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USE OF PLAY ACTIVITY IN THE ASSESSMENT

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OF ATYPICAL CHILDREN

By

John M. Paolella

A Dissertation Submitted to the Graduate School of Loyola University in Partial Fulfillment of the Requirements for the Degree of Doctor of Fhilosophy

Chicago, Illinois

January 1973

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John M. Paolella was born in Chicago, Illinois, on April 6, 1942. He was graduated from De Paul Academy in Chicago, Illinois, in June of 1960. He attended Loyola University in Chicago, Illinois, from September, 1960, through June, 1964, and there received his Bachelor of Science degree. In January of 1967 Mr. Paolella received his Master of Arts degree in psychology from Loyola University. During his years of graduate training, Mr. Paolella served a clinical clerkship (VA-Westside Hospital, Chicago, 1966-1967), clinical internship (Loyola Guidance Center, Chicago, 1968-1970), and post-internships (Loyola Guidance Center, 1970-1972; Rosary College, River Forest, Illinois, 1970-1972).

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CHAPTER I

INTRODUCTION

In March, 1970, a day school for atypical children was established by Dr. Patricia M. Barger, Director of the Loyola Guidance Center. The Guidance Center is regarded as an extraordinary division of Loyola University, Cnicago, Illinois. Prior to commencement of the day school program, a number of relevant topics was examined and critically discussed by staff members. Such issues included the investigation of clinical assessment techniques in addition to various methods for appraising therapeutic process and outcome. While research in the general field of child psychotherapy is sparse, it is especially limited in the area dealing with atypical children (Ginnott, 1961; Meltzoff & Kornreich, 1970). The lack of communicative speech and severe problems in interpersonal relations commonly associated with this clinical group tend to rule out or limit the use of traditional psychological tests as diagnostic and research tools (Mittler, 1966; Tilton & Ottinger, 1964). Hence, it appeared valuable to investigate alternative techniques for obtaining behavioral measures of these children which might eventually prove useful for both the clinician and researcher. The observation of play behavior in a free-play situation seemed an appropriate and practical method of studying certain characteristics of atypical children since such a

technique would not be totally dependent on verbal communication or the child's attentiveness to, or compliance with, an adult examiner.

In summary, the present investigation was viewed as an exploratory one which had a twofold purpose: (1) primarily to investigate the use of a play activity scale for assessing the behavior of atypical children, and (2) secondarily to attempt an appraisal of behavioral change in these subjects (using play activity as a dependent measure) over a time period in which one of the intervening variables was treatment at the Loyola University Day School.

Due to the complexity of the problem areas related to the current study, the literature review is presented in four sections: Theoretical Concepts Pertaining to Atypical Children, Group Treatment of Atypical Children, Loyola University Day School Treatment, and Use of Play Activity for Assessing Atypical Children. These four sections are followed by a fifth which includes a statement of the research proposal and the hypotheses to be tested.

Theoretical Concepts Pertaining to Atypical Children

Since the publication of Kanner's classical paper on early infantile autism in 1943, a plethora of theoretical articles dealing with this specific syndrome and related childhood disorders has appeared in the literature. Evidence of this trend is reflected by the existence of numerous and extensive review articles, such as those by Eisenberg (1957), Rutter (1968), and Ward (1970) which critically examine various aspects of this field of childhood psychopathology. There appears to be agreement among these authors that the great bulk of controversy and confusion in this area is primarily centered about three issues: terminology, diagnostic criteria, and theories of etiology. It is difficult and somewhat conceptually artificial to deal with each of these variables as separate entities; thus for purposes of clarity,

issues regarding terminology and diagnostic criteria will be examined conjointly and independently from those of etiology.

Since the syndrome of early infantile autism was first described by Kanner (1943, 1949), terminological confusion has ensued as the result of theoreticians utilizing numerous descriptive labels to conceptualize similar yet apparently distinctive clinical entities. A representative sample of these descriptive terms includes symbiotic psychosis (Mahler, 1952), childhood schizophrenia (Bender, 1942, 1947; Despert, 1952, 1968; Goldfarb, 1961), atypical children (Putnam, 1948, 1955; Rank, 1949, 1955; Szurek, 1956), children with unusual sensitivities (Bergman & Escalona, 1949), and children with borderline psychosis (Ekstein & Wallerstein, 1954).

Kanner (1943, 1949), reporting on a sample of approximately 55 child- \checkmark ren (ages unspecified), listed 12 diagnostic features which he believed to be characteristic of early infantile autism. These were: (1) extreme interpersonal detachment, usually from infancy; (2) normal, alert, and expressive appearance; (3) normal motor co-ordination with the ability to execute quick skillful movements; (4) avoidance of eye contact and lack of visual and/or auditory responsiveness to others, thus appearing to be blind and/or deaf to people; (5) no physical reaching out dating from infancy (e.g., failure to assume an anticipatory posture before being picked up, absence of plastic molding when cradled); (6) absence of the production of sounds or gestures; (7) failure to use speech for purposes of communication; (8) a marked facility with objects in contrast to responses to people and language; (9) indications from psychometric performance that cognitive potentialities (ranging from normal to superior) are masked by the basic disorder; (10) an obsessive desire to maintain sameness; (11) bed-wetting, thumbsucking, nailbiting and masturbation are rarely associated with the disorder; (12) the

rate of occurrence is less than 1% in the general population.

In a more recent article by Kanner (Eisenberg & Kanner, 1956), he indicated that the major diagnostic characteristics of early infantile autism were (1) extreme interpersonal detachment usually from infancy, and (2) the maintenance of sameness via stereotypic behavior. Kanner's extended research on this subject (i.e., clinical observations of 120 children) revealed that all except these two major characteristics could be found in other types of childhood psychopathology.

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Mahler (1952) described a syndrome of childhood termed symbiotic psychosis which is characterized by a later onset than early infantile autism and distinguished by symtomatology centered about a desperate effort to avert the catastrophic anxiety of separation from the mother. According to Mahler, symbiotic psychotic children rarely show marked evidence of disturbance in the first year of life except, perhaps, in their sleeping. They are often described by their mothers as "cry-babies," or as "oversensitive infants." Their disturbance becomes apparent gradually or manifests itself abruptly during the critical developmental period at which time normal children become increasingly independent. Clinical symptoms are demonstrated between the ages of 2-1/2 to 5, with a peak of onset in the fourth year. It is hypothesized that these children cannot move out of the stage of total dependency from the mother; their ego is borrowed from their mother and they cannot attain even the independence of the normal 3- or 4-year-old. The diagnostic features of symbiotic psychosis as specified by Mahler include the following: (1) anxiety reactions so intense and so diffuse that they are reminiscent of the organic distresses of early infancy, (2) from the third year onward, growing discrepancy between the rate of maturation of partial ego functioning versus lag of developmental individuation, (3) stereotyped speech productions, (4) a conflict between a craving for body contact and a shrinking from it, and (5) agitated, catatonic-like temper tantrums and panic stricken behavior.

Mahler's (1952, 1968) theoretical differentiation between early infantile autism and symbiotic psychosis was based upon the following criterion: in early infantile autism the child fails to emotionally perceive the mother as the first representative of the outside world, whereas in symbiotic psychosis the child becomes pathologically fixated in his affective relationship with the mother.

Bender (1942, 1947) utilized the term "childhood schizophrenia" to describe a clinical entity occurring in childhood before the age of ll years which reveals pathology at every level and in every area of integration and patterning within the functioning of the central nervous system. Her description of the disorder is based upon clinical experiences with more than 100 pre-adolescents (ages of the sample unreported). Bender's diagnostic signs are expressed in physiological terms, in accordance with her interpretation of causation: (1) disturbance in vaso-vegetative functioning, (2) disturbance in normal rhythmic patterns (sleeping, eating, elimination), (3) unevenness in somatic growth and nonspecific endocrine dyscrasias, (4) dysrhythmia in electroencephalographic examinations, (5) motor awkwardness (history of anxiety about walking alone, climbing stairs, etc.), (6) continuation of early reflex patterned activities such as coreoathetosis, (7) postural reflex responses, (8) bodily dependence (e.g., leaning on others), (9) "soft" neurological signs, grimacing, expressionless voice, etc., (10) lack of concern about body secretions, (11) perceptual problems, and (12) language disturbances. Bender's (1947) publication, noted that many of the clinical cases described by the author appeared to resemble the syndromes of early infantile autism (Kanner,

1943) and symbiotic psychosis (Mahler, 1952). Bender herself (1969), in reporting upon her clinical experiences with 200 schizophrenic adolescents between 1935 to 1952, stated that 50 cases met the criteria of infantile autism as specified by Kanner. However, she views autism not as a specific clinical entity but rather as a defense by withdrawal in a young child who suffers from disorganization, disturbed patterning, and maturational disorders resulting from brain defects and pathology.

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Despert (1952, 1968), in attempting to describe the psychological core of childhood schizophrenia, has defined it as a disease process in which the loss of affective contact with reality (or failure to develop affective contact) is coincidental with or determined by the appearance of autistic thinking and accompanied by specific phenomena of regression and dissociation. In a study undertaken between 1930 to 1937 with a group of schizophrenic children under 13 years of age, Despert has vividly described the behavior of her sample. The 29 cases reported were divided into three groups: (1) acute onset, (2) insidious onset, and (3) insidious onset with precipitating episode Within the first group (acute onset), the general clinical picture was characterized by the sudden appearance of intense and severe symptoms in a previously well or relatively well-adjusted child. Specific symptoms displayed by four children under 7 years of age included: hyperactivity, sleep disturbances, bizarre behavior (e.g., blinking and grimacing), withdrawal from people, hyperaggressiveness, and language disorders (e.g., mutism and primitive forms of speech expression). The other three children in this group, all over ll years of age, presented symptomatology more like that found in adults. These symptoms included: acute anxiety, visual and auditory hallucinations, somatic and persecutory delusions, and motor and sleep disturbances. Cata-

tonic features were predominant in one case and hebephrenic features in the other two cases. In the second group (insidious onset), the general clinical picture was one of a child whose early history was characterized by mild deviations which slowly developed into severe ones over a number of years. Specific symptoms displayed at the time of admission by three children under 7 years of age included: affective withdrawal in the direction of seclusiveness, aggressive behavior directed toward parents and peers, language disturbances (e.g., immature speech, idiosyncratic use of words, and perseverative questioning), bizarre rituals, compulsions, and excessive preoccupations. The other 13 children in this group between 7 and 13 years of age displayed symptoms including: asociability (e.g., stealing and truancy), neurotic traits (e.g., religious obsessions and hand-washing compulsions), bizarre motor behavior (e.g., grimacing, eye-blinking, and head writhing), visual and auditory hallucinations, and persecutory and somatic defusions. In the third group (insidious onset with precipitating episode), the clinical picture was one of a child whose early development was atypical and whose schizophrenic behavior appeared related to an exogenous precipitating factor (e.g., death of a parent or the witnessing of a terrifying movie). Specific symptoms displayed by two children under the age of 7 included: hyperactivity, loss of appetite, stereotyped repetitive movement of the hands and head, somatic complaints, self-destructive behavior, irrelevant speech, and mutism. The four other cases in this group between 7 and 13 years of age demonstrated symptoms including: lying, stealing, fire-setting, seclusiveness, bizarre behavior, hallucinations (visual, auditory, gustatory), and persecutory delusions.

Despert (1968) suggested that early infantile autism as described by Kanner (1943) represented the earliest form of schizophrenia. However, she believed that early infantile autism could be differentiated from childhood schizophrenia in that the former condition had an earlier history of onset and included symptomatology which was more severe in nature.

Goldfarb (1961) has considered the term childhood schizophrenia as a diagnostic label which indicates the presence of profound impairments in essential adaptive functions existing in the child. He does not view childhood schizophrenia as a unitary, etiologically specific and positive disease entity; it is merely a label indicating that the child deviates dramatically from the normal in ego-functioning, that is, he lacks normal guides for self-directed action and self-regulation, for achieving self-identity, and for differentiating himself from the external world. The term "atypical child" was introduced by Putnam (1948, 1955) and expanded upon by her colleagues Rank (1949, 1955) and Szurek (1956). These theoreticians appear to be in agreement with the use of the term atypical to refer to children demonstrating marked personality deviations which might be variously diagnosed as infantile dementia, psychosis, autistic disturbance, pseudo-retardation, or arrested development due to emotional factors. The clinical sample reported upon by this group of authors included more than 100 children whose ages upon initial contact ranged from 18 months to 14 years, with a large portion of the sample being 6 years or younger. The outstanding symptomatology presented by the children is described as including: withdrawal from people, retreat into a world of fantasy, mutism or the use of language for autistic purposes, bizarre posturing, seemingly meaningless stereotyped gestures, impassivity or violent outbursts of anxiety and rage, identification with inanimate objects or animals, excessively uninhibited expression of primitive impulses, severe feeding disturbances, and the absence of basic self-care skills.

Due to the presence of overlapping symptomatology coupled with difficult

problems inherent in differential diagnosis, the term atypical child is viewed by this group of investigators as possessing greater clinical utility. Szurek (1956), reporting upon the consensus of his co-workers at the Langely Porter Clinic, stated that they were beginning to regard as clinically fruitless, or even unnecessary, attempts at making a strict differential diagnosis between such childhood disturbances as severe psychoneurosis, psychosis, autism, and schizophrenia. There are those (Eisenberg, 1957; Rutter, 1968) who strongly oppose the tactic taken by this group of clinicians. Both Eisenberg and Rutter have stated that Putnam, Rank, and Szurek have committed a logical error in arguing for the identity of diseases based upon the presence of overlapping symptomatology. However, it seems to the author that Rank and her colleagues were not arguing for the identity of the specified childhood disorders in employing the concept of atypical child, but were instead implying that they were not dealing with a separate and distinct clinical entity but rather with a group of related and overlapping clinical syndromes. Therefore, to employ different diagnostic terms for syndromes which were not clinically distinctive even on a behavioral level was to engage in pseudo-semantics.

Bergman and Escalona (1949) reported on a sample of children possessing what was termed "unusual sensitivities." The sample was composed of five children (two boys and three girls) whose respective ages when first seen by the authors were 2-1/2 months, 6 years, 25 months, 28 months, and 6 years. These children were described as being unusually hypersensitive to both quantitative and qualitative stimulation in several, if not all, sensory modalities. For example, colors, bright lights, noises, usual sounds, quality of fabrics, and experiences of equilibrium, taste, smell, and temperature, seemed to have an extraordinarily intensive impact upon them. In addition to dis-

playing unusual sensitivities, the children were initially observed to possess a certain precocity, though this was unevenly distributed among the diverse functions of their personality. Because of their precocious reactions and skills, the children initially impressed the authors as unusually gifted and potentially budding geniuses. However, upon follow-up examination, the children demonstrated psychotic behaviors strikingly similar to those described in Kanner's (1943) paper.

Ekstein and Wallerstein (1954) have utilized the terms borderline, schizophrenic-like, or severely neurotic to describe a group of children who were subject to marked and frequent fluctuations in ego states visible during the treatment process. The striking phenomenon of continual alteration of psychotic and neurotic ego organization contributed to a characteristic pattern of unpredictability which was, paradoxically, one of the most predictable aspects of the psychotherapeutic effort. It has been these authors' reported experience that children in this clinical group have begun a therapy session with conversation and/or play which appeared age-appropriate and might lead an observer to assume the presence of a relatively intact ego. However, suddenly, and without a clearly perceptible external stimulus, a dramatic shift then occurred in the child's behavior; the neurotic defenses crumbled precipitously and the archaic mechanisms of primary process and psychotic defenses erupted into view. The psychotic behavior then receded just as rapidly and the neurotic, or pseudo-neurotic, defenses reappeared. Ekstein and Wallerstein provided a therapeutic interview with a 10-year-old girl to elucidate this phenomenon. These authors suggested that conceptually, at least, borderline psychotic children (schizophrenic-like and severely neurotic) could be differentiated from blatantly psychotic and neurotic children on

the basis of the ego's capacity to maintain adaptive control over internal and external stimuli. The psychotic child's ego is postulated as possessing little control over its hallucinatory and delusional experiences, having almost lost the capacity to distinguish inner from outer reality. The borderline psychotic child's regulatory apparatus appears to vary from periods of almost total lack of control over primary process material to rather prolonged intervals of tenuous control over internal stimuli. Although the regulatory mechanism fluctuates in the neurotic child, the variation exists within narrow limits; loss of control is not as pervasive as in the borderline or floridly psychotic child since total personality functioning is largely under the dominance of the secondary process in the neurotic.

Based upon the above review of the literature, it appears that there exists a wide variability in terminological and diagnostic concepts regarding atypical children. Problems, such as differences in terminology, usage of theoretical terms which are difficult to define operationally, lack of uniformity in criteria for diagnosis, and inadequate descriptions of samples employed, make it extremely difficult to order the data. Ornitz and Ritvo (1968) have presented a conceptual schema which seems most valuable to the author for both ordering relevant clinical information and attempting some measure of integration.

The thesis proposed by Ornitz and Ritvo is that early infantile autism, atypical development, symbiotic psychosis, and certain cases of childhood schizophrenia (including borderline states), while possibly representing different clinical syndromes, are essentially variants of the same pathological process. Their thesis is based upon detailed observation of 150 cases plus a critical evaluation of the literature. Two major variables were employed by these investigators to order the data: (1) natural history of the

pathological process and (2) observations of overt behavior patterns that occur as clusters of symptoms.

In regard to the variable of natural history, Ornitz and Ritvo have descriptively traced the chronological appearance of deviant behavior as occurring during seven phases of the child's history: (1) postnatal period, (2) neonatal period, (3) first 6 months, (4) second 6 months, (5) second and third years, (6) fourth and fifth years, and (7) the period after 5 or 6 years.

(1) Postnatal Period. In the immediate postnatal period some children have been described as unusually quiet, motorically inactive, and emotionally unresponsive or, conversely, as unusually irritable and extremely sensitive to auditory, tactile, and visual stimuli. The same infant may alternately manifest both types of disturbance. Following the immediate postnatal period two general courses of development may be reported. In the first, the infant shows early signs of deviant behavior. In the second, relatively normal development is described by the parents until the age of 18 to 26 months, at which time an apparent regression in all areas of activity rapidly occurs. These children then look identical to the children whose development had been deviant from birth. In many cases, parents report that the regression is associated with some concurrent event, such as the birth of a sibling, marital rift, economic reversal, or a move to a new home. In other cases, the behavioral changes are associated with factors influencing the child directly, such as illness, hospitalization, or separation from a parent.

(2) Neonatal Period. Most frequently it is reported by parents that during this period the infant was: "a good baby," "he never cried," "he seemed not to need companionship or stimulation," "he did not want to be held." Concomitant with being "good," he may have shown a reduced activity level, torpor, and a tendency to cry rarely, if at all. When picked up he may have been limp with peculiar posturing and flaccid muscle tone.

(3) First 6 Months. Deviant behavior reportedly occurring during this period included: a lack or delay of the smiling response, failure to notice mother's presence or absence, lack of the anticipatory response to being picked up, underactivity (e.g., failure to play with the crib gym or show an interest in toys) and paradoxical overreactivity to stimulation (e.g., panic at the sound of a vacuum cleaner or telephone), and failure to vocalize.

(4) Second 6 Months. Deviant behavior reportedly occurring during this period included: severe feeding disturbances (e.g., unwillingness to hold solid foods in the mouth, refusal to chew or swallow, intense gagging), and active casting away of toys, bizarre preoccupations with objects (e.g., broken string, pencil), irregular motor development, increased withdrawal from the relationship with mother (e.g., failure to discriminate mother, displaying limpness or stiffness when held by mother, failure to engage in "peek-a-boo" and "patty-cake" games with mother, absence of imitative behavior such as waving goodbye), failure to develop verbal and gestural communicative language, apparent absence of verbal receptive language (child frequently thought to be deaf), tactile discrimination with adverse reactions to rough fabrics and preference for smooth surfaces, intolerance of proprioceptive stimulation (e.g., tossing child in the air).

(5) Second and Third Year. After 12 months, unusual sensitivity to auditory, visual, tactile, and labyrinthine stimulation is often accompanied paradoxically by peculiar and bizarrely expressed pursuit of sensations in these modalities (e.g., attending to self-induced sounds, rubbing surfaces with hands, ear-banging and flicking). Contrasting with these behaviors, the child seems to ignore more meaningful, environmentally determined stimuli.

Between 1 and 3 years of age, repetitive habits, mannerisms, and gestures may begin to develop. These include episodes of cessation of activity accompanied by bizarre posturing and staring into space, prolonged periods of darting, whirling, lunging, hand flapping, and toe walking. Certain external stimuli, such as spinning objects, may precipitate explosive yet organized patterns of activity. Continuous body rocking and head rolling are also frequently observed.

During this period, the child's affective detachment from people appears more pronounced. For example, there is a lack of eye contact, or if eye contact is present, the child appears to be looking through people; or the child fails to relate to others as separate individuals but merely as an extension of himself.

(6) Fourth and Fifth Years. During this period, the unusual sensitivities to external stimulation noted above may decrease. Motor retardation, when it has occurred, is usually overcome and the child becomes capable of ageappropriate physical activities. Yet, he may not engage in such activities (e.g., climbing or riding a tricycle) because of his lack of awareness of the activity. The tendency to walk on toes, flap arms, and whirl may decrease, but in some cases continues for many years.

A major problem of the child during this period is observed in the area of language development. Speech may not have developed at all or, if present, may be characterized by echolalia and pronoun reversals. The voice may sound atonal, arrhythmic, and hollow.

The symptoms of early infantile autism and its variants as viewed by Ornitz and Ritvo have been described, as noted above, in terms of onset of occurrence. These symptoms are also grouped into the following subclusters by these authors, and are referred to as such in the continuation of their review:

(1) disturbances of perception, (2) disturbances of motor behavior, (3) disturbances of relating, (4) disturbances of language, and (5) disturbances of developmental rate and sequence. There is no a priori assumption that one subcluster of symptoms stands independently of another.

(7) The Period after 5 or 6 Years. One of the most confusing aspects of the pathological process is that after the age of 5 or 6 years, symptomcomplexes of early infantile autism and its variants tend to merge with other clinical entities (e.g., childhood schizophrenia).

With respect to disturbances of relating and language, Ornitz and Ritvo have observed that with increasing age, the capacity to relate depends markedly upon the capacity to communicate with others. It has been noted that speech may not develop by age 5, in which case the autistic child becomes less distinguishable from the retarded child. Those children who fail to develop communicative speech and progress no further, when seen agein at 10 to 15 years of age, tend to appear much as they did when younger. The clinical picture presented is one of primary retardation with psychotic features in certain areas of ego development.

In a second course of development, Ornitz and Ritvo have observed that characteristics of organic brain disease become manifest. There may be an impulsiveness, a lack of emotional control, hyperactivity, restlessness, and irritability accompanied by some degree of mental retardation and concretistic thinking.

A third developmental course noted by Ornitz and Ritvo becomes manifest during latency and in early adolescence. It is identical to that clinical picture described by other investigators as schizophrenia. Language is characterized by loose, free, or fragmented associations leading away from social contact and communication. Bizarre, illusory, or hallucinatory

thinking may be present. A distorted fantasy life may be developed around some of the earlier disturbances of perception or motor expression.

A fourth course of development observed by Ornitz and Ritvo may evolve either from an autistic stage or from an intermediate schizophrenic stage. Superficially, such children appear to have a relatively normal personality structure or neurotic or characterological defects. However, careful attention to the behavior and a detailed history of earlier development will reveal a clinical picture suggestive of residuals or an earlier autistic syndrome. In particular, these children present a certain oddness in character and impaired empathy coupled with a lack of social judgment and discrimination. There may also be an excessive preoccupation with mechanical things coupled with a lack of interest in human relationships.

Behavioral observations of cases regarded as early infantile autism and its variants by Ornitz and Ritvo appear strikingly similar to major aspects of clinical pictures presented by other investigators (i.e., Kanner, Mahler, Bender, Despert, Putnam, Rank, Szurek, Bergman, and Escalona). Considering the ages of the samples reported and symptoms described, it seems to the author that these investigators are not dealing with homogeneous groups, although the syndromes described by Kanner and Mahler appear to represent more specific clinical entities. Therefore at the present time, rigid adherence to the use of specific diagnostic terms (e.g., early infantile autism, symbiotic psychosis, childhood schizophrenia) seems premature and of limited value both clinically and experimentally. More specifically, for purposes of the present study the broader term "atypical children" is used and accompanied by observational data which describe the overt behavior of the subjects. A behavioral description of the sample employed is presented in Appendix A and discussed more fully in the Method Section.

