarrows made?

Out of wood, or metal. Usually they're made in factories.

They're made in factories. Then they're put in stores and people buy
it? My daddy bought a wheelbarrow. But this one is made out of toys,
isn't it? This one won't really move. Right? If a tractor pulled it,
it would pull to pieces, right? This wheelbarrow is easy to break.
They try to back up but they can't. She can't move. She's stuck. And
here comes the tractor R-r-r-r-r. This is a dang long stick. Isn't
this a heavy stick? Michael could pick this up, couldn't he? I could,
couldn't I? How much does this stick weigh? Weighs 5 pounds and I
weigh more than 5. This only weighs 6, I mean 7, eh, 6, 4, 49. I'm 60.
I can lift up this stick couldn't I? I did it.

Here we go traveling down the road. R-r-r-r. Doing 500 and she cracks
up. Br-r-r-r.

Now they're cutting it up - cutting it up. Grind, grind grind. The
wheel-barrow is all grinded up, isn't it? I'll try to make it again.
I don't know if I'll do all the right things - I'll try.

Now I'll get the wheel up. The wheelbarrow's made again. See? Now I
... Do you work in the big building? Where are you going next? What
are you doing there? Are you a housemother? Are you a teacher? She's
going 200 B-r-r-r-r-r.

2. NRB.M.4(88)

I know what to play. (Turns box over so it can be used as a table.
Gives observer the cloth.)

Do you want this?

No, you're supposed to cook and you put on your apron.

You want me to cook here? What would you like me to cook?

Some beans together and you stir it up. Here's your spoon. (Child
hands the stick to the observer.)

And mash some potatoes. And some jello.

There. (Observer stirs with the spoon.)
Put some ice in it. That's fun to make jello and you make the ice melt. That's funny and after a while you put it in the freezer and after a couple of hours we eat it.

Now we can put the dishes on the table. Is it done yet?

Smell's pretty good. Do you think it's done?

Hm-m-m-m. It sure looks like it's done. (Stirs beans with stick.) Feels all right. Feels like it's done. Might be done after supper.

I don't know what I'm to do with this hat.

You don't have to do anything with it.

It's done. I have to get the dishes on the table for supper. (Child sets dishes on the table.) Oh, no. We don't have teaspoons. Well, just use our hands. Here's two apples. (Use spoons and eat out of the plates. Takes up glass and drinks.) Fruit juice. We can eat the apples now. (Munch-munch.) Put it away. (Child puts the apple core in a waste basket.)

Now we can have our jello. It's all done. Some in your bowl. (Child serves jello into bowls.) Now some bananas. (Eats jello.) Think I'll have some more. Do you want some more?

Yes, thank you. That was good jello. (Child serves jello, then eats jello.)

Well, I think I'm going to go to the store. (Puts the hat on and goes over to the corner.)

(Child returns.) Do you know what I brought?

What?

A new egg beater. Now tomorrow you won't have to mash the potatoes with the spoon. You can use the egg beater. It's electric. It says cake mix on speed 1; mashed potatoes on speed 7; bread dough on speed 2. There's ten of them. Jello on speed 3; baked beans on speed 4; pudding on speed 5, chocolate; lemon pudding on speed 6. I already said 7 and vanilla pudding on speed 8; ice cream on speed 9; cookie dough on speed 10.

You can also make other things. You can make different kinds of jello but it doesn't say. But you can make anything but you just have to have it on the speed. If you want it off you don't have to turn it all the way around. There's a little red button and you push and the thing goes all around. And I also brought you a new timer and it goes four hours. It doesn't go around four times. It just goes around once. At home we have one that just goes around.
I brought you some boxes of jello and some whip cream. Oh! I didn't say whipped cream but whip cream should be on speed one because whipped cream is pretty soft.

3. NRB.M.4(76)

Now put this blanket back on it (the box) and then put the stick like this. (Under the box.) Could you make this good enough to fit in perfectly? (Fold the cloth so it fits in the box.)

I want it to be folded so it will go in here just right. Now. If we just had a doll we could play mother and father. We could make believe like in the Neighborhood of Mr. Lee and Mr. Rabbit.

Well. I wonder what we can use this for. (the stick) I know. We can use it as one of those rocking cribs. Rock the baby to sleep. (The box rolls back and forth over the stick.) Pretend there's a clock right there. (On the wall.) What time is it?

Six o'clock in the morning.

Well. Pretend it's night time.

It's eight o'clock.

Well. Let me see if the baby's eyes are closed. Yah, they're closed. We can leave him alone. Lift up the crib so we don't wake him up. Hey, I think the crib should go a little bit by the wall. That's a better place. Isn't it? No, not real close because we might hit the wall. Pretend this is a real denty one. This is our house and we don't want our house all dented up.

Well, let's pretend this is the bedroom right here and this is our bedroom. Right here and this is the kitchen and right here is the living room. Let's watch T.V. for a while. Pretend we have a machine that tells us what channels are on (T.V. Guide?). Right here is the button. Oh, oh. The Channel 11 was the one that had the good movie and we missed it. Oh, no. That's right. What - I've got to press the button and see if Channel 4 is there. Well. We have our favorite movie on there, don't we? Oh, it's on! Let's turn the T.V. on. Click. The movie. Pretend that it's ... What day should we pretend it is?

Friday night is kind of nice.

How about Saturday? You see, that's the day our favorite movies are on. After this movie on Channel 5 is our favorite movie. Right?

Oh. I think one of those products to wash our good clothes are on. I have made a few myself of one of those real good clothes washing stuff. You remember that stuff I did?
Oh, that's right! I forgot to get that movie of that brand new beer I just invented. Let's have a drink of that good beer. Wow, that's good isn't it? I'll climb in the kitchen. Do you want to drink it out of a bottle or a glass?

I like the glass.

Well. You'll have a bottle and a glass. (Pours bottle beer into glass.) Here. Oh. That's right. I forgot to buy the tables didn't I?

Well. Make sure my beer doesn't get gone because I'm going to find some tables. Remember those tables that are in the garage? (Sets beer down. Goes to entrance. Makes believe he is lifting tables.)

Ugh. Ugh. That's mighty heavy. Can you come out and help me? There. Pretend we have one of those channel selectors like that one (in his house). Here, just press the button. Well. We'll put the channel selector on the table.

Nice to have tables.

Oh, we forgot to get the chairs, didn't we? Should I go take a peek out in the garage and see if they've got stuff there? Ugh. There are some chairs over there. Here. (Gives observer chairs.) Say, I think . . . Let me go look if we have any food left. You know yesterday our food was just about gone.

What! I'll look in the cupboards now. There is no food in the frig.

Oh, goodness.

All there's left is beer. (Looks into cupboards.) Nothing. Pretend there's a store here. (Walks to entrance, reaches for bags.) Ugh. Help me with these bags. Wow.

We sure have a lot of food. (Hands packages of food to observer.)

We'll pretend there's a storeroom downstairs. Well, there's a lot of whiskey too. Pretend there is a bar downstairs like we do in our basement.

Is that it?

That's all. (The packages of food.)

4. RB.M.3(82)

(The child calls out "ding dong" and strikes the stick on the ground. The observer then performs the action. Later on the observer is told to call out the actions while the child performs.)
Do-eng, do-eng, ding dong.
Time to get up.
Ding dong, ding dong.
Time to go to bed.
Ding dong.  Time to get up.
Ding, dong.  Time to go to school.
Ding, dong.  Time to go home.
Ding, dong.  Time to eat lunch.
Ding, dong.  Time to go back to school.
Ding, dong.  Time to go back . . .
Ding, dong.  Time to go to bed.
Ding, dong.  Time to get up.
Ding, dong.  Ding, dong.  Time to get back.
Ding, dong.  Ding, dong.  Time to eat breakfast.
Ding, dong.  Time to go to school.
Ding, dong.  Time to come home.
Ding, dong.  Time to eat lunch.
Ding, dong.  Time to go to school.
Ding, dong.  Time to come home.
Ding, dong.  Time to . . . eat supper.
Ding, dong.  Time to watch T.V.
Turn the T.V. on.  Santa Claus is on T.V.
Ho, ho.
Merry Christmas.
Ding, dong.  Time to go to bed.
Ding, dong.  Time to go to bed.
Wait till it's time to get up.  It's not time yet.
Ding, dong.  It's time to get up.  Put your clothes on.
Ding, dong.  Time to eat breakfast.
Ding, dong.  Time to go to school.
Time to go to school.  Keep going, keep going.
You're at school.
Now do you're work.
Ding, dong.  Time to do your work.
Ding, dong.  Singing time.
Singing time ain't over.
Singing time ain't over yet.  Keep singing.
Ding, dong.  Time to go out to recess.
Put your coat on, go outside, walk outside.
Okay.
Ding, dong.  Time to go in.  Don't run - walk.
Now time to eat lunch.
Ding, dong.  Time to eat lunch.
Ding, dong.  Time to watch T.V.
I forgot to say breakfast.
Ding, dong.  Time to eat breakfast.
Ding, dong.  Time to go to school.
Don't run, walk.
Ding, dong.  Ding, dong.  Time to ah - come back to school.
I forgot to tell you.
Ding, dong.  Time to eat lunch.
Ding, dong.  Time to go back to school.
Ding, dong. Time to come home from school.
Ding, dong. Time to clean the room.

Let's play house. You're the mom and I'm the dad. Okay, I'm going to the store.

All right, dear.

We need milk, cereal and we need crackers.

The crackers are all gone?

Do you think we should buy them?

Oh, I think we should buy them.

I got the crackers and cereal and milk and the bread.

And the bread, fine.

They didn't have any more bread.

No more bread?

Well, I've got to have the stick.

Ding, dong. Time to clean the house. Why don't you have the clock?

Ding, dong. Time to go to bed.

Ding, dong. Time to get up.

Ding, dong. Time to eat breakfast.

No, time to get dressed.

Ding, dong. Time to eat breakfast.

There, my breakfast is all gone.

Ding, dong. Time to go to school.

(Cr-r-r-r-r steers car to school.)

Are you driving to school?

Yes, I'm driving. Ee-r-r-r-r-r. (Puts on brakes.)

Ding, dong. Time to do your work.

All done.

Ding, dong. Time for recess.
No. Ding, dong. Ding, dong. Time for singing.

Ding, dong. Time for singing.

5. NRB.M.3(61)

(Child puts hat on head. Uses stick as a baseball and bats make-believe ball over the make-believe fence. Catches ball when it comes back. Continues this game, saying very little. Takes the hat off. Reaches into his pocket for a make-believe dime. Puts the dime into a make-believe coke machine attached to parti-room wall. Presses one of the holes in the parti-room. Reaches for a can of coke. Removes tab top. Drinks down the coke. Takes up the bat and begins to hit the ball again. Falls down trying to catch the ball. Presses the buttons for more coke. This time presses about ten of the holes. Gathers up ten cups and drinks them all down. Bats ball and runs around the bases. Except for occasional grunts, ohs and wows, there is little speech. The action, however, is accurate.)

"[ . . . at the curb marshall]" (It is difficult to understand this brief interlude from the ball playing sequence. All the child's speech was not intelligible.)

(Returns to ball playing sequence. Uses one hand on bat.) My wrist broke. I'm going to slide. (Runs and slides around bases. Bats ball again. Takes stance, rubs hands like baseball player. Gets more pop.) Which one should I push? I'll push this one. (Drinks the pop.) I'll put it all in my mouth at one time.

6. RB.M.1(107)

Here goes Apollo 12 . . . Here go the three astronauts up in space . . . 10-9-8-7-6-5-4-3-2-1 Blast off! . . . Then they go out and say, "I'm going to go out and scout around." And the thing busted and they forgot about the rocket ship. "We're on the moon. Hey, where's the rocket ship? Let's jump down. Yi-i-kes!"

7. RB.M.1(77)

It's a bridge and if you stamp on it it will bust through and you'll fall in the water.

8. RB.F.4(75)

I'll pretend this is a blanket. (the cloth) I'll put a blanket on the floor and pretend that it's your bed. You have to sleep on it because it's . . . say you're taking a tan. All right . . . now . . . lay down and take a nice tan.
I'm taking a tan now.

On the towel? Do you see some sun?

Yes, it's very warm.

Yah. How do you spell sun? S-U-N? Where's the stick?

Here it is.

Now. What could you do with this stick? Pretend that you're walking with it?

You could.

I'll try it. See this is what we could do. You could go like this.
(Uses stick as a cane) Like that. You can pretend that they're crutches. Do you do that when you have crutches? Like this?

(Observer helps her use the stick like a crutch) This way.

Now, let's say you have crutches. You have to walk with crutches. Let's say you have a sore foot and I have to bring you to the hospital.
(Holds observer by the arm.) "Oh, you have to go to the hospital." Here's the hospital. Now I'm the doctor and I have to fix you up. I have to doctor you up. Let's see. "Are you sick today? Do you have a sore foot?"

Yes, I have a sore foot.

"Let's see it." Ahh - Well . . . What should I do if I'm a doctor . . . Anything I want?