Etiology of Atypical Development. Turning to a consideration of etiology of atypical development, the literature reveals that this issue has been considered from several points of view: (1) organic hypotheses, (2) psychogenic hypotheses, and (3) hypotheses based upon multiple causation.

Subsumed under organic hypotheses are those ascribing the source of the disorder to genetic predisposition, diffuse encephalopathy, malfunctioning of the reticular activating system and associated structures, and defective perceptual apparatus.

The primary source of evidence offered in support of the genetic hypothesis is a number of studies reporting twins (the majority of them monozygotic concordant for autism (e.g., Bakwin, 1954; Chapman, 1957; Kallman, Barrera, & Metzger, 1940; Keeler, 1958; Lehman, Haber, & Lesser, 1957; Sherwin, 1953; Ward & Hoddinott, 1962). Evidence from these studies appears to be inconclusive due to the confounding of such variables as heredity, environment, and congenital defects.

Bender (1942, 1947, 1961) has presented the hypothesis that schizophrenic decompensation in children is the result of diffuse encephalopathy which is endogenous in origin. Onset of the disease may be insidious or else be precipitated by a combination of noxious intra-uterine and/or perinatal events. Bender cited as evidence for her position the presence of disturbances in neuro-physiological functioning, as enumerated in a previous section of this review. Rutter (1968), in examining the concept of autism and related disorders, such as brain-damage syndrome, has pointed out that much of the evidence which could be crucial regarding support of this hypothesis is still missing: (1) there are no published histopathological studies, (2) electroencephalo-

graphic studies in the literature are inadequate and contradictory, and (3) metabolic investigations are still in their infancy. Rutter has also raised two important issues regarding this type of organic hypothesis. First, because many atypical children fail to demonstrate evidence of brain pathology does not necessarily mean there exists no structural or functional defects. Instrumentation utilized to assess neurophysiological functioning is still inadequate. Secondly, even if central nervous system dysfunction can be demonstrated, it is not necessarily the only causative factor operating. Since a vast majority of children with central nervous system dysfunction do not display symptoms of autism and related disorders, it remains to be explained why the portion who become autistic or schizophrenic do so. Rutter concluded that use of central nervous system dysfunction as an etiological explanation of autism and related disorders is too general to be of much help in understanding the specific causes of these disorders. He suggested the formulation of more specific biological hypotheses in this area.

Atypical development as caused by defective functioning of the reticular activating system has been hypothesized by such investigators as Rimland (1964), Hutt, Hutt, Lee, and Ounsted (1965), Koegler and Colbert (1959), and DesLauriers and Carlson (1969). Although these authors can account for much of the deviant behavior of atypical children on a theoretical level, there is little empirical evidence to support their positions.

The most precise and complete formulation of the hypothesis that early infantile autism and its variants are caused by disturbances in perceptual functioning is presented by Ornitz and Ritvo (1968). It is hypothesized that deviant behaviors presented by this group of children are caused by a breakdown of homeostatic regulation of sensory input which results in a state of perceptual inconstancy. Disturbances of perception are considered fundamental

to other aspects of the disorder and are manifest by early developmental failures to distinguish between self and environment, to imitate, and to modulate sensory input. The symptoms suggest that the illness is characterized by dissociated, uncoupled, and alternating states of excitation and inhibition due to an underlying pathophysiology. Similar disturbances of perception have been emphasized as etiologically significant by other investigators (e.g., Anthony, 1958; Bergman & Escalona, 1949; Goldfarb, 1956). At present, however, empirical evidence to support this theoretical position is absent.

Psychogenic hypotheses appear to represent two positions. Essentially, the first position maintains that it is the relationship between the child and the parents (specifically the mother) that determines pathological behavior in the child; that is, each member of the dyad contributes behavioral components which result in disturbed functioning in the child. The second position explicitly states that the child's deviant behavior is caused by parental psycho pathology (specifically the mother's).

An illustration of the first position is that of Mahler (Mahler & Gosliner, 1955) which described the genesis of symbiotic psychosis. According to Mahler, the child is constitutionally vulnerable and predisposed toward the development of psychosis. The constitutional vulnerability of the child's ego helps create a vicious circle of pathogenic mother-infant relationships by stimulating the mother to react to the child in ways that are prohibitive to his attempts to separate and individuate. Anthony's (1958) position on the genesis of infantile autism is similar to Mahler's regarding the mother-infant relationship. According to Anthony, the emergence of infantile autism results from two types of mother-infant dyads: (1) a child whose constitutional ego barrier is abnormally "thin" coupled with an active, intrusive, hyperstimu-

lating mother and (2) a child whose constitutional ego barrier is abnormally "thick" coupled with a passive, withdrawn, hypostimulating mother. There have been efforts to be theoretically precise about the nature of the child's constitutional vulnerability. Bergman and Escalona (1949) and Ekstein and Wallerstein (1954) have described the ego barrier as analagous to a semipermeable membrane whose function it is to allow stimuli (both external and internal) to penetrate the organism in a manner and at a rate conducive to healthy development. If the barrier is either abnormally "thick" or "thin" it creates a predisposition for disturbances in immediate behavior and long-range development. Behavior states in the mother can either compensate for defects in the infant's constitutional ego barrier or exacerbate them. As Kessler (1966) has pointed out in reviewing this theory, it is unclear how much of the deficit is constitutional on the child's part and how much of the child's pathology is the result of ineffective maternal care. Unfortunately, close study of infants prior to the onset of psychotic conditions are virtually nonexistent in the literature.

The second type of psychogenic hypothesis emphasizes parental psychopathology as the cause of deviant behavior in the child. Theoreticians representing this position include Rank (1949) and her colleagues Putnam (1948) and Pavenstedt (1955). Cases reported by these clinicians abound in evidence of parental difficulties, especially maternal ones. Mothers are characteristically described as intelligent and superficially well-adjusted, but upon closer investigation appear to be immature, narcissistic, and ill-equipped to perform their maternal functions because of unresolved conflicts centered about hostile-dependent feelings. Emotional interchange with the child is marked by ambivalence in all areas of the relationship, if not by more pathological

attitudes of rejection. This group of authors has noted that the disturbance in the mother-child relationship antedated the appearances of atypical behavior in the child. They have also observed that the early relationship between the father and the child was disturbed, but failed to provide any precise descriptive statement about the nature of the disturbance.

Bettleheim's (1967,1971) view appears to represent the most clearly expressed psychogenic hypothesis so far available. He suggested that essentially the autistic position consists of extreme withdrawal by the child due to his conviction that his own efforts have no power to influence his environment. This attitude is postulated as having developed out of the child's repetitive experiences with insensitive, destructive, non-need-satisfying parental figures (especially the mother). Bettleheim explained the severity of the child's response in terms of critical periods in development at which time he is exposed to extreme parental behaviors which prevent him from acquiring a sense of mastery. These critical periods include the first 6 months which is crucial for establishing basic trust in self and others; 6 to 9 months which is an important period for initiating separation-individuation; 18 to 24 months during which time the child begins to develop skills for making affective, motoric, and vocal contact with persons other than his parents.

The primary source of evidence offered in support of psychogenic hypotheses are case studies. Where empirical investigation has been undertaken (e.g., Anthony, 1958; Esman, Kohn, & Nyman, 1959; Goldfarb, 1961; Klebenoff, 1959; Meyers & Goldfarb, 1961; Wynne & Singer, 1963), results appear inconclusive due to such factors as design errors, nonrepresentativeness of samples employed, methods of evaluating both child and parental pathology, and the nature of control groups used (if any).

Investigators such as Goldfarb (1961) and Eisenberg (1957) have sug-

gested that single factor biases (either purely psychogenic or purely organic) have resulted in apparently mutually exclusive and conflicting theories of etiology. These authors point to the strong probability of multiple causation. Deficits on either the side of the child and/or the parents are suggested as variables which should be isolated and investigated both as separate entities and as interactional processes.

Based upon the above review of the literature, it appears that early deficits whether they exist on the part of the child (i.e., hereditary, constitutional, biological, or psychological variables) and/or on the side of the environment (e.g., maternal and familial factors), are strongly implicated as playing a major role in the maldevelopment of the child. While theoreticians seem to be dealing with the common phenomenon of early deficiency, the area they choose to focus upon (child and/or environment) plus the position they assume (organic and/or psychogenic) appears to be largely determined by their theoretical predilections. While the bulk of hypotheses reviewed appear to have heuristic value, none as yet has received empirical confirmation. Therefore, for purposes of the present study, the issue of etiology was not dealt with directly. More specifically, while behavioral descriptions of the present subjects are provided, no judgments were made as to whether the etiology of the observed behavior was due to organic and/or psychogenic factors.

Group Treatment of Atypical Children

In contrast to the plethora of articles dealing with theoretical issues relating to atypical children, there is a dearth of research pertaining to group psychotherapy with this clinical sample (Meltzoff & Kornreich, 1970).

The traditional method for treating atypical children has been intensive

individual therapy as described by such workers as Rank (1949), Ekstein and Wallerstein (1954), and Stierlin (1969). The rationale for this form of treatment appears to be based upon the assumption that the child has become damaged as the result of a faulty relationship with a significant figure, usually the mother. Therefore, an exclusive relationship for the child which is need-satisfying in general, and restitutive and corrective in particular, is viewed as constituting the necessary core of treatment. However, within the last decade and a half, a small number of studies has appeared in which the utility of employing various forms of group therapy for treating atypical children was investigated. It is the purpose of the present section to review a number of these studies in detail since methods used in these studies appear similar to the ones employed in treating subjects involved in the current investigation.

Falstein and Sutton (1958) described a group nursing care program developed over a 5-year period on an inpatient, children's psychiatric unit. The subjects involved in the study were between 3 and 13 years of age and had received a diagnosis of schizophrenia. The total number of subjects treated during the duration of the program was not reported. In addition to being involved in the group nursing program, subjects also received individual psychotherapy, occupational therapy, and remedial education. The size of the group at any time during treatment ranged from four to six children with two members of the nursing team functioning as therapists. The group program evolved in the following manner. Initially, the children were encouraged to form relationships with permanent nursing staff involved in the program, the level of the relationship being determined primarily by the individual child's needs. After affective contact had been established between children and staff, a

highly structured and routinized program was introduced within a group setting to encourage age-appropriate skill acquisition. The program included activities to develop such skills as dressing, bathing, eating, toileting, playing, and speaking. After one year, the most noticeable changes reported in addition to age-appropriate skill acquisition were a marked reduction in anxiety and isolated behavior and the emergence of activities approximating social interaction with peers (e.g., indirect contacts via play materials and engagement in parallel activities). Nine months prior to the termination of the program, group activities were extended to include a modified school program. The educational aspect of the program involved introducing increased structure, demanding more specific activities of the children, and the active discouragement of inappropriate behaviors. Group pressure, praise, and rewards were techniques used to interrupt autistic preoccupations and to stimulate performance. School-appropriate behaviors (e.g., taking seats and remaining in them) were encouraged. The development of skills such as identification of body parts, verbal communication through imitation and singing, and advanced selfcare were also encouraged. Because the school program was terminated abruptly, the authors reported that evaluation of outcome was not possible.

Pfeiffer (1959) described a special group program developed for children on an inpatient psychiatric ward of an urban hospital. Fifty-five subjects (38 boys and 17 girls) who ranged in age from 2 to 6 years participated in the program. The children had been committed to the hospital for either a diagnostic evaluation and/or short-term treatment followed by possible placement. Diagnostic evaluations indicated disturbances, such as severe neurosis, mental deficiency, organic brain disorder, and schizophrenia. The group program was only one aspect of treatment received by the subjects. Groups were composed of approximately nine members, and the program consisted primarily of supervised

free-play. The atmosphere of the group was essentially a permissive one in which a child could approach and interact with therapists, another child, or remain engaged in solitary play. Much physical contact was used to either comfort or help control the more disturbed children. The author reported that of the 55 subjects, 29 were able to return to the community after one year of hospitalization.

May and May (1959) reported upon the residential treatment of children described as atypical-autistic who ranged in age from 4 to 14 years. The number of subjects employed in the study was not specified. The mode of treatment employed was essentially psycho-educative. The core of the treatment program was composed of three phases: (1) the loving-contact period, (2) creative gratification, and (3) the time of tests and challenges. During phase 1 (loving contact), subjects were introduced into small living groups. The basis for grouping was the child's level of development. Throughout this phase, subjects were exposed to a structured daily routine which was only moderately permissive in nature. The subjects were also introduced to staff (e.g., teachers, housekeepers, play therapists) who attempted to provide person constancy and affective stimulation. The use of food by staff was noted as an important factor in the successful establishment of relationships with the children. After subjects adapted to phase 1, phase 2 was introduced. During phase 2 (creative gratification), subjects were encouraged to develop skills for which they demonstrated some measure of aptitude (e.g., arts, mechanics, athletics). Situations were provided in which subjects could achieve skillcompetence by successive approximation and gains were verbally rewarded by staff. It was believed that during this period the subjects began to develop a feeling of mastery and simultaneously appeared less overtly preoccupied with

pathological aspects of their personality. Once the subjects had established some form of trusting relationship between themselves and their environment, they were moved into phase 3 (tests and challenges). During this period, the subjects were gradually and carefully reintroduced into living with their families. May and May reported that approximately 30% of the children treated over a 3-year period had reached a level where they could function outside the school for brief periods. It was projected that these subjects would eventually reach a minimal level of adjustment which was compatible with a restricted, limited, and unchallenging life.

Fenichel, Freedman, and Klapper (1960) described a day-school program for children who had been diagnosed as childhood schizophrenia and excluded from attending private and public schools. The program was initiated in 1953 and started with the working hypothesis that many children diagnosed as schizophrenic could live at home and be helped in an adequate day-care setting which provided psychiatric and educational guidance. By 1955 the school was administering service to 38 children. The program was a six-hour daily, five-day-perweek one which furnished subjects with living-playing-learning experiences and activities that offered continuity, stability, and security. The program was divided into phases: (1) a preparatory phase to make the child as comfortable as possible by removing stress situations and relieving anxiety and (2) a reeducational phase to stimulate maturation by helping the child to cope with inner needs and tensions and the outside world. As many remedial and therapeutic educative techniques of preschool and elementary school as possible were used. Some techniques of play therapy, group therapy, and music and dance therapy were also applied. One important factor involved in all treatment modalities appeared to be the relationship between teachers and children.

Whatever activity a subject was engaged in, there was a teacher available who was willing to become involved with him on whatever level the subject demanded. For example, relationships often occurred on a primitive, nonverbal level with the teacher acting as an accepting, comforting maternal figure who held, rocked, fondled, and fed the child. Fenichel et al. (1960) have described the gains made by these children as follows:

Many of our children have achieved self-management for the first time in their lives. Children with poor motor coordination have learned to play ball, swim, roller-skate, ice-skate, ride a bicycle and manipulate woodworking tools. Children with overwhelming fears and aggressions have learned to control impulses and tolerate change and frustration. Children who were afraid to cross streets, go into stores or playgrounds, ride a subway, and meet people, have overcome these specific fears and taken first steps toward socialization. Children who were considered "uneducable" have learned to read, write, do arithmetic and other academic work (p. 142).

Farmer (1963) presented a brief account of a vocational activities program with four psychotic girls who ranged in age from 6 to 8-1/2 years. The subjects were seen once a week for a music hour followed by two hours of swimming-pool play. Long-term treatment goals were basically: (1) to help the girls establish their own ego boundaries and (2) to encourage growth in a broad range of ego functions, especially in personal relationships. A number of specific strategies and techniques were utilized to implement the achievement of goals. First, the girls' obsessive need for sameness of environment, people, and routine was rigidly maintained and only gradually changed until they could tolerate differences. Second, known areas of unpleasant association and those stimulating phobic-like reactions were intentionally avoided. Third, the tendency to distractibility, hyperactivity, and short-attention span was handled by confining subjects to a specific area, overstructuring activities for them, and halting activities just prior to the satiation point. The musical activities program initially consisted of involving the subjects in

singing simple songs whose content emphasized "here-and-now" situations, timespace relationships, and identification of body parts. Use of a felt-board utilizing visual and tactile-kinesthetic stimuli was adjunctive to the music program. During the later phases of treatment, musical games and dances were introduced to encourage social interaction and the establishment of interpersonal competence. Following 10 months of treatment, the authors noted three major changes in the subjects: increased attention span, greater awareness of and responsiveness to each other, and a more stable body image.

Speers and Lansing (1965) described the group treatment over a 2-year period of five symbiotic psychotic children (three girls and two boys, ranging in age from 3-1/2 to 4-1/2 years). The subjects were seen twice weekly for hourly sessions while their parents were treated collaterally in a group. The mode of therapy employed with the children had its groundings in the authors' theoretical position regarding the eticlogy of the behavior disorder of their sample. The position of Speers and Lansing maintained that the psychotic child and his parents were psychologically committed to a symbiotic relationship between mother and child which precluded regression of the child to an earlier phase of development, the phase of autism (in which there is no personal identity, no distinction between self and nonself, and no experience of the mother as something apart from self). The symbiotic relationship also precluded advancement of the child to a more mature phase of development, the phase of separation-individuation (in which there is a real awareness of complete physical and psychological separateness of mother from child with realization of separate identities, ego boundaries, impulse and affect control, and complete and distinct body image). The authors postulated that therapy with this type of subject could be initiated only in a framework of a relationship which reconstituted a benign, gratifying early mother-child
symbiosis. It was their thesis, however, that the development of a "therapeutic symbiosis" was not restricted to a dyadic relationship between a mothering figure and a subject, but that in a group situation a "group ego" could serve as one-half of the symbiotic relationship with a subject as the junior partner. It was reported that during the initial phase of group treatment, the autistic (withdrawal) defenses of the children were penetrated. This was described as being accomplished through the use of tactile-kinesthetic stimulation (e.g., physical contact between therapists and subjects), auditory stimulation (e.g., loud marching music), and visual stimulation (e.g., use of a wall mirror). If a child became overwhelmed by intruding stimulation, he received support and protection (both physical and verbal) from the therapist. During the secondary phase of treatment, subjects were strongly encouraged to establish a symbiotic relationship with the therapists. Within the context of this relationship the children were invited to gratify dependency needs, allowed to act out sexual and aggressive impulses within limits, and permitted to actively pursue primitive concerns surrounding such activities as feeding, excretion, body parts identification, etc. An important factor in this stage of treatment was the therapist's provision of extrinsic controls (usually in the form of firm but nonpunitive physical restraint) when it appeared that a subject was being overwhelmed by his own impulses or his behavior threatened another child. The therapist then gradually demonstrated to the subject that internal controls could be achieved. It was reported that during this stage of treatment, group members slowly began to shift affective contact from the therapists to each other (e.g., subjects began to relate to each other, make attempts at satisfying each other's needs, and exercise controls when appropriate). During the tertiary phase of treatment, separation-individuation, subjects relied less dramatically on the therapists and utilized each other for sources

of interpersonal stimulation, interaction, and need gratification. Speers and Lansing reported that some of the gains made by their subjects in addition to improved socialization included: improvement in speech, acquisition of bowel and bladder control, and development of age-appropriate eating habits. Also, four subjects were able to eventually attend kindergarten and adjust without

much difficulty.

Lifton and Smolen (1966) have attempted to delineate an explicit approach for engaging in group psychotherapy with severely disturbed children. Their groups were composed of subjects of both sexes, ranging in age from 4 to 12 years, who had received independent diagnoses of either autism or severe schizophrenia. The number of subjects involved in the study was not reported. Groups met for two-hour sessions, three to four times a week, the duration of the treatment was not specified. Essentially, therapy consisted of structured group play combined with activities and discussion. Lifton and Smolen refer to their approach as "relationship group psychotherapy." Special emphasis was placed upon the importance of therapist variables which were viewed as not only promoting a curative relationship for the individual child, but also between group members. Therapist functions included the following activities: (1) acceptance of appropriate behaviors from subjects but not of self-destructive or psychotic ones; (2) participation in a highly active and involved manner in the group (e.g., taking the initiative and responsibility for penetrating subjects' autistic barriers during initial contacts, and subsequently building therapeutic relationships between group members); (3) assumption of a high degree of leadership (e.g., structuring the group so that subjects have freedom within the context of clearly defined limits); (4) employment of verbal and physical restraint when necessary to institute and promote controls, and substantiate

feelings of protection for the group; (5) verbalization and interpretation of the behavior and feelings of individual children and the group (and provision of assistance to group members to do the same) at a level that could be understood and assimilated constructively; (6) concentration on the immediate reality situation of the group; (7) acceptance of all individual behavior as a form of communication, and pursuit to discover its meaning and convey this to individual and the group; (8) promotion of accurate person-perception and development of empathy among group members; (9) encouragement of spontaneous group discussion on whatever level would evoke a response; (10) halting of inappropriate acting-out and self-destructive behavior and interpretation of what is happening; (11) provision of assistance to subjects in differentiating psychotic delusions and fantasies from reality; (12) placement of demands and pressures on child (or allowance of the group to do so) which were tolerable and growth producing. Lifton and Smolen have observed marked changes in most of the children treated. These reported changes included higher levels of ego integration, lessened withdrawal and isolation, and decrease in psychotic fantasies, delusions, and bizarre behavior. In addition, it was stated that subjects achieved better self-control, appeared less rigid and more spontaneous, and advanced from autistic to interpersonal modes of relating. Finally, the authors noted that 70% of their subjects have been maintained in public schools, with almost all earning promotion to higher grades.

Halpern (1970) described a 4-year study involving the treatment of 15 children who ranged in age from 4 to 6 years. Eleven subjects had received the diagnosis of infantile autism, three subjects of organic brain syndrome with autistic features, and one subject of mental deficiency with autistic features. One of the symptoms present to some degree in all subjects was the

partial or total failure in the use and comprehension of verbal symbols. Therefore, the core of the treatment involved a language training program implemented in a classroom setting. Groups were eventually composed of no more than six subjects who met daily with their teachers for a 2-hour period under conditions controlled for constancy as much as possible. The schedule for the first hour consisted essentially of the teacher greeting each subject using both verbal and gestural communication. The child was coached to respond in a similar fashion and in the process establish eye contact with the teacher. This procedure was extended so that subjects were encouraged to greet each other. Gestural responses were initially accepted from mute children, followed by verbal responses gradually shaped by successive approximation. Following the greeting phase, each child was encouraged to place the letters in his name upon a flannel-board. The children's attention was then directed to a blackboard where the teacher had written a statement about the day and its weather. Each subject was then called upon and encouraged to attempt a recitation including the printed material on the board. This exercise was followed by a series of lotto games, designed to teach auditory and visual word recognition and to present replicable models for social interaction. The second hour was divided into four 15-minute periods beginning with outdoor free play. This was followed by a rest period, a music period consisting of rhythmic marching to records while playing musical instruments, and a snack period prior to departure, Halpern reported that after a 4-year period, all subjects were able to use communicative speech to some extent. Although 13 subjects were attending public school following treatment, teachers evaluated the majority of them to be poorly adjusted in the classroom. The remaining two subjects were in residential treatment in facilities for disturbed children.

Bettelheim (1971), reporting on a sample of 40 children who had received residential treatment for an average of two years, claimed to have achieved "good results" with 42% of the subjects. The sample employed was described as "autistic" in a very broad and undifferentiated manner. "Good results" included such criteria as college attendance and graduation, the attainment of higher academic degrees, and the ability to be gainfully employed. Bettleheim (1950, 1955) described his mode of therapy as essentially consisting of the provision of the child with a structured but permissive environment in which he could be weaned away from autistic isolation. Two factors emphasized as especially important in treatment were the presence of environmental structure and constancy of person in the form of a therapist-counselor. In regard to the former, the child was encouraged to develop a relationship with a staff member at the simplest level and then encouraged to expand upon the relationship until it became more complex and age-appropriate. After the child had gained a sense of basic trust in himself and his environment because of his involvement with a staff member, he was placed in situations designed to teach age-appropriate skill acquisition (e.g., self-care habits, educational tasks, peer relationships). Although Bettelheim's description stressed the importance of the individual relationship for the child, he mentioned the value of group activities (1950). Initially the group assisted the child to focus upon immediate and present activities and provided him a relief from dealing with painful past memories. The group later provided the child with a protective environment in which to begin testing out social skills acquired via the individual relationship (e.g., the ability to relate, empathize, and confront others with feelings). Finally, group pressure forced the child to abandon psychotic behaviors and to imitate and firmly adopt more appropriate ways of acting. Since the appearance of two studies in 1961 (Ferster Ferster &

DeMyer, 1961) dealing with the application of operant learning principles to the treatment of specific problems of autistic and schizophrenic children, an increasing number of investigators have devoted their attention to experimental inquiries into the efficacy of using behavior modification for dealing with these subjects (e.g., Blake & Moss, 1967; Brawley, Harris, Allen, Fleming, & Peterson, 1969; Browning & Stover, 1971; Colligan & Bellamy, 1968; Hewett, 1965; Lovaas, 1966; Lovaas, Freitag, Gold, & Kassorla, 1965; Lovaas, Schaeffer, Benson, & Simmons, 1965; Metz, 1965; Wetzel, Baker, Roney, & Martin, 1966; Wolf, Risley, & Mees, 1964). Although results of the above representative sample of studies indicate that the use of operant training techniques can lead to dramatic symptom modification in atypical children, these studies are regarded as irrelevant to the purpose of the present review for the following reasons: (1) in these experiments, techniques were employed primarily in situations where the subject-experimenter ratio was one to one and (2) there appeared to be a lack of definite evidence in the literature which indicates that individual learning techniques involving a subject-experimenter ratio of one to one are equivalent to group learning principles in which the subjectexperimenter ratio is increased beyond one to one. There is, however, a paucity of research dealing with the application of operant conditioning techniques to group treatment of atypical children (Carlin & Armstrong, 1968; Hingtgen, Sanders, & DeMyer, 1963; Martin, England, Kaprowy, Kilgour, & Pilek, 1968; Zimmerman & Zimmerman, 1962).