Yes.

Okay, I can get some . . . ah . . . a little thing . . . a little stick . . . I mean not the stick . . . I mean a towel . . . Where's the towel? I have to rub that little thing. (rubs the sore leg) "Now, is it better now?"

Feels pretty good.

Oh, it does?

You're a good doctor.

Yah . . . Ah-h-h well. What time is your foot going to be better, huh? When is it going to be better?

When do you think, doctor?
Well . . . I don't know . . . Tomorrow it might be. "You'll have to stay at the hospital all day. Every day I have to rub your sore."

Now. Let's see. You have to get out of the hospital. Okay. Here's the towel for the tan.

I'll spread the towel on the floor.

Oh, yah. You have to spread it flat. Do you want me to take a tan with you?

9. RB.P.3(100)

(Bangs stick on floor) I'm going to build a big house. Now I would like you to tell me what I will make . . .

Why, you made a big house.

Oh no, I will be making one. What's . . . Where's your tape recorder?

In the back.

Right here?

Let's just play.

Just play? (As if she had forgotten what she was doing.) Oh! I've got to make the . . . (bang, bang) come here and see the house.

Okay. Where's this house.

Here.

Oh, fine.

We're in the house. (Just an area within the parti-room so designated.)

Okay.

Now this is the upstairs of the house. See? You may go upstairs and do what you want.

Okay. I'll go up.

Okay. And I'll go up. (Observer and child walk around the parti-room.)

(Laughs) Come up. This is the upstairs. Come here. (Walks around touching the walls of the parti-room:) Now, I'll show you where the bed is. Oops, there are some more steps and then that's all. Watch out, (walks around parti-room). Now this is where you go and play outdoors. Oops! There you are. (Bumps into observer who is standing in opening of parti-room which serves as door. This now becomes a battle of getting
to the door before the child who wants to duck out.) This is our bedroom right here. (Tries to step out and reach the couch near the partition.) I'm going downstairs (walks around). Here is the basement. Now, I'll show you where this bedroom is. Wait. Where's that couch over there?

Which couch.

Outside here. I'll go up there and see where it is. Is Diane here with us?

No. Just the two of us.

Do you have a sister? I do. (Tries to get out of the room.)

Stay in the room.

All right. Now let's talk and I'll say where you go out. Now you can go wherever you want to go. Where do you want to go, outside or inside?

I want to go inside.

All right. You go in and I'll take the end and this is our back porch (the doorway - again child starts sliding out the door). Right here. "You must never go in there. You might fall and hurt yourself." (Speaks with a low, adult voice, enunciates distinctly, almost theatrically, and with authority.) Right here we'll go in the back. Now how would you like to make a tower again?

I put the blocks away.

And is this door open or closed?

There isn't any door, it's just an empty space.

An empty space? (The room is explained to the children before play is begun and they are free to examine it prior to play.) There's not a space here. I want you to come here and I'll show you . . .

10. FB.F.3(87)

You know what we could do? I could put the box like this (on its side) and I could get in it and take this apart (the flaps) and you could say, "Who's in there?" Would you like to do that? (Moves the box - the stick falls.) Wow it dropped.

Okay. I'll get in and you put that over. Okay? (The towel covers the child in the box.) Maybe the hat won't fit in. (Child squeezes into the box.)
(Observer places the towel over the opening of the box.) There you're all covered up.


Who is in there.

You say, "Who is in there." (wolf-like voice)

Who is in there.

"It's me." (in a little voice)

Who is me.

Me by my chiny chin chin.

Say, "I'll huff and I'll puff and I'll blow you're house in." (wolf-like voice)

I'll huff and I'll puff and I'll blow your house in.

(Child giggles. Observer huffs and puffs.)

Will I have to go away?

Yes. (Observer moves away.)

Hello, Mrs. Tait! (Child pops out of the box) Look'it, my house is still fixed. (Cloth is still in place over box.) See you can make strong houses for anyone.

Yes, I guess you can.

I said you could.

I didn't make that house, did I?

Yes you did, but we'll pretend I really made it. Okay.

11. NRB.F.3(72)

I'm going to give the kit a check up - "Meow" - "Come here." The check up - He needs his teeth fixed. Now I'm going to turn the chair. "Here you go cat." It doesn't run. It's just a paper. I won't drill with the drill because the drill isn't here. "I'll just take you for a little bit of a ride and then you're done, cat." Here I go. "I'll just take you three rides." (Shoves the box around.) Whoop, crash. The chair busted down. No good. This box is no good. I'm going to throw it away out the window. ( Picks up the box and throws it.)
12. NRB.F.2(79)

I'm going fishing. This is my fishing boat. (Child puts cloth into box, the hat on head, sits in box holding the stick like a fishing pole.)

I caught one fish.

(Turns box upside down. Spreads cloth over box. Sits on box and moves the box along with feet.) This is my boat now.

13. RB.F.2(71)

I'm going to get down in the box and I'm to put the towel - I'm going to be your mouse then ... you come to see me.

You're going to be my what?

My mouse and you're going to come and see me.

I'm a mouse?

No, I'm going to be your little animal and you're going to see me, okay? And then when you come you go (knock, knock) and when you knock on my door like this (knock, knock) then I jump up and boo and you get scared and go back over there, okay? (Child is in the box, covered with the cloth.)

(Observer knocks, looks in the box.)

Boo! Yowe. Let's do it again. I like that. Cover me up again.

(knock) Oh!

14. NRB.F.2(100)

Can we pretend this is a gun and I'm shooting at you and I'm wearing this hat? And I put you in my box and I carry it home and I put this cloth over you?

Do you want me to get in?

Can you get in?

I don't know. I can get in a little bit.

(Child giggles as observer tries to get in the box.) Here's your old blanket. You can put it on. Oops.

Now you're carrying me home?
I don't think I can carry you. Do you think so?

You can make believe though.

I'll try to. I can get my stick and carry you home. Wah. (Child giggles.) Can't move ya. Ooh-oh. Take you on my bus. My box I mean. Isn't this fun pretending? Do you pretend at home?

15. RB.F.2(72)

I look like I'm going to pretend I'm a cowboy. Did you ever see how they pretend on television? Why don't you be the cowboy? (Puts the hat on the observer's head.)

Do you want me to do something?

Pretend you're rounding up some cattle.

Do what?

Just pretend you have a rope and swing it around.

Why don't you show me? (Child demonstrates.)

Let's pretend we're going to hop on the horse. (jumps up and down) When you get tired you can stop.

16. RB.F.1(103)

Che-e. A rocket (the stick) Choo-oo. Ready to get started and its going to go splash off and back down. Wasn't a very long trip.

17. S.M.4(85)

(During this sequence "the man" usually meant the stick. When the stick was used for another object "the man" was imagery.)

The man is wearing a blanket. (cloth) The man is looking for something on the ground. The man is lying down in a pool. (box) The man is going to slide on the pole (stick) into the pool. (box) The man is playing hide and go seek. He's counting to ten. The boy was bad and he's sitting in the corner. This man is ramming the stick into the wall. Now the man is playing 10 o'clock, 2 o'clock. Now the man is going to blast off the hat like a [not understandable] and the hat will go far away. Now he's going to play with guns. Now he's hiding in the box. Now the man is climbing up the pole and he's going to go to the top. Now the guy is pulling to get on the stick and he's going to ride down. Now he's going to walk across the stick. Now the guy is going
to jump on the blanket. (cloth) Now the guy is going to walk down the hill.

18. S.M.3(61)

Here's the hat. (Child gives the hat to the observer.)

I'll have this stick.

You can have this. (Child gives the cloth to the observer.)

I'll have this. (the box)

This is my boat (the box) and this is my gun. (the stick)

I gotta get in. I won't fit in. (Child sits in box.)

Pow. Pow. Pow. (Shoots gun into space.)

My gun fell into the water. I'm shooting the water now. I'm shooting the water out of the gun.

Ya-y. The bullets are coming over. (Child ducks down into the box.)

Pow. I shot the swing down.

Pow, pow. You know what I shot? You know where I shot a hole? (Points to wall.) Right there. If you had another stick like this you could stick it in (the hole) and you could screw it in, and if you put another stick in there (opposite wall) and a stick over here, then you could swing on that. (Child describes an exercise bar.)

My gun fell in there. (The child had gotten out of the box to demonstrate. The stick had been left in the box. Child again gets into box.)

I'm sleeping. Z-z-z-z-z.


I'm shot. (Child slumps down into box.)

19. S.M.1(105)

(Child puts hat on uses stick as a cane and walks.) "A man walking with a cane."
20. S.M.1(89)

(Child puts the hat on top of the stick and places the stick in the box.)

Here's a man. He doesn't look very fancy. I can make him fatter.  
(Wraps cloth around stick.) He's sleeping. I have to cover up his  
toes. His feet are down there now. (in the box) He's snoring in bed.  
He's too tired. Boy. There're too many men in here.

21. S.M.1(78)

(Holds stick like a rifle.)

Put your finger in here and go pow. (Shoots into space.) And go like  
this and you put it on your finger and then you have a gun and shoot  
your toe off. (Points the stick at toe.)

22. S.M.1(68)

(Child puts hat on head. Takes up stick and moves it sharply up and  
down in a striking motion.)

I'm spanking. I'm spanking a [box].

Spanking a box?

I'm spanking a fox. (Rubs leg with cloth.)

(After listening to the tapes of this session, the observer still felt  
that the word sounded more like box the first time than fox.)

23. S.F.5(104)

(Child puts on the hat, wraps the cloth around like a cape, and uses  
the stick as a cane. During this time the child dramatized all actions.)

I'm pretending I'm a spy and I'm dressed up like an old lady. Now I'm  
in my hideout and I take out all my money. Now I'm going out to a  
lady's house and I'm going to say, 'I'm real poor and I want some  
money.' And she's going to give me some money.

Now I go up to a man. And he's looking at me and he's a policeman and  
he got me and he said, 'Give me the money.' And I said, 'No.' Then I  
had to give him the money. So I gave him the money and he got me in  
jail and I didn't know what to do and I had to stay in there and stay  
in there. So then once he let me go so I didn't rob any more and the  
lady came and said, 'You're not poor anymore so give me my money back.'  
And I said, 'The police have my money.' So she went to the police and  
she got the money.
Then all the people came back and they went to the policeman and got their money. And then I was watching T.V. and somebody knocked on the door. I went to see who it was. It was an old man who asked for some money and I said, "Are you dressed up like that just to see if you can get some money?" And he said, "No, I'm really an old man." And so I took away the cape, and I took away the hat, and I took away the cane and it was this guy the police was trying to get so I turned him in and I got some money. And I put on my hat and put on my cape and I had my kitten and I put him in the box. Then I went and I didn't steal anymore money and I was just walking around and people would say, "There's the villain, there's the villain." But the police didn't go after me because he knew I had already been captured and he let me go again. And so then I went back to my hideout and took off my cape and my hat and I gave the kitten my coat.

And then something knocked at my door. (apprehensive) And I went to the door and it was my sister. No, my brother and he asked me what I was doing. And I said, "Nothing." And he asked me where I got the cat. And I said I bought it with all the money I got from the police. So I put on my hat and I told him the rest of the story and he said, "Well, mom and dad may get mad 'cause you did that." And I said, "Don't tell them. Do you promise?" He said, "I promise." So he didn't tell them but I told them and they didn't get mad at me.

So, I put on my hat and coat and started walking and everybody shouted again, "There he is, there he is." But I kept on walking, kept on walking. I went up to town to the store and I bought some stuff and then I got some cat food and I got back to my house and gave my cat the cat food and he ate it all up. And so then there was this little dog scratching at my door. So I opened the door. I said, "Come in little dog." And the dog came in. He was a frisky dog like a Chihuahua. And then we kept him and named him Chink because that's our little dog's name. The cat - he didn't go after the cat and they slept together.

Then I had to go up town to buy some dog food and cat food so they wouldn't get hungry. So I went up to town and got a whole bunch of cat food and then I went back home. I put down my stick, took off my hat, and gave them the dog food and the cat food. And they ate it all up. And then they went to bed to go to sleep. It was time to go to sleep. So I went to sleep.

And I heard knocks at the door. I heard something knocking at the door. I didn't know what to do. I got up and I went - I took a flashlight. I went out but I couldn't see anybody. But there was someone there and they were taking the money I got from the police in my drawer. So I went down there. Hurried up. I sneaked up and I said, "Watch out." Then I was going to shoot him. And I said, "Give me my money back" and I called the police. And I told them that they were the guys who were trying to steal my money so the police came and got him. And the cat and the dog got out. And they left. So I had to put on my hat and I had to go look for them. And I didn't know what to do (breathlessly) because they were - They should come. So I ran. I took my stick and I ran out in the cold and it was snowing. I had to run
and run. And finally I saw them. They were under this tree. So I
took them in my arms (tenderly), took my stick and I went back home.
And when I went back home I said, "How come you ran away?" And they
didn't say anything. And so the - I took them and I put them in the
box and I put the cover over them so they wouldn't get cold. Then I
went back to sleep, took my blanket. Then I just sat and sat because I
didn't have nothing to do. I woke up and I couldn't get to sleep. So
I got up. Took my hat and my coat and went outside. I just went for a
long, long, long walk. 'Cause I didn't have nothing to do.

Then in the morning when it was time to go to work and I had to go to
leave for town and I took off my hat and I was so sleepy. And then I
didn't know if I should drive because I was so sleepy. I took my dog
and my cat and held them in my arms. I put the cat in the hat and
wrapped the dog in the blanket. I took them and took my stick and put
them back in the box. I put on my hat and I put on my coat and there
was this guy and he escaped and he was robbing money again and the
police thought it was me. I took my box - so I had to get out - so I
took my box and I left. And I came to this little house where nobody
lived. I lived here. And then my cat and my dog liked it here so I
lived here all my life and then the police never found me except for
one day when this little old lady came to the door and she knocked.
And I said, "Come in little lady, come in." And she said, "I lost my
little doggie." And so I said, "Well, here goes nothing." And I put
on my hat and my coat and I went to look for her little dog while she
babysat my cat and my dog. But she was a spy. (secretively) And she
took off her hat and she went up to my drawers and she got all my money.
And then when I came home she was gone. And I looked in my drawers for
the money but I couldn't find the money and she took my dog and cat.
So I had to put on my coat and go get the lady and then I saw it. That
must be the lady that escaped from jail. So I hurried after her and I
knew that even though I was a robber I had to go and catch other rob­
ers. So I went and I looked and looked at houses. And sometimes
ladies got mad and threw me out because I knocked at doors. So I kept
on going and I saw this tiny weeny little old house and she was a
little old lady and went and I peeked in the house and there was the
lady. So I went back in the house and I said, "Lady give me my dog and
cat and my money." And she gave me the dog and she gave me the cat and
she didn't give me the money. And I said, "Well lady, if you're not
going to give me the money just wait." So I went home and I called the
police and told them I had found the lady and that she had stole my
money. So the police said, "I'm coming right over. What house does
she live at?" And I said, "Well, I'll go with you." And so the police
came and knocked at my door because I told him where my house was. And
I said, "Come on and I'll show ya." And so we went and we went over to
the lady's house and we sat there.

24. S.F.5(97)

And you could have - and if this was a rain coat - A man could be going
to the office and he could be wearing a rainhat like this. (The stick
is the man, the hat is the rainhat, the cloth is the raincoat.) And
the box we could use for an office and when he came in and he would
have to - or this could be a bus (the box) and he could sit on the bus.
And he could go in there and start working in his office. At night
time the bus would be waiting for him and he could go back home again.

And you could use this if you just had like this. You could use this
and just wrap the baby up and pretend. (The stick is the baby, the
cloth is a blanket.) This guy - pretend like this lady with a bonnet
on - she could pretend if she was carrying the baby and she could put
it in the cradle and she came home and she took off her hat and she was
giving the baby the bottle and then she would rock the baby in the
 cradle and then if she didn't have any dishes you could pretend this
was a cupboard or a refrigerator (the box) and this lady could go in
there and this lady would have - and she could go and get the baby bot­
tle and she could go and feed the baby the bottle.

And you could have this elevator (the box) and if it (an arrow printed
on the box) were pointing up and if it were pointed down that meant it
was going down. And if a lady wanted to go that way (up) or that way
(down) she could just tell the man and he would just point the arrow
and it would light up on the ceiling maybe and you could pretend like a
square light if it were pointed that way it would go that way and if it
were pointed that way it would go that way. And they could come and go
to any elevator and the closest light to the nearest elevator and you
know you're going to the nearest elevator.

And you could use this as a hospital. Then that hospital that would go
like this (the box tipped on it's side) and if the lady - if she would
have to go - she was coming in for an appointment. And her husband was
going to see her in the hospital. And then the lady and he took off
his hat and his coat. And real quick you could say that she was laying
in the bed and I always make believe at home because it's easier than
making a great big mess. If you want to make something and if you
start looking for something then you won't have enough time to play.
And you can play that this is cut lower (the box) and this is a little
table and the hat is hanging up on something and he could be sitting
down or standing and they could be talking and then he had to go out
because it wasn't visiting hours and he had to put on his coat and then
he put on his hat and he left and went out of the building and went
home. Then he took off his coat and he got dressed for home and he sat
and watched television on it. And like my dad, he always falls asleep
on the couch and he could pretend and his kids came and covered him up
and then they straightened up the house and they put his hat here and
they put him in bed and they put his coat up by his hat. And he woke
up and he went and he was really hungry and so his daughter and he had
to work so his daughter she got his breakfast. She was real old - not
real old but she was in high school so she could make breakfast and
supper and everything. And so, while her mother was in the hospital -
so she had to go to her mother in the hospital again. So she ate a
quick breakfast and then he had to go and she was coming out of the
hospital. So he hurried up. He took her dress and coat 'cause they
were going on to out to dinner. So he went out and she came out. And she had a bonnet with her and they went to this dining place and they sat down and they are - And then they sat down and they watched the movie and this was a movie (the box) and they left to eat and there was a screen in there and it was a good cowboy movie and they loved cowboy movies and they stayed there and they ate popcorn and they went when it was over to see the next show, the preview, but it was the same show and then when they were going out there was a mat that says "Come in." And when they came out the woman had to go to the hospital again. So she went back to the hospital and the man went home and she went in again and she came out again and the - he said she was going to have a baby so then she went into the hospital and the next day she had a baby so she was still in the hospital. And then after a while they let her see the baby and this thing was over the bed like a vanity and then they brought the baby into her and she wanted to see the baby real bad and then her husband came in again and he wanted to see it too. So he was sitting down, put his hat - he was sitting over there. And then the nurse was getting the baby ready and she had to give him his breakfast and then she brought it in and put it by the mother and then the man he had his hat in his hand and he came up and he said, "Oh, what a cute little baby." And then the mother said [not intelligible] and then the mother got out of the hospital and the baby was still in the little bed in the carriage father had brought and then the mother carried the baby all the way home and then she put him in the cradle and if she just stepped on it there was a thing and she could roll it and she could rock it and roll it all around.

25. S.F.4(96)

Play beach and the beach is over there. That's what we lay on. (Spreads the cloth on the floor in one corner of parti-room. Child puts the hat on her head.) And that's the cap. The bathing cap and we sit down and watch the people swim. Now the people say and they swim on it, what do you call it? (Child is describing a surfing contest. Observer was able to understand this only later on during the session.) And they say who fell down and they see who comes back first. Sometimes somebody falls down and they break their nose or something.

(Child looks across the parti-room as if observing action.) And there one fell down. He's still down in the water. Now he's on the board again. Wow. Two fell down. They hit each other. One's back on the board. Where is the other one? He's staying down there. He must be drowned.

Now three fell down. Look at that big wave come over. It's going to come on top of them.

Are they all right?

Ya. But that one still didn't come up. There's one over there coming in. Now four fell down. There's one so far that never fell down. He
must be glued on to the board.

One is still down there. Probably the crabs got him.

Now that one we thought was pasted onto the board fell off, too. Boy, now three fell off. The waves covered them all up.

Now they’re back on the board. Now that one we thought was pasted on got off again. The one is over there. The surfboard is caught on a rock. He better get on the stone and get the surfboard off it and start going again.

One all ready broke. Now he'll have to ride on a half one.

Can he do it?

I wonder. Now that one fell off again. That one we thought was pasted on the surfboard fell off again. I think he needs cement. How would he get it off when he goes to bed? Now three fell off again. Two of them hit together. Their surfboard broke. That one that was in half got hit again. Now he has no more surfboard. He has to get on with a partner. There, he got on with someone else. Seems like he has a broken nose. That one is going out. It isn't his turn yet. He's taking another surfboard. And there's a girl going. Probably his girlfriend. Girls don't know too much about surfing. She might drown. She fell off. Look's like she's going to walk under the water. Ya. She's walking under water. Oh. She made it up. Now all she needs is a surfboard because that one went away. Oh, there's her boyfriend. Now they have three on a surfboard. They're probably going to sink. Now that one fell off. Now he's swimming back. I wonder if the sharks are going to get him. He's in the lead with three people on. Oh. Now he's sunk. Now an ambulance is coming - swimming. He drowneded. Hey that other one is standing up. He better lay down or he'll fall off the surfboard.

The other one is going backwards. He'll probably never come to shore. Look at them. There are three in a row coming up. They're the leaders. That guy over there with the surfboard on the rocks never got going.

Now one more mile. He should make it. Oh. He fell off. There's a wave coming. Some surf guys are under the wave. Three in a row fell off that time. They're trying to go over a wave.

26. S.F.3(78)

It's a boy. (the stick) A doll. (The hat is on the stick, the cloth is wrapped around the stick. The child rocks the boy doll. Puts him carefully to bed. The hat is upside down on the towel and the stick is placed in the hat.)
He's standing on his head. (Child wraps the hat in the cloth. Puts this on top of the stick.) He put a pillow on his head. (Puts stick on floor with one end on the pillow.) Now he's sleeping on it.

A cowboy. (Puts hat on stick tucking up one side of the hat.)

He's eating. (Hat is upside down making a bowl. Stick is placed sideways in hat indicating a head in the bowl while child makes eating noises.)

(Smoothes cloth on floor, puts hat on the cloth. Covers hat with the cloth.) I'm making his bed. (Opens up covers. Places stick in bed. Covers stick.) Now he's in bed. He's going to play in his play crib. (Puts stick in the box.) Put on his cap. (the hat) Put on his clothes. (the cloth) Now I'm all ready. I'm ready to go to the costume party. (Stick walks around back to the box.) Knock. Knock. (The doll knocks on the door.) "Who's there?" "It's Tom." "Hello Tom. Come in."

Now he's home again. (Takes off his clothes.) He's got to go to bed. He's got a new bed. (the box) It's a little small. (The stick does not fit in the box.) Now he's in bed. (Covers the box with the cloth.) Wake up.

27. S.F.3(77)

We could play house with the hat and you could be the mother if you want and wear the hat. And this could be your hat. And this could be the garden and you punch it (the stick) down into the ground to make one of those things that have to hang on to something - like the flowers hang on to.

Oh, a stick in the ground that vines grow on?

Yes. They have to hold on to this. Put that right here. (Child sets the stick against the wall.) If it will stay up. Okay. (It does.) We could be cooking. You could make cookies. I'll be helping too. We need some chips because we can make chocolate chip cookies. And nuts. And we need some brown sugar and sugar and lard. You know that kind of lard stuff.

Like butter or margarine?

Yes. And that would be all and we can start making them and put them in the oven. This is the pan. (Puts spoonfuls of cookie mix on cookie sheet.) Now we can turn on the oven. Now we've got to wait. Oops, now they're ready. (Takes cookie sheet out of the oven and child and observer pretend to eat cookies.) Are they good? My brother hates peas. He just hates them. There's two more left. Just enough. (Child takes one cookie, observer takes the other.)
Now let's start cleaning house. We could sweep. I'll clean up and you can sweep. I've got to put the stuff away. I'm putting the baking stuff away. Clean off this. (Clears flour, crumbs, etc. off kitchen counter while the observer pretends to sweep floor.) And put it in the garbage. There now put that in the garbage. You can stop sweeping now.

The box is in the way now. Let's put it away. (Places box in the corner of parti-room.)

28. S.F.2(70)

(The stick is placed on the ground. It is a road barrier.)

Now, this will be another and it's right in the middle of there. Somebody dropped that hole. (This refers to the hat placed upside down in front of the barrier. The hat is the hole.) See, here comes a car - Er-r-r-r. (Hand imitating car crashes into hat and over the barrier.) Goes right into the dirt (the cloth placed in back of the barrier) because he couldn't see and now it's in the dirt. It's a ring you go around in. (Child refers to the hat.) It's a playground thing, you know.

(The observer was confused by this change and wasn't sure if she heard correctly.) That's what the car bumped into?

Something like a swingset you know. Then you go in the hole you know. And then you play house and then this is your fort. (Uses fingers on the hat to dramatize activities.) And you go tipping over and there are no windows. And it goes right into it - crash. And then you climb up on the house, and it goes boom - the house.

29. S.F.1(99)

Can't think . . . Oh, that's your desk (the box) and the teacher. This is the desk and you're sitting at the desk and the teacher is teaching and you write. And you're at your desk still and she's doing arithmetic . . . ha . . . I can't even say it . . . well, math . . . and you go to the board and write 5 plus 5 equals what. ( Observer acts out child's directions.)

30. S.F.1(84)

Now she's (the stick) got to go go to bed again. (Child puts the stick in the box.) Now she's got a pillow (the cloth) and now the covers. (the hat.) Now she's snoring Z-z-z-z-z.
(Child puts hat on.) I'm pretending to be a mountain climber. (Puts on the cloth as a cape. Carries the stick.)
EXAMPLES OF PLAY SESSIONS

Example 1.