Zimmerman and Zimmerman (1962) reported upon the modification of maladaptive responses (e.g., tantrums, irrelevant verbal behavior, and primitive language) of two emotionally disturbed boys (both age 11), in a classroom situation. Maladaptive responses emitted by the subjects were not attended to by teachers while behaviors which were more adequate with respect to social and

scholastic adjustment were shaped and maintained by use of intermittent social reinforcement (e.g., teacher proximity, active involvement with a subject, praise). Data regarding duration of treatment plus quantitative measures of the dependent variables were not provided in the report. Zimmerman and Zimmerman simply stated that at the conclusion of treatment the subjects were working more effectively in class and using more mature and relevant speech.

In a study by Hingtgen et al. (1965), a technique is described for developing cooperative behavior in a group of atypical children. The subjects employed were six children (two males and four females) ranging in age from 3 years, 7 months to 7 years, 5 months who were diagnosed as schizophrenic. One prominent feature of the sample was the absence of, or severe impairment in, social interaction with peers. The purpose of the study was to investigate whether social responses could be developed in childhood schizophrenics using operant conditioning techniques. Initially, cach subject received several months of daily, pre-experimental operant training. The training involved the subject's learning to operate a lever to obtain coin on a fixed-ratio schedule of reinforcement, and to deposit the coins in vending machines to obtain candy, crackers, and cereal. After each subject had learned to successfully perform the training task, the six subjects were then paired into three teams. Themembers were taught, through nonverbal shaping procedures, to emit cooperative responses, that is, they were eventually required to alternate their bar presses in order to obtain rewards, one subject's response allowing the other subject to obtain reinforcement. Results indicated that it was possible to shape these alternative cooperative responses within an average of 23 sessions. It was also noted that the subjects eventually engaged in social interactions (e.g., establishing physical contact with each other) although such behaviors

were not directly reinforced in the experimental situation. However, observed increases in these forms of social contact might have been due to extra-experimental, therapeutic activities engaged in by the subjects during the time of the research.

Martin et al. (1968) described a procedure for conditioning class-room behavior in 10 subjects described as autistic and who ranged in age from 8 to 18 years. The specific goal of the research was to train 10 subjects to function as a group in a kindergarten class under the supervision of one teacher. During the initial phase of treatment, each subject was worked with individually (subject-experimenter ratio of one to one) in a small barren room, for 60 3-hour sessions. Tokens were established as reinforcers and then a number of behaviors were conditioned in each subject: (1) sitting quietly in a desk, (2) controlling tantrum activities, (3) naming familiar objects and pictures, (4) answering simple questions dealing with self and relationships to the environment, (5) tracing and copying, and (6) matching simple objects. Following the individual training period, the secondary phase of treatment was entered. During this phase (a 3-month period), the location for sessions was gradually changed to a typical elementary school classroom, the complexity of tasks (e.g., object naming) was increased, and the subject-experimenter ratio was accelerated to seven to one for some of the tasks. Results indicated that the procedures employed were effective in varying degrees for 7 of the 10 subjects. However, detailed data on only 4 children are supplied in the study. Because 3 subjects had failed to emit consistent and intelligible verbal responses during the initial phase of treatment, the remainder of their program was devoted to language training.

Carlin and Armstrong (1968) described the group treatment of four preadolescent boys who had received either a primary or secondary diagnosis of

schizophrenia. The group met for 90-minute free-play sessions, four days a week for five weeks. Characteristic of the initial behavior of the group was a profound lack of cooperative play coupled with destructive acting-out. The primary treatment goal was to encourage social responsibility among group members (e.g., to teach the subjects that the behavior of group members was partially their own responsibility). The following reinforcement contingencies were introduced to facilitate the achievement of the treatment goal: (1) for sequences of appropriate interaction involving a majority of the group, token rewards were placed into a common pool, (2) sequences of socially inappropriate behavior (especially aggressive activities such as spitting, kicking, destroying objects, etc.) resulted in a fine and tokens were withdrawn from the pool, (3) effort on the part of one or more of the subjects to solve group problems or to be especially helpful to the group was rewarded by adding bonus tokens to the pool, (4) fines or payments were preceded by verbal evaluation of the behavior and an announcement of fining or rewarding action by the therapist, (5) at the end of the session the tokens in the pool were evenly divided among the subjects and they could cash in the tokens for a variety of toys and food. Only a few sessions after the introduction of reinforcement contingencies there was a dramatic deceleration of provocative and acting-out behaviors and an acceleration in physical proximity and cooperative play. However, the previously specified contingencies were not sufficient to control all disruptive activities. Supplemental techniques such as use of physical restraint by the therapists, employment of a "time-out-penalty" (during which the subject was removed from the group for brief periods), and withdrawal of attention were utilized to assist in controlling acting-out behavior. It was also observed that one subject who became jealous of a dyadic interaction between two other subjects, acted-out in order to penalize the group and apparently obtain

revenge. At this point, the group-fining system was halted and inappropriate activities were ignored while behavior previously defined as appropriate continued to be rewarded. Once this system was adopted, the group began to improve and reach a stable level of functioning. At the end of treatment, Carlin and Armstrong observed that the subjects were able to inhibit their aggressive impulses and work together in reasonable harmony for the common good of the group. The authors viewed the impact of the program as due to its capacity to motivate subjects who seemed to have either lost or never gained sufficient social motivation.

The studies reviewed above suggest that group psychotherapy and research with atypical children is currently at a preliminary stage in development. From the standpoint of scientific research design, the methodologies employed in the field-type studies (Bettelheim, 1950, 1955; Carlin & Armstrong, 1968; Falstein & Sutton, 1958; Farmer, 1963; Fenichel et al., 1960; Halpern, 1970; Lifton & Smolen, 1966; May & May, 1959; Pfeiffer, 1959; Speers & Lansing, 1965) can be characterized as either clinical-descriptive or pre-experimental (Campbell & Stanley, 1963). In general, either methodology is open to serious scientific criticism (i.e., numerous uncontrolled variables might well have contributed to the contamination of both the internal and external validity of the design). Even the more laboratory-oriented-type studies (Hingtgen et al., 1965; Martin et al., 1968; Zimmerman & Zimmerman, 1968) have failed to meet criteria regarded as experimentally necessary for these designs (Gelfand & Hartmann, 1968), It seems that the failure in the above studies to introduce appropriate experimental controls is understandable if the research is placed in historical perspective and the complexity of the phenomena under investigation is acknowledged. However, the majority of the studies appear to be

markedly deficient in specifying criteria of change and/or improvement and providing quantitative measures of these criteria. A variety of global, descriptive, and impressionistic judgments have been offered by the authors as the primary evidence of therapeutic change. Examples of statements which reflected such judgments included: a significant reduction in anxiety and isolated behavior accompanied by increased acquisition of age-appropriate skills (Falstein & Sutton, 1958); hospitalization release after one year of treatment (Pfeiffer, 1959); achievement of a level of adjustment which allowed subjects to function outside of residential treatment facilities for brief periods (May & May, 1959); acquisition of self-management which was reflected in such behavior as improved impulse control, the ability to tolerate change and frustration, the overcoming of specific fears, and the increase in academic skills (Fenichel et al., 1960); increased attention span, greater awareness and responsiveness to others, and a more stable body image (Farmer, 1963), improvement in speech and socialization (Speers & Lansing, 1965); higher levels of ego integration, lessened withdrawal and isolation, decrease in psychotic fantasies, delusions, and bizarre behavior, and improved self-control (Lifton & Smolen, 1966); the ability to use communicative speech to some extent (Halpern, 1970); increased effectiveness in class and use of more mature and relevant speech (Zimmerman & Zimmerman, 1968); the inhibition of aggressive impulses supplanted by the ability to engage in cooperative behavior (Carlin & Armstrong, 1968).

In view of the failure of the majority of the research to provide precise criteria and related measures for appraising therapeutic change in atypical children, it appears imperative to the author that exploratory investigations are needed in which criterion measures are more clearly specified,

represented quantitatively, and evaluated statistically. Therefore, the present study represented, in part, an attempt to investigate the use of an instrument for securing relevant, specific, and objective dependent measures from a group of atypical children involved in a group treatment program. The instrument employed and the rationale for using it are discussed in a later section.

Loyola University Day School Treatment

The purpose of the present section is twofold: (1) to provide a brief description of the day school program in which all 20 subjects who were involved in the current study participated and (2) to provide a brief description of the subjects and the bases for which they were divided into subgroups for treatment. (A more complete behavioral description of the sample employed is presented in Appendix A and discussed more fully in the Method Section.) The information presented in the current section is regarded as necessary for the development of the present research design and the deduction of hypotheses to be tested. The following descriptions are based upon the author's observations of the Loyola University Day School Program from March 1, 1970, to approximately December 30, 1970.

Physical Plant, Staff, General Structure and Atmosphere. The Loyola University Day School was located in a moderately sized, remodeled apartment building located next door to the Loyola Guidance Center. The school was confined to the first floor and basement of the building. The first floor contained four classrooms which were separate from one another, a front room and adjacent porch (used for combined group activities), an enclosed rear porch (used for storing supplies), and a small kitchen (off limits to the children

and used by staff members for their "breaks"). Classroom furnishings were simple but pleasant (e.g., brightly colored kindergarten-sized chairs and tables). The heated basement contained one large room used for group activities, indoor play during winter, etc. Bathrooms were located on the first floor and in the basement. Outside was a small playground, enclosed by a fence, which contained play equipment (e.g., swings, slide, and merry-go-round).

Staff consisted of one full-time, master teacher who possessed an advanced degree in special education, teacher-therapists (a number of Ph.D. candidates in psychology who had previous training in conducting child therapy) and Loyola University undergraduate volunteers. Teacher-therapists were supervised by two full-time Ph.D. clinical psychologists at the Guidance Center. In addition, regular staff meetings were held during which treatment process was reviewed and discussed by teacher-therapists and supervising psychologists, the Guidance Center's medical director, and a psychiatric consultant. Undergraduate volunteers were trained by teacher-therapists and met with them frequently for general discussion and review of treatment procedures.

The Day School program was a 6-hour daily, 5-day-a-week one whose aim broadly defined was psychotherapeutic, that is, it was the goal of the program to assist each child in developing age-appropriate cognitive, emotional, and • social skills. The general atmosphere of the school was a moderately permissive one within the context of structure which offered the children continuity, stability, and security. The staff attempted to establish a relationship with the children which was characterized by human warmth and stimulation in combination with reality based demands and expectations.

Children were assigned to one of four classrooms (subgroups) on the basis of staff's appraisal of their current level of development and they

remained in those subgroups for the duration of the treatment reported upon. The treatment modes varied between subgroups primarily because of the different needs of each subgroup. A more detailed description of each subgroup and the treatment modes employed in dealing with them are presented below.

In addition to the Day School program, most children were seen for individual therapy on at least a weekly basis at the Guidance Center. The children's parents were treated collaterally in groups at the Guidance Center.

<u>Room One</u>. This subgroup was composed of six subjects and treatment was conducted by one teacher-therapist and a number of volunteers. All of the subjects were verbal, demonstrated only minor speech problems, and appeared capable of functioning at approximately a kindergarten-first grade level. In regard to emotional-social development, this subgroup seemed to be functioning at a level characteristic of a 1- or 2-year-old mode of relating (described in Appendix A). All subjects in this subgroup were toilet trained.

The subjects were exposed to a structured daily routine which included periods of the following activities: training in school-functional behaviors (e.g., sitting in a chair quietly and attending to teacher and tasks); morning greeting of teacher and classmates; participation in a series of academic (cognitive) tasks, specified for each subject's needs, (e.g., tasks designed to teach auditory and visual word recognition, numerical concepts, tracing and copying geometric designs, printing letters, object and picture naming, learning to respond to questions about various pictures depicting practical situations); motor development exercises (e.g., climbing a jungle gym, walking a balance beam, playing ball, riding a tricycle); nap time (i.e., resting quietly on cots); lunch; supervised outdoor play; bathroom "breaks"; indoor free-play (e.g., drawing and painting); music period (e.g., singing to records,

participating in a marching band); "show and tell" (i.e., a subject bringing an object from home and explaining it to the class); departure (i.e., subjects saying "good-bye" to teacher and classmates and preparing to leave for home).

Whenever possible, activities were conducted in the context of the subgroup in order to encourage social interaction and the development of ageappropriate affective skills. Whenever this was not feasible, subjects worked in pairs or individually with a staff member.

Appropriate behaviors (e.g., attending, appropriate use of materials, cooperation -- the following of requests, attempts at and/or successful performance of an activity, constructive social interactions) were socially reinforced in a positive manner by staff. Social reinforcement took the form of general statements to the class (e.g., "I like the way you did that--that's very good!"), and specific statements to individual subjects (e.g., "That's a good job ("). In addition, token reinforcement was used to help subjects to develop the concept of symbolic reinforcement and to learn to delay immediate gratification (e.g., subjects could accumulate "stars" on their record for performing activities, and these "stars" could be exchanged at the end of the day for prizes, such as candy or games). In essence, social and/or token reinforcement was used to elicit, shape, and maintain appropriate behaviors. In addition to the staff rewarding appropriate behaviors, attempts were made to establish a climate in which the subjects would socially reinforce each other's appropriate behaviors and eventually their own (via an internalized reward system). Inappropriate behaviors (e.g., self-hitting, junk verbalizations, destructive acting-out directed against people or objects, bizarre actions) were negatively reinforced by staff using a number of methods (e.g., withdrawal of attention, reprimands, verbal and physical restraint, spanking, brief periods of isolation). Methods for controlling inappropriate behaviors were

determined for each subject on the basis of need for and effectiveness of extrinsic control in contrast to apparent level of internalized control. Extrinsic controls (e.g., physical restraint) were used only if necessary (e.g., if a subject's behavior seriously threatened to harm himself or others) and were gradually "faded" (e.g., from physical restraint to verbal reprimand) as a subject demonstrated he had attained intrinsic controls.

In general, the teacher-therapist and volunteers were highly active and personally involved individuals who conveyed acceptance of appropriate behaviors but not of self-destructive of psychotic ones. They attempted to verbalize and interpret the behavior and feelings of individual subjects and the class (and assist class members to do the same) at a level which could be understood by the subjects. Within this context, staff attempted to assist subjects in developing effective ways of identifying and expressing both positive and negative feelings.

Room Two. This subgroup was composed of six subjects and treatment was conducted by three teacher-therapists and a number of volunteers. Although teacher-therapists alternated days on which they conducted the class, consistency among teachers for dealing with the class and individual subjects was attempted as much as possible. The subjects in this subgroup were verbal, but some demonstrated speech defects (e.g., verbal-receptive and verbal-expressive deficits and echolalia). Although subjects appeared to possess the intellectual potential necessary for engaging in prekindergarten and kindergarten level cognitive activities, use of this potential seemed blocked primarily by inability to maintain attentional focus on tasks coupled with preoccupations with nonverbalized psychotic fantasies and/or overt psychotic behavior including ritualistic and compulsive behaviors, and stereotyped repetitive movements. In regard to emotional-social development, some members of this subgroup appeared to be functioning at a level characteristic of a 1 or 2year-old mode of relating. Other members demonstrated characteristics of a primitive, nonverbal level of relating (described in Appendix A). All subjects in this class were toilet trained.

These subjects were exposed to treatment which was much the same as that received by subjects in Room One except for a more concerted emphasis placed upon the development of both receptive and expressive communicative skills, the establishment of self-identity, and a more simplistic and refined approach in presenting cognitive tasks. In regard to the development of communicative skills, receptive gestural and verbal responses were taught primarily by imitation, while expressive gestural and verbal responses were taught initially by imitation and then gradually shaped by methods of successive approximation. With respect to the establishment of self-identity, numerous "games" were employed (e.g., "Simon says" and "Using the mirror") which assisted a subject in identifying his own body parts and those of other members of the class. These "games" also appeared to reduce the anxiety of subjects who seemed frightened by the prospect of interacting with other subgroup members (e.g., establishing physical contact and gradually increasing the dimensions of the "game" to include other forms of social interaction appeared to lessen the subjects' fear of relating to others). In regard to teaching cognitive tasks, due to the subjects' tendency toward distractibility and preoccupation with psychotic behaviors, each cognitive task was reduced to its simplest components (e.g., attending, making a gestural-expressive response such as pointing, combining a gestural-expressive with a verbal-expressive response, making a verbal-expressive response). Initially, a subject was trained to

consistently provide as many components in his response to a task as he appeared able to. Then, gradually, as skill acquisition increased, more expectations were placed upon the subject until he was able to comfortably include all components in his response to a task. In addition, as many sensory modalities as possible (e.g., visual-tactile, visual-vocal, auditory-vocal, auditory-visual) were employed in training subjects on cognitive tasks.

Appropriate behaviors were rewarded by continual social reinforcement (as described for Room One) in addition to the use of intermittent primary reinforcement (e.g., M & M's, cereal, milk). Social reinforcement by itself appeared inadequate for eliciting, shaping, and maintaining behaviors for this subgroup.

Inappropriate behaviors were negatively reinforced in a fashion similar to that described for Room One.

Rooms Three and Four. Room Three contained four subjects while Room Four contained five subjects. Treatment was conducted by two teacher-therapists per room and a number of volunteers. Although teacher-therapists for both subgroups three and four alternated days on which they conducted their classes, consistency among teacher-therapists for dealing with the classes and individuals was attempted as much as possible. The subjects in both rooms were characteristically primitive and nonverbal, and persistently utilized withdrawal, resistiveness, and/or other autistic maneuvers to avoid establishing contact with people (the behavior of these subjects is described more fully in Appendix A and the Method Section). In general, subjects were hyperactive, resistant to changes, often appeared out of contact with reality, preoccupied with internal and external psychotic activities, and seemed undifferentiated from the environment. Most of the subjects were not toilet trained and also

demonstrated feeding difficulties.

The subjects in these rooms were exposed to a highly structured daily routine which was primarily centered about assisting them to develop the following skills: (1) learning to establish affective contact with people (which included the subject beginning to develop an awareness of physical and psychological separateness, self-identity, and emotional control), (2) acquisition of some form of communication (gestural and/or verbal), (3) acquisition of bowel and bladder control, and (4) acquisition of appropriate eating behaviors.

Much intensive individual work was done with each subject. For example, staff attempted to penetrate the defensive maneuvers used by each subject (e.g. withdrawal, resistiveness, preoccupations with psychotic behaviors) in order to establish affective contact with the child. In order to accomplish this, staff were actively intrusive and employed various forms of sensory stimulation, such as tactile-kinesthetic (e.g., physical contact), auditory (e.g., verbalizations; music), and visual (e.g., a mirror, brightly colored objects), in the context of a personal relationship with the child. If a child became overwhelmed by intruding stimulation, he received support and protection (both physical and verbal) from the staff. Affective responses produced by a subject (e.g., eye contact, physical contact, smiling, vocalizations) were positively reinforced with food and accompanied by physical contact and praise from the staff.

With regard to acquisition of communicative skills, each subject had an individual program to which he was exposed. Examples of the programs and treatment techniques used included the following: teaching sign language to two subjects who were apparently deaf; positively reinforcing random vocalizations, shaping them into phonemes and later into simple words; use of modeling and imitation procedures for subjects who appeared to possess less of a deficit in receptive and expressive language.

Toilet training was a major problem for both rooms of subjects. Various methods were employed (depending on the individual subject) to assist in the development of bowel and bladder control and other self-care skills surrounding toileting (e.g., zippering and buttoning of clothes, using toilet properly, washing hands after toileting). In essence, toilet training involved taking subjects to the bathroom on a frequent and regular basis--urinating and defecating in the toilet were responded to with praise and physical contact (e.g., a pat on the head, a hug). Wetting and soiling were handled in a number of ways using aversive techniques (e.g., letting a child remain wet or soiled for a brief period if it was noxious to him, spanking, verbal reprimands).

The program for shaping appropriate eating behaviors included seating the subject at a table and employing various techniques depending on the problems demonstrated by the individual, to encourage responsiveness. For example, if a child exhibited atypical food preferences, preferred foods were mixed with nonpreferred foods, and the quantity of the former was eventually reduced as the child became more tolerant of the latter. Another example involved the shaping of a sequence of feeding activities (e.g., picking up food, handling, placing in mouth, chewing, and swallowing) by the staff physically assisting a subject to practice the behavior (e.g., teacher would hold the subject's hand, use it to pick up the food and place it in the subject's mouth, and move the subject's facial muscles to facilitate chewing). Physical prompts (from the teacher) were discontinued as the subject demonstrated that he had acquired the response sequence or could respond to verbal assistance.

Although much individual work was done with each subject due to the severity of his problems, whenever possible, group procedures were used (e.g., in establishing cooperative behaviors, encouraging social interaction between subjects while playing).

While subjects were allowed to express both positive and negative feelings, gratify primitive dependency needs, and act out sexual and aggressive impulses, this was tolerated only within limits which were nonthreatening for the individual subject and other group members. Destructive activities directed against self or others plus psychotic behaviors were negatively reinforced using a number of methods which included withdrawal of attention, active halting of the behavior by the teacher using physical and/or verbal restraint, brief periods of isolation, and punishment (physical and/or verbal).

Use of Play Activity for Assessing Atypical Children

As reported in an earlier section of the review, the lack of communicative speech and severe problems in the area of interpersonal relations commonly associated with atypical children tend to rule out or limit the use of traditional psychological tests as diagnostic and research tools with this clinical group (Mittler, 1966; Tilton & Ottinger, 1964). The observation of play behavior in a free-play situation seems an appropriate and practical alternative method of studying certain characteristics of atypical children since such a technique would not be totally dependent on verbal communication or the child's attentiveness to, or compliance with, an adult examiner. This proposal appears even more valid in view of the findings of several experimental studies which have demonstrated that children's level of functioning or adjustment is reflected in various quantitative and qualitative features of their play behavior (Haworth & Menolascino, 1967; Loomis, Hilgeman, & Meyer, 1957; Meister, 1948; Schacter, Meyer, & Loomis, 1962; Stiesel, Weiland, Denny, Smith, & Chaiken, 1960; Tilton & Ottinger, 1964; Weiner & Ottinger, 1969).

There appears to be general agreement among theoreticians of various

persuasions that play of atypical children is characteristically pathological. Bender (1947) reported that schizophrenic children became fixated with one type of object (e.g., spinning round gadgets) and retained early, primitive reflex patterned activities as a mode of play throughout childhood. Eisenberg and Kanner (1956) described autistic children's play as involving preoccupation with simple repetitive activities and fascination with objects which were handled with the skill of fine motor movements. Despert and Sherwin (1954) referred to the lack of functional play in childhood psychotics. Bakwin (1954) observed that these children were either totally uninterested in toys or played exclusively with one toy for hours. Other terms used to designate the play of atypical children include: compulsive and perseverative (Polan & Spencer, 1959; Rank, 1949), bizarre and idiosyncratic (Churchill, 1969), inappropriate (DeMyer & Ferster, 1962), solitary and ritualistic (Colligan & Bellamy, 1968).