Hey, you can be . . . ah . . . the Indian and I'll be the cowboy. Now here's my gun (the stick). Ba-a-a. Ba-a-a. (Laughs) Stick'em up. You're under arrest. Ba-a-a . . . Ba-a-a. (Shoots observer) I killed you after you were under arrest.

Here's a major general and you're one of his men. Bang, bang. You're dead.

What's this? (Picks up the cloth.) Here comes a ghost. (Holds up the cloth.) See that thing? It's a ghost. Bang, bang. It shot you.

A rocket ship (the stick) and then you take off . . . 10-9-8-7-6-5-4-3 2-1 Blast off! Then a torpedo hits it . . . whee-e, crash.

Now you can be the rocket ship and I'll be the tornado. (Observer counts down.) Another dead rocket ship . . . yikes . . . crashes . . . three men . . .

I'm going to go up to Mars . . . Blasts off and goes over here (edge of parti-room). We're going to go over the cliff. Whee! (stick drops) . . . here's Mars . . . crashes . . . now he's ready to blast off up here on Mars (roars). He says (man in the rocket ship), "Oh, a tornado is coming from Jupiter." Crash. That's about the end of that. Guys got killed.

Now what should I do . . . They're all going to smash (stick is rocket) into that (the hat) . . . It's quicksand. He comes down. Yikes!

You can be the lady and I'll be the cub scout. (He gives observer the hat to put on.) I'll be the cub scout - eh - I'll be the boy scout. Here, you can use the stick (as a cane). "Do you need a little help across the street?" Okay, here the light turned red - eh - green (laughs). Okay, now you're across the street. Tornado's going to hit, jump down! We're dead. Except the ghost. He lived through it. The ghost lived through it.

Let's see now . . . I think I'll have a cannon fight. There are going to be Indians out there and a cannon here. (Uses the box and the stick to make a cannon.) Let's see what should you be . . . an Indian and you're caught. "Give up or I'll shoot her." We give up. Bang, bang. I shot her. Rat-ta-ta. Killed them all and I shot you again. Bang.
I'm alive. Now you're one of the bad guys . . . and again . . . Bang. Now I killed all the Indians.

Now you're one of the men again. You're going to be a bad guy. Stick'em up. Bang.


Now it's a machine gun. It's a spy thing . . . there are German Nazis out there . . . eh-eh-eh. Now you're one of our guys. Here Nazis. Rat-ta-ta.

That would be a mountain (points outside of the parti-room) and there are Indians up in it and we're in the fort. You can be a corporal and then the Indian jumps down. Hey, there's a tornado coming, Indian. Get out of here. Jump on my gun and I'll throw you out. My gun broke. Yipes! The tornado's hitting. You know what? We're dead.

Here comes a cyclone . . . here comes a hurricane . . . We're in a ship. We're dead.

Now, here comes a cyclone. We're on land . . . we're in a fort. Get down! We're okay . . . You're dead and I'm okay. Now it's going to be a tornado again. I'm down. I'm dead. You're dead.

Now here comes a moving hat with a stick on it. Ah-h-h-h. The stick came off . . . Bang, bang, bang.

Then this thing comes floo-oo-ting around. (the cloth)

Now I'm going to fight some bad guys. You're one of them. Here's your gun. You're dead. I'm dead . . . no, I'm just wounded, I'm alive. Now you're one of the prisoners again. Going to give up? We give up. Bang. Killed you already. Tornado's going to hit. Get down! You're dead. Here comes a hurricane. You're dead again. Here comes a cyclone and we're in the fort. Hey, my guns flying away. Bang. It killed you. Nice boy, we're not going to kill you (pats the stick).

Here comes a spear from the bad guys. Yow! Right into you. You're dead.

Let's see. What should we have now? Here comes a plane . . . Bang. It kills me. It kills you. Now you're alive again.

The missile takes off . . . another rocket ship. You can be the rocket ship. Cyclone hit . . .

Now here comes a ghost. It attacks the ship and kills all the men in it. Takes the gun along. Stick'em up. Rat-ta-ta. Stick'em up. Hi. Ra-ta-ta. Now he puts it on here (the parti-room wall). Okay.
Now you can be an Indian squaw. Stick'em up. I'll kill her if you don't give up. We give up. Bang. Bang.

You Indian, me white man. You naughty, me nice. Will you give up? Bang, bang.

Plane's going to hit you. Bang . . . hit you . . . got you in the back.


Here goes Apollo 12 . . . Here go the three astronauts up in space . . . 10-9-8-7-6-5-4-3-2-1 Blast off! . . . Then they go out and say, "I'm going to go out and scout around." And the thing busted and they forgot about the rocket ship. "We're on the moon. Hey, where's the rocket ship? Let's jump down. Yi-i-kes!"

Now we're going to shoot down some bad guys. You're the bad guy and I'm the good guy . . . no, you're the good guy and I'm the bad guy. Give up . . . Bang. Give up or else we'll kill her. Bang. More tornadoes. Here comes one . . . we're dead.

Example 2.

(Child examines objects very carefully. Feels the cloth all over and looks at it closely.)

Tomorrow I go home. Today's the fourth day of the week, tomorrow will be the fifth and there's two more days added but that's not the week, that's the weekend.

I want to see what's at the end of the pole. Hey, there's a little hole right here, like a little crack right there. (This is the rough end of the pole where it had been sawed off.)

If there was a stand for it . . . You know what you could make out of this? Well, you could put it in the stand. Put the towel on the top of the pole and then the hat.

Well, why don't you do it?

Okay. I'll have to hold it up.

Do you want me to hold it up?

I can hold it. Like this, see? I can hold it. I'll take the blanket - like that . . . Did Scott play with this? He told me he played with the
blocks and made a tower and knocked it down.

This the last day you're going to be teaching?

Yes.

Oh. Scott told me that and I didn't know - might be - he tricks me.

Let's see now . . . There now, it's all done. Look'it. Hey, maybe it looks like a cowboy standing. You put cowboy hats on them. Hands right here . . . the feet are right here. It looks like a pogo stick . . . You've got to balance . . .

I'm going to put the towel around. How many more minutes left?

You don't have to play if you don't want to.

I'm always playing.

Too bad Steven is nine. I'm eight now, pretty soon I'll be nine. Do you know when my birthday is? It's November 24th.

You can put your hands in here. (Child is holding the stick up with the towel wrapped around it. He tucks one hand up under the cloth touching the top of the pole.)

I like these, right here. I want to see which one falls and put this one back in the box. Is that all how far it will go in? (the stick in the box) If you cut it here it would go in. All the way . . . If you cut it here (a little longer) it would go in. If you cut it here (still longer) it won't go in.

(The child takes the hat, fondles it very carefully, feeling the brim and smoothing it out.)

I'm going to make sure there are no wrinkles in this. I'm going to make sure everything is all popped out - no wrinkles in.

We'll soon go back to the classroom. Will it be three o'clock when we get back? It will be about two thirty maybe. They'll all be coming for milk. I probably won't get milk, will I? Because we get milk at two thirty.

Oh, yes. She'll probably save it for you.

What if you set this hat on a snowman? If you make one outdoors. We could. We don't need no hat for our snowman.

About five minutes left.
You don't have to play if you don't want to.

I like to. After this we go back to the classroom.

Yes, and I'll see that you get your milk.

I probably will. It's always there waiting for me. Or else I could have milk at supper - about three glasses full. I can drink that much. I'm only nine pounds already and fifty-one inches. They weighed me already. Rhonda weighs more than I do but I'm still tougher than she is. You can tell by my hands. They're so rough. 'Cause Artie picks on me. His middle name is Artie C. Bangs.

About three more minutes left.

I'm going to spread this blanket out. (Spreads cloth very tenderly, smoothing it out carefully.)

This I'll have to fold up. (He folds the cloth up very carefully.) I think I'll fold it some more and see how it looks. I'll fold it this way.
# CONFIDENTIAL

Name  
  First  Middle  Last  

Address  

Telephone  

Age:  

Birthdate  
No.  Day  Yr.  

Sex:  M  F  

**I. Intelligence**  

**II. Vision**  

a. Normal  

b. Partially seeing  

c. Legally blind (If checked please continue below:  

**III. Program**  

a. Residential  

b. Non-residential  

**IV. Onset of Blindness**  

a. Pre-natal, neonatal  

b. Two years or before  

c. After 2 years of age circle one:  
  3  4  5  6  7  8  

**V. Cause of Blindness**  

**VI. Description of Blindness**  

a. Total blindness  

b. Light perception only  

c. Object perception  

d. Travelling vision  

e. Other  

**VII. Secondary Disability**  

a. Yes (If yes, describe)  

b. No.
CHECK SHEET

I. Type of Play Behavior Exhibited
   a. Manipulative play
   b. Dramatic play
   c. No play
   d. Other

II. Time Involved in Play (minutes)
   a. Manipulative play
   b. Dramatic play
   c. Other
   d. Total

III. Number of Vocalizations for ½ Minute at Mid-point of Play
    a. Number of vocalizations

IV. Involvement of Observer in Dramatic Play Requested by Child
    a. Yes
    b. No.
    c. No dramatic play

V. Number of Dramatic Units per Play Session
   a. Initial units
   b. Repetitive units
   c. Total number of units per play session

VI. Length of Time Involved in Longest Dramatic Unit
    a. Seconds
VII. Number of Discrete Sub-Units Within the Longest Dramatic Unit
   a. Number of sub-units

VIII. Materials Used in Dramatic Play Session
   a. Stick
   b. Box
   c. Cloth
   d. Hat

IX. Materials Used in Longest Dramatic Unit
   a. Stick
   b. Stick and box
   c. Stick and cloth
   d. Stick and hat
   e. Stick, box and cloth
   f. Stick, box and hat
   g. Stick, cloth and hat
   h. Stick, box, cloth and hat
   i. Box
   j. Box and hat
   k. Box and cloth
   l. Box, hat and cloth
   m. Cloth
   n. Hat
   o. Cloth and hat

X. Intensity of Longest Dramatic Unit
   a. 5 - High
   b. 4 - Medium high
c. 3 - Medium

d. 2 - Medium low

e. 1 - Low

XI. Number of Materials Used in Longest Dramatic Unit

a. 1

b. 2

c. 3

d. 4

XII. Roles Assumed by Child During Dramatic Play Session

XIII. Roles Assigned to Observer During Dramatic Play Session

XIV. Roles Assigned to Materials During Play Session

a. Stick

b. Box

c. Cloth

d. Hat

XV. Content of Dramatic Play Units
Sandy

Sandy, age six, is an attractive, gentle girl of average intelligence. She is not strong physically and must be continually guarded against falling and bruising herself. The other children are aware of her physical problem and quickly help her when she needs it. They are never rough with her during play. She is totally blind.

Observation 1.

Sandy is sitting on the floor with her legs spread out in front of her. She is singing quietly to herself. She is playing with blocks around her. She searches around for them, places them on top of each other. She continues to do this, discarding anything that she encounters that is not a block. She puts a block on top of the tower; the tower falls down. She shows no emotion but quietly spreads the blocks around her. Her head rocks back and forth. Talking or singing to herself, she starts to build a new tower. Martin comes by and grabs a block. Sandy says, "Stop it," and goes on building. Tom approaches and touches her leg. She says, "Stop it," and continues to build. (5 minutes)

Observation 2.

Sandy is playing with blocks while sitting on the floor, legs stretched out in front of her. She is singing a little song to herself while building a tower with the blocks. She has now placed six blocks on top of each other. Tom comes over and says to Sandy, "Give me the blocks." She reaches for one near Tom and says, "I need this one, all right, Tom?" (Four children are playing with blocks in this corner. Three of these are engaged in parallel play, that is, they are talking together and show interest in what each one is doing but their block building is done on an individual basis. The fourth child, Clarissa, is playing with blocks also but she is separated from the group slightly and pays no attention to the group.) Sandy is talking to Ellen. Her head is rolling back and forth slowly. There is an argument

*All names used are fictitious.*
going on between the three children concerning the blocks. Sandy says something to the effect that anyone can play with the blocks. Ellen stretches over to Sandy, claps two blocks together and gives them to Sandy. Sandy takes them and gives them to Tom. She now reaches around for a block. She picks up a block shaped like a train and puts that up on top of the tower. She continues to feel around the floor and finds a small bulb-shaped block. She lets that one slip from her fingers. She continues searching with her fingers and says to Ellen something like, "She's talking to blocks." (This discussion was carried on between the three children. "She" may have referred to Ellen who was muttering to herself or to the observer who was speaking into the tape recorder.) Tom says, "You can't talk to blocks." Sandy continues trying to build her tower with odd shaped blocks. Part of the tower falls down but she says nothing nor shows any emotion. Ellen gives Sandy six blocks. Sandy says, "Oh," and passes them to Tom. (5 minutes)

Observation 3.

Sandy is playing with Martin. Martin has wrapped Cindy in a blanket. Now he unwraps her and moves away. Sandy says, "Tell me where that big . . . Eh-h" and stops. "Not in the closet." She walks around to where the blocks are. She says, "Where's that big horsie, Ellen? The one that's not broken?" She tries to tie her belt. Ellen does not say anything immediately. After a minute Ellen says, "Come here, Sandy," and reaches for her hand. Sandy says, "Come here and show me where it is quick." Ellen takes her over to the horse. "Get on quick," she says in a conspirator's voice. Sandy has trouble getting on the horse. She manages to get her leg over the horse. She tries to tie her belt, drops it and rocks on the horse a few times. She tries again to tie her belt, gets off the horse and tries to tie it again. She is unable to do it. She climbs back on the horse and rocks back and forth. "Come here, Ellen," she calls. Ellen is on the other side of the room. "Come here, Ellen. Let's give Martin something. He is crying because they won't give him the blanket." (Actually Martin is crying because he bumped his head.) Ellen does not answer. Sandy looks in the closet for something to give Martin so he will stop crying. Sandy reaches for a pillow but puts it back. "Martin. Martin. Martin. Don't cry." Tom gives the blanket to Sandy and says, "Here's something." Sandy takes it and tries to give it to Martin. "Here, Martin." (5 minutes)

Observation 4.

Sandy is sitting on the couch. She has a toy telephone on her lap. She is singing very quietly to herself while she tries to un-tangle the telephone cords. She drops the telephone and says, "Hey-ey-ey," when she hears the ball bouncing. She gets up and walks around. She comes back and says, "Mrs. Tait," and complains because she cannot get the ball. She walks over to Tom who has the ball and says, "Hurry up and give it to me." She can hear the ball bouncing. She stands
rubbing her eyes. She says to Martin, "You won't let me play with the ball." He runs away from her. She follows. She hears Jimmy's voice and goes up to him. He is saying, "Beep, beep, beep, beep." She tries to catch him but finds Tom instead who is playing with the ball and follows him. Jimmy comes up to her and tickles her neck. She hits him with her hand. Then she walks toward Tom who is bouncing the ball. She bumps into him and holds his arm. She says, "Turn me loose, Sandy." She walks away toward some chairs and sits on one. Tom bounces the ball and it hits Sandy. "Stop that," she says. She stands making little fluttery noises with her lips. The ball accidentally brushes against her. She says, "Stop, stop. You hit me." (5 minutes)

**Jimmy**

Jimmy, age six, is a slight, agile boy of average intelligence. His vision has recently been corrected with glasses to a point where he is reading large type print.

Observation 1.

Jimmy is standing in the kitchen cabinet sticking his head out of the hole where the sink usually goes. He is talking and playing with Sandy. They are pushing each other (gently) talking together. He whispers into Sandy's ear. She does not hear him and says, "What, what, what?" Jimmy says to Sandy, "Quit saying, 'What, what, what.'" He pats her on the back gently and says again, "Quit saying 'what, what, what.'" He climbs on top of the kitchen cabinet and grabs the basin. Sandy holds on to the basin. He says, "Sandy." and grabs the basin gently from her. He holds it over her head like a hat, laughs and puts the basin back. Sandy tries to lift the basin out of the sink. Jimmy wants it back in place. He says, "Put it back, Sandy, Sandy wandy." He forces it down. He holds the basin down in the sink while Sandy puts her arms over his shoulders and attempts to take the basin out of the sink. Jimmy climbs over the kitchen cabinet and runs over to the other side of the room to the rocking horse. He rocks back and forth. He looks back over his shoulder and sees the boys playing with the ball. He gets off the horse and walks into the middle of the game saying, "I'm playing, I'm playing." "No," says Martin. "Yes, Martin," says Jimmy. Martin agrees and the three boys become involved in a ball game. Martin, across the room, is the leader. Tom and Jimmy are on the other side of the room. Martin tells Jimmy to get in back of Tom, possibly with the idea of taking turns. Martin throws the ball and Jimmy and Tom run for it. Tom gets the ball and throws it to Martin. Jimmy jumps up and down in place waiting for his turn. He is supposed to get in back of Tom. Martin throws the ball across the room. Jimmy jumps out, catches it and throws it back across the room. He hip hops in place laughing. The ball comes to him again. Jimmy and Tom scramble for it. Jimmy does not get it. He jumps up and down in place,
laughing, while Tom throws the ball. He hops around in small circles, laughing, jumping, clapping his hands. He grabs the ball, bounces it, catches it, throws it back over his head. He jumps around laughing, runs after the ball again. He bounces the ball across to Martin who says, "Throw it." (5 minutes)

Observation 2.

Jimmy is playing dodge ball. He is telling all the children to get in the center. He is holding the ball. "In, in. Everybody in, in." Then he skips back to position and says, "Here I go." He kicks the ball and jumps around. "Clarissa, Clarissa," he calls and hops up and down. Martin comes up with Sandy and they talk about the game. Jimmy takes Sandy by the hand to his position near the window and lets her stand there. "I'll kick it first," he says. "I'll kick it like this - Zoom." He kicks the ball across the room. Then he holds Sandy around the neck and tickles her gently. He says something like, "My doggy, my doggy," and tickles her around the neck again. He stops and says, "Clarissa's out, Tom's out." "Okay, Clarissa." Clarissa is in the game again. Jimmy says, "I hit him, pow." and demonstrates. He kicks into the air and turns around. "Poom. Get in Clarissa." Sandy and Jimmy play together with a revolving bar placed across the window. The ball rolls toward Jimmy. He says, "Okay, Tom's out." Jimmy runs for the ball, kicks it. "I got Clarissa out lots of times," he tells the observer. He gets the ball and says, "Martin's out." Martin says, "No." Jimmy says, "Yes, you are. Yes, you are. You got hit by the ball. You're out. Yes you are. Yes you are because I hit you with the ball. Yes I did. I certainly did. You're out of the game." He chants, "My dog it me, dig it." Looks at the observer speaking into the tape recorder. "Mrs. Tait's talking to herself." Martin comes up and says to Jimmy, "I know what to play." Jimmy says, "I know, too." He gets down on the floor. "Let's play gym," he says. He gets up. "Jumping Jack," he says and starts to jump clapping his hands over his head. He chants, "Jump, jump. Do your daily exercise. 1-2-3-4." The other children join him. Then he goes down on the floor and does push ups. (5 minutes)

Observation 3.

Jimmy is playing with Martin and Sandy and a large blanket. Martin and Sandy are holding the ends of the blanket. Jimmy plunges through the middle of the blanket pulling on it. Martin drops on the blanket. Jimmy laughs. Sandy and Jimmy pull Martin while he cling to the blanket. Jimmy pulls Martin across the floor. Then he jumps on top of Martin. Martin gets up and Martin and Jimmy have a tug of war with the blanket. Jimmy bumps into the rocking horse. He says, "Aha," and gets on it. He rocks back and forth and says, "I can ride this horse without even holding on," which he does. He gets off the horse and runs over to the children playing with the blanket. He gets covered by the blanket but runs away. Now he sees the ball. He grabs it
saying to Tom, "Do you want to play kickball?" He puts the ball into position for a kick. He calls to the observer, then kicks the ball, dances around in circles, gets back into kicking position. Runs and kicks the ball. He now sees the children playing with the blanket. He jumps onto the blanket trying to pull it from Martin. He lets go of the blanket, runs after the ball. Hits the ball, hits the blanket. Gets ready to kick the ball. He calls out, "Mrs. Tait, watch how hard I can kick it." He kicks the ball and runs after it trying to get it before Tom. (5 minutes)

Observation 4.

Jimmy is playing with two halves of a large plastic ball, jacks and three red jack balls. He has the jacks in the corner. The two halves of the large ball are next to the wall, one on each side, forming an alley way. He takes the small red ball, moves back about three yards away and throws the whole handful of balls into this alley way hitting the jacks. He then goes up to the corner, picks up one half of the plastic ball, placing it about two yards from the other half still near the wall. Humming to himself, he places a line of jacks between the two halves of the ball. He steps back and gently rolls several of the small balls toward the jacks. He calls out, "Mrs. Tait," indicating that the observer should watch him. He gathers the balls and throws them forcefully against the line of jacks. He gathers the balls, lies flat on his stomach and throws the balls, knocking the jacks about. (5 minutes)

Ellen

Ellen is a slim, fairly attractive girl who exhibits stereotyped behavior quite frequently, eye rubbing, rocking, etc. She mutters quite often to herself. There seem to be undercurrents to her play which the observer could not always comprehend. Her intelligence is considered to be below average.

Observation 1.

Ellen is sitting on the floor playing with blocks near three other children. She crawls back looking for more blocks against the wall. She picks up a small wooden train, part of the block set, and says, "This is a funny thing." She has blocks in two hands and returns to her original position. She calls, "Sandy." Sandy is one of the children playing near her. She plays with the blocks setting them on edge at right angles. "I do not want any little blocks," she says. Sandy gives her a small blue object. Ellen says, "I do not want any
little blocks," and throws it away. Sandy reaches over and gives her another little block. Ellen says, "I said, 'I do not want any little blocks,'" and throws it down. She says, "Give them to Tom. Tom wants little blocks." She feels around the pile of blocks trying to find large blocks. She can only find small ones. She picks up four small blocks and goes over to Tom. "Tom, here," she says and puts them on the floor. Sandy says, "Let me have them," and she tries to grab them. "I'll give them to Tom," Sandy says. Ellen takes them back, lifts them, drops them, and picks them up again. "I am giving these all to Tom," she says, "I don't want small blocks." She drops them, picks them up, puts them in one hand, then the other, takes one block and pounds it on the floor. "Here," she drops them on Tom. Then she moves back to her original position and plays with her pile of blocks. (5 minutes)

Observation 2.

Ellen is sitting on the floor with Sandy and Tom. The three children are talking together. Ellen puts some blocks into the bag and gives the bag to Sandy to give to Tom. Tom dumps the blocks on the floor. Ellen leans over and plays with Cindy's shoelace and feels the leather of Cindy's shoe. Ellen gets up and walks over to the toy kitchen which is in the corner nearby. She squats down in front of the cabinet and feels around in it. She takes out a plastic block and dish, throws them back in and shuts the cabinet. She reaches around for the bag in which the blocks came and puts the blocks back into the bag. Tom complains about his lack of blocks. Ellen says, "Okay, Tom," opens the bag and gives one block to Tom. Then she gives the bag to Sandy. Tom says that the bag contains blocks. Ellen says, "No, it's not. It's trash." Sandy dumps the blocks out. Sandy says, "What a surprise." Ellen feels what Sandy is making with the blocks. Then she says to Sandy, "I'm so sorry. I have to steal some of your blocks." Ellen moves around in a small space on her hands and knees feeling the blocks near Sandy. Ellen whispers into Sandy's ear. She jumps up and down on her knees. Sandy says, "Ellen," in a tone of astonishment or surprise. Ellen says, "Tell Tom what I said." (The three children are all sitting very close to each other.) Ellen sings a phrase of a song while pounding on the floor with a small block still on her hands and knees, "Mr. rabbit, Mr. rabbit ..." She repeats the song. Sandy talks to her. She tells Ellen to tell Tom. Ellen goes up to Tom on her hands and knees and sings the song to him. (5 minutes)

Observation 3.

Ellen is playing with the blocks. Sandy and Jimmy are also there. Ellen is talking to Jimmy. She is bent over feeling the various pieces of the block set. She sits down. Now she is picking up all the unusual pieces, the cones, the bulb-like objects. She sits back, picks up the plastic bag, feels around in the bag, finds a small wooden car and takes it out. She drops the bag. "One of you bit my horsie,"
she sing songs. She continues to feel these objects. Now she puts one
block down and one block at right angles to it. She tries to put
another block on top of the horizontal one but the vertical block falls.
She says, "Oh, no." Martin says he is going to get something. She
calls out to him, "It's broken. It's broken." She feels around for
more blocks. Jimmy says something to her, a sort of doggerel, which
she finds funny. It must have naughty overtones because Sandy tells
him to stop. Ellen laughs. She giggles every time Jimmy says this.
She is still feeling around the floor and touching a variety of blocks.
She finds the bag again. "Ah-h-h. Do you know what Diane saying?" she
says to Sandy or Jimmy. Jimmy says his little rhyme again. She says,
"Ooh." She jumps up, falls down flat on the floor laughing. She takes
the bag, jumps up and down on her knees, pounds the bag on the floor,
jumps up and down, pounds the bag, kicks her feet in back of her, jumps
up and down on her knees and slaps the bag with outstretched hands. (5
minutes)

Observation 4.