While general agreement may be found among theoreticians that atypical children's play with toys is impaired and distorted, little exploratory research has been conducted which is either directly or indirectly concerned with securing objective measures of this phenomenon (Haworth & Menolascino, 1967; Schacter et al., 1962; Stiesel et al., 1960; Tilton & Ottinger, 1964; Weiner & Ottinger, 1969). A number of these studies has been primarily concerned with investigating differences in play activity between atypical children and other diagnostic groups (Haworth and Menolascino, Tilton and Ottinger, Weiner and Ottinger), or else has been restricted to the examination of one specific characteristic of atypical subjects' play behavior (Steisel et al.). Only the study by Schacter et al. appears to be related to one of the purposes of the present investigation, that is, to attempt an appraisal of behavioral change in atypical subjects (using play activity as a dependent measure) over a time

period in which one of the intervening variables was the reception of psychotherapy.

Within the context of the study by Schacter et al. (1962), two, six-member subgroups of preschool-age children diagnosed as schizophrenic were exposed to one year of either drug treatment or individual psychotherapy. Measures of the subjects' play activity prior to treatment were compared to measures obtained after treatment. Play observations were carried out in the following fashion. Each subject was observed through a one-way vision screen as he played with selected toys in the company of a neutral examiner. An observer recorded into a dictating machine a verbal description of the actions and interaction of subject and examiner. Each play observation lasted for approximately 15 minutes. Typewritten protocols were made of each observation. Protocols were then divided into 3-minute intervals, and scored for eight behaviors using a presence-absence criterion. Four behaviors described the subject's relationships to toys (transportation play, imaginative play, disruptive play, and organized play), and four behaviors described the subject's relationships to people (use of own body as an object, use of another as a person, use of another as a thing, and level of organized communication). A comparison of the play behaviors before and after treatment yielded the following results. The group of subjects who had received individual psychotherapy demonstrated a significant increase in organized play, a trend toward an increase in transportation play, and a significant increase in level of organized communication. The group of subjects who had received drug therapy showed no significant changes. No conclusions regarding the effectiveness of differential treatment were drawn by the authors because of the preliminary stage of the research and the acknowledged need for introducing experimental controls in future studies.

Research Proposal and Hypotheses

In view of the limitations of traditional psychological methods for assessing atypical children, the present study represented an exploratory attempt to investigate the use of an observational technique for obtaining behavioral measures of this clinical sample. The procedure used involved the direct observation of subjects in two free-play situations. The initial observation (Play 1) was made prior to a subject receiving treatment at the Loyola University Day School. The second observation (Play 2) was made following a time interval during which a subject had received approximately seven months of treatment at the day school. Each play observation was divided into two parts: (1) a 20-minute period in which the subject alone was observed by the experimenter, followed by (2) a 20-minute period in which the subject was observed by the experimenter in the presence of the subject's mother. These situations were essentially unstructured, and the experimenter assumed the role of a neutral observer. A number of previous studies (Haworth & Menolascino, 1967; Steisel et al., 1960) employed either a more highly structured observational setting and/or required the experimenter to actively participate in interactions with subjects. The use of such procedures appears to restrict both the intensity and variety of potential subject responses and limits data production.

While none of the previous research has involved the subject's mother being present during play observations, the inclusion of the mother provided an opportunity to determine whether her presence affected the child's play behavior.

The evaluative instruments used in the present study to rate observational records of subjects' activities were developed by Foley (1962), and

Vernon, Foley, and Schulman (1967). These instruments provide scales for evaluating the following activities: (1) quality of play, (2) aggression, and (3) dependency striving. A more complete description of the scales, enumeration of behaviors constituting the activities, and relevant reliability data are presented in the Method Section and Appendix B. Although these scales had not as yet been used to evaluate activities of atypical children, they were employed in the current study in preference to alternative methods used in previous investigations (Haworth & Menolascino, 1967; Tilton & Ottinger, 1964; Schacter et al., 1962) because they appeared more comprehensive and relevant for rating the expected behaviors of the sample employed. While a general description of the subjects was presented in an earlier section of the review and a more detailed description is provided in the Method Section and Appendix A, it is important to note that there was a wide variability in the behaviors presented by the sample. Therefore, an instrument which appeared sensitive to a broad variety of potential play activities was needed. It seemed that the Quality of Play Scale (Foley, 1962) satisfied this requirement. More specifically, this scale appeared to possess an adequate basal level for rating the play of a nonverbal subject who might only casually and superficially deal with a toy, while at the same time containing an adequate ceiling for rating the highly elaborate play of a verbal subject. In addition, the Quality of Play measure (similar to Barker, Dembo, & Lewin's 1941 measure of constructiveness) provided an objective system for rating play which has been empirically demonstrated to be sensitive to fluctuations in emotional states, such as frustration (Barker, Dembo, & Lewin, 1941; Davitz, 1952; Foley, 1962), and also related to levels of cognitive functioning as measured by traditional intelligence tests (Barker et al., 1941; Clune, 1973).

Hypotheses regarding Time in Play and Quality of Play. General descriptions of the subjects assigned to the four classrooms prior to Day School treatment were presented in an earlier section of the review. In essence, these descriptions were based upon clinical judgments regarding the degree of emotional disturbance demonstrated by subjects. These judgments were made by Loyola Guidance Center staff prior to accepting a subject for treatment. The process by which the clinical judgments were made is explained more fully in the Method Section. Assuming these judgments were a valid and reliable index of the subjects' pathology, the following hypotheses were developed with respect to the measures, Time in Play and Quality of Play. Relevant empirical evidence (Haworth & Menolascino, 1967; Loomis et al., 1957; Meister, 1948; Schacter et al., 1962; Stiesel et al., 1960; Tilton & Ottinger, 1964; Weiner & Ottinger, 1969), and theoretical evidence (Bakwin, 1954; Bender, 1947; Colligan & Bollomy, 1968; Despert & Sherwin, 1954; DeMyer & Ferster, 1962; Eisenberg & Kanner, 1956; Polan & Spencer, 1959; Putnam, 1949) from which to deduce hypotheses regarding these specific measures is sparse. However, these studies strongly imply that the level of a subject's disturbance is negatively reflected in both the quantitative and qualitative features of his play activity. More specifically, as the level of the child's disturbance increases, he plays less and the play activities themselves become increasingly primitive and underdeveloped. Based upon this evidence it is therefore hypothesized that at the time of Play 1 (pretreatment) those subjects judged to be less pathological--Group 1 (rooms one and two) obtain significantly higher scores than those subjects judged to be more pathological --Group 2 (rooms three and four), for the dependent measures Time in Play and Quality of Play.

Since it is a secondary purpose of the study to attempt to assess behavioral change in the subjects over a time period during which one of the intervening variables was treatment at the Day School, the following hypotheses were developed. Results from the investigation by Schacter et al. (1962) demonstrated that the organization of play improved in a group of schizophrenic subjects following one year of psychotherapy. In addition, research dealing with group treatment of atypical children (Carlin & Armstrong, 1968; Falstein & Sutton, 1958; Farmer, 1963; Fenichel et al., 1960; Halpern, 1970; Lifton & Smolen, 1966; May & May, 1959; Pfeiffer, 1959; Speers & Lansing, 1965) suggests that, in general, psychotherapy was effective in modifying various aspects of subjects' pathological behavior (e.g., decrease in autistic preoccupation, greater awareness and responsiveness to people and objects, development of speech, improvement in motor skills). One would expect that such therapeutic gains should be reflected in play activities. Based upon this evidence, it is therefore hypothesized that for all subjects (i.e., Groups 1 and 2 combined), Play 2 (posttreatment) scores are significantly higher than Play 1 (pretreatment) scores for the dependent measures Time in Play and Quality of Play.

Hypotheses regarding Aggression. Based upon the clinical description of subjects previously provided, it is hypothesized that at the time of Play 1 (pretreatment) nonverbal expressions of aggression are significantly higher than verbal expressions of aggression for all subjects (i.e., Groups 1 and 2 combined). It is also hypothesized that at the time of Play 1 nonverbal expressions of aggression are significantly higher for those subjects judged to be more pathological than for those subjects judged to be less

pathological.

In regard to change in behavior between Play 2 and Play 1, the following hypotheses were developed. Day School treatment was aimed at assisting subjects to identify and effectively express aggressive feelings in a verbal (and age-appropriate) fashion rather than in a nonverbal (primitive and destructive) fashion. Therefore, it is hypothesized that nonverbal expressions of aggression at Play 2 are significantly lower than nonverbal expressions of aggression at Play 1 for all subjects (i.e., Groups 1 and 2 combined). It is also hypothesized that at Play 2, verbal expressions of aggression are greater than nonverbal expressions of aggression for all subjects.

Hypotheses regarding Dependency Striving. Based upon the clinical description of subjects previously provided, it is hypothesized that at the time of Play 1 immature and/or nonverbal expressions of dependency are significantly higher than mature-verbal expressions of dependency for all subjects.

In regard to change in behavior between Play 2 and Play 1, the following hypotheses were developed. Day School treatment was aimed at assisting subjects identify and effectively express dependency in a mature-verbal fashion rather than in an immature and/or nonverbal fashion. Therefore, it is hypothesized that immature and/or nonverbal expressions of dependency at Play 2 are significantly lower than immature and/or nonverbal expressions of dependency at Play 1 for all subjects. It is also hypothesized that at Play 2, mature-verbal expressions of dependency are greater than immature and/or nonverbal expressions of dependency for all subjects.

<u>Hypotheses regarding Presence of Mother</u>. While no formal hypotheses regarding mothers' presence are made, no differences are expected between conditions of "mother absent" and "mother present" for any of the dependent measures.

CHAPTER II

METHOD

Subjects

Sixteen boys and four girls who were regarded as atypical children and who were accepted for treatment at the Loyola University Day School served as subjects in the experiment. At the time of the Play 1 observation, subjects were 50 to 111 months of ago; the mean age of the group was 79.80 months. At the time of the Play 2 observation subjects were 59 to 119 months of age; the mean age of the group was 88.60 months. During the interval between the Play 1 and Play 2 observations, the subjects had received approximately seven months of treatment at the Day School.

The analyses of the data were based on the 20 experimental subjects reported above. Partial data (Play 1 observation) obtained from the testing of an additional subject were not used because the subject's mother refused to allow the child and herself to participate in the Play 2 observation.

Prior to acceptance for treatment at the Loyola University Day School, all subjects and their parents were seen for an initial screening interview which lasted for approximately 2-1/2 hours. Interviews were conducted by a team composed of Loyola Guidance Center staff members: a Ph.D. clinical psychologist, a number of psychology trainees (Ph.D. candidates serving internships), and in some cases the Center's medical director (an M.D. whose specialty is pediatrics and who also holds an M.A. degree in learning disabilities). Information gathered during these screening sessions included data regarding the subjects' presenting problems, developmental history, and estimates of current levels of cognitive, emotional, and social functioning. Six of the 20 subjects had been receiving group treatment at the Guidance Center for approximately 1-1/2 years prior to treatment at the Day School. For these six subjects, treatment notes were available in addition to material gathered during the initial screening interview. For the remaining 14 subjects, screening interviews were conducted approximately three months prior to initial treatment at the Day School.

Behavioral characteristics of the sample prior to Play 1 observations and subsequent treatment at the Day School are presented in Table 1. Subjects were assigned to one of four treatment "rooms" based on staff's appraisal of their general level of disturbance and data are presented in Table 1 according to the following division: Group 1 (rooms one and two) contained those subjects regarded as less pathological while Group 2 (rooms three and four) contained those subjects regarded as more pathological. More complete descriptions of behavioral characteristics together with examples are provided in Appendix A. The features chosen to describe the sample were a combination of those regarded as pathognomic of atypical development by the author and other investigators (Brody, 1969; Cain, 1969; Rutter, 1966). Descriptive data presented in Table 1 were secured in the following manner: (1) after testing all subjects for the current study, the experimenter reviewed their clinical records which contained pretesting and pre-Day-School-treatment information (i.e., material gathered in the initial screening interview, treatment notes for the six subjects who had received group treatment at the Guidance Center,

and clinical information obtained from other professionals and/or agencies who had dealt with the subjects in the past) and (2) on the basis of information present in the subjects' records. A judgment of "present" or "absent" was made by the experimenter regarding each of the characteristics enumerated in Table 1.

Materials

The equipment for the play sessions included a variety of toys for both Play 1 and Play 2 observations. As reported by Foley (1962), the toys were selected on the basis of criteria which included the following: (1) sufficiently attractive and interesting to engage a subject for 40 min. of play, (2) simple, nonmechanical, and relatively indestructible (or easily replaceable) playthings which would lend themselves to expressive play of a constructive or destructive nature and permit pleasurable activity at different levels of complexity, and (3) provide for the expression of aggression, direct or indirect, through a variety of objects ranging from dolls as parent surrogates to blocks, clay, and crayons as more neutral materials. In addition, it was judged by the author that the toys were suitable for use with the group of subjects employed.

The following toys were used for both Play 1 and Play 2 observations.

Doll family. A mother, father, little boy, little girl and baby "rag" dolls, with the parent dolls approximately 32 in. tall and dressed to resemble mature adults, and the children proportionately smaller and appropriately clothed to resemble the subjects being tested.

Bears. One large (18 in.), one medium (16 in.) and one small (9 in.) teddy bear, all plush in texture and similar in appearance except for size. The bears might be thought of as parents and a child.

Blocks, wagon, and mallet. One hundred Playskool blocks of assorted colors and shapes which fit in a small Playskool wagon, plus a wooden mallet.

Table 1 Behavioral Characteristics of Subjects (Total <u>N</u> = 20)											
									Characteristics	1	
	` G:	roup 1	(<u>N</u> =	= 11)	C	Froup	2 (<u>N</u>	= 9)			
Relationships with People:											
Autism			0				1				
Withdrawal and/or resistiveness			1				2				
Primitive nonverbal	• • •		1				6				
1 or 2-year-old mode of relating	• • •		9				0				
Perceptual Anomalies:											
Primitive modes of perception			2				8				
Apparent lack of response to auditory stimuli			0		·		ँ २				
Apparent lack of response to painful stimuli	• • •		0				<u> </u>				
Language:											
Apparent absence of verbal-receptive language			0				5				
Apparent absence of verbal-expressive language			0				6				
Expressive language present but not used for communication	• • •		6				2				
Echolalia	• • •		2				- 1				
Other language abnormalities	•••		9				·1				
Concentration ·	,										
Poor persistence at a task and distractibility			7				ß				
	• • •		, F				0				
Motor Phenomena:											
Disturbances in coordination (gross and fine motor)	• • •		2				4				
Hyperkinesis			7				8				
Hypokinesis	•••		0				l	•			
Stereotyped repetitive movements	•••		6				7				
Advanced, Seemingly "Isolated" Special Abilities			6				7				

Table 1 (Continued)

Characteristics

Number of Subjects Demonstrating Characteristics Group 1 ($\underline{N} = 11$) Group 2 ($\underline{N} = 9$)

Ritualistic and Compulsive Behaviors:	the second se	
Non-adaptability (resistance to change)	2	5
Abnormal attachments	5	6
Abnormal preoccupations with objects	6	7
Ather obsessive bhenomena		1 7 7
	2	±
Reading Difficulties	-	. <u>F</u>
recaing Difficultures	Т.	2
Sleen Disturbances	0	0
	۷. ۲	· C
Incontinence:		
Diurnal and/or nocturnal enuresis (after aco))	0	E
Diurnal and/or nocturnal encopresis (after age 4)	0	5
brainar and/or nocournar encopresis (arter age 4/	0	0
Aggression:		
Self-injury.	2	2 Q
Destructive activity directed against neonle on objects	5	- U E
Temper tentring	2 Q	2
	0	. 9
Anxiety and Fears (Verhalized)	6	•
Function and rear (for ballacules essesses essesses essesses essesses essess	0	0
Exclusion from School	11	0
		У

Toy telephone. A miniature plastic telephone (approximately $8 \ge 2 \ge 3-1/2$ in.) with a movable dial and ringing bell.

Clay. One large can (3 lbs.) of clay (Play Doh).

All experimental sessions were conducted in a room at Loyola Guidance Center which was not regularly used in dealing with the subjects. The room was reasonably quiet, relatively free from distractions in terms of furnishings, and provided a play area of approximately $9 \ge 8$ ft.

Procedure

Each subject was observed on two occasions during periods of free play with a variety of toys. The initial observation (Play 1) was made prior to subjects receiving treatment at the Loyola University Day School. The second observation (Play 2) was made following a time interval during which subjects had received approximately seven months of treatment at the Day School. Fach play observation was divided into two periods: (1) a 20 min. session in which the subject alone was observed by the experimenter, followed by (2) a 20 min. session in which the subject was observed by the experimenter in the presence of the subject's mother. A brief interval (of approximately 5-10 min.) was provided between sessions during which a subject could rest, go to the washroom, etc., and the experimenter could reorganize materials. The subjects' behavior, and the subjects' and mothers' behavior during the two play observations were recorded by the experimenter, and the verbalizations of the entire sessions were tape recorded.

At the beginning of each play session the toys were arranged in a semicircle on the floor at one end of the experimental room. A desk and chair for the experimenter were located at the other end of the room directly across from the toys and play area. A small, cassette tape recorder (in operation to

record the session) and table microphone were inconspiciously positioned on the experimenter's desk.

Most of the subjects and their mothers were acquainted with the experimenter prior to the Play 1 observation due to their previous contact with him at the Guidance Center. When the experimenter arranged appointments for the play interview he informed the subject's mother that the play observation was a routine data-gathering activity which had the purpose of indirectly providing information about the subject's current level of functioning. In arranging an appointment with the subject's mother, the experimenter endeavored to present the interview as a neutral event necessary for gathering information about the subject's present behavior and to clarify any misconceptions that results from the interview would be used for evaluative purposes (e.g., making decisions about the subject's disorder).

When the subject and his mother arrived at the Guidance Center for testing, the experimenter briefly greeted them in the waiting room. In cases where the subject possessed verbal language, the experimenter asked the subject whether he (or she) would like to accompany him to a playroom where he might play with some toys while his mother remained behind. In cases where the subject appeared not to possess verbal language, the experimenter employed gestural language in addition to verbalization to convey his invitation to the subject. In cases where the subject appeared out of contact with reality, he was led or carried to the playroom in a noncoercive fashion in addition to the experimenter using verbal and gestural language. When a subject demonstrated either moderate unwillingness or strong negativism (verbally or nonverbally) with respect to accompanying the experimenter, he attempted to encourage the subject to participate (e.g., by describing to the subject the numerous toys
available; by employing nonverbal techniques when necessary such as holding and comforting the subject). In essence, the experimenter attempted to create a positive or at least a neutral attitude in the subject, through use of verbal and/or nonverbal measures, prior to taking him to the experimental room.

As soon as the subject entered the experimental room, the experimenter suggested that the subject look at the toys. For all subjects, the experimenter pointed at each toy and named it. During this brief introductory period an attempt was made by the experimenter to orient the subject to the toys and the room.

<u>Play 1 (mother absent</u>). The subject was informed by the experimenter, "You may play with all the toys and do whatever you would like with them. I am going to sit over here (experimenter's desk) and watch and write while you play." For nonverbal subjects, in addition to providing verbal instructions, the experimenter attempted to gesturally convey the instructions. The subjects who appeared to be out of contact with reality were placed near the toys in addition to receiving verbal and gestural instructions from the experimenter. At this point the experimenter's record of the subject's activities was begun and continued until the end of the 20 min. period.

Following this session the subject was returned to his mother in the waiting room and informed that in a few minutes he would again have an opportunity to play with the toys, only this time his mother would be present. After approximately a 5-10 min. "break" during which the experimenter rearranged the toys as they were prior to the subject's play activity, the subject and his mother were invited into the playroom.

<u>Play 1 (mother present</u>). The experimenter requested the subject's mother to sit on a chair provided for her midway between the toys and the

experimenter's desk. The subject was again provided with the same instructions and in the same fashion as during the previous session. In addition, the subject's mother was informed by the experimenter that the purpose of this portion of the interview was to observe the play behavior of the subject while his mother was present. If the subject's mother inquired about how she should act during the session, the experimenter answered by reiterating that there were no explicit directions for her and that she could do whatever she wanted with the subject. At this point, the experimenter's record of the subject's and subject's mother's activities was begun and continued until the end of the 20 min. period.

<u>Play 2</u>. Following a temporal interval during which the subject had received approximately seven months of treatment at the Loyola University Day School, the Play 2 observation was made. The procedure used in Play 2 was the same as the one employed in Play 1. The subject was initially observed alone (mother absent) for a 20 min. play period, followed by the subject observed in the presence of his mother for another 20 min. play period. Arrangement of toys, instructions, and recording procedures were the same as in Play 1.

Throughout the Play 1 and Play 2 sessions the experimenter endeavored to create a friendly, permissive atmosphere in which both the subject and his mother felt free to do as they chose--for the subject to play with the toys as he saw fit, or not to play if he preferred; for the subject's mother to actively participate in his activities in any way she viewed as appropriate, or to function as more of a neutral observer. No attempt was made to direct the subject's and/or the subject's mother's activities during these periods. The experimenter did not initiate conversation with the subject or the subject's mother, but responded to statements in a friendly, but brief, manner. When the subject and/or his mother attempted to involve the experimenter in play, the experimenter participated as little as possible and continued with his recording. The only activities halted by the experimenter were three types of subject behavior: (1) actions which might result in permanent physical injury to the subject or experimenter, (2) actions which could produce irreparable damage to objects in the experimental setting, and (3) attempts to leave the experimental room.

Recording and Analysis of Behavior

Behavioral Records. A complete record of each subject's behavior and subject's mother's behavior during the Play 1 and Play 2 sessions was made by the experimenter with the assistance of a tape recorder. Each final record consisted of the experimenter's running account of the subject's activities and the time spent in each action synchronized with the verbalizations from the tape recording of the session. The behavioral observations included a record of the subject's activities and play, facial expressions, evidences of emotionality, and apparent mood. Although the subject was the experimenter's primary focus in recording during play sessions in which the subject's mother was present, as much of the mother's activity, facial expressions, evidences of emotionality, and apparent mood as possible were also recorded. It was felt to be of key importance to record the mother's behavior which appeared to be either a direct stimulus or response to all the subject's activities, but especially to play. Synchronization of the experimenter's observational record and the tape recording was possible because the tape recorder and the stop watch used in timing each subject activity were started simultaneously and ran continuously throughout the experimental session.

The adequacy of this procedure in providing an accurate record of the subject's behavior was suggested by the high degree of interobserver stability

obtained by Foley (1962) on the basis of three records based on behavioral observations made by her and another psychologist. Of the total 183 units of actions (see the following subsection for scoring), Foley found that 171 were common to both records, 9 units were observed only by her, and 3 only by the second observer. On the basis of the 171 units of action common to both, Foley and the second observer were in agreement (in terms of the subject's activity and emotional tone) on 170 or 99.4% of the units. When all 183 units were considered, both observers were in agreement on 93.1% of the units.

Units of Action. The experimental procedure employed provided four behavioral records for each subject: Play 1--mother absent, Play 1--mother present, Play 2--mother absent, Play 2--mother present. Analysis of the data required that each of the four continuous behavioral records be divided into parts forming meaningful psychological units of activity which lent themselves to the development of scoring scales for the variables under consideration. The present system for scoring units of action was one developed by Foley (1962) which followed the definition of psychologically significant units of activity formulated by Barker, Dembo, and Lewin (1941):

In defining psychologically meaningful parts, we may distinguish between actions which are guided to a particular end by a central idea or purpose, the actions being the means to this end, and those which do not involve such "means-end" relations. In the former case, a sequence of behavior which is guided by a common idea or purpose is a psychologically significant unit. Such a sequence may or may not be homogeneous as to the activities or material involved. Thus the child who places different things on a truck and pushes it across the floor in order to deliver them to a play store incorporates a great diversity of action within one behavior unit. In cases where activities are not guided by a central idea as means to a more or less distant end, the division into behavior units can be made on the basis of the homogeneity of the actions. In this case the activity is its own end. For instance, when the child is rhythmically swinging the fishing pole, pushing the truck back and forth when no other intention is involved, or walking aimlessly about, a change in the activity is an indication that the psychological unit has changed since the activity and the end are one (p. 62).

The criteria for scoring units of action in the present study are presented in Appendix B.

Scoring of the Dependent Measures

Each of the four records obtained for each subject was scored for the following variables: Time in Play, Quality of Play, Aggression, and Dependency Striving. Scoring manuals for these variables were developed by Foley (1962), and Vernon, Foley, and Schulman (1967) and are presented in Appendix B.

<u>Time in Play</u>. This score (T-Play), as the name implies, was the total time the subject spent in rated play activities during the 20 min. session.

<u>Quality of Play</u>. Two Quality of Play (Q-Play) scores were used in the present study and each was based on the rating of each play activity on a 1-7pt. scale where 1 pt. represented the lowest level of play activity (touching or holding a toy with little examination or manipulation) and 7 pts. the highest level (creative, sustained, and elaborated use of toys). In assigning the ratings for Q-Play, a play activity was, by definition, any activity with one of the standardized toys regardless of how little this activity resembled play.

One score, Quality of Play/Time (Q-Play/T), expressed the subject's average Q-Play level in terms of time spent in play. That is, the 1-7-pt. rating for each play activity was multiplied by the time spent in that activity, the products summed, and the total divided by the total time the subject spent in rated play activities.

The second score, Q-Play/20 was similar to Q-Play/T but expressed the subject's average Q-Play rating in terms of the total time available for the play session (20 min.). As for Q-Play/T, the 1-7-pt. rating for each play

activity was multiplied by the time spent in that activity and the products summed. In this case, however, the total was divided by 20 for the final score for each play record.

Both Q-Play scores refer to rated play activities initiated and maintained by the subject. For those records obtained from sessions in which the subject's mother was present, additional scoring principles were used in an attempt to minimize the effect of mother's participation on the subject's play ratings (see Appendix B: <u>Mother Participation--Principles for Scoring S</u> Activity).

Aggression. Scores for Aggression (AGGR) were based on the frequency of occurrence and duration (per minute) of various aggressive actions during each 20 min. play period. Aggressive actions (per minute) were assigned either a 1-pt. score (activity of relatively short duration), or a 2-pt. score (activity of long duration). Echaviors which were defined as aggressive for the scoringof this variable included: (1) physical actions directed toward injuring self, another person or person surrogate; attempts to damage or destroy property, (2) verbal activities intended to create discomfort and/or hurt the feelings of another person or person surrogate; assertions of will and attempts to gain compliance with demands, and (3) miscellaneous expressions (e.g., excessively noisy behavior, nonverbal provocative actions, uncooperative behavior). The behaviors described by these three categories referred both to actions occurring in the subject's fantasy play and to his activities as they were directly oriented to the experimental situation, the experimenter, and the subject's mother (when present).

Two AGGR scores for each 20-min. period were used in the present study. One score, Nonverbal Aggression (NV-AGGR) was the sum of aggressive behaviors rated by Scale 1 (Direct, physical aggression) and Scale 3 (Miscellaneous

expressions of aggression). The highest possible NV-AGGR score attainable for a 20-min. period was 80 pts. The second score, Verbal Aggression (V-AGGR) was the sum of aggressive behaviors rated by Scale 2 (Verbal aggression). The highest possible V-AGGR score attainable for a 20-min. period was 40 pts.

<u>Dependency Striving</u>. Scores for Dependency Striving (DS) were based on the frequency of occurrence (per minute) of various dependent actions during each 20-min. play period. Dependency actions (per minute) were assigned either a l-pt. score (if present), or a 0 score (if absent). Behaviors which were defined as dependency for the scoring of this variable included: (1) seeking positive attention, (2) seeking praise, recognition, and approval, (3) seeking help, information, or guidance, (4) seeking reassurance, comfort, sympathy, and permission, (5) seeking negative attention, and (6) seeking physical contact. The behaviors described by these six categories referred to the subject's activities as they were directly oriented to the experimental situation, the experimenter, and the subject's mother (when present).

Two DS scores for each 20 min. period were used in the present study. One score, Immature and/or Nonverbal Dependency Striving (IM/NV-DS) was the sum of the dependent behaviors rated by Scale 4 (Seeking reassurance, comfort, sympathy, and permission), Scale 5 (Seeking negative attention), and Scale 6 (Seeking physical contact). The highest possible IM/NV-DS score attainable for a 20-min. period was 60 pts. The second score, Mature-Verbal Dependency Striving (MV-DS) was the sum of the dependent behaviors rated by Scale 1 (Seeking positive attention), Scale 2 (Seeking praise, recognition, and approval), and Scale 3 (Seeking help, information, or guidance). The highest possible MV-DS score attainable for a 20-min. period was 60 pts.

Method of Scoring Play Records. All records were rated for Units of

Action, Quality of Play, Aggression, and Dependency Striving by a paid, undergraduate assistant who was trained in the use of the scoring systems. This rater had no immediate working contact with any other aspect of the present study or its subjects. In addition, he possessed no knowledge of any of the hypotheses formulated. All records were also rated independently by the experimenter for Aggression and Dependency Striving. Twenty records, chosen randomly, were rated in the same fashion by the experimenter for Quality of Play.

Final scores for Units of Action and Quality of Play were those arrived at by the undergraduate assistant. Final scores for Aggression and Dependency Striving represent the mean of the combined ratings of the undergraduate assistant and the experimenter.

<u>Reliability and Interscorer Agreement</u>. The reliability of two of the scoring scales was reported by Foley (1962). For Q-Play and AGGR, reliability estimates were achieved by a method which involved dividing 50 play records, each of 40-min. duration, into "odd" and "even" units of comparable length. The reliability of the scores based on the correlation between the sum of the ratings of odd and even units corrected by the Spearman-Brown formula was .90 for Q-Play and .88 for AGGR.

The estimate of interscorer agreement for Q-Play/20 and AGGR (for the three scales combined) was reported by Foley (1962). For Q-Play/20 and AGGR, product-moment coefficients of correlation were computed on the basis of scores obtained by Foley and another psychologist independently rating 5 play records. The <u>rs</u> reported were .99 for Q-Play/20, and .97 for AGGR. In the present study an estimate of interscorer agreement for Q-Play/20 and Q-Play/T was computed on the basis of scores obtained by the experimenter and the undergraduate assistant independently rating 20 (20 min.) play records. An estimate of interscorer

agreement for AGGR was computed on the basis of scores obtained by the experimenter and the undergraduate assistant independently rating 80 (20-min.) play records. The product-moment coefficients of correlation attained were .99 for Q-Play/20, .99 for Q-Play/T, and .83 for AGGR (for the three scales combined).

The estimate of interscorer agreement for the six DS scales was reported by Vernon, Foley, and Schulman (1967). Correlations (\underline{r}) of interjudge agreement for 16 play records ranged from .74 to .94. In the present study, an estimate of interscorer agreement for DS was computed on the basis of scores obtained by the experimenter and the undergraduate assistant independently rating 80 (20-min.) play records. The product-moment coefficient of correlation attained was .96 for DS (for the six scales combined).

CHAPTER III

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RESULTS

The results of the current investigation are presented with respect to the following dependent measures: Time in Play, Quality of Play, Aggression, and Dependency Striving. The first section is concerned with the relationship between the subjects' ages and the dependent measures. The second section is devoted to the analysis of the dependent measures Time in Flay and Quality of Play with respect to the three experimental conditions: group membership (i.e., Group 1--subjects clinically judged to be less pathological, Group 2-subjects clinically judged to be more pathological), time of ratings (i.e., Play 1--pretreatment, Play 2--posttreatment), and mother status (i.e., absent or present). The third section is devoted to the analysis of the dependent measure, Aggression, while the fourth section is concerned with the analysis of Dependency Striving with respect to the three experimental conditions previously specified.

Relationship Between Subjects' Ages and Dependent Measures

At the time of Play 1, subjects in Group 1 (\underline{N} = 11: 10 boys and 1 girl) were 67 to 105 months of age; the mean age of the group was 85.00 months. At the time of Play 1, subjects in Group 2 (N = 9: 6 boys and 3 girls) were 50 to lll months of age; the mean age of the group was 73.44 months. The difference in ages between groups at Play 1 approached significance ($\underline{t} = 1.77$; $\underline{df} = 18$; $\underline{p} < .10$), with Group 1 tending to be older than Group 2 (the mean age difference between groups was 11.56 months). At the time of Play 2, subjects in Group 1 were 75 to 114 months of age; the mean age of the group was 93.27 months. At the time of Play 2, subjects in Group 2 were 59 to 119 months of age; the mean age of the group was 82.88 months. There was no significant difference between groups with respect to age at Play 2 ($\underline{t} = 1.48$; $\underline{df} = 18$; $\underline{p} > .10$). The mean age difference between groups at Play 2 was 10.39 months.

In order to further investigate the relationship between age and the dependent measures employed, Pearson product-moment coefficients of correlation were computed between subjects' ages and the Play 1 and Play 2 measures, i.e., the play measures, Aggression, and Dependency. The results of these analyses are presented in Table 2. Correlations between the play measures (Time in Play, Quality of Play/20, Quality of Play/Time) and age (at both Play 1 and Play 2) were low and nonsignificant. Correlations for Nonverbal Aggression and Mature-Verbal Dependency Striving were also low and nonsignificant. While correlations between age (at both Play 1 and Play 2) and the measures of Verbal Aggression and Immature and/or Nonverbal Dependency Striving were somewhat higher, they were still not significant.

Given these findings it was maintained, especially for the play measures, that variations in results were not significantly associated with the subjects' ages. Therefore, it was judged to be legitimate to use analysis of variance to investigate the experimental results as opposed to analysis of covariance.

Table 2

Correlation Coefficients for Play 1 and Play 2 Between

Subjects' Ages (\underline{N} = 20) and Dependent Measures

Age of Subjects

Play Measures ^a	•	Play]	Play 2
Time in Play		16	.04
Quality of Play/20		.09	02
Quality of Play/Time		.19	06
Aggression [®]		.	
Nonverbal		22	09
Verbal ^b		. 44	.36
Dependency Striving ⁸		•	
Immature and/or Nonverbal	:	.41	•34
Mature-Verbal ^b	۰ ۱	.10	.09

^a Combined across experimental conditions of mother absent and present
^b Transformed scores

Analysis of the Measures of Time in Play and Quality of Play

The descriptive statistics for the Time in Play (T-Play), and the two Quality of Play (Q-Play) scores are presented in Table 3 where T-Play represents the total time spent in rated play activities during a 20-min. session, Q-Play/20 signifies the average Q-Play rating for an entire 20-min. of Play 1 or Play 2, and Q-Play/T represents the average Q-Play rating for the time spent in play. The descriptive statistics for these measures are presented in the table with respect to the three experimental conditions: group membership (Group 1 or Group 2), time of ratings (Play 1 or Play 2), and mother status (absent or present). Additional summary statistics (i.e., combinations of two conditions) are presented to aid in the interpretation of statistical analyses.

Three-way analyses of variance with repeated measures on two factors were used to investigate the subjects' scores in terms of the three experimental conditions previously specified. Subsequent two-way analyses of variance with repeated measures on one factor were performed as an additional technique for evaluating the subjects' scores with respect to group membership and mother status for Play 1 and Play 2 considered separately.

The results of the three-way analyses of Time in Play, and the two Quality of Play measures (Q-Play/20 and Q-Play/T) are presented in Table 4.

The results of the three-way analyses of Time in Play approached significance for the main effect of group membership and yielded definite significance for the two Quality of Play measures. Subsequent two-way analyses revealed significance for the main effect of group membership at Play 1 for Time in Play ($\underline{F} = 5.88$; $\underline{p} < .05$), Q-Play/20 ($\underline{F} = 14.34$; $\underline{p} < .01$), and Q-Play/T ($\underline{F} = 19.61$; $\underline{p} < .001$). With respect to the main effect of group membership at Play 2, two-way analyses revealed no significance for Time in Play, approached

Table 3

Descriptive Statistics for Time in Play (T-Play), and Quality of Play

(Q-Play/20, Q-Play/T) Scores for Group 1 (\underline{N} = 11) and Group 2 (\underline{N} = 9)

Time in	N	Mother Absent			Mother Present			Absent + Present		
rtay	Play 1	Play 2	Play 1 + 2	Play 1	Play 2	Play 1 + 2	Play 1	Play 2	Play 1 + 2	
Group 1 <u>M</u> SD	14.39 5.66	16.92 4.27	15.66	16.46 4.13	17.65 3.81	17.06	15.43	17.29	16.36	
Group 2 <u>M</u> SD	10.72 6.85	15.61 4.99	13.17	10.16 5.37	16.35 5.37	13.26	10.45	15.98	13.22	
Total <u>M</u> <u>SD</u>	12.74 6.33	16.33 4.53	14.42	13.62 5.61	17.06 4.50	15.16	12.94	16.64	14.78	
Q-Play/20)							,		
Group 1 <u>M</u> <u>SD</u>	2.31 1.22	3.24 1.75	2.77	2.98 1.17	3.50 1.69	3.24	2.65	3.37	3.01	
Group 2 <u>M</u> <u>SD</u>	1.13 .82	2.05 1.22	1.60	1.19 .73	2.26 1.03	1.73	1.17	2.16	1.66	
Total <u>M</u> <u>SD</u>	1.78 1.19	2.70 1.16	2.19	2.17 1.36	2.95 1.53	2.49	1.91	2.77	2.33	

Table 3 (Continued)

Q-Play/T	1	Mother Absent			Mother Present			Absent + Present		
•	Play 1	Play 2	Play 1 + 2	Play]	Flay 2	Play 1 + 2	Play 1	Play 2	Play 1+ 2	
Group 1 <u>M</u> <u>SD</u>	3.09 .83	3.66 1.47	3.38	3.53	3.82 1.46	3.68	3.31	3.75	3.53	
Group 2 <u>M</u> <u>SD</u>	2.05	2.59 .91	2.33	2.10	5 2.66 9 .71	2.41	2.11	2.63	2.37	
Total <u>M</u> SD	2.62	3.18 1.33	2.85	2.9 1.0	1 3.30 3 1.30	3.05	2.71	3.19	2.95	

	Time in Play			Q-Play/20			Q-Play/T		
Source of Variation	df	MS	F		MS	F	MS	F	
Between Subjects Group (G) Subjects w. groups	19 1 18	195.91 49.79	3.93*		35.89 4.37	8.22**	26.59 2.52	10.54***	
Within Subjects Time of Ratings (T) G X T T X Subj w. groups	60 1 1 18	271.08 66.94 17.65	15.36 ^{***} 3.79		14.73 .36 .66	22.46 ^{*****} .54	4.46 .04 .50	8-86 ^{***} .07	
Mother (M) G X M M X Subj w. groups	1 1 18	10.84 8.54 17.50	.62 .49	•	1.80 .56 .54	3.34 [*] 1.04	.73 .22 .41	1.78 .53	
ΤΧΜ GΧΤΧΜ ΤΧΜΧSubjw.grou	1 1 ps18	.00 8.60 18.20	.00 .47	•	.08 .38 1.10	.07 .34	.13 .06 .61	.21 .10	

P < .10 *P < .05 ****P < .01 ****P < .01 Table 4

Three-Way Analysis of Variance of Time in Play and Quality of Play Scores

significance for Q-Play/20 ($\underline{F} = 4.14$; $\underline{p} \lt .10$), and yielded definite significance for Q-Play/T ($\underline{F} = 5.36$; $\underline{p} \lt .05$). Inspection of the means in combination with results of the analyses of variance confirmed the hypotheses that at Play 1 the subjects in Group 1 (less pathological) not only spent significantly more time in rated play activities than did subjects in Group 2 (more pathological), but also played at a significantly higher quality of play level. There were no significant differences between groups on play measures at Play 2 except for Q-Play/T. Inspection of the means indicated that Group 1 (less pathological) attained significantly higher Q-Play/T scores than Group 2 (more pathological) at Play 2.

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The results of the three-way analyses of Time in Play, and the two Quality of Play measures yielded significance for the main effect of time of ratings. Inspection of the means in conjunction with the results of the analyses indicated that these findings were highly consistent and confirmed the hypotheses. That is, all subjects (i.e., Groups 1 and 2 combined) demonstrated significant increases in Time in Play and the two Quality of Play scores when Play 2 was compared to Play 1.

As predicted, results of the three-way analyses indicated that the main effect of mother status was not significant for Time in Play and Q-Play/T. However, mother status approached significance (which was not supported by the two-way analysis) for the measure Q-Play/20. Inspection of the means in combination with results of this analysis and the two-way analysis which yielded no significance indicated that there was a tendency for all subjects to perform at a somewhat higher Quality of Play level (Q-Play/20) when mother was present (as opposed to absent) when the data from Play 1 and Play 2 ratings were combined rather than considered separately.

Analysis of Aggression Measures

The descriptive statistics for Nonverbal Aggression (NV-AGGR) and Verbal Aggression (V-AGGR) measures are presented in Table 5. These statistics are presented with respect to the three experimental conditions previously specified. Additional summary statistics are presented for the same reasons and in the fashion previously mentioned. It should be noted that distributions for Verbal Aggression measures contained a large number of zero scores and were positively skewed. Therefore, the logarithmic transformation $X = (\log X + 1)$ was applied to the distributions in an attempt to normalize them (Winer, 1962). However, even after statistical transformations had been made, the results of the analyses of variance in combination with inspection of the means revealed that "significant" effects were an artifact; that is, they were primarily a function of extremely low and/or zero scores presented by Group 2 under all experimental conditions. Due to these statistical difficulties, results of Verbal Aggression measures were viewed as uninterpretable and for this reason descriptive statistics of transformed scores and results of the analyses of variance of both raw and transformed scores are not presented. A closer examination of the possible cause of this statistical problem is presented in the Discussion Section.

Results of the three-way analysis of variance of Nonverbal Aggression (presented in Table 6) indicated significant main effects for group membership, time of ratings, and an approach toward significance for the interaction of group membership X time of ratings. Subsequent two-way analyses of variance revealed a significant main effect for group membership at Play 1 ($\underline{F} = 6.15$; $\underline{p} < .05$), but not at Play 2. Inspection of the means in combination with results of the two-way analysis confirmed the hypothesis that at Play 1 the

		Descriptive Statistics for Nonverbal Aggression (NV-AGGR) and Verbal											
		Aggression (V-AGGR) Scores for Group 1 (\underline{N} = 11) and Group 2 (\underline{N} = 9)											
Nonverbal		Mother Al	osent	I	Nother Pre	esent	A	osent + Pi	resent				
Aggression	Play 1	Play 2	Play 1 + 2	Play 1	Play 2	Play 1 + 2	Play 1	Play 2	Play 1 + 2				
Group 1 <u>M</u> SD	13.27 13.35	11.86 8.98	12.57	12.40 10.72	12.18 8.29	12.29	12.84	12.02	12.43				
Group 2 <u>M</u> SD	29.83 19.35	18.77 12.60	24.31	25.27 16.47	15.44 7.04	20.36	27.56	17.11	22.33				
Total <u>M</u> <u>SD</u>	20.72 17.94	14.97 10.82	18.44	18.20 14.76	13.65 7.73	16.33	20.19	14.57	17.38				
Verbal Aggression	1								•				
Group 1 <u>M</u> <u>SD</u>	3.90 6.39	1.45 3.38	2.68	2.22 3.86	4.00 5.16	3.11	3.07	2.73	2.89				
Group 2 <u>M</u> SD	.00 .00	.05 .16	.03	.50 1.32	.00	.25	.25	.03	.14				
Total <u>M</u> SD	2.15 5.05	.82 2.55	1.35	1.45 3.06	2.20 4.26	1.68	1.66	1.38	1.51				

Table 5

Table 6

Three-Way Analysis of Variance of Nonverbal Aggression (NV-AGGR) Scores

Source of Variation	df	MS	F
Between Subjects Group (G) Subjects w. groups	19 1 18	1941.19 333.71	5.82**
Within Subjects Time of Ratings (T) G X T T X Subj w. groups	60 1 1 18	627.89 458.69 132.36	4.74** 3.46*
Mother (M) G X M M X Subj w. groups	1 1 18	88.03 66.73 77.74	1.13 .86
ΤΧΜ GΧΤΧΜ ΤΧΜΧSubjw.groups	1 1 18	7.15 .00 77.12	.09 .00

*p <	.10
**p <	.05
***p 🖌	.01
****p <	.001

subjects in Group 2 (more pathological) displayed significantly more Nonverbal Aggression than did the subjects in Group 1 (less pathological). In addition, inspection of the means in conjunction with results of the three-way analysis confirmed the prediction that less Nonverbal Aggression was expressed at Play 2 than at Play 1 for all subjects (i.e., Groups 1 and 2 combined). However, further analysis (i.e., inspection of the means in combination with the approach toward significance for the interaction of group membership X time of ratings for the three-way analysis) revealed that this main effect was primarily due to the scores of subjects in Group 2 at Play 2.

In addition, hypotheses were made which involved comparisons between Nonverbal Aggression and Verbal Aggression measures. In an attempt to evaluate these hypotheses, two-tailed \underline{t} tests (for correlated measures) were employed using raw scores for both Nonverbal and Verbal Aggression. This was necessary because the transformation of scores for Verbal Aggression proved ineffective. The \underline{t} tests were applied to subjects divided according to group membership (i.e., Group 1--less pathological, $\underline{N} = 11$; Group 2--more pathological, $\underline{N} = 9$) rather than for the total \underline{N} of 20. It was believed that the \underline{t} tests applied in this manner would provide a more accurate analysis of the research hypotheses. However, due to the statistical difficulties previously enumerated with respect to Verbal Aggression, results of these tests which involved making comparisons between Nonverbal and Verbal Aggression measures are of questionable validity because they essentially involved making comparisons between nonparallel distributions.

With respect to comparisons between Nonverbal and Verbal expressions of Aggression, reference to the means in Table 5 is of assistance in orienting the reader to the data under consideration. As predicted, at Play 1 Nonverbal expressions of Aggression were significantly higher than Verbal expressions of

Aggression for Group 1--mother absent ($\underline{t} = 4.23$; $\underline{df} = 10$; $\underline{p} \lt .01$), Group 1-mother present ($\underline{t} = 3.20$; $\underline{df} = 10$; $\underline{p} \lt .01$), and Group 2--mother absent ($\underline{t} = 4.62$; $\underline{df} = 8$; $\underline{p} \lt .01$), Group 2--mother present ($\underline{t} = 4.86$; $\underline{df} = 8$; $\underline{p} \lt .01$). Contrary to the hypotheses, at Play 2 Verbal expressions of Aggression were not significantly higher than Nonverbal expressions for either Group 1 or Group 2. In fact, there was significance found in the direction opposite to that predicted. That, at Play 2, Verbal expressions of Aggression were significantly lower than Nonverbal expressions of Aggression were significantly lower than Nonverbal expressions of Aggression for Group 1--mother absent ($\underline{t} =$ -10.98; $\underline{df} = 10$; $\underline{p} \lt .01$), Group 1--mother present ($\underline{t} = -.280$; $\underline{df} = 8$; $\underline{p} \lt .05$), and Group 2--mother absent ($\underline{t} = -2.80$; $\underline{df} = 8$; $\underline{p} \lt .05$), Group 2--mother present ($\underline{t} = -6.59$; $\underline{df} = 8$; $\underline{p} \lt .001$).

Analysis of Dependency Striving Measures

The descriptive statistics for Immature and/or Nonverbal Dependency Striving (IM/NV-DS) and Mature-Verbal Dependency Striving (MV-DS) are presented in Table 7. It should be noted that the distributions for Mature-Verbal Dependency Striving contained a large number of zero scores and were positively skewed. Therefore, the logarithmic transformation $X = (\log X + 1)$ was applied to the distributions in an attempt to normalize them (Winer, 1962).

Hypotheses with respect to Dependency Striving were evaluated by using three-way and two-way analyses of variance in a manner previously described. Results of the three-way analyses are presented in Table 8.