Ellen is sitting on the floor with her legs stretched out. She
is holding a purple Easter egg music box and is turning the handle lis­
tening to the music. Sandy has some blocks and is saying, "Blocks for
sale, blocks for sale." Ellen says, "I want some." She continues sit­
ting and turning the music box handle. She gets up and finds a small
cradle with a doll in it. She takes the doll out, sets it on the floor
and then puts the cradle over her arm. She sings out, "Crackly corn for
sale." Tom comes over and holds the cradle. Ellen says, "You're not a
baby." Then she says to Tom, "Now you get in here." Tom puts the doll
in the cradle. Ellen says, "No, don't put her in there. You get in
yourself." She finds a piece of plastic material used as a blanket in
the crib. Repeatedly sings, "Crackly corn for sale." Tom puts the
blanket over her hair, rubs it around. Ellen tries to get it off.
Then sits hunched over giggling and chanting. Tom and Ellen tussle
(good naturedly) over a musical egg. Ellen sings, "Hot potatoes for
sale." Tom leaves. Ellen now chants, "Crocodiles for sale," then
"Blankets for sale," and she takes the doll blanket and wraps it around
her like a bib. (5 minutes)

Tom

Tom is a quiet gentle boy. He is able to perceive light and
while his mobility is quite good he is limited when playing with the
boys, Jimmy and Martin, who have quite a bit more vision. His intelli­
gence is considered to be below average.
Observation 1.

Tom is on the floor playing with blocks near Sandy. Sandy is giving him blocks. "Do you want more blocks?" she says. She puts one in his hand. He sits there feeling the blocks. He has been making a sort of train in the sense that one block is put in front of the other lengthwise. He is not talking to Sandy, however, they are aware of each other and Sandy talks to him occasionally. He continues playing with the blocks. Sandy takes his hand and shows him what she has built. Tom makes no comment but says, "I need more blocks." He searches with his hands around him for some more. "I know what I'm going to build," he says and begins to build something. It looks like a platform on the floor with one block standing upright on one side and another on the other side. Sandy talks to him but he does not answer. He crawls over to find more blocks. Ellen, who is also playing with blocks nearby, calls, "Tom." Tom goes over to her and feels the block object that she has made. He goes back to his original spot but he needs more blocks. Sandy says, "I'll get you some." She gives Tom some blocks. (5 minutes)

Observation 2.

Tom is on the floor playing with blocks. He is putting one block in back of the other forming a row of blocks. He is quiet, not talking, sitting close to Sandy. He feels around in front of him (scoots forward on hands and knees about one yard) for more blocks. He finds a plastic bead, touches it but it rolls away. He finds one block and goes back to his original position. In doing this he messes up his structure accidentally at first and then purposefully. (This was done with little show of emotion, a sort of stirring motion.) He puts two blocks on top of each other building a tower-like structure. He is bent over, knees to ground, head very close to the blocks. He is very careful about placing the blocks and tries to get them even. He works very slowly and carefully. The tower, however, remains crooked. Ellen has passed some more blocks to Sandy in the plastic bag which Sandy in turn passes on to Tom. He dumps them out of the bag onto the floor. Ellen giggles, "Tom doesn't know what it was." Tom says, "Yes, it was the blocks." Ellen says she played a trick on him. The tower made with three blocks falls down. (This interchange between the three children began with Ellen. She has put a surprise in the plastic bag for Tom. She calls it a bag of trash. Tom does not care for this joke. All contact between Tom and Ellen goes through Sandy. Whether this is part of an arrangement decided upon yesterday in a similar situation and carried over to today cannot be determined.) (5 minutes)

Observation 3.

Tom is sitting on the floor near Sandy. They are playing with blocks. Now he is picking up blocks, scooping them toward him in a
random quick movement. He builds a similar train-like structure as he did yesterday. He is speaking quietly to himself. He takes an odd-shaped block and tries to use it in several positions. He puts it down and scatters everything around quietly. He walks around to the other side of the room where the boys are. He walks into Clarissa who has a chair near the closet. (She is looking for the jacks and wants to climb on the chair to look around on the top shelf.) Tom says, "What are you doing?" He kneels in front of the closet, reaches in, picks up a toy iron. Clarissa bangs two objects together making a loud noise. Tom sits on his heels, holds a hand to his ear and says, "Wow." He picks up another plastic object and feels around in the closet. Calls, "Hey, Clarissa." She has walked away but comes back. "Hey, Clarissa. You all play with this." He stands and holds it as Clarissa joins him. They both handle the toy. It is a toy that makes a noise when a string is pulled, however, it makes no noise presently. Clarissa puts it back. Tom returns to the closet and feels around in it. He feels the objects, mostly broken pieces of toys. A block falls out of the closet. Tom throws it back in and shuts the door. He moves over to the next closet on his hands and knees where Clarissa is. Both children are reaching into the closet. Clarissa picks up a push-pull toy dog. Tom and Clarissa feel the dog. Tom feels the legs. Clarissa manipulates the ears. Then Tom picks up a plastic dish, puts it back, and says, "I gotta go." He starts running around looking for Martin who is playing with the ball. Tom goes back to Clarissa and says, "Close the door, Clarissa." Martin is nearby and Tom says to Martin, "Let's play kick-ball." "Move," Tom says to Clarissa, "move." He gets into position. He says, "Come on, come on," to Martin. (5 minutes)

Observation 4.

Tom is chasing Martin who has the ball. They have previously been fighting for it. Tom is chasing Martin but very slowly. He says, "I don't feel like running." His hand is trailing along the closets. (The closets are in the center of the room forming an island in the middle.) Tom is slowly walking around them following Martin. He is complaining to Martin. He stands still while Ellen and Martin tussle over the ball. Tom calls, "Mrs. Tait. Martin." He continues walking in circles around the closets with his hand trailing along the closet doors. He finds Ellen and grabs her thinking it is Martin. He says, "Oh," realizes his mistake and continues walking around the closets calling Martin. He continues calling the observer and Martin periodically. Martin is teasing Tom, keeping always just ahead of him. Martin is jumping around and then sneaks up in back of Tom and says, "Woo. Woo." Tom turns around. Ellen says, "Tom, come here." He goes over to Ellen and she gives him a toy metal pan. Tom continues walking around the closet calling, "Martin." He throws the pan at Martin. Meanwhile, Martin becomes interested in something else and Tom gets the ball. Tom bounces the ball against the wall. Martin grabs the ball. Tom tries to get the ball from him. Martin kicks and screams quietly, a sort of "Ee-ee." Tom says, "I want the ball." Martin says, "You're
not getting it." Tom grabs Martin around the waist and they drop to their knees. Martin clutches the ball to his stomach. Tom is on top of Martin. (5 minutes)

**Martin**

Martin is an active, aggressive, well-developed boy. He seems to become involved with the other children in the group and likes to tease them. He is very kind to Sandy and thinks of her welfare whenever coming and going to the playground. He has enough vision to move about quite freely. He is considered below average in intelligence. Prior environment and an antagonistic attitude may account for this.

**Observation 1.**

Martin is playing ball (a large ball) with Jimmy. Jimmy is on one side of the room, Martin on the other. Jimmy kicks the ball and Martin runs after it, falls, grabs the ball, runs back to place and kicks the ball to Jimmy. Martin then runs and grabs the ball from Jimmy. Jimmy says, "Give it to me." Martin says, "No, it's my kick." He bounces the ball and calls out, "Kick, it's my kick." He kicks the ball to Jimmy and Jimmy kicks it back. Martin grabs the ball and holds it next to his stomach. Jimmy and Martin tussle for the ball. "Let go," says Martin. They pull and Jimmy gets the ball. "You cheat, you cheat," calls Martin. He stomps his feet and points to Jimmy, "You cheat." Martin is angry and sits in the chair. Then he sees the ball, runs after it and smiles when he gets it. Jimmy and Martin continue their active game of kickball. Jimmy kicks the ball and it bounces near the children playing with the blocks. "Give me that ball," Martin says and grabs it. No one answers him. He bounces the ball, returns to his position and kicks it to Jimmy. Jimmy misses the ball and Martin laughs and claps his hands and jumps up and down. He catches the ball with outstretched arms. He kicks it as it bounces and it hits Jimmy on the head. Now Jimmy is angry and runs up to Martin and throws the ball at Martin. Martin gets the ball and kicks it out of the playroom. (5 minutes)

**Observation 2.**

Martin is playing ball with Jimmy. Martin gets the ball, puts it in place on the floor, backs away, runs forward and kicks the ball. He claps his hands and hops around. He kicks the ball as Jimmy sends it to him. He jumps up and down, claps and runs after the ball. He falls on his knees. He kicks the ball and it rolls. "Man," he says.
He is hot and sweaty and opens up his shirt. The ball comes his way again. He kicks it and hits the observer. "Excuse me, Mrs. Tait," he says. He kicks the ball again. It bounces back and forth. He kicks it, misses it and it rolls away. He runs after it and falls to the floor. He kicks the ball, jumps up and down, and claps his hands. "Four for me," he says. He runs after the ball again, kicks it and claps his hands. Clarissa comes up and says, "May I play?" Martin says, "No," and laughs. He kicks the ball and laughs when Jimmy misses it. Clarissa says, "I want to play ball." Martin says, "Get in back of me." He kicks the ball and runs after it but gives Clarissa a chance to get it but she cannot see the ball. Martin gets the ball and says, "Walk away, Clarissa." She walks away and stands against the wall. Martin runs after the ball and falls on it. He says, "Clarissa, move, move. Go by the chair." Then he says, "I have sixty," and jumps up and down and claps. Then he says, "Seventy," and hops and skips. He puts his hand on his mouth and hops around to his original position. The ball bounces, and Clarissa says, "Let me kick the ball." "No," says Martin. Clarissa says again, "Let me kick the ball." "No," says Martin, then, "Your turn to kick, Clarissa." (5 minutes)

Observation 3.

Martin is by the group playing with the blocks. He is next to Ellen, Sandy and Jimmy. Martin is talking to Jimmy. Martin is holding the ball and looking at a little toy cowboy. He is looking at it very closely. He also has a big plastic airplane. He puts the cowboy on the ball. It falls off. He says to Jimmy, "Let's do (something)." He reaches over, lifts Ellen's dress and says laughing, "Oh, Ellen." Now he turns to Sandy. He puts his cowboy on top of Sandy's block tower. He knocks down some of the tower. Sandy says, "See, what you made me do?" "What did I make you do, Sandy?" He has a block. He puts the cowboy on the block. "If you come close to this house, he'll shoot you," he says to no one in particular. He is stretched out on the floor now still holding the ball. The ball rolls away and Martin raises up to get the ball but lets it go and picks up the airplane. He tries to put the cowboy into the airplane. He takes the nose off the airplane and puts the cowboy in the nose of the plane. He gets up still holding the cowboy. He walks around the room, comes up to Tom and says, "Shoots you," pointing the cowboy at Tom. Then he runs and gets the ball that Tom is playing with. He puts the soldier in his pocket and tussles with Tom for the ball. He says, "Don't fight over this ball." He gets the ball and dribbles it around the room, while Tom chases him. They both are giggling. Tom grabs Martin around the waist. Martin calls, "Mrs. Tait, Mrs. Tait." He laughs and sings songs, "Hey, Mr. Crooked." Tom follows Martin around the room trying to get the ball. He hangs on to Martin. Martin calls, "Mrs. Tait, Mrs. Tait. Tell Tom to stop. Stop Tom, stop." (5 minutes)
Observation 4.

Martin is playing with the ball. He bounces it around the room, throws it against the wall, chases it. The ball bangs against the plastic seahorse on the floor making a noise. Martin picks up the seahorse and looks at it. He finds an airplane nearby and picks it up. He tries to dribble the ball while holding on to the airplane. Then he sits on the ball and scoots up to Sandy while sitting on the ball. She is playing a game, calling out, "Who wants sweet potatoes?" Martin calls out, "Who wants a jet?" The children nearby call, "I do." Jimmy comes over and gets it. Sandy says, "A baa baa." Martin says, "A baa baa, you won't." He moves away bouncing the ball. Sandy continues the game, calling out, "Who wants a butterfly?" Martin comes back, picks up a block and makes believe he's eating it. He says, "I do," and grabs the plastic bag with the blocks in it. He tries to eat the bag. Sandy pulls it away from him. He calls out, "Mrs. Tait, Mrs. Tait." Then he finds the plastic butterflies that were in the plastic ball. He turns them around and says, "Who wants a butterfly? A real butterfly?" He gives them to Sandy. Sandy says, "It's not a real butterfly." Martin says, "It is." He walks away dribbling the ball. He now finds half of the plastic ball which is filled with jacks and the jack balls. He kicks it and all the jacks spill out and the balls go flying. "Ah ha," he says lying down on the floor. He takes a jack and spins it, looking at it closely. He says, "I'll take all these jacks." Clarissa is there. She wants some jacks. Martin says, "I'll keep them all." Clarissa says, "No." Martin says, "I will." Jimmy comes up and talks to Clarissa. Jimmy has the two halves of the ball. He has put the jack balls into the plastic ball and shakes them up and down. Martin says, "Put the jacks in there." He starts to put the jacks into the plastic ball. Jimmy says, "No." Martin again says, "Put the jacks in there." Jimmy says, "Okay." He opens the ball and puts the jacks in. Then Jimmy closes the ball and shakes it up and down, the jacks rattling about. Martin laughs and says, "Shake it up." (5 minutes)

Clarissa

Clarissa is a rather large, plump, awkward girl. She is able to see objects when held up to her eyes. She seems to be an outsider in this group, playing frequently by herself. The boys show more annoyance toward Clarissa than toward the other girls. Clarissa is considered to be of average intelligence.