Results of the three-way analysis of variance of Immature and/or Nonverbal Dependency Striving indicated a significant main effect for time of ratings, and a significant interaction effect for group membership X time of ratings X mother status. Subsequent two-way analyses of variance revealed

Table 7

Descriptive Statistics for Immature and/or Monverbal Dependency Striving (IM/NV-DS) and

Mature-Verbal Dependency Striving (MV-DS) Scores for Group 1 ($\underline{N} = 11$) and Group 2 ($\underline{N} = 9$)

Immature-	Mother Absent			ľ	Mother Present			Absent + Present		
Dependency	Play 1	Play 2	Play 1 + 2	Play 1	Play 2	Play 1 + 2	Play 1	Play 2	Play 1 + 2	
Group 1 <u>M</u> SD	10.45 8.44	3.36 5.74	6.90	7.77 6.79	6.36 5.62	7.06	9.11	4.86	6.98	
Group 2 <u>M</u> <u>SD</u>	7.38 6.02	4.61 6.18	6.00	14.33 11.75	3.16 3.17	8.75	10.86	3.89	7.37	
Total <u>M</u> <u>SD</u>	9.07 7.43	3.92 5.82	6.45	10.72 9.75	4.92 4.85	7.90	9.98	4.37	7.18	
Mature- Verbal Dependency		•	• • • • • •		•			•		
Group 1 <u>M</u> <u>SD</u>	10.54 8.16	10.18 7.98	10.36	16.31 9.24	16.18 8.14	16.25	13.43	13,18	13,30	
Group 2 <u>M</u> <u>SD</u>	1.83 3.60	1.94 3.72	1.89	3.11 3.22	5.11 7.82	4.11	2.47	3.53	3.00	

				Table 7	(Continued	1)			
Mature-	ľ	Mother Ab	sent	1	Mother Pre	esent	A	osent + P:	resent
Dependency	Play 1	Play 2	Play 1 + 2	Play 1	Play 2	Play 1 + 2	Play 1	Play 2	Play 1 + 2
Total <u>M</u> SD	6.62 7.76	6.47 7.55	6.13	10.37 9.73	11.20 9.62	10.18	7.95	8.35	8.15
								X	
Mature- Verbal Dependency ^d		•					L.		
Group 1 <u>M</u> <u>SD</u>	.949 .398	.878 .483	.914	1.102 .463	1.184 .235	1.143	1.026	1.031	1.028
Group 2 <u>M</u> <u>SD</u>	.259 .384	.237 .424	.248	.497 .337	• 543 • 468	.520	.378	,390	.384
Total <u>M</u> SD	.639 .519	.590 .553	.581	.830 .506	.895 .478	.832	.702	.710	.706

^a Transformed scores

Table 8

Three-Way Analysis of Variance of Immature and/or Nonverbal Dependency

Striving (IM/NV-DS), and Mature-Verbal Dependency Striving

(MV-DS) Scores

Dependency Striving

		Immature	-Nonverbal	Mature-Verbal ^a		
Source of Variation	df	MS	<u>F</u>	MS	F	
Between Subjects Group (G) Subjects w. groups	19 1 18	2.96 80.29	.04	8.22 .41	20.00****	
Within Subjects Time of Ratings (T) G X T T X Subj w. groups	60 1 1 18	623.39 36.68 34.25	18.20**** 1.07	.00 .00 .15	.00	
Mother (M) G X M M X Subj w. groups	1 1 18	41.89 33.23 47.63	.88 .70	1.24 .01 .06	19.68**** .15 .23	
T X M G X T X M T X M X Subj w. groups	1 1 18	9.07 245.01 39.48	.23 6.21**	.06 .01 .04	1.55 .22	

*p < .10 **p < .05 ***p < .01 ****p < .001 ^a Transformed scores

that the interactions for group membership X mother status only approached significance at Play 1 ($\underline{F} = 3.27$; $\underline{p} \lt .10$) and at Play 2 ($\underline{F} = 2.86$; $\underline{p} \lt .10$). Inspection of the means in conjunction with the results of the three-way analysis confirmed the prediction that expressions of Immature and/or Nonverbal Dependency would be lower at Play 2 than at Play 1 for all subjects (i.e., Groups 1 and 2 combined). Consideration of the interactions for group membership X mother status through examination of the means suggested for Play 1 that Group 2 (more pathological) presented more expressions of Immature and/or Nonverbal Dependency with mother present than did Group 1 (less pathological) with mother absent. However, for Play 2, Group 1 presented more expressions of Immature and/or Nonverbal Dependency with mother present than Group 2 with mother absent

Although no formally testable hypotheses were made with respect to Mature-Verbal Dependency Striving using analysis of variance, results of the three-way analysis (Table 8) indicated significant main effects due to group membership and mother status. Subsequent two-way analyses of variance revealed significant main effects for group membership ($\underline{F} = 14.44$; $\underline{p} \lt .01$) and mother status ($\underline{F} = 9.85$; $\underline{p} \lt .01$) at Play 1, and significant main effects for group membership ($\underline{F} = 14.86$; $\underline{p} \lt .01$) and mother status ($\underline{F} = 14.51$; $\underline{p} \lt .01$) at Play 2. Inspection of the means in conjunction with results of the analyses of variance indicated the following conclusions. The subjects in Group 1 (less pathological) expressed more Mature-Verbal Dependency than subjects in Group 2 (more pathological) both at Play 1 and Play 2. In addition, more expressions of Mature-Verbal Dependency were displayed when mother was present (as opposed to absent) by all subjects both at Play 1 and Play 2.

Additional hypotheses were made which involved comparisons between Immature and/or Nonverbal Dependency Striving and Mature-Verbal Dependency Striving. In an attempt to evaluate these hypotheses, two-tailed t tests (for correlated measures) were employed using raw scores for both of these measures. The <u>t</u> tests were applied to subjects divided according to group membership as for the analyses of aggression. However, due to the statistical difficulties previously enumerated with respect to Mature-Verbal Dependency Striving, results of these tests which involved making comparisons between Immature and/or Nonverbal and Mature-Verbal Dependency Striving measures are of questionable validity because they essentially involved making comparisons between nonparallel distributions.

With respect to comparisons between Immature and/or Nonverbal and Mature-Verbal expressions of Dependency Striving, reference to the means in Table 7 is of assistance in orienting the reader to the data under consideration. As predicted, at Play 1 Immature and/or Nonverbal expressions of Dependency were significantly higher than Mature-Verbal expressions of Dependency for Group 2--mother absent ($\underline{t} = 2.36$; $\underline{df} = 8$; $\underline{p} \leq .05$) and Group 2-mother present ($\underline{t} = 2.83$; $\underline{df} = 8$; $\underline{p} < .05$). However, there was an approach toward significance found in the direction opposite to that predicted for Group 1. More specifically, at Play 1 Immature and/or Nonverbal expressions of Dependency tended to be significantly lower than Mature-Verbal expressions of Dependency for Group 1--mother present (t = -2.00; df = 10; p \checkmark .10). There was no significant difference for Group 1--mother absent ($\underline{t} = .02; \underline{df} = 10;$ p >.10). As predicted, at Play 2 Mature-Verbal expressions of Dependency were greater than Immature and/or Nonverbal expressions of Dependency for Group 1-mother absent (\underline{t} = 2.33; \underline{df} = 10; $\underline{p} \boldsymbol{<} .05$), and Group 1--mother present (\underline{t} = 3.24; df = 10; $p \lt .01$). However, contrary to the hypotheses, there were no significant differences at Play 2 for Group 2--mother absent (t = .90; df = 8;p > .50), or Group 2--mother present (t = .72; df = 8; p > .50).

CHAPTER IV

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DISCUSSION

The present study was designed as an exploratory one which had a twofold purpose: (1) primarily to investigate the use of a play activity scale for assessing the behavior of atypical children, and (2) secondarily to attempt an appraisal of behavioral change in these subjects over a time period in which one of the intervening variables was Day School treatment. The results of the study are discussed with respect to the dependent measures Time in Play, Quality of Play, Aggression, and Dependency Striving.

Time in Play and Quality of Play

The findings of the current investigation with respect to the construct validity and concurrent validity of the play scale employed (Foley, 1962) were highly consistent and supported the research hypotheses. More specifically, it was demonstrated that at the time of Play 1 (pretreatment) the subjects in Group 1 (clinically judged to be less pathological) attained significantly higher scores than did the subjects in Group 2 (clinically judged to be more pathological) for the dependent measures Time in Play (T-Play) and Quality of Play (Q-Play/T, Q-Play/20). Those subjects clinically judged to be less

pathological spent more time in play and used the time more constructively to achieve higher quality of play activity than did those subjects clinically judged to be more pathological. As noted in an earlier section, these results did not appear to be a function of chronological age. In addition, although Clune (1973) has demonstrated that Quality of Play measures are often significantly correlated with intelligence as measured by traditional intelligence tests, these correlations were derived from a large sample (N = 100) of normal children who ranged in age from 53 to 77 months. Considering the experimental conditions under which Clune's findings were arrived at (i.e., sample size, ages of subjects, and level of adjustment of subjects) in conjunction with an absence of empirical evidence demonstrating any relationship between the level of intellectual functioning of atypical children and their play activity, it is suggested that the results of the present study were primarily a function of differences in the severity of subjects' pathology rather than differences in intellectual functioning. That is, it appears possible to attribute the differences found between Group 1 and Group 2 at the time of Play 1 to differences in level of pathology rather than to a tendency toward differences in chronological age or possible differences in functional intelligence between groups.

The results of the current study with regard to play measures supported theoretical positions (Bakwin, 1954; Bender, 1947; Colligan & Bellamy, 1968; Despert & Sherwin, 1954; DeMyer & Ferster, 1962; Eisenberg & Kanner, 1956; Polan & Spencer, 1959; Putnam, 1949), and empirical findings (Haworth & Menolascino, 1967; Loomis et al., 1957; Meister, 1948; Tilton & Ottinger, 1964; Weiner & Ottinger, 1969) which suggested that the level of a child's disturbance is negatively reflected in both the quantitative and qualitative

features of his play activity. That is, as the degree of the child's disturbance increases, the time spent in constructive play diminishes and/or becomes increasingly primitive and underdeveloped. It appears, however, that the results of the present study are even more relevant and enlightening when compared to the findings of previous investigations for two reasons. First, while prior theoretical studies have implied that differences in the level of disturbance of atypical children are reflected in both quantitative and qualitative features of their play activity, none has provided empirical evidence to support this position. Second, while previous empirical studies have revealed significant differences in quantitative and/or qualitative aspects of play between groups of atypical children (e.g., schizophrenic, autistic) and other seemingly distinct diagnostic groups (e.g., familially retarded, chronic brain syndrome), or between groups of atypical and normal children, none of these studies (with the exception of Filton and Ottinger and Weiner and Ottinger) has demonstrated significant differences in play activities between subgroups of children within the same diagnostic category of "atypical."

In summary, the findings of the current study when placed within the context of previous investigations would strongly support the conclusion that the observational technique in combination with T-Play and Q-Play measures used in the present study would have practical utility as a diagnostic and evaluative instrument in future research dealing with atypical children.

Turning to a consideration of the secondary purpose of the study, that is, an appraisal of behavioral change, it was previously noted that one of the intervening variables occurring between Play 1 and Play 2 was treatment at the Loyola University Day School. Since the investigation was very preliminary with respect to this purpose and a suitable control group was unavailable, the findings must be interpreted within these limitations. Results of the current

study with respect to changes in the three play measures were consistent and supported the research hypotheses. All subjects (i.e., Groups 1 and 2 combined) attained significantly higher scores for T-Play, Q-Play/20, and Q-Play/T when Play 2 (posttreatment) was compared to Play 1 (pretreatment). These results were congruent with the findings of Schacter et al. (1962) who reported a significant improvement in organization of play for a group of atypical children following one year of psychotherapy. However, due to the limitations of the present study it is not valid to attribute improvement in the subjects' play scores to Day School treatment. While it is very possible that the intensive and consistent treatment (of approximately seven months duration) which appeared to be the experience most common to all subjects was the intervening variable which produced improvement in play scores, uncontrolled sources of variation (e.g., extra-therapeutic events, maturational effects) may well have contributed to the observed changes. However, if these findings are placed in perspective regarding the area of child psychotherapy research, they are encouraging and potentially valuable. As previously reported, the majority of the research in child therapy, especially with atypical children, has failed to provide criterion measures of change which were clearly specified, represented quantitatively, and evaluated statistically. The findings of the current study regarding changes in play behavior following treatment in combination with results previously discussed strongly suggest that these measures could be useful in future psychotherapy and educational research as evaluative instruments for appraising change. These play measures appear to be relevant, specific, objective, and reliable.

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Although no formal hypotheses were made regarding differences between Groups 1 and 2 at the time of Play 2 (posttreatment), examination of the data is warranted. As previously reported, Group 1's performance was significantly superior to Group 2's at the time of Play 1 on all of the play measures. It was also noted that all subjects made significant gains on all three play measures when Play 2 was compared to Play 1. However, at Play 2 (posttreatment) differences between the performances of Groups 1 and 2 had either diminished or were absent. While both groups were significantly different with respect to play measures at Play 1, and all subjects improved over time, the groups were less dissimilar at Play 2. Inspection of the data indicated that these findings were primarily due to the more pathological Group 2 subjects becoming more like Group 1. Limitations of the design make it difficult to interpret the cause of this phenomenon.

While no formal hypotheses were made regarding the presence of the mother, no differences were expected between conditions of mother absent versus mother present for the three play measures. These expectations were borne out for the measures T-Play and Q-Play/T, but not for Q-Flay/20. More specifically, all subjects (i.e., Groups 1 and 2 combined) tended to attain significantly higher Q-Play/20 scores with mother present rather than absent when ratings from Play 1 and Play 2 were combined. This finding appears to be related to the fact that Q-Play/20 represented the average quality of play rating in terms of total time available for a session, whereas Q-Play/T represented the average quality of play rating in terms of actual time used by a subject per session. By viewing the scores in this manner, Q-Play/20 appears to be more of a measure of persistence in play for a session than does Q-Play/T. In this respect, it is highly probable that when mother was present she emitted cues to the child which encouraged persistence in play which was reflected in the Q-Play/20 results for the condition of presence of mother.

Aggression

It is extremely difficult to evaluate the research hypotheses regarding the Verbal Aggression (V-AGGR) and Nonverbal Aggression (NV-AGGR) measures. Distributions of V-AGGR contained a large number of zero scores and were positively skewed. However, even after statistical transformations had been made to normalize the distributions, the analysis of variance of V-AGGR in combination with inspection of means revealed that significant effects were primarily a function of extremely low and/or zero scores presented by Group 2 under all experimental conditions. In addition, hypothesis testing with respect to differences between V-AGGR and NV-AGGR had to be made using raw scores which basically involved statistical comparisons between noncomparable distributions. Therefore, with the exception of the results regarding NV-AGGR, the interpretation and discussion of results with respect to V-AGGR and comparisons between V-AGGR and NV-AGGR are of questionable validity due to the statistical difficulties previously enumerated. However, before turning to a discussion of these results, closer examination of the possible causes of the statistical problems encountered with respect to the V-AGGR measure is warranted. As noted earlier, the V-AGGR measure was based upon the frequency and duration of occurrence (per min. of a play session) of verbal activities intended to create discomfort and/or hurt the feelings of another person or person surrogate; assertions of will and attempts to gain compliance with demands (See Scale 2 -Verbal Aggression in Appendix B). The highest possible V-AGGR score attainable for a 20-min. session was 40 points. Inspection of means of raw scores in Table 5 of the Results Section indicated that the range of scores attained within groups of subjects per session was from 0 to 3.90. Inspection of the V-AGGR scale in the Appendix in combination with the score values and range

attained by the subjects would suggest that this scale was inappropriate to use with the subjects employed. This conclusion is further supported by the description of subjects in both the Introduction and Method Section. More specifically, in retrospect it appeared that the "level of verbalness" needed to attain a meaningful score on this scale was not part of the functioning behavioral repertoire, particularly of the more pathological subjects.

Bearing in mind the complexities of the aforementioned problems, the results of the AGGR measures are discussed. As predicted, it was found that at the time of Play 1 expressions of NV-AGGR were significantly higher than expressions of V-AGGR for all subjects. As anticipated there were also no differences at Play 1 for these results with regard to the conditions of "mother absent" versus "mother present." In addition, as hypothesized, it was found that at Play 1 the subjects in Group 2 (more pathological) displayed significantly more NV-AGGR than did subjects in Group 1 (less pathological). The primary inference of these findings is that the NV-AGGR scale possesses construct validity in that it significantly discriminated between contrasted groups and also concurrent validity with the criterion being the author's clinical judgment.

With regard to behavioral change between Play 2 (posttreatment) and Play 1 (pretreatment), the hypotheses were only partially confirmed. While NV-AGGR was significantly lower for all subjects (i.e., Groups 1 & 2 combined) when Play 2 was compared to Play 1, this effect seemed primarily due to a significant decrease in NV-AGGR by Group 2. That is, the overall reduction in NV-AGGR at Play 2 appeared to be primarily a function of the decrease in NV-AGGR for Group 2 rather than a decrease in NV-AGGR for Group 1. It appeared that whatever the intervening variables were (including Day School treatment) between Play 2 and Play 1, they had a greater effect on the reduction of

NV-AGGR group for Group 2 than for Group 1. This interpretation is supported by the results which indicated that although at Play 1 the subjects in Group 2 demonstrated significantly more NV-AGGR than the subjects in Group 1, there was no significant difference between groups at Play 2.

Finally, contrary to the hypotheses, at Play 2 (posttreatment) expressions of V-AGGR were not significantly higher than expressions of NV-AGGR for either Groups 1 or 2. In fact, there was significance found in the direction opposite to that predicted. That is, at Play 2 V-AGGR was significantly lower than NV-AGGR for both groups. There was no significant difference found between conditions of mother absent versus mother present. Again, it must be remembered that the validity of these findings is questionable due to the use of nonparallel scales in making the comparisons between measures.

Dependency Striving

It is moderately difficult to evaluate the research hypotheses regarding Immature and/or Nonverbal Dependency Striving (IM/NV-DS) and Mature-Verbal Dependency Striving (MV-DS). Distributions of MV-DS contained a large number of zero scores and were positively skewed. However, (unlike V-AGGR) after a statistical transformation had been performed to normalize the distribution, the analysis of variance of MV-DS in combination with inspection of means suggested that results were not primarily a function of <u>extremely</u> low and/or zero scores. That is, results of the analyses for MV-DS seemed somewhat more valid and interpretable (than for V-AGGR). However, hypothesis testing with respect to differences between MV-DS and IM/NV-DS had to be made using raw scores which basically involved statistical comparisons between noncomparable distributions. Therefore, the results regarding comparisons between these measures

are of questionable validity.

Hypotheses with respect to greater frequency of IM/NV-DS when compared to MV-DS at the time of Play 1 (pretreatment) were only partially confirmed. Expressions of IM/NV-DS tended to be significantly higher than expressions of MV-DS for Group 2 (more pathological). There were no differences between conditions of mother present versus mother absent for this group. However, contrary to the hypothesis, expressions of IM/NV-DS tended to be significantly lower than expressions of MV-DS for Group 1 (less pathological) for the condition of mother present. With regard to the tendency for Group 1 to express more MV-DS than IM/NV-DS with mother present, it is conjectured in retrospect that the presence of mother provided cues which could be utilized by subjects in this group to elicit more age-appropriate dependent responses than ageinappropriate ones. However, this hypothesis would have to be tested in future studies which included an instrument for evaluating the presence of maternal cues for dependency in a free-play situation.

With regard to behavioral change between Play 2 and Play 1, as predicted, expressions of IM/NV-DS were found to be significantly lower at Play 2 when compared to Play 1 for all subjects (i.e., Groups 1 and 2 combined). Due to the limitations of the present design it is impossible to identify what caused this change over time, more specifically, whether Day School treatment produced this effect.

An unexpected three-way interaction effect for group membership X time of ratings X mother status was found for IM/NV-DS. Inspection of the data in combination with results of the two-way analyses of variance seemed to indicate that Group 2 (more pathological) expressed more IM/NV-DS with mother present than did Group 1 (less pathological) with mother absent, at the time
of Play 1. However, Group 1 seemed to have presented more expressions of IM/NV-DS with mother present than Group 2 with mother absent, at the time of Play 2. One possible explanation of these findings is that at Play 1, although subjects in Group 2 have been described in previous sections as presenting age-inappropriate and more frequent dependent behaviors than subjects in Group 2 at this time, Group 1 might not have manifested these behaviors in a situation with a relative stranger, especially if these behaviors were not encouraged or rewarded (i.e., at Play 1 with the examiner). That is, Group 1, which might be considered to be "relatively better socialized" than Group 2, possibly possessed a greater capacity to inhibit immature and/or nonverbal dependent responses and exercised this capacity given the characteristics of the situation. On the other hand, although subjects in Group 2 have been described in previous sections as more withdrawn and socially isolated especially with strangers, they might well have demonstrated a greater frequency of IM/NV-DS responses with mother present, especially if Group 2 mothers had provided more cues which elicited these forms of behavior than either Group 1 mothers or the neutral examiner. The interactional results for Play 2 are more difficult to interpret. One possible explanation is that by Play 2 (posttreatment) Group 1 felt more comfortable expressing IM/NV-DS with mother present (possibly as a result of treatment) while Group 2 felt more comfortable expressing these same types of responses with mother absent. It should be remembered that during the interval between Play 2 and Play 1, not only the subjects but also their mothers received treatment. Possible changes due to treatment alone (which were not measured by this design) could very well have contributed to the interactional results of Play 2. In summary, since the present study did not provide stringent measures for the analysis of mothers' behavior, all hypotheses deduced from interactional results would

have to be investigated in future studies which included scales for evaluating maternal (and even examiner) variables with respect to dependency cues in a similar free-play situation.

Predictions in regard to Dependency Striving at Play 2 (posttreatment) were only partially confirmed. As hypothesized, MV-DS was greater than IM/NV-DS for Group 1. However, contrary to the hypothesis there was no significant difference between expressions of IM/NV-DS and MV-DS for Group 2. Also, there were no significant differences between conditions of mother absent versus mother present. These results appeared to be related to Group 1's "verbal superiority" as described at Play 1 (and possible improvement over a time period which included treatment) when compared to Group 2. Although the description of subjects provided in earlier sections was gathered from data prior to Play 1, it is conjectured that the severity of Group 2's language difficulties were persistent at Play 2 and interfored with their ability to acquire and express MV-DS responses by this time. These hypotheses would have to be tested in a future study which introduced not only an appropriate control group but also provided clinical ratings of subjects both at Play 1 and Play 2.

Although no formally testable hypotheses were made with regard to MV-DS as analyzed by the analyses of variance, results indicated that subjects in Group 1 (less pathological) expressed significantly more MV-DS than subjects in Group 2 (more pathological) both at Play 1 and Play 2. In addition, significantly more MV-DS was expressed by all subjects (i.e., Groups 1 and 2 combined) when mother was present as opposed to absent both at Play 1 and Play 2. Again, it is maintained that the results for Play 1 primarily reflected Group 1's "verbal superiority" when compared to Group 2. With respect to differences at Play 2, it is again conjectured that the severity of Group 2's language disturbances persisted until this time and interfered with their ability to acquire and express MV-DS responses. In regard to the effect of mother presence, it is suggested that maternal cues played an important role in contributing to these results. Future research should include clinical ratings of subjects both at Play 1 and Play 2 and also scales for evaluating maternal behavior (specifically with respect to dependency eliciting cues) in order to investigate these phenomena more closely.

General Comments

The most important findings of the present study seem to be those which demonstrated the construct and concurrent validity of the play measures employed (Foley, 1962). With respect to concurrent validity, the criterion of "clinical judgment" as used in the current investigation was satisfactory in that it was based upon sufficiently prolonged observation and detailed case history information (Anastasi, 1961). However, it is suggested for future studies that the criterion of "clinical judgment" be derived from more objective indices (e.g., the scale presented in Appendix A) obtained from direct assessment of subjects, and the reliability of these indices be established if the researcher wishes to strengthen the concurrent validity of the play measures. In addition, it is suggested that appropriate control groups be introduced into future research if the play measures are used to assess behavioral change over time. However, even in light of the design limitations of the present study its findings seem valuable and important, especially if it is placed in proper historical perspective and contrasted with the dearth of research in the area. The present investigation has demonstrated the utility of an observational technique in conjunction with relevant, specific, objective,

and reliable measures of play which seem to possess practical value as diagnostic and evaluative instruments for future research with atypical children.

The secondary findings of the study suggest that the investigation of dependent and aggressive behaviors of atypical children in the context of a play situation is an extremely complex problem. It appears that instruments which measure more primitive forms of these behaviors, that is, have extremely low basal levels, are needed in order to provide more meaningful research data. In addition, it seems imperative that future studies assess the behavior of the experimenter (and the subject's mother if included), since these most probably influence the production of dependent and aggressive responses from atypical children.

CHAPTER V

SUMMARY

In view of the limitations of traditional psychological tests for assessing atypical (i.e., autistic, schizophrenic, psychotic) children, the present study represented an exploratory attempt to investigate the use of an observational technique and a play activity scale for obtaining behavioral measures of this clinical sample.

The play behavior of 20 children diagnosed as atypical was investigated with respect to three experimental conditions: group membership (i.e., Group 1 ($\underline{N} = 11$)--subjects clinically judged to be less pathological, Group 2 ($\underline{N} =$ 9)--subjects clinically judged to be more pathological), time of ratings (i.e., Play 1--pretreatment, Play 2--posttreatment), and mother status (i.e., absent or present). When dependent measures (Time in Play, and two Quality of Play ratings) of Group 1 and Group 2 were compared at the time of Play 1, findings were highly significant and consistent for the effect of group membership. That is, at Play 1 the subjects in Group 1 (less pathological) spent more time in rated play activities and achieved higher quality of play scores than did the subjects in Group 2 (more pathological). In addition, all subjects (Groups 1 and 2 combined) demonstrated significant increases in Time in Play and the two Quality of Play measures when Play 2 was compared to Play 1. There was only an approach toward significance for the effect of mother status for one of the Quality of Play measures.

The analyses of additional dependent measures (Aggression and Dependency Striving) were difficult to evaluate because of statistical problems encountered. Results of these findings plus an examination of possible factors related to the statistical problems were presented and discussed.

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APPENDIX A

Behavioral Characteristics of Subjects

Within the context of the following descriptive categories, "observed" behavior refers to the following: (1) for 14 subjects previously unknown to the Loyola Guidance Center, it refers to activities reportedly observed by Guidance Center staff during the screening interview, (2) for 6 subjects who had received group treatment at the Guidance Center prior to Day School treatment, it refers to activities reportedly observed during the screening interview and maintained subsequent to the reception of group treatment. "Reported" behavior (for all 20 subjects) refers to activities reportedly observed by parents, or other professionals and/or agencies who had dealt with the subject prior to contact with the Guidance Center.

Relationships with People

<u>Autism</u> - (Behavior observed) - The child appears oblivious to people. There is almost a continuous lack of response; the child behaves as if no one is present. There is an avoidance of eye-to-eye gaze, or if eye contact is present the child seems to "look through" people.

In general, the child's behavior has a mechanical quality. He is unresponsive to physical contact from people. Affective responses to others are usually totally absent (e.g., the child does not respond overtly to the interviewer smiling at him, talking with him, or physically stimulating him), or if present, are primitive and seemingly inappropriate (e.g., the child cries, shrieks, tantrums, or laughs hysterically for a prolonged period in response to the interviewer greeting him, attempting to maintain a personal interaction with him, and/or attempting to involve him in a task).

Withdrawal and/or resistiveness - (Behavior observed) - The child

appears visually attentive to a person at a distance (e.g., the child will intermittently gaze at the interviewer's face or eyes from afar). However, when a person approaches, the child withdraws into imperviousness and halts visual attending and/or attempts physical retreat.

The child responds to physical contact from people by turning away or in some instances by struggling to pull away. Affective responses to people include passive withdrawal into a seemingly oblivious state (e.g., a child attending to an interviewer withdraws into an impervious state when the interviewer increases physical proximity, attempts to initiate and maintain a personal interaction, and/or attempts to engage the child in a task). Another characteristic set of affective responses includes more active, resistive maneuvers by the child in response to the interviewer's attempts to structure the interpersonal situation. The child's resistiveness to the interviewer may be manifested by expressions of fear and pain, temper-tantrum-like behavior, cr escape activities. These phenomena appear diffuse and are primarily expressed in a global fashion with the body. For example, a child who seemed comfortable while the interviewer maintained physical and emotional distance suddenly recoils, appears panic-stricken, and then darts about the room in response to the interviewer's endeavors to increase physical proximity, initiate and maintain a personal interaction, or engage the child in a task.

<u>Primitive nonverbal</u> - (Behavior observed) - Autistic withdrawal, and resistive behaviors as previously described are significantly less pervasive or totally absent. The child appears able to make regularly recurring responses (both spontaneous and elicited to a person as a whole). While these responses are more sustained, they are primarily nonverbal, relatively circumscribed, and of three types only; (1) primitive social-affective behaviors (e.g., establishing and maintaining eye contact with the interviewer; smiling

at and cuddling with the interviewer; hitting the interviewer if frustrated by him), (2) primitive exploratory-investigatory behaviors (e.g., visually and manually exploring the interviewer's face and body), and (3) behaviors which appear related to the satisfaction of basic needs (e.g., making gestural responses for food; clinging to the interviewer for security)

1 or 2-year-old mode of relating - (Behavior observed) - In general, the child's behavior is characterized by extreme attention seeking activities in relationships with people (e.g., engaging the interviewer in prolonged conversation and/or questions which are often times unrelated to the immediate situation; seeking physical contact from the interviewer; seeking reassurance, comfort, sympathy, and approval by verbal and/or nonverbal means). The major cues in identifying the behavior are its quality of dependency, and the persistence with which the child engages in it. Characteristically the child responds to withdrawal of attention in a negativistic and/or actively aggressive fashion (e.g., withdrawal of attention by the interviewer causes the child to demonstrate such actions as temper outbursts, episodes of crying, scratching the interviewer, verbal expressions of anger). In summary, the behavior in this category would be socially appropriate in many ways for a child of approximately 1 to 2 years of age, but is inappropriate given the chronological age of the subject.

Perceptual Anomalies

<u>Primitive modes of perception</u> - (Behavior observed) - Activities of prolonged duration which appear to reflect the child's perceptually infantile approach to dealing with his environment. These include a variety of mouthing, smelling, touching, and visual responses to objects and/or people. For

example, recurrent episodes of licking an interviewer; crawling about and sniffing objects in the room; indiscriminantly picking up objects and chewing on them; repetitively rubbing his hands over a number of objects or scratching their surfaces; twirling objects in front of his own eyes as if struggling to establish object constancy.

<u>Apparent lack of response to auditory stimuli</u> - (Behavior observed and reported) - The child fails to demonstrate detectable behavioral responses to both speech and nonvocal sounds. For example, the child disregards a person talking to him; he is also nonresponsive to loud noises such as hand clapping, objects dropping, sirens wailing, etc. Often the child has been regarded as deaf at some period during his history.

<u>Apparent lack of response to painful stimuli</u> - (Behavior observed and/ or reported) - The child fails to react with evidence of pain to physical injury which is either self-induced or environmentally occurring (e.g., burns, cuts, falls, head-banging).

Language

<u>Apparent absence of verbal-receptive language</u> - (Behavior observed) -The child fails to produce consensually validated verbal responses (words). While the child may produce gross, undifferentiated sounds, or vocalizations which approximate speech, he does not emit clearly recognizeable words.

Expressive language present but not used for communication - (Behavior observed) - While the child produces consensually validated verbal responses (which may range from single words to complex sentences), he does not employ them for purposes of communition (e.g., the child may be overheard to speak when he presumes no one is nearby, but fails to speak in an interaction with a person). Also included in this category is the child's giving inappropriate verbal responses to verbal stimuli provided by others, even though he possesses the appropriate verbal responses in his repertoire (e.g., a child who has spoken his name frequently in an isolated situation responds by reciting the ABC's, etc., when requested by a person to recite his own name).

Echolalia - (Behavior observed) - The child either immediately or after some delay repeats words, phrases, or sentences spoken by others.

<u>Other language abnormalities</u> - (Behavior observed) - These include idiosyncratic usage of language (e.g., inventing words for things or people), tonal and inflective abnormalities (e.g., atonal, arrhythmic, hollow sounding quality to the voice; speaking in a "sing-song" or "parrot-like" fashion), articulatory defects, and perseverative questioning (e.g., answering the child's question does not terminate the question).

Concentration

<u>Poor persistence at a task and distractibility</u> - (Behavior observed) -The child demonstrates an inability to sustain attentional focus and behavioral involvement when given tasks or activities to perform.

Motor Phenomena

<u>Disturbances in coordination</u> (gross and fine motor) - (Behavior observed - Considering the chronological age of the child, gross and/or fine motor coordination skills are judged as impaired to a moderate or extreme degree. Behaviors under examination include overall gait, crawling patterns, ability to handle and manipulate familiar objects (e.g., toys, academic materials, door knobs, handles on objects), skills required to perform self-care activities (e.g., ability to hold food in mouth and chew, buttoning, zippering, lacing, tying). <u>Hyperkinesis</u> - (Behavior observed) - Considering the chronological age of the child, he is judged as markedly overactive. Behaviors regarded as hyperactive would include episodes of jumping up and down, and prolonger periods of darting, lunging, whirling, or rocking.

<u>Hypokinesis</u> - (Behavior observed) - Considering the chronological age of the child, he is judged as markedly underactive. For example, a hypoactive child would characteristically exhibit prolonger periods of lethargy and passivity accompanied by flaccid muscle tonus.

<u>Stereotyped repetitive movements</u> - (Behavior observed) - These behaviors include whole body movements (other than rocking); writhing activities of the head, face and neck; hand flapping; engaging in flicking motions with the fingers, etc.

The Presence of Advanced, Seemingly "Isolated" Special Abilities - (Behavior observed) - This category refers to the existence of seemingly encapsulated skills in a child whose general level of functioning is evaluated as otherwise severely retarded. The general level of retardation is regarded as resulting from developmental arrest or gross developmental disturbance (whatever the hypothesized etiology), rather than regression. The special abilities encountered in subjects included capacities for gross and fine motor coordination, language usage and vocabulary, auditory memory, and geographic memory (place location).

Ritualistic and Compulsive Behaviors

<u>Non-adaptability</u> (resistance to change) - Behavior observed - The child reacts with expressions of panic or rage (either verbal or nonverbal) to

changes introduced in the environment. Frequently coupled with this behavior is the child's active striving to reinstitute environmental constancy.

<u>Abnormal attachments</u> - (Behavior observed and/or reported) - Persistent attachments to curious and unusual objects (e.g., carrying about an open-ended, cardboard food package and gazing through it periodically). Also included in this category are fetish-like attachments to particular articles of clothing (e.g., gloves, hats, coats) and particular types of textured objects (e.g., soft woolens, hard materials, wooden toys).

<u>Abnormal preoccupations with objects</u> - (Behavior observed and/or reported) - The child engages in preoccupations with simple objects (e.g., child twirling toys and becoming totally absorbed in the activity; child demonstrating unusual fascination with mechanical gadgets).

<u>Other obsessive phenomena</u> - (Behavior observed and/or reported) -Essentially these behaviors have ritualistic and compulsive qualities (e.g., the child demanding to touch certain objects in a room prior to engaging in other activities; marked stereotyping in arranging toys; the child persistently walking in a specific pattern upon entering selected rooms at home; compulsive repetition of TV and radio commercials or popular songs).

<u>Feeding Difficulties</u> - (Behavior observed and/or reported) - Persistent and unusual feeding disturbances including such phenomena as strong aversions to certain textured foods, atypical food preferences, narrow range of food choices, refusal to take nurturance outside of the home, bizarre rituals surrounding eating.

<u>Sleep Disturbances</u> - (Behavior reported) - Essentially involves severe difficulties in either falling asleep and/or remaining asleep. Also included in this category is the apparent need for little sleep (e.g., the child reportedly sleeps only 4-5 hours a night).

<u>Incontinence</u> - (Behavior observed and/or reported) - Frequent occurrence of either diurnal and/or nocturnal enuresis or encopresis after age 4.

Aggression

<u>Self-injury</u> - (Behavior observed and/or reported) - Includes "selfdestructive" behaviors such as head-banging, biting of the hands and arms, earboxing, hitting the body with clenched fists, face scratching, hair pulling, etc.

Destructive activity directed against people or objects - (Behavior observed and/or reported) - Includes both intentional and unintentional behaviors (e.g., child furiously attacking peers because they have "tessed" him; child repetitively hitting or pinching the interviewer for no apparent reason; child breaking windows and other glass objects with significant frequency).

<u>Temper tantrums</u> - (Behavior observed and/or reported) - Includes such activities as prolonged periods of screaming, screeching, crying, and kicking of objects as a response to either obvious environmental frustration, or to indiscernable internal stimuli.

<u>Anxiety and Fears (Verbalized</u>) - (Behavior observed and/or reported) - The child manifests frequent verbal expressions of morbid fears and anxiety (e.g., fear of being physically harmed; anxiety about bodily damage occurring from some vague, internal source; fear of abandonment).

Exclusion from School - (Behavior reported) - The child has been formally

excluded from attending regular school (either public or private).

APPENDIX B

I. Scoring Manual for Units of Action (Foley, 1962)

The Units of Action (UA) score for each play record (i.e., Play 1--Mother Absent, Play 1--Mother Present, Play 2--Mother Absent, or Play 2--Mother Present) consists of the total number of units occurring during the first 20 min. of the period. In general, an activity is scored as a separate unit when \underline{S} 's behavior suggests a change in goal or focus of attention.

The time spent in the action assigned a UA rating is noted for each unit. When a unit is not complete because of the 20-min. limit, the elapsed time for the activity occurring prior to this limit is assigned to the unit. Activity involved in the transition from one activity to another is not scored as a separate unit when \underline{S} 's intention is obvious and no loitering occurs. In this case, the time interval between the activities is counted with the new activity. However, when the transition involves a delay, distraction, or unnecessary wandering, it is scored as a separate unit.

Criteria for Scoring Units of Action

1. Different activities with different objects.

A single complete activity preceded and followed by different activities in terms of objects or playthings used, focus of attention, of mode of expression is scored as 1 unit. However, an activity involving several different objects which may be meaningfully grouped together in terms of class, location, or S's undifferentiated treatment of them is scored as 1 unit. In addition, a period of rather generalized attention to a number of objects such as might occur during episodes of wandering about the room is scored as a single unit. In general, 1-unit ratings of activities involving different objects are made when the assignment of separate ratings would be difficult or impossible and the activity may be more meaningfully subsumed under a single unit such as "wandering."

> Scorable as 1 unit: Building a block tower (preceded by doll play and followed by drawing)--talking to E (preceded by looking out of the window and followed by play with bears)--placing a variety of toys in the wagon without paying particular attention to any one-walking around the room and looking at different objects without becoming involved with any one object for more than a few seconds--

activity around the window involving looking out, tapping fingers on sill, and poking at glass (see also UA, Sect. 4).

2. Series of different activities with the same objects.

Activities with the same objects or playthings are scored as separate units when each represents a discrete activity which would be scored as 1 unit if it occurred separately. In addition, play with the same toy or group of toys is divided into separate units when the ongoing activity would be assigned different quality of play ratings(e.g., inspection versus fantasy play).

> Scorable as 2 or more units: A series of drawings, each on a separate piece of paper (1 unit per drawing) -- two or more drawings on a single sheet where the content or S's comments suggest they are unrelated . such as a house and writing (1 unit for each separate part)--building a block structure and later using the blocks for a new structure or piling them in the wagon (2 units) --inspection or simple manipulation of a toy to see how it works followed by fantasy activity involving the toy (2 units)--pushing the blocks around aimlessly and then integrating them into a structure (2 units)--building a block structure followed by rather prolonged destruction of it and finally loading the blocks in the wagon (3 units)--making different objects from Play Doh such as a dish, snake, and person (1 unit per object)--differentiated activity and prolonged attention to toys of the same class as dressing and/or undressing members of the doll family or giving big bear and little bear separate rides in the wagon (1 unit for the activity with each member of the toy group).

> Scorable as 1 unit: Repetitions of the same activity or repeated attempts to attain some goal (as rebuilding a block tower which falls)--slight variations on a single theme (as making pancakes with Play Doh)--making several different objects from Play Doh which combine into a single unit (as nest and eggs or dish with food)--rapidly executed activities with toys of the same type when \underline{S} does not treat them in a differentiated manner (as removing the shoes from all the dolls in quick succession or piling all the, dolls in the wagon for a ride).

3. Interruptions or breaks in ongoing activity.

a. By activity with different objects or the same objects with different intent.

The scoring of interruptions arising from activity with different objects is a special case of different activities with different objects (Sect. 1) and, consequently, the interruption is scored as 1 unit. However, in the case of interruptions, the interpolated activity is often shorter and/or incomplete and, as such, may escape attention. This is especially true when the interruption involves activity with the same objects but the intent of the activity or quality of play level is different. In both instances, the interrupted activity, the interruption, and the subsequent activity (a different activity or the resumption of the original activity) are each scored as 1 unit.

Scorable as 3 units: Building with blocks interrupted by period of pounding a block on floor before building activity resumed--drawing interrupted to look at block and drawing resumed--fondle and talk to bear, hold carelessly while looking out of window, and return to play with bears--hammer on block, hold in hand while talking to \underline{E} about dolls, and commence drawing--interrupt drawing or play with Doh to show \underline{E} progress (especially involving holding up production, carrying to show \underline{E} or sitting back so \underline{S} is no longer engaged in activity) before resuming activity (Note: If \underline{S} 's attention remains focused on what he is doing suggested by continued work on production and/or talk of what he is doing, the showing is considered an overlapping activity and is not scored as a separate unit.)

b. By inactivity, contemplation, loss of attention, non-play activity with people or objects in the experimental setting, etc.

Changes from activity to relative inactivity (sitting, standing, looking) are scored as 1 or 2 units. When the interval of inactivity suggests a period of contemplation, planning, or uncertainty about the next step in the ongoing activity and attention is focused mainly on the objects of the prior activity, the period of activity and inactivity are scored as 1 unit. If the original activity is resumed, the entire sequence is scored as 1 unit. If a different activity is initiated after the interval the sequence is scored as 2 units.

When the original activity is interrupted by a period of inactivity suggesting loss of attention and a search for a new activity as reflected by generalized looking around, verbalizations, or movement away from the original activity, the activity and the interval are scored as 2 units. Thus as with interruptions in general, the entire sequence including the subsequent activity is scored as 3 units regardless of whether the original activity is resumed or a different activity initiated. Even when S continued to hold an object used in the original activity, if the object appears to be temporarily forgotten and is not used, the intervening activity is scored as a separate unit.

An exception to the scoring of an interruption as a separate unit arises when the interruption is very brief (i.e., less than 10 sec.). Thus quick glances at \underline{E} or other objects are not scored as separate units. For further discussion of this point see Section 4.

Scorable as 1 unit: Drawing, sits back to study handiwork and occasionally glances at \underline{E} , and resumption of drawing--building with blocks, crawls around structure to look at other side, and resumes building activity.

Scorable as 2 units: Building with blocks, sits back and taps floor with block and wonders how to fit block in while looking at structure, shakes head as if unable to decide and starts conversation with <u>E</u>--tries to make dolls sit up in wagon, dolls fall over and S stares moodily at them, sighs and turns to play with blocks.

Scorable as 3 units: Drawing, <u>S</u> leans back and gazes around room and at other toys, resumes drawing activity--pulls wagon around room, pauses to look out of window while still holding wagon cord, continues to pull wagon around room.

4. Simultaneous or rapidly alternating activities.

Two activities occurring simultaneously, or in rapid alternation, where the assignment of times would be difficult are scored as 1 unit. This classification is differentiated from interruptions because the ongoing activity is either continuous or subject to only very brief (less than 10 sec.) disruptions. Glancing quickly at \underline{E} or talking while engaged in play and requesting \underline{E} to look at progress in ongoing activity are the most frequent sources of simultaneous activity scored as 1 unit.

Scorable as 1 unit: Repeatedly calling attention to progress in making block structure without interrupting activity ("Look! Now I'm putting the door in...Look! This is going to be the window" as <u>S</u> places blocks)--looking quickly at <u>E</u> or around the room while drawing--talking to self about ongoing activity--rapid alternation of fantasy play and explanations to <u>E</u> (as a telephone conversation in which <u>S</u> talks to imaginary friend and reports what friend has said to <u>E</u> and what he will say to friend and then does so.)

II. Scoring Manual for Quality of Play (Foley, 1962)

Each unit of action involving a play activity is assigned a Quality of Play (Q-Play) rating on the basis of the 1-7 pt. scale described in the following section. Play is, by definition, any activity involving the toys provided in the experimental situation regardless of how little the activity resembles play. In turn, play activities which do not involve the standardized toys are not rated for Q-Play.

The Quality of Play/Time (Q-Play/T) score for each record (i.e., Play 1--Mother Absent, Play 1--Mother Present, Play 2--Mother Absent, Play 2--Mother Present) is obtained by multiplying the 1-7 pt. rating for each play activity by the time spent in that activity, summing the products, and dividing by the total times \underline{S} spent in the rated play activities during the first 20 min. of the record.

The Q-Flay/20 score for each record is also obtained by multiplying the 1-7 pt. rating for each play activity by the time spent in that activity and summing the products, but the total is divided by 20 (i.e., the total time rated for quality of play for each record).

Special Considerations in Assigning Ratings

Play activities interrupted by a different activity. When play with a particular toy or group of toys is interrupted by other activities the Q-Play rating is, in general, assigned on the basis of the entire sequence of units comprising a particular play activity rather than its separate parts. For example, if \underline{S} leaves his drawing to look out of the window and then returns to drawing, the Q-Play rating is based on the completed drawing (or its final state if left unfinished). The time assigned to the activity includes only the

time spent in the activity -- not the time involved in the interruption.

Different levels of play within the same activity. When play with a particular group of toys was pursued on more than one level, each level is rated separately for Q-Play. For example, <u>S</u>'s fantasy play with the dolls (6 pts.) was interspersed with period of inspecting the dolls' clothes (3 pts.).

Overlapping play activities. When play activities which would receive different Q-Play ratings occur simultaneously, only the activity involving the higher rating is scored. This situation is most frequent when <u>S</u> continues to hold a toy without using it while pursuing another play activity.

Play activities not involving contact with the toys. In general, <u>S</u>'s activity must involve contact with the play materials to receive a Q-Play rating. That is, merely looking at or talking about a toy is not rated. However, Q-Play is scored when the lack of contact occurs during ongoing play and <u>S</u>'s attention remained focused on the toys as evidenced by fantasy about what is occurring, crawling around to size up the situation and making plans, or talk with <u>E</u> about progress (such as what <u>S</u> has done or plans to do). Those intervals receive the same Q-Play rating as the activity itself.

Criteria for Rating Quality of Play

A general description of the types of play behavior characterizing each level on the 1-7 pt. scoring scale for Q-Play is presented below. Specific examples of the play behavior assigned 1-7 pt. ratings for each toy or group of toys are provided in the following section.

1 Point. Touching or holding with minimal manipulation or examination.

Toy must be held in hand or touched--not merely looked at. Attention to toy is superficial and casual and frequently appears idle as if <u>S</u> is preoccupied with something else. True manipulation is absent-S simply handles the

toy without attempting to make it do anything. Examination is limited and \underline{S} does not appear concerned with how the toy is made or how it works.

2 Points. Primitive, inadequate, or undeveloped use.

Active manipulation or handling of the toy without apparent purpose. Thus \underline{S} frequently appears to be doing something for the fun of it (even though it may be rather stupid), because he is bored and has nothing better to do, or while his mind is really on something else. No fantasy activity is discernable although \underline{S} may state what he is doing in a factual way. Activities at this level tend to be short, but may be long when the same action is repeated again and again.

3 Points. Investigation and purposeful activity of a non-play nature.

Examination and careful investigation of how something works or is put together. Investigation is inferred from the way <u>S</u> manipulates the toy and/or questions about how it works. Simple problem solving may occur as, for example, seeing whether something will come off, finding out how it fits together, or why it makes a noise. The problem need not be solved.

All activities involving organizing, cleaning up, arranging, and putting away of playthings.

Showing and explaining play creations to \underline{E} when the action involves a break in the ongoing play activity. When showing and/or explaining activities overlap with the play activity, the action is rated at the level assigned to the play activity or for the activity receiving the higher rating. Seeking assistance from \underline{E} .

4 Points. Appropriate activity at undeveloped level.

Play at this level creates the impression that \underline{S} is really making or doing something with the play materials, but the product of the activity does not clearly reveal \underline{S} 's intent and \underline{S} does not provide clues through conversation or fantasy. In general, the play is relatively unelaborated and involves expected and obvious uses and groupings of the toys (e.g., pounding with the hammer, playing with crayons and paper or blocks and the wagon). Play is characterized by doing something to the toy rather than having it play some role as it might in fantasy (e.g., \underline{S} hits the dolls rather than having them hit each other). Directness of purpose and fantasy may exist, but neither is clear from \underline{S} 's actions alone. Thus many behaviors rated at this level would receive a higher rating if \underline{S} verbalized the purpose of the activity or accompanied the action with spoken fantasy. Play is frequently short but may be long through repetition.

5 Points. <u>Appropriate activity at developed level--imaginative and/or</u> purposeful use.

Play is frequently directed toward some recognizable goal as in drawing a picture or making a block structure. The activity tends to be well sustained and is frequently completed although neither its completion nor the quality of the finished product is important for the 5-pt. rating if the purpose is clear. Fantasy play is common, especially with the dolls and bears who are no longer inanimate objects, but the actors in <u>S</u>'s fantasy. The fantasy episodes are generally short (a single, unelaborated incident) and <u>S</u>'s fantasy need not be verbalized if the import of the action is apparent (as the father doll spanking the child doll).

In general, play at this level differs from 4-pt. activities in being more sustained, developed, and purposeful or imaginative although S's use and grouping of the toys is still expected and obvious. Level 5 is differentiated from level 6 in terms of the greater elaboration of the play activities, the more creative use of the toys, and the larger scope of the activity which characterizes the higher level (e.g., a small block building versus an elaborate castle or a snake versus a nest with chicken made from clay).

6 Points. Highly elaborated or creative (but relatively short) activities.

Activities which are well developed and elaborated although the use of the toys need not be particularly original. The activity is sustained and purposeful and whatever is undertaken is usually completed. Play usually involves only one type of toy (such as blocks) or expected combinations of play-things (as blocks and wagon or crayons and paper), but \underline{S} fully realizes their potential. Fantasy is frequent.

Very imaginative use of the toys involving an unusual (but appropriate) combination of playthings or clever solution to a problem. The activity is frequently fairly short although occasionally \underline{S} spends considerable time in executing a single original idea.

7 Points. Highly elaborated creative activities.

Play at this level combines both aspects of Level 6 in that it involves creative and imaginative use of the toys where the creativeness tends to be sustained, elaborated and developed over a period of time. Several toys or groups of toys and non-toy objects are integrated in a meaningful and appropriate, although frequently unexpected, way. Unlike Level 6 where a single idea may be developed at length, the 7 pt. play activity seems to develop as <u>S</u> pursues it--new elements and ideas are integrated in the course of action. Fantasy is frequent and long fantasies suggesting the same sort of elaboration of ideas as described for the toys are rated at this level even though the activity with the toys is more usual and includes less integration of toys of different types.

Mother Participation--Principles for Scoring S Activity

In scoring play records where <u>S</u>'s mother is present (i.e., Play 1--Mother Present, Play 2--Mother Present), the following principles are used in rating Q-Play in addition to those previously enumerated.

Assign Q-Play level only when <u>S</u> initiated activity with toys. Thus if mother suggests activity and S only watches (or listens), score is "0". If

mother initiates but \underline{S} begins to take an active role, score as below. If mother interferes with something \underline{S} has started or prevents him from doing something, score at level activity would have received if \underline{S} had been permitted to carry through,

Points:

1

2

3

Ъ

Asks mother to make something (with doh, blocks, etc.) and stands watching. Request may have been for some particular item or just asking her to make something. May hold doh, etc. but does not help mother or actively manipulate. If <u>S</u> does something else after getting mother started on activity, score that activity (if scorable). <u>S</u> engaged with blocks and mother interrupts to explain or demonstrate and <u>S</u> attentive to mother.

Gets mother to make something or participate as above and also fools around with toy without really making anything--tears bits off doh, pushes blocks around. Adds to construction at mother's suggestion as makes doh ball for head--listens on phone without saying anything after mother gives to him to try to encourage to participate in her conversation.

As above but helps mother to organize materials, supplies doh to meet needs of construction on own initiative. S begins activity (as drawing) and takes to mother for help, especially as directs her in what she should make.

Looks to mother for inspiration in making something (often unspecified) and then imitates activity or engages in parallel action. Mother may participate but <u>S</u> must do fair amount of activity by self or play counts at level 2. <u>S</u> has plan which would count at higher level but uses mother to carry out as undressing dolls for bed (accent on participation rather than help (see level 3) and <u>S</u> must remain attentive and follow through with activity as putting dolls to bed, treating, etc.)

5, 6 & 7 S enlists mother so she becomes part of ongoing activity, helps S to carry out fantasy as playing other person on telephone or being recipient of block transport in wagon. Mother cooperates in assigned role and perhaps elaborates but initiative lies with S. Level for scoring determined by S's level of play.
Bears and Dolls

Blocks and Mallet

<u>l</u> Point

Touch casually--pick up and hold (not like a baby)--sit or lie on in absent way. Touch--hold as if forgotten--jiggle in hand--run hands over--push a little in aimless way--stand on.

2 Points

Bounce and jiggle up and down--move arms or legs in aimless way--hit or poke without punishment fantasy--move to different location or wagon (not idea of pick up or ride)--sit on and push self around floor--rough tossing around--throwing--push in heap and roll on. Push several together without building --isolated episodes of tapping or hitting together or on other objects (as if enjoys pounding)--toss around actively but aimlessly--put few in wagon without idea of picking up or load-shove around actively--destruction of a building (casual or prolonged)-stick two together with clay in idle way--scratching desk or other surface with corner.

General inspection--finding out how to remove clothes--remove and replace shoe, etc. as simple problem (need not succeed)--more complete undressing if apparent purpose is to investigate (no fantasy)--hitting bear to learn about squeak--getting <u>E</u> to help with clothes or bow--put away to clean up--arrange or line up as they were at start of session.

<u>3 Points</u>

Inspect blocks noting size, color, etc.--observe two blocks make something as two arches form circle--look at mallet, inquire about use and tap a little to try out--show <u>E</u> completed structure or ask advice--cleaning or clearing up by putting blocks in wagon or toy box.

4 Points

Make stand, sit, or walk--push or hit together suggesting a fight--roughness that might be punishment--hold like a baby--fondling and cuddling (no fantasy)--undress dolls as activity rather than inspection (no reason specified but may involve fantasy). Put a few blocks together as if building something or noting it will be something without further development of idea--tap on block with mallet as if for purpose--knocking apart and replacing suggesting some purpose --place a number of blocks in wagon with more enthusiasm than order (interest suggests play rather than cleaning up and purpose unspecified).

Bears and Dolls

Blocks and Mallet

5 Points

Actors in S's fantasy who do simple things like kiss, spank, fight, take a quick ride in wagon and other single episode activities--undress one doll for bath or to fix hair (may or may not redress)--partially undress more dolls for some purpose but fantasy not elaborated--holding like baby or child and have simple conversation with or talk to. Pile blocks in wagon for a load to take somewhere (see wagon)--simple structures (about 20 or fewer blocks) in building that shows purpose or that <u>S</u> says is something, e.g., towers, houses, trees--smaller structures with original idea as a slide--mallet used as hammer for tapping in blocks-blocks stuck together with clay but not used as structural aid (see 6 pts.)--destructive actions involving fantasy associated with 5 pt. building as a tree of blocks being chopped down with a block hatchet.

6 Points

Similar to 5 pts. but involves more episodes end/or characters--family goes for ride--mother sends children to store--family is undressed to go to bed--family goes to church with wagon as car--longer fights and arguments with integrated fantasy. Elaborate structures using all or most of blocks, e.g., castles, large houses, factories--fewer blocks in original building as gas station with pumps and signs--solving structural problem in building a high tower by sticking blocks together with clay-building a house with wagon used to haul wood (blocks)--careful placing of all blocks in wagon so fit flat (as when manufacturer sold them).

7 Points

Long fantasy involving the doll family in which each member tries to obtain a gift from the fish pond and, upon failing, calls upon another member and finally the bears. Different roles played realistically by <u>S</u>--Blocks used to make stove on which clay pancakes are cooked for bears. Subject draws a picture while waiting for pancakes to cook and then feeds bears. A substantial number of blocks used to build a house which then became the home of the three little pigs with the bears, as wolves, trying to get in and subsequently being trapped. Elaborate fantasy which frequently involved little contact with toys.

Crayons and Paper

Clay

<u>l Point</u>

Touch or hold in hand--stand or kneel on.

Touch or hold in hand as if forgotten, often while doing something else.

2 Points

Draw a line or two or scribble in idle way (no other drawing)--long series of drawings mostly in one color (fast and just a couple lines on each page)-drop crayons on paper or on floor-mark up shoes or room in destructive way-shuffle papers or toss around (not lining up)--fold roughly, crumple, or sit on a pushing self around-move from one spot to another or to wagon without apparent purpose--break crayons or tear paper off. Squeeze, knead, pat, stick fingers into, step on, hit with mallet, break pieces off, etc. as simple activity without apparent purpose of making anything--pat on paper without making anything--stick pieces on window or other inappropriate places--removing from can and/or replacing when not part of other play--squash object with prolonged squeezing (idea of destruction rather than preparing to make new object).

3 Points

Look at carefully and comment on colors, etc.--show <u>E</u> drawing as separate activity (not part of running comment during drawing)--line up paper or crayons as preparation for drawing or as clean up at end--put away in box or wagon. Inspect label on can--look at clay and comment on color or texture--take clay out to get ready to make something or put it back in can at end (each as fairly long effort--quick removal, etc. rated with play activity itself) --showing <u>E</u> what has been made as separate activity (see crayons and paper)--asking for help in kneading clay or removing from can.

4 Points

Drawing that <u>might</u> be something even if it looks like a scribble since \underline{S} spends some time and effort--elaborate scribbles in several colors--complexes of lines (unnamed), scribbles called designs or writing when they bear no resemblance--simple scribbles called something (2 pts. if not). Rolling balls, cylinders like snakes, patting flat like pancake or anything which suggests some purpose, but object is not named and is frequently remolded into something else--calling objects something when it looks like nothing, e.g., a lump of clay called a shoe--rolling a piece with a block but not making anything recognizable.

Crayons and Paper

5 Points

Simple drawings of a single unit such as a house, tree, head or flower which are recognizable--repetitious and quickly executed designs even if large --printing name (or poor but recognizable attempt)--attempts to write or print a few letters or numbers which are passable or good--drawings involving more elements with each very simple (a few lines) as tree, person, and flowers. Simple objects, often designated or clearly recognizable, such as bells, snakes, apples, eggs, and pancakes-two-ball type shapes like snowmen or bears (relatively unelaborated)-simple nest with eggs--single round piece cut with can cover without fantasy of cooky--play with something that has been made (as a ball).

Clay

6 Points

Integrated drawings and time consuming, well-executed designs--drawings resembling a picture with several elements as room with furnishings and person, house, sun, trees, etc.--one thing like a house or person elaborated-original idea as copy of toy telephone or wagon--copying a block design made previously even though execution is poor--long lettering or numbering sequences. Cookies cut with cover of can (designated or fantasy)--other confections such as plates and food--people-animals--bird and nest--pumpkin with light and cover--in general, groups of simple objects which take time or complex single objects.

7 Points

Clever integration of clay figure and drawing as picture of a girl with well executed clay dog on leash--bas-relief clown carefully shaped with mallet handle and colored with crayons on paper with circus tent and other decorations.

A chicken with nest as part of farm fantasy in which farmer steals chicken in wagon, chicken is attacked by clay snake, and finally saved by S.

Telephone

Wagon

<u>l Point</u>

Touch--hold--pick up and put down.

Touch--hold cord as if forgotten--sit in or rest foot in (no pushing activity)--move back and forth a little in bored way.

2 Points

Jiggle or toss around--dial once or twice for fun or in idle way (no suggestion of phone call)--long and repetitious dialing apparently and fun of activity or noise--twirling receiver on cord--moving from one place to another without apparent purpose. Roll or kick back and forth--twist, swing, or idly knot cord--turn over and shove around roughly--hit without idea of repair--pull a foot or two when empty without idea of trip or taking some place--toss in a few blocks or other toys without evidence of intent to clean up or get a load to haul.

3 Points

Examine by turning over--wondering about bank in bottom--dialing to find out how it works and perhaps commenting on bell--untangling cord--load in wagon or toy box as part of clean up.

Examine as words on side or wheels-use to load toys in for clean up (neat or messy)--put away in box.

4 Points

Dial and hold receiver in hand and/or listen as if a real call but no conversation or fantasy--mentions intent to call some number and dials but no listening or other follow through. Pull around empty as if taking a trip --tap wheels with mallet as if \underline{S} is mechanic but no fantasy to clarify-place a few toys in wagon and pull a short distance with possible idea of load--place a number of blocks or other toys in wagon, reason unspecified and no trip (gives idea this is fun to do).

Telephone

Wagon

5 Points

Making a call including dialing, listening, and saying "Hello" and/or a few words--dial, listen, and report phone is busy, no answer, or other outcome of call (not elaborated--see level 6).

Taking dolls or bears on short trips--<u>S</u> gives self a ride in wagon--building simple structures with blocks using wagon as floor--make a sidewalk with blocks--pile most of blocks in wagon in neat way (but not so all fit flat as originally packed by manufacturer)-

Rating of play with wagon usually involved other toys and level of play determined by nature of activity (see bears, dolls, etc.).

6 Points

Telephone calls involving dialing, listening, and a conversation in which there are several exchanges with a fantasy person (may be numbled, whispered, or relatively short exchanges--extended fantasy about telephone being busy, wrong number, no answer so try another number in context of realistic use of phone.

No 6 pt. rating unless used in conjunction with other toys.

7 Points

Play with father doll including having him make a telephone call and talk as well as helping him hold crayons for writing. No 7 pt. rating unless used in conjunction with other toys.

III. Scoring Manual for Aggression (Foley, 1962)

The Aggression (AGGR) scores for each play record (i.e., Play 1-Mother Absent, Play 1-Mother Present, Play 2-Mother Absent, Play 2-Mother Present) are the sums of the 1-2-pt. ratings of aggressive behavior occurring during the first 20 min. of the period.

Rate each type of aggressive behavior as either present or absent for each minute of the play record. If the behavior is rated as present, it is assigned either a 1-pt. score (activity of relatively short duration), or a 2-pt. score (activity of long duration). The score for each scale is the sum of the 1-2-pt. ratings of aggressive activity for the 20-min. session--possible score of 0 to 40.

The scales and criteria for scoring Aggression are described in a following section under (1) Direct, physical aggression, (2) Verbal aggression, and (3) Miscellaneous expressions of aggression. The activities subsumed under these headings refer both to actions occurring in <u>S</u>'s fantasy play and his behavior as it is directly oriented to the experimental situation, to <u>E</u>, and to mother when present.

Continuing activities are scored for each minute in which they occur (e.g., child head-banging during the first minute continues activity into the second minute; head-banging occurring during the first minute receives a separate score from head-banging occurring during the second minute).

Overlapping activities are scored in as many categories as warranted. For example, a brief fight between two dolls may also involve name-calling and threats, etc. Each aspect of the activity would receive a 1 pt. rating. Another example would be <u>S</u> commanding <u>E</u> to let him leave the room (1 pt.), and trying to push <u>E</u> out of his way (1 pt.). Because of difficulty in defining "duration" in terms of time (activity of relatively short duration versus activity of long duration), the following criteria are used in rating activities of long duration: (1) \underline{S} continued the behavior for longer than average or than was necessary to discover that the approach was ineffective in attaining his goal, (2) the activity (such as pounding) was continued in a perseverative way suggesting \underline{S} 's need to express his feeling noisily and destructively and possibly, to test the limits of the situation, and (3) angry outbursts suggesting loss of emotional control or some hope that a sufficiently prolonged and violent display of feeling would help him to get what he wanted. In general, activity of long duration was found to persist for more than 20-sec. intervals.

Scales and Criteria for Rating Aggression

Scale 1. Direct, physical aggression

Actions directed toward hurting or injuring self, another person, person surrogate or animal.

Biting--hitting--kicking--pinching--slapping--rough poking or shaking --throwing down--pulling hair--pushing--inflicting physical punishment (spanking, etc.)--scratching--killing.

Actions directed toward getting own way.

Pulling or pushing another to do something--forcibly taking something from another--pushing or shoving (as to get out of room)--grabbing-attempts to break, tip over, or force way in (as with play doh can in effort to remove doh).

Destructive, damaging actions directed at inanimate objects or own constructions.

Scratching--throwing--attempts to break or destroy--hitting--kicking --knocking into--overturning--pounding with hammer, blocks, fist, etc. (even when trying to build something)--any unnecessarily rough treatment of toys--defacing objects (as sticking play doh on window screen, making crayon marks on anything except paper)--stepping or stamping on in a hurtful way--jumping (as on furniture)--chewing on toys or objects in room.

Scale 2. Verbal aggression

Attempts to injure the feelings of another through verbalizations directed at the person (or person surrogate) or objects belonging to him or in some way associated with him.

> Expressions of dislike and criticism--derogation--derision--namecalling--insults--invidious comparisons (what we have is bigger, better, etc. than what you have)--complaints implying criticism of \underline{E} or mother when present ("You aren't talking to me...I bet the other person is a talker;" "You didn't get any cars;" "Your toys aren't very nice;" "Why do you have to sit there all the time?")

Attempts to exert influence or have own way. Tone of voice and wording are important in differentiating pleas and wishes from peremptory demands. For example, a wistful "I wish I could go now" is not rated for aggression while "I want to go now--you det me out!" spoken in a loud, angry tone is rated for aggression.

> Demands for special privileges (especially for things <u>S</u> has been told he may not do such as leave the room, play with toys after the time limit, etc.)--assertive statements ("I am going now.")--bargaining ("If you'll let me leave the room when I want, then I will play.")-devious approaches (suggesting he should leave because his mother wants to see him or feigning sprained wrists which must be rested)-threats (includes threat of all types of physical aggression listed in Scale 1 and activities directed toward injuring the feelings of another in Scale 2)--lack of cooperation expressly stated ("I'm not going to play anymore!")--quarrels, fights, and disagreements.

Scale 3. Miscellaneous expressions of aggression

Excessively noisy behavior.

Yelling--shouting--stamping feet--pounding with apparent attempt to make a racket (also rated for pounding as a destructive activity).

Making faces or threatening gestures at another, including provocative behavior aimed at a person (e.g., raising mallet as if to hit \underline{E})

Uncooperative behavior.

Persistence in doing something <u>S</u> has been told to stop (as opening closets, hitting window panes, etc.).

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IV. Scoring Manual for Dependency Striving (Vernon, Foley, and Schulman, 1967)

The Dependency Striving (DS) scores for each play record (i.e., Play 1-Mother Absent, Play 1-Mother Present, Play 2-Mother Absent, Play 2-Mother Present) are the sums of the 1 pt. ratings of dependent behavior occurring during the first 20 min. of the period.

Rate each type of dependent behavior as present (1) or absent (0) for each minute of the play record. The score for each scale is the sum of the ratings of dependent behavior for the 20 min. session-- possible score of 0 to 20.

The scales and criteria for scoring Dependency Striving are described in a following section under (1) Seeking positive attention, (2) Seeking praise, recognition, and approval, (3) Seeking help, information, or guidance, (4) Seeking reassurance, comfort, sympathy, and permission, (5) Seeking negative attention, and (6) Seeking physical contact.

For behavior to qualify as dependency, it must be the child who seeks-not \underline{E} or mother (when present) who initiates or promotes. Whenever mother is attentive to the child or doing something with him, it is helpful to ask whether this is due to the child's efforts to involve her. <u>How</u> the child involves mother provides the category for dependency striving.

Continuing activities are scored for each minute in which they occur (e.g., child climbs on mother's lap at start of session and sits there throughout receives score of 20; child involves mother in play is scored for each minute of involvement).

Overlapping activities are scored in as many categories as warranted (e.g., child may seek reassurance while sitting on mother's lap--scored for reassurance and physical contact).

Scales and Criteria for Rating Dependency Striving

Scale 1. SEEKING POSITIVE ATTENTION

<u>Conversation</u>: Talks to adult in friendly, sociable way to get and keep listener's attention. Frequently involves topics not immediately related to clinic, day school, or ongoing play (telling about TV program; imparting information; telling jokes). Conversation may include questions which seem designed to keep it going rather than true bids for information or help (see below). Major clue in differentiating conversational questions from those that should be scored in other categories is that conversational questions are less likely to be concerned with the immediate situation and ongoing activity (talk about making snowmen when out of school and child wonders who makes snow, when it will snow again, and various "whys").

<u>Comments</u>: Remarks on ongoing activity designed to keep adult apprized of what he is doing. Major distinguishing feature is that they are casual, matter-offact remarks and <u>S</u> does not seem to expect an answer. Comments may be more to self than adult but very softly spoken and short self-instructions or muttering to self is not scored ("Now this one" whispered to self as building with blocks not scored). Clearly audible fantasy play with dolls, telephone conversations, singing, and mouth noises are scored in this category since adult almost has to attend. Comments may be negative, neutral, or positive (express doubt in ability to do something--but not as indirect request for help or reassurance--as "I goofed on that;" "I don't know whether I can build this higher without it falling;" "I like this play room").

<u>Participation</u>: Focus on getting adult to participate in comething that requires two persons (playing doctor; phone conversation), because child wants to be entertained, or because child wants adult to take responsibility or lead or just take some part (make drawing, shape doh). In differentiating seeking participation from seeking help, note that obtaining help is generally rather incidental to the ongoing activity (as getting assistance in removing cover from doh can; removing crayon from box) which <u>S</u> pursues on his own once obstacle is overcome. In seeking participation, the continuance of the activity depends on the adult becoming involved. Simplest activity in this category involves getting adult to look at something (showing material in doh can or other things not made by <u>S</u>). Note that showing and getting adult to watch is scored for seeking praise and recognition if it involves something <u>S</u> is responsible for--see below.

Scale 2. SEEKING PRAISE, RECOGNITION, AND APPROVAL

<u>S</u> eager to keep adult alert to his accomplishments, providing praise, or giving full attention to what he is doing or about to do. Attention frequently desired because activity is difficult, praiseworthy, or exciting. Bids may be verbal ("Hey, look at this!"; "See what I did;" "I finished this drawing"-with expectation adult will look) and are likely to be repeated if adult does not respond. Bids may also be nonverbal (holding up drawing; silently signalling adult to look). This category is differentiated from comments by fact that S clearly wants adults to respond.

Scale 3. SEEKING HELP, INFORMATION, OR GUIDANCE

Help: Seeks instrumental assistance through word or gesture, frequently after having had some difficulty in doing thing himself. Bids may be indirect ("This is too hard for me" or "I can't do this" in discouraged way, especially if accompanied by expectant look at adult or pause in activity as waits for adult to provide assistance). Casual comments on difficulty (noted above) do not count.

Information: Questions about play materials or objects in play room with respect to what it is, why it is that way, or how to use it. Child gives impression that he really does not know--not just a ploy to keep adult talking (as repeated "whys" when adult already busy explaining scored as seeking positive attention) or way of getting reassurance (S has already said what something is or has been told but apparently wants support from adult before using the wagon or hammer). Seeking reassurance especially likely with respect to clinic setting, experimental apparatus (tape recorder), and things unrelated to play.

<u>Guidance:</u> Getting advice on how to do something in play, discussing alternatives, wanting adult to tell what to do or structure situation.

Scale 4. SEEKING REASSURANCE, COMFORT, SYMPATHY, & PERMISSION

<u>Reassurance, Comfort, & Sympathy</u>: Child appears unsure of self (inadequate, babyisn), anxious, or unhappy with situation and wants adult to reassure, comfort, or change the situation. Emotional tone and context important and mother's response (providing reassurance) may be clue (S wonders where his father is and mother tells him he is working and they will see him that evening). Bids frequently take form of requests ("I want this to stop;" "I want to go home now"). Statement like "I love you" scored in this category since child seems to want mother to say she loves him, too. Questions about things that are probably threatening to S (children crying; strange noises) as well as many questions about the clinic setting suggest need for reassurance.

<u>Permission</u>: Getting permission ("May I. . ." or "Can I. . .) directly and statements about plans which suggest child is not sure whether he should be doing something. Mentioning something he plans to do in tentative way that gives feeling he wants to see how adult takes it before he goes ahead. Apologies and statements of compliance after first not complying with adult's request.

Scale 5. SEEKING NEGATIVE ATTENTION

Bids to gain and hold adult's attention by misbehaving, generally being obnoxious, or engaging in perseverative questioning. Hostile, aggressive, or destructive actions which child is quite sure on basis of past experience will get attention (name calling, making very loud noises) or continuing to engage in activity which adult has told him not to continue. Aggressive actions (as pounding in context of building) not necessarily scored in this category. Provocative nature of behavior is major clue plus apparent concern about adult's reaction (sly glances to see how adult is taking it; seeming to anticipate reproof). Defiant tone may also suggest this category even though adult may not have stated prohibition ("I'm going to take my socks off;" "I'm going to leave now"). Adult need not prohibit activity if it is evident mother is making effort to ignore it or even accepts it ("You're just waiting for me to tell you not to do that"). Child's disobeying is not scored if it appears that primary aim is getting or doing what he wants rather than trying to attract attention (continuing to pile blocks although mother keeps telling him not to).

Scale 6. SEEKING PHYSICAL CONTACT

Must have actual contact (sit on lap; lean on; hand on knee) or try to get it (ask to be held). Most difficult to rate when child plays in area very near to mother. In general, score as contact only when child seems to make effort to be near (carrying toys to work near mother sitting in chair). No score for contact when it is incidental to some other purpose (getting mother to help put shoe on doll; remove doh from can) or appears to occur by chance (sits near mother's feet because toys are there).

APPROVAL SHEET

The thesis/dissertation submitted by John M. Paolella has been read and approved by members of the Department of Psychology.

The final copies have been examined by the director of the thesis/dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis/dissertation is now given final approval with reference to content and form.

The thesis/dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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ADVISOR'S SIGNATURE	