Observation 1.

Clarissa is sitting on the floor playing with the blocks. She puts the blocks in place working slowly but at a constant pace, picking
up whatever block comes to her hand and placing it next to another. She calls, "Mrs. Tait, Mrs. Tait, look what I made." She reaches over to Sandy who is playing with blocks near her and says, "See what I made?" She takes Sandy's arm so she can feel her blocks. "I made all these blocks." Sandy moves them slightly, "Oh, oh, you messed it," but this is said quietly without anger. She reaches for the bag to see if there is anything in it. Then she says to Martin as he comes by, "Look what I made." She picks up a block, looks at it closely, puts it down. She picks up the first block and puts it down. She realizes that the blocks have windows painted on them. She searches for another block, looks at it very closely holding it up to her eye, nose almost touching. She continues looking for the blocks with windows painted on, keeps these and discards the rest. She puts all the blocks down, goes back to her original piece of work, messes it up and says, "Who wants all these blocks?" in a sing song voice. (5 minutes)

Observation 2.

Clarissa is trying to play with the boys who are playing ball. She keeps saying, "It's my turn." The ball comes near her. She tries to beat Martin to it. "I'll get it," she says, but she can't find it. She stands quietly for a while. She runs over and says to the observer, "They won't let me get the ball." She says to Martin, "Martin. Let me get the ball." He is on top of the ball. "Martin, you won't let me get the ball." She follows Martin. She now says, "Jimmy, can I play?" She follows Jimmy and Martin around the room. The boys now let her play. Martin takes her by the shoulders and positions her in the middle of the play area. She says, "I want to play football." Clarissa stands and waits while Jimmy and Martin organize a game of dodge ball. They round up Sandy and Tom and put them in the middle. Clarissa is standing quietly, perhaps listening. Jimmy and Martin are trying to decide if Sandy should play or not. They say very nicely to her, "You better stay out," and lead her to a chair. Martin returns to Clarissa and shows her where to stand. Clarissa stands there quietly. The ball is rolled and hits Clarissa. She is out of the game. She runs after the ball. She runs back to the closet, opens the closet and sort of droops over the door, subdued. Martin comes back to Clarissa. He puts his arm around her shoulder, she puts her arm around his waist. He brings her into the circle again. She pushes her way through and says, "Now let me." She holds on to Cindy's dress, talks to her quietly. She turns and holds on to Martin's shirt. "I'll be catching," she says, "I'll be catching." "No," says Martin. She follows him trying to catch the ball. She gets into the center of the ring, runs back as if to avoid the ball, however, the ball has not been thrown. She stands there with the other children jumping up and down, waving her hands and calling, "Yea, yea." She listens to Martin talking to the children. She reaches for the ball when it comes past. Tries to get it from Martin. She pulls him around the waist and they have a tussle. (5 minutes)
Observation 3.

Clarissa is over by the kitchen corner. Now she walks over to the blocks, stepping on them. She picks up one, then puts it down. She is walking around rather aimlessly. She is looking for the jacks. She goes to the rocking horse and looks under the horse. Tom bumps into her. She doesn't say anything. She kneels down by the blocks, looking them over. She touches one red block (the jack ball is red). She moves around on her hands and knees. She stands up and looks on the window shelf. She stoops and looks under the couch. There is a large ball under the couch with two plastic butterflies in the center of the ball. The butterflies rotate in the ball when the ball moves. She picks up this ball and looks at it closely. She turns the ball slowly looking at the butterflies. She is trying to get into the butterflies. She pokes her finger into the center split. She is in a kneeling position, working on this ball trying to get the butterflies out. She feels the antennae on the butterflies. She turns the stem that they are fastened onto and continues to feel the body of the butterflies. She is not saying anything. She crawls away from the couch continuing to play with the butterflies. She looks under the couch again. Tom comes up to her. She says to him, "Did you see it?" He feels the butterflies briefly but says nothing. She gets up and walks into the other children. (5 minutes)

Observation 4.

Clarissa is sitting on the floor near the window. Jimmy is also there. Clarissa wants some balls and jacks. Jimmy has them all in the plastic ball. He gives two balls to Clarissa. She is sitting with her legs outstretched. She talks to Jimmy. She gives him one ball back. She takes some jacks in her hand, throws them out and then tries to bounce the ball. Meanwhile, Jimmy has given her all the jacks. She says to him, "I don't need all of them. Who wants some of these jacks?" Jimmy says, "I don't." She says, "Put them all in there." She takes them and puts them in the big ball. Jimmy and Clarissa are sitting close together. She takes the jacks and spreads them over the floor. She touches each one with her finger. She sneezes and gets her arm all wet. Then she says to Jimmy, "Here put these back again." Then she gives him some more jacks. She now has five jacks left. She takes the ball and bounces it on the floor with the right hand. With the left, she picks up the jacks. She comes up to the observer and says, "I need a kleenex." She blows her nose in the kleenex, walks around rubbing her nose with the kleenex. She goes out the door and puts the kleenex in the basket outside the playroom. She comes back in and sits down with her legs spread out. She spreads the jacks on the floor between her legs. (5 minutes)
APPENDIX E
STATE OF MINNESOTA
Department of Public Welfare
Centennial Office Building
St. Paul, Minnesota 55101

December 23, 1969

Dear Mr. and Mrs.

Mrs. Perla Tait, a representative of Ohio State University, is interested in studying the play activity of 4 through 8 year old blind children, and she has requested permission to study children of this age known to our agency. Minnesota State Services for the Blind is interested in cooperating with Mrs. Tait as she proceeds with her study because it is anticipated that the results will be beneficial not only to professional persons serving blind children, but to you as a parent and to the blind child.

We cannot release your name to Mrs. Tait unless you grant us permission. If you are willing to have your child participate in this study you should know that she would see your child probably in your home for approximately one half hour on January 15 or 16, 1970 at an appointed time.

In order that we can arrange an appropriate schedule for Mrs. Tait, would you please call Mrs. Yvonne Wheat of our staff at 221-2092, and inform her of your decision to participate or to decline participation.

Thank you for your courtesy in this matter.

Yours truly,

/s/ C. Stanley Potter

C. Stanley Potter, Director
State Services for the Blind and Visually Handicapped

CSP/JOK/yw

210
GRAND FORKS PUBLIC SCHOOLS

Grand Forks, North Dakota

Office of the
Assistant Superintendent

March 26, 1970

Mrs. David Tait
313 Northwestern Drive
Grand Forks, North Dakota

Dear Mrs. Tait:

Your research proposal was approved for implementation in the Grand Forks School District last evening. Several conditions were made, however:

1. Written parental permission must be secured.
2. Students should participate during non-school hours.

Your efforts should occur in Lincoln School. Mr. Wayne Peterson serves as Principal of Lincoln School.

With best wishes, I remain,

Sincerely yours,

/s/ Harold Bergquist

Harold Bergquist
Assistant Superintendent

jm

cc: Mr. Peterson
Dear ____________________:

Assistant Superintendent, Dr. Harold Bergquist, has informed me that the Committee on Research of the Grand Forks School District has given me its official approval to conduct research in the Lincoln School. I will be working in conjunction with Mr. Wayne Peterson.

Briefly, this study concerns itself with comparing the play behavior of young blind children with that of young sighted children. In order to do this I observe children playing with simple objects which I bring with me to the school. This play session will take place during the regular recess time at Lincoln School. The children I have worked with so far have enjoyed the experience.

I have randomly selected children within a particular age group and have drawn your child's name to be included in the study. Naturally the names of children participating in the study will not be included in the final analyses.

It appears that studies such as this may lead to an increased understanding of young children. Your permission for ________________ to participate will assist in bring this about. In order to facilitate your reply, a check sheet has been included with a stamped, addressed envelope. Your cooperation will be appreciated.

Yours truly,

P. E. Tait (Mrs. David H.)
April 21, 1970

Dear Mrs. Tait:

Yes

Please include my child, __________________, as a Lincoln School participant in this research project.

No

Please do not include my child, __________________, as a Lincoln School participant in this research project.

Signature - Parent or Guardian
TABLE 34

COMPARISON OF THE AGES IN MONTHS OF BLIND AND SEEING SUBJECTS

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Blind</td>
<td>Seeing</td>
<td>Blind</td>
<td>Seeing</td>
</tr>
<tr>
<td>61</td>
<td>61</td>
<td>71</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>68</td>
<td>72</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>77</td>
<td>72</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>78</td>
<td>74</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>80</td>
<td>75</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>77</td>
<td>82</td>
<td>77</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>85</td>
<td>79</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>85</td>
<td>85</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>89</td>
<td>87</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>92</td>
<td>93</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>93</td>
<td>100</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>93</td>
<td>100</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>99</td>
<td>103</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>105</td>
<td>108</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>107</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANALYSIS OF THE DATA PERTAINING TO THE MINTO AND DRAYTON SEEING SUBJECTS

Introduction

This subdivision was created in order to determine whether or not the school situation in which the two major sources of seeing subjects; namely, Minto and Drayton, had an effect upon play behavior. Thirteen of the seeing subjects (8 males, 5 females) attended the Minto Elementary School; ten of the seeing subjects (5 males, 5 females) attended the Drayton Elementary School. These constituted the most directly comparable groups, and hence, the data from these were subjected to further scrutiny. The remaining six seeing subjects came from the Grand Forks area and were not included in this particular analysis because they constituted a younger age group and thus were not suitable for direct comparison with the children of Minto and Drayton relative to play behavior.

Age of the population

Relative to the variable, age, the thirteen Minto subjects had a mean age of 91.54 months with a standard deviation of 9.79; the ten Drayton subjects had a mean age of 81.50 months with a standard
deviation of 24.80. Table 35 sets forth the means and standard deviations of the age of the Minto and Drayton subjects.

**TABLE 35**

MEANS AND STANDARD DEVIATIONS (S.D.) OF THE AGE OF MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto</td>
<td>13</td>
<td>Mean 91.54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D. 9.79</td>
</tr>
<tr>
<td>Drayton</td>
<td>10</td>
<td>Mean 81.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D. 24.80</td>
</tr>
</tbody>
</table>

An analysis of variance was used to determine if the age of the Minto subjects differed significantly from the age of the Drayton subjects. Results indicated that relative to the variable, age, there was no significant difference at the .05 level between Minto and Drayton subjects. Therefore, it was inferred from these data that any differences in play behavior were probably not mediated by differences in age between the groups. The summary table for this analysis is shown in Table 36.

**Intelligence of the population**

Relative to the variable, intelligence, the thirteen Minto subjects had a mean intelligence of 105.46 with a standard deviation of 13.41; the ten Drayton subjects had a mean intelligence of 99.40 with a
TABLE 36

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE AGE OF MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto and Drayton</td>
<td>569.56</td>
<td>1</td>
<td>569.56</td>
<td>1.79</td>
</tr>
<tr>
<td>Within Groups</td>
<td>6683.75</td>
<td>21</td>
<td>318.27</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7253.31</td>
<td>22</td>
<td>XXX</td>
<td></td>
</tr>
</tbody>
</table>

standard deviation of 8.85. Table 37 sets forth the means and standard deviation of the intelligence of the Minto and Drayton subjects.

TABLE 37

MEANS AND STANDARD DEVIATIONS (S.D.) OF THE INTELLIGENCE OF MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto</td>
<td>13</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>105.46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.41</td>
</tr>
<tr>
<td>Drayton</td>
<td>10</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>99.40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.85</td>
</tr>
</tbody>
</table>

An analysis of variance was used to determine if the intelligence of the Minto subjects differed significantly from the intelligence of the Drayton subjects. Results indicated that relative to the variable, intelligence, there was no significant difference at the .05 level between Minto
and Drayton subjects. Therefore, it was inferred from these data that any differences in play behavior were probably not mediated by differences in intelligence between the groups. The summary table for this analysis is shown in Table 38.

**TABLE 38**

**SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE INTELLIGENCE OF MINTO AND DRAYTON SUBJECTS**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto and Drayton</td>
<td>207.63</td>
<td>1</td>
<td>207.63</td>
<td>1.52</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2863.69</td>
<td>21</td>
<td>136.27</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3071.31</td>
<td>22</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

Composition of the population by sex

A two sample chi square test was used to determine whether or not the Minto group of subjects and the Drayton group of subjects differed significantly relative to the composition of the groups by sex.

The obtained chi square value was not significant at the .05 level. Membership in the Minto group and in the Drayton group was independent of sex as indicated by a chi square of .02. Table 39 shows the representation of males and females in the Minto and Drayton groups.
TABLE 39

CONTINGENCY TABLE SHOWING THE REPRESENTATION OF MALES AND FEMALES IN THE MINTO AND DRAYTON GROUPS

<table>
<thead>
<tr>
<th></th>
<th>Blind</th>
<th>Seeing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>8</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
</tbody>
</table>

df = 1
$X^2 = .02$

Analysis of the Statistical Data

Type of play behavior exhibited

A two way chi square test was used to determine if the school situation; namely, Minto and Drayton schools, was independent of the type of play in which the subjects became involved and in the non-involvement of the subjects in play.

Table 40 shows the relationship between the Minto and Drayton subjects and the frequency of their involvement in manipulative play.

The obtained chi square value, .02, was not significant at the .05 level. Therefore, the null hypothesis that no difference exists between the two variables, school situation and the involvement in manipulative play, was accepted. It was inferred from these data that there was no
### TABLE 40

**CONTINGENCY TABLE SHOWING THE OBSERVED (O) AND EXPECTED (E) FREQUENCY OF MINTO AND DRAYTON SUBJECTS' INVOLVEMENT IN MANIPULATIVE PLAY**

<table>
<thead>
<tr>
<th>Manipulative Play</th>
<th>Minto</th>
<th>Drayton</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (O)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>(E)</td>
<td>(0.6)</td>
<td>(0.4)</td>
<td></td>
</tr>
<tr>
<td>No (O)</td>
<td>13</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td>(E)</td>
<td>(12.4)</td>
<td>(9.6)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
</tbody>
</table>

\[ \text{df} = 1 \]
\[ \chi^2 = 0.02 \]

The obtained chi square value, 7.15, was significant at the .01 level. Therefore, the null hypothesis that no difference exists between the observed and expected values was rejected and the alternative hypothesis that the two variables, school situation and the involvement in dramatic play, are associated, was accepted. It was inferred from these data that the subjects attending the Drayton school became more
TABLE 41

CONTINGENCY TABLE SHOWING THE OBSERVED (O) AND EXPECTED (E) FREQUENCY OF MINTO AND DRAYTON SUBJECTS' INVOLVEMENT IN DRAMATIC PLAY

<table>
<thead>
<tr>
<th>Dramatic Play</th>
<th>Minto</th>
<th>Drayton</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (O)</td>
<td>2</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>(5.7)</td>
<td>(4.3)</td>
<td></td>
</tr>
<tr>
<td>No (O)</td>
<td>11</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>(7.3)</td>
<td>(5.7)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
</tbody>
</table>

\[ df = 1 \]
\[ X^2 = 7.15^* \]

*Significant at the .01 level.

frequently involved in dramatic play than the subjects attending the Minto school.

Table 42 shows the relationship between the Minto and Drayton subjects and the frequency of their involvement in play other than manipulative and dramatic.

The obtained chi square value, 4.08, was significant at the .05 level. Therefore, the null hypothesis that no difference exists between the observed and expected values was rejected and the alternative hypothesis that the two variables, school situation and involvement in play other than manipulative and dramatic, are associated, was accepted.
TABLE 42

CONTINGENCY TABLE SHOWING THE OBSERVED (O) AND EXPECTED (E) FREQUENCY OF MINTO AND DRAYTON SUBJECTS' INVOLVEMENT IN PLAY OTHER THAN MANIPULATIVE AND DRAMATIC

<table>
<thead>
<tr>
<th>Other Play</th>
<th>Minto</th>
<th>Drayton</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (O)</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>(E)</td>
<td>(3.3)</td>
<td>(2.6)</td>
<td></td>
</tr>
<tr>
<td>No (O)</td>
<td>7</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>(E)</td>
<td>(9.6)</td>
<td>(7.3)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
</tbody>
</table>

\[ df = 1 \]
\[ X^2 = 4.08^* \]

*Significant at the .05 level.

It was inferred from these data that the subjects attending the Minto school became more frequently involved in play other than manipulative and dramatic than the subjects attending the Drayton school.

Table 43 shows the relationship between the Minto and Drayton subjects and the frequency with which they did not become involved in play.

The obtained chi square value, 1.13, was not significant at the .05 level. Therefore, the null hypothesis that no difference exists between the two variables, school situation and the non-involvement in play, was accepted. It was inferred from these data that there was no
TABLE 43

CONTINGENCY TABLE SHOWING THE FREQUENCY OF MINTO AND DRAYTON SUBJECTS' NON-INVOlVEMENT IN PLAY

<table>
<thead>
<tr>
<th>No Play</th>
<th>Minto</th>
<th>Drayton</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (O)</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>(E)</td>
<td>(3.4)</td>
<td>(2.6)</td>
<td></td>
</tr>
<tr>
<td>No (O)</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>(E)</td>
<td>(9.6)</td>
<td>(7.4)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
</tbody>
</table>

df = 1
X² = 1.13

difference in the frequency with which Minto and Drayton subjects did not become involved in play.

Time involved in play

The data were examined to determine whether or not Minto and Drayton subjects differed in the amount of time spent in manipulative play.

Relative to the amount of time spent in manipulative play, the thirteen Minto subjects had a mean of .0 with a standard deviation of .0 and the ten Drayton subjects had a mean of .01 with a standard deviation of .32. Table 44 sets forth these means and standard deviations.
TABLE 44

MEANS AND STANDARD DEVIATIONS (S.D.) RELATIVE TO THE TIME SPENT IN MANIPULATIVE PLAY BY MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto</td>
<td>13</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Drayton</td>
<td>10</td>
<td>.01</td>
<td>.32</td>
</tr>
</tbody>
</table>

The analysis of variance was used to determine if the amount of time spent in manipulative play by Minto subjects differed significantly from the amount of time spent in manipulative play by Drayton subjects. Results indicated that there was no difference at the .05 level of significance. The summary table for this analysis is shown in Table 45.

TABLE 45

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE TIME SPENT IN MANIPULATIVE PLAY BY MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto and Drayton</td>
<td>.06</td>
<td>1</td>
<td>.06</td>
<td>1.32</td>
</tr>
<tr>
<td>Within Groups</td>
<td>.90</td>
<td>21</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.96</td>
<td>22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The data were examined to determine whether or not Minto and Drayton subjects differed in the amount of time spent in dramatic play. Relative to the amount of time spent in dramatic play, the thirteen Minto subjects had a mean of .38 with a standard deviation of .96 and the ten Drayton subjects had a mean of 9.30 with a standard deviation of 7.38. Table 46 sets forth these means and standard deviations.

**TABLE 46**

MEANS AND STANDARD DEVIATIONS (S.D.) RELATIVE TO THE TIME SPENT IN DRAMATIC PLAY BY MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Dramatic Play</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto</td>
<td>13</td>
<td>Mean .38</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D. .96</td>
</tr>
<tr>
<td>Drayton</td>
<td>10</td>
<td>Mean 9.30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D. 7.38</td>
</tr>
</tbody>
</table>

The analysis of variance was used to determine if the amount of time spent in dramatic play by Minto subjects differed significantly from the amount of time spent in dramatic play by Drayton subjects. Results indicated that there was a difference at the .01 level of significance. The summary table for this analysis is shown in Table 47. Examination of means shown in Table 46 would indicate that the Drayton subjects engaged in more dramatic play than the Minto subjects.
TABLE 47
SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE TIME SPENT IN DRAMATIC PLAY BY MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto and Drayton</td>
<td>449.26</td>
<td>1</td>
<td>449.26</td>
<td>18.83*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>501.18</td>
<td>21</td>
<td>23.87</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>950.43</td>
<td>22</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .01 level.

The data were examined to determine whether or not Minto and Drayton subjects differed in the amount of time spent in play other than manipulative and dramatic.

Relative to the amount of time spent in play other than manipulative and dramatic, the thirteen Minto subjects had a mean of 2.69 with a standard deviation of 5.50 and the ten Drayton subjects had a mean of .0 with a standard deviation of .0. Table 48 sets forth these means and standard deviations.

The analysis of variance was used to determine if the amount of time spent in play other than manipulative and dramatic by Minto subjects differed significantly from the amount of time spent in play other than manipulative and dramatic by Drayton subjects. Results indicated
TABLE 48

MEANS AND STANDARD DEVIATIONS (S.D.) RELATIVE TO THE TIME SPENT IN PLAY OTHER THAN MANIPULATIVE AND DRAMATIC BY MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Cell</th>
<th>N</th>
<th>Other Play</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto</td>
<td>13</td>
<td>Mean 2.69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D. 5.50</td>
</tr>
<tr>
<td>Drayton</td>
<td>10</td>
<td>Mean 0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.D. 0.00</td>
</tr>
</tbody>
</table>

that there was no difference at the .05 level of significance. The summary table for this analysis is shown in Table 49.

TABLE 49

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE TIME SPENT IN PLAY OTHER THAN MANIPULATIVE AND DRAMATIC BY MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto and Drayton</td>
<td>40.97</td>
<td>1</td>
<td>40.97</td>
<td>2.37</td>
</tr>
<tr>
<td>Within Groups</td>
<td>362.77</td>
<td>21</td>
<td>17.27</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>403.74</td>
<td>22</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>
Number of vocalizations uttered during the play session

The data were examined to determine whether or not Minto and Drayton subjects who engaged in play differed in the number of vocalizations uttered during a half-minute sample taken at the mid-point of play.

Relative to the number of vocalizations uttered, the eight Minto subjects (5 males, 3 females) had a mean of 7.13 with a standard deviation of 6.33 and the nine Drayton subjects (4 males, 5 females) had a mean of 39.11 with a standard deviation of 26.84. Table 50 sets forth these means and standard deviations.

<table>
<thead>
<tr>
<th>Table 50</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Means and Standard Deviations (S.D.) Relative to the Number of Vocalizations Uttered by Minto and Drayton Subjects</strong></td>
</tr>
<tr>
<td>Cell</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Minto</td>
</tr>
<tr>
<td>Drayton</td>
</tr>
</tbody>
</table>

The analysis of variance was used to determine if the number of vocalizations uttered by Minto subjects during play differed significantly from the number of vocalizations uttered by Drayton subjects during play. Results indicated that there was a difference at the .01 level of
significance. The summary table for this analysis is shown in Table 51.

Examination of the means shown in Table 50 would indicate that the Drayton subjects uttered more vocalizations during play than the Minto subjects.

TABLE 51

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE RELATIVE TO THE NUMBER OF VOCALIZATIONS UTTERED BY MINTO AND DRAYTON SUBJECTS

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minto and Drayton</td>
<td>4333.17</td>
<td>1</td>
<td>4333.17</td>
<td>10.75*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>6045.77</td>
<td>15</td>
<td>403.05</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10378.94</td>
<td>16</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .01 level.

Conclusions

Examination of the findings indicated that the Minto and Drayton subjects differed significantly in their behavior during the recorded play sessions. These statistically significant differences are listed herewith:

1. The Drayton subjects engaged in dramatic play more frequently than the Minto subjects.

2. The Drayton subjects involved themselves in dramatic play for a longer period of time than the Minto subjects.
3. The Minto subjects engaged more frequently in play other than manipulative and dramatic than the Drayton subjects.

4. The Drayton subjects uttered more vocalizations during play than the Minto subjects.

Review of these differences suggests that the Minto subjects tended to hold themselves aloof during the play sessions to a greater extent than the Drayton subjects. While the Minto subjects apparently did not wish to become involved in dramatic play, they also did not wish to refuse to cooperate. Hence, they complied with the request of the observer by engaging in play other than manipulative and dramatic; such as, guessing games. Because the Minto subjects vocalized infrequently, this play other than manipulative and dramatic did not serve the same function as the manipulative play of the blind child which could be interpreted as an attempt to continue the contact with the observer.

The Minto and Drayton schools were both in small, rural communities located in the same general area. In the Minto school the elementary classrooms were of the traditional pattern, each grade having one teacher. In the Drayton school, the first three grades were taught by several teachers and teacher's aides in one, large, open classroom. It was felt that there is a possibility that the Minto subjects demonstrated a reserved reaction to the observer because of background experiences based on the classroom teacher as the primary authority figure. The
observer was more openly accepted by the Drayton subjects as another one of several adults sharing authority. Thus, the Drayton subjects may be thought of as approximating more closely the blind subjects' perception of adults as authority figures.
REFERENCES


Deutsch, F. The sense of reality in persons born blind. *Journal of Psychology*, 1940, 10, 121-140.


Fraiberg, S., Siegal, B. L., & Gibson, R. The role of sound in the search behavior of a blind infant. *Psychoanalytic Study of the Child*, 1966, 21, 327-357.


Walters, R. H. & Parke, R. D. The role of the distance receptors in the
development of social responsiveness. In L. P. Lipsitt and C. C.
Spiker (Eds.), Advances in child development and behavior. Vol. II.

Webster's New Twentieth Century Dictionary of the English Language.

White, R. W. Motivation reconsidered: the concept of competence.
In C. B. Stendler (Ed.), Readings in child behavior and develop-

Wills, D. Some observations on blind nursery school children's under-
standing of their world. Psychoanalytic Study of the Child, 1965,
20, 344-363.

Wright, H. F. Observational child study. In P. H. Mussen (Ed.),
Handbook of research methods in child development. New York: