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Examination of Social Play Behaviors
of Preschoolers with Multiple Handicaps

by

Beth Louise Parrott

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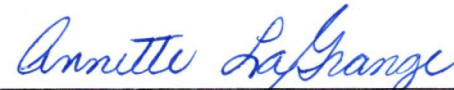
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FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "Examination of Social Play Behaviors of Preschoolers with Multiple Handicaps" submitted by Beth Louise Parrott in partial fulfillment of the requirements for the degree of Master of Science.


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ABSTRACT

The development of social skills for children with handicaps has received a great deal of attention over the past fifteen years. Various strategies have been investigated with regard to improving the social play behaviors of preschoolers with handicaps by utilizing preschoolers without handicaps. This current study contributes to this body of knowledge by combining the strategies of social skill training and interactions between preschoolers with and without handicaps to determine the effects on the social play behaviors of the children with handicaps. Measurement of social play behaviors was felt to be most optimally observed in an existing segregated program for preschoolers with multiple handicaps. Ten preschool children with multiple handicaps were joined by four preschool children without handicaps three afternoons a week for a four month period. The children were observed by behavioral observers who coded their social play behaviors during free play activity times, eight times over the course of the study. The results of this study suggest that the social play behaviors of the group of preschoolers with handicaps was positively affected by interactions with preschoolers without handicaps, specifically in terms of solitary play skills. Possible explanations for these results such as developmental maturity, familiarity issues, ability to deal with change and the effects of stimulation by peers without handicaps were explored. Limitations of this study as well as implications for future research and practice were discussed.

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CHAPTER ONE

LITERATURE REVIEW

Investigation into the skills acquired by children throughout their early development highlights social skillfulness as essential for future growth, development, and positive social interactions. Acquisition of social skills for most children involves peer interactions, modelling of adult and peer behavior as well as reinforcement of appropriate behaviors through natural day-to-day situations and activities. Research has shown that children with handicaps fail to acquire social skills by mere interactions with peers but rather require specific training and education in this area. The dilemma of improving the social skills of children with special needs is identifying the key elements for teaching these skills. The research in the area thus far has failed to provide a clear direction as to the best manner of improving these skills especially with regard to skill generalization. Various methods such as peer tutoring, confederate training and teaching of specific social skills both in artificial and natural settings have revealed few definitive answers and many questions continue to emerge.

SOCIAL SKILLS

The development of social skills for children with special needs has been an important topic in special education

research. When comparing social skill levels of mainstreamed children with special needs to those of their peers without handicaps, they are less accepted (Gottlieb & Gottlieb, 1977), lower in social status (Bryan, 1976) and disliked and ignored by others (Lerner, Mardell-Czudnowski & Goldberg, 1981). This lack of skills results in social isolation regardless of the child's disability - mental retardation, learning disability, emotional disturbance or physical handicap (Ballard, Corman, Gottlieb & Kaufman, 1977; Bryan, 1976; Gottlieb & Gottlieb, 1977; and Strain, Shores & Timm, 1977). Without intervention, these social skill deficits become more handicapping as the child grows older (Strain, 1981).

The literature is varied in its use of the terms special needs or handicapped for groups of children displaying a variety of impairments or disabilities. Labels range from mild developmental delays to severe mental retardation or physical handicaps. "The difficulties inherent in assessment of young children make the specification of some handicapping conditions...very difficult to document with confidence" (McLean, Smith, McCormick, Schakel & McEvoy, 1991, p. 2), and therefore a more generic or global term such as handicapped is applied. The use of the terms tends to be individual rather than universal in the literature which leads to difficulty in drawing general conclusions and implications.

The terms mainstreamed and integrated are often used interchangeably in the research literature. Gottlieb and

Gottlieb (1977) refer to mainstreaming as the temporal, instructional, and social integration of eligible exceptional pupils with normal peers. It is based on an ongoing individually determined educational needs assessment, requiring clarification of responsibility for coordinated planning and programming by regular and special education administrative, instructional, and support personnel. Most of the literature in this area is descriptive rather than empirical in nature and is often based on individual mainstreaming or integration projects.

Gresham (1982) concludes that:

...the extent of a handicapped child's level of social skills should guide...decisions on whether or not mainstreamed placement for that child is indicated...While not a panacea, social skills training is one way to increase the odds that handicapped children will interact with and be socially accepted by their non-handicapped peers. (p. 423)

Strain (Strain, 1975; Strain, 1981; Strain et al., 1977; Strain & Timm, 1974) identifies successful teaching tactics and the use of peer confederates in improving the level of social integration of handicapped children. His research shows that special attention must be paid to selecting specific peer initiations, arranging the physical environment to promote interaction, training peers, and conducting daily intervention sessions.

Social skill deficits are observed in all categories of exceptional children and deficits which appear in the early years tend to become more debilitating without active intervention (Strain, 1981). Additionally, an absence of social skills inhibits the development of intellectual, language and related skills (Guralnick, 1980).

Social skills may be defined in a variety of ways. It has been defined as the individual's compliance with and adaptation to the demands and expectations of society, these include interpersonal behaviors (e.g., accepting authority, conversation skills, cooperative behaviors, play behaviors), self-related behaviors (e.g., expressing feelings, ethical behavior, positive attitude toward self), and task-related behaviors (e.g., attending behavior, completing tasks, following directions, independent work). Combs and Slaby (1977) define social skills as "the ability to interact with others in a given social context in specific ways that are societally acceptable or valued and as they sometimes are personally beneficial, mutually beneficial or beneficial primarily to others" (p. 162). It can also be simply defined as those skills that a person uses to perform competently in the presence of other people (Gresham, 1986). Often the choice of definition is tied in with the content of instruction and its evaluation. "From a different definitional perspective... assume that social skillfulness comprises only those motor and verbal behaviors that are used

in the course of interaction with peers" (Gresham, 1986, p. 5). Operating within this framework, having certain motor and verbal behaviors in one's repertoire suggests skillfulness; not having these behaviors suggests the opposite. Peer acceptance per se is not relevant here, rather the focus of intervention and its evaluation is on increasing certain behaviors. Social skills research in the past decade has focussed primarily on building positive behaviors into the repertoire as well as eliminating negative behaviors (Cartledge & Milburn, 1986).

Odom and McConnell (1985) use the label performance-based social skills. They feel this orientation is best suited to early intervention programming and expand the definition from peer judgments of acceptance and liking for the child or the child's behaviors to include parent, teacher, and sibling judgments. In addition, their performance-based approach places considerable emphasis on the situation-specific nature of skillfulness.

Those targeting the specific behaviors which are desired need to address the validity of such intervention goals, and whether they are desired or valued by society. In this context social skills are those behaviors that, within a given situation, predict important social outcomes for children (peer acceptance or popularity, significant others' judgments of social skill and other social behaviors known to consistently correlate with peer acceptance/popularity and

judgments of significant others). Such validation is often determined by soliciting the subjective evaluations of persons who might be considered to be the consumers of the behavior change; for preschool children with handicaps this is often parents or teachers.

Social validation of intervention addresses the question of whether or not the quantity and quality of behavior change makes a difference in the child's everyday life. In social skill research, social importance is often associated with changes in sociometric standing. That is, one concludes that certain skills have social importance if changes in their levels are correlated with less rejection and more friendship choices (Strain & Kohler, 1988).

Skill deficiencies in the social repertoire are quite common, even for the child with the least amount of disability. To the observer of children with significant cognitive and physical disabilities it is readily apparent that many of these children do not possess the basic communicative and motor responses that are used in social exchanges between young children. If a child has never been observed to display a certain skill, it is probably safe to assume that the problem is one of a skill deficit. These difficulties pose a special concern for children with handicaps (physical and developmental) entering mainstreamed settings since peer relationships play such a prominent role in the mainstreaming process (Guralnick & Weinhouse, 1983).

It is often the case that the skills of young children with handicaps do not generalize from a teaching context to more naturalistic situations. Special teaching strategies are needed to increase interaction and social skills development between young children with and without handicaps. Vaughn (1985) identified some practical suggestions for the facilitation of social development:

Develop activities which improve the attitudes of nonhandicapped preschoolers toward handicapped children
Place handicapped student where teachers' attitudes toward them are positive.

Use the teacher's attention as a social reinforcer for play behavior.

Teach interpersonal problem-solving as a means to facilitating social interactions.

Develop structured conditions which include physical prompts, verbal prompts, and praise for approximations and for appropriate imitative responses.

Assist handicapped children in demonstrating positive behaviors that are likely to improve the way they are perceived by others.

Use nonhandicapped students as intervention agents.

Develop team-learning and cooperative-learning methods as a means of promoting interaction between handicapped and nonhandicapped students.

Use dramatic play or structured role-playing activities

to facilitate social interaction between preschoolers.
Arrange contingencies so that the handicapped child is perceived by peers as rewarding.

Provide play materials which encourage or require more than one child to participate.

Program for generalization of social skills from setting to setting and from person to person. (p. 171-172)

Most research shows that children with special needs do not acquire social competence by interacting with their peers either handicapped or nonhandicapped but rather require direct teaching of these skills (Gresham, 1982). Gresham also states that:

three faulty assumptions are typically made when a special needs child is integrated into a mainstream setting.

1. The physical placement of exceptional children in a room with regular students will result in increased social interaction.
2. The physical placement of exceptional children with non-exceptional peers will result in social acceptance.
3. The exceptional child will initiate the behavior of "normal" children.

There can be no question that handicapped children require skill training to promote their social integration with non-handicapped peers. (p. 422)

PRESCHOOL/EARLY CHILDHOOD EDUCATION

The literature on early peer relations indicates that successful interactions (social skills) with one's age-mates is a necessity for normal growth and development (Hartup, 1978). The ability to get along with one's peers, to make friends, to learn from others, and to cooperate are indicators of socially skillful children. At the same time, the absence of these skills is a major defining characteristic of young handicapped children (Strain & Kohler, 1988).

The curriculum of special education preschool programs is designed to maximize instructional effects for children with a variety of handicapping conditions. These programs serve as a place for children to learn and to socialize through play and provide information to parents on child growth and development. The emphasis is on individualized, criterion-related instruction guided by a behavioral or cognitive-learning curricular model. Both the teacher/child ratio and the total class size is smaller than in most regular preschools. (Odom & Speltz, 1983)

Special education preschool programs (serving children 2 1/2 - 6 years of age) fall generally into three categories. Integrated programs (i.e., programs for children with handicaps in which some nonhandicapped children are enrolled), mainstreamed preschools (i.e., programs for nonhandicapped children in which some children with handicaps are enrolled) and segregated programs (i.e., programs serving only children

with handicaps). (Jenkins, Speltz & Odom, 1985) In all three types of programs the needs of the children are usually met through play experiences, group or individual therapy time; with the goal of maximizing the potential of children with developmental problems.

Odom and Speltz (1983) found the term integrated has been applied to preschool classes with widely differing proportions of handicapped students. Integrated was used most consistently for programs where 50% or more of the students in the class were handicapped. When less than 50% were handicapped (majority nonhandicapped) the term integrated was used less consistently.

Odom and Speltz (1983) in their review of the literature of educational programs serving preschool children with and without handicaps in the same setting found little consistency in terms used to label and discriminate program types, and caution their generalizability to other programs with differing components. They also found that the ratios of children with handicaps to children without handicaps in integrated preschools ranged from .68 to .07. Odom and Speltz suggest that only programs containing mostly children with handicaps (proportions of .50 or more) be distinguished by the term integrated special education preschools and those containing mostly nonhandicapped be termed mainstreamed preschools.

A recent position paper by the Division of Early

Childhood (DEC) of the Council for Exceptional Children states developmentally delayed children are those requiring education and intervention due to a delay in one or more of the following: cognitive development, physical development (which includes fine motor and gross motor), communication development, social\emotional development, or adaptive development (McLean, Smith, McCormick, Schakel & McEvoy, 1991). Recent research has suggested that, for developmentally delayed preschool children at least, children at similar chronological ages may have the most impact on the peer relations of delayed children (Guralnick & Groom, 1987). Field, Roseman, DeStefano and Koewler (1981) in their research on play behaviors with handicapped preschoolers in the presence and absence of nonhandicapped peers found that the handicapped children watched the normal children more than the normal children watched the children with handicaps. They suggest that this may relate to the normal children being developmentally more advanced, just as younger children have been noted to watch older more developmentally advanced children more frequently than the reverse. The success of an integrated special education program depends strongly on the abilities, attitudes, and predilections of the nonhandicapped children selected to serve as models. Model children should reliably exhibit as least age-appropriate social and communicative skills and readily take part in peer-mediated instructional procedures. Little research is available in

identifying nonhandicapped children who "do well" as models in integrated programs.

Dunlop, Stoneman, and Cantrell (1980) found there were minimal differences between handicapped and nonhandicapped children in overall proportions of time spent in types of solitary activities, dominant interactions, cooperative interactions, and adult-child interactions. They also found high levels of cooperative interaction in both groups which does not corroborate other research that had been reported previously regarding the isolation of handicapped children in integrated settings.

Several studies involving social interactions of handicapped preschoolers utilize the concept of peer-tutoring or peer confederates. (Odom, Hoyson, Jamieson & Strain, 1985; Strain, 1984a, 1985a; Strain, Hoyson & Jamieson, 1985; Strain & Odom, 1986) The basis of this concept is the training of nonhandicapped children to interact and intervene with handicapped children. Investigations of peer-initiation interventions have demonstrated that the confederates' initiations are responsible for increases in the subjects' positive social interactions. A variety of factors may influence the confederates' behavior toward the subjects (reinforcement from the teacher, others activities in the room, "treatment fatigue", teacher directions). A majority of these studies have been quite successful in increasing the types of social interactions that Strain (1983a) had found to

be related to sociometric acceptance by nonhandicapped peers (i.e., play organization, sharing, responding to peers' social initiations) (Odom et al., 1985).

Few studies have utilized the option of reverse mainstreaming, having children from the regular preschool or daycare participate in activities of the special education preschool class.

Integrated educational programming must be carefully planned if the outcomes of increased learning opportunities for disabled children, acceptance of individual difference for non-disabled children, acceptance of individual difference for disabled children and involvement of the family of the disabled child in the mainstream are to be realized. Research supports the notion that integration experiences are likely to be beneficial if activities promote social interactions between the two groups of children, assure appropriate parent support and involvement, and prepare and support professional staff (Chen, Hanline & Friedman, 1989; Faught, Belleweg, Crow & VanDenPol, 1983; Gresham, 1981; Guralnick & Groom, 1988; Odom et al., 1985).

Previous studies in the area suggest that handicapped children more frequently engage in isolated, self- and toy-directed behaviors, and their occasional social behaviors are directed to teachers more frequently than to peers. Odom & Strain (1984) define simple social play behaviors as sharing items, assisting other children, physical affection,

cooperative play, play organization, and rough and tumble play, which all have prosocial qualities which set the stage for ongoing social interchanges with preschool handicapped children. Important factors have been the optimal age for introducing mainstreaming, the ratios of handicapped and nonhandicapped children, and the amount of teacher-directed activity in the classroom (Field, Roseman, DeStefano & Koewler, 1981).

Equivalent numbers of handicapped and nonhandicapped children in free play situations was found by Dunlop, Stoneman & Cantrell (1980) to be most effective. Other studies have produced mixed findings: some noting no changes in play interaction behaviors (distance from peers, positive and negative behaviors with peers), with mildly delayed preschoolers, some noting an increase in the social play behaviors only when a program was introduced to actively facilitate interaction (Field et al., 1981).

Guralnick (1978) has summarized the numerous and complex variations in reported integrated programs and identified 13 common procedural variables or programmatic factors that may affect child behavior in integrated preschool settings. These include: teacher/child ratio, ratio of handicapped to nonhandicapped children, teacher training, curricular model and the severity of the student's handicapping conditions. Guralnick and Groom (1988) also add that the tremendous variation in integrated programs and the variety of procedural

variables can substantially affect the outcomes of these programs.

In part, the social withdrawal demonstrated by many children with handicaps may be attributed to the absence of appropriate social stimuli in segregated settings. This conclusion is based upon the dramatic behavior change in children with handicaps following the programmed application of peer social initiations (peer mediated strategies where the nonhandicapped child is trained to initiate social play with their handicapped peers) (Strain, 1975; Strain et al., 1977).

Mainstreamed or integrated settings not only allow the techniques of social integration to be applied but also serve as responsive social environments more likely to support generalized outcomes (Strain, 1984b).

Guralnick and Groom (1988) found that three and four year old children with mild developmental delays engaged in a much higher rate of peer-related social interactions (cooperation, positive peer interaction, sharing, greeting others, asking for and giving information and making conversation) when participating in mainstreamed playgroups in comparison to specialized classroom programs. Not only was the rate of social interaction in the mainstreamed setting more than twice that in the specialized setting, but higher rates were also noted for many individual social behavior categories that are typically associated with peer-related social competence. Although the mildly delayed children in the playgroups were

not selected as play partners as frequently as were other nonhandicapped children, social interactions between delayed and nonhandicapped children were common occurrences.

Quay and Jarrett (1986) in their study of 3- and 4-year-olds, found that although children with and without handicaps did not differ in the overall number of social initiations that they made, children with handicaps asked fewer friendly questions than nonhandicapped children and made more demanding initiations. Since asking questions frequently permits a child to gradually enter into a social activity, they noted that these skills should be useful ones to train. The finding that children with handicaps made more demanding initiations than children without handicaps suggests that they need help in learning positive ways to start a social interaction. Without focussed attention on developing these skills they are not likely to have satisfying social relationships in the mainstreamed classroom where they must compete with children who are better able to engage in positive reciprocal interaction. Children with handicaps need specific activities to improve particular social skills and encourage social interaction if mainstreaming is to enhance their opportunities for social interaction (Guralnick & Groom, 1988; Odom, Bender, Stein, Doran, Houden, McInnes, Gilbert, DeKlyen, Speltz & Jenkins, 1988; Snyder, Apolloni & Cooke, 1977; Strain & Shores, 1983). Detailed curricula that structures the interaction between handicapped and nonhandicapped children is

needed (Jenkins et al., 1985).

The ethics of using peer models without handicaps as behavior change agents has received a fair amount of attention. Some researchers have questioned the "fairness" of asking children without handicaps to interact with children with handicaps with whom they would not ordinarily choose to play. Children with handicaps will frequently engage in activities less advanced than those of their nonhandicapped peers; by structuring situations in which the two groups are required to interact, the developmental level of activities in which the child without handicaps engages may be inadvertently reduced. Greenwood, Walker, Todd and Hops (1981) suggest guidelines, such as age appropriate peer interactions and play skills, be established for the use of peers as behavior change agents in integrated special education classes. Overall the benefits for nonhandicapped models engaged in peer-tutoring counter some ethical concerns with respect to the use of preschool-aged model children. (Odom & Speltz, 1983).

For preschool children with handicaps, segregated settings clearly restrict the interaction available with normally-developing youngsters. Such a situation is particularly detrimental to children with handicaps as they are limited in the opportunity to acquire skills that naturally develop in the process of peer interactions (Strain & Kerr, 1981).

The positive social effects on both populations in

mainstreaming are seen in the areas of increased understanding of individual differences by all those involved (parents, teachers, children), the fostering of a positive self-concept for the child with handicaps, preparation for later life adjustment, reinforcement of social play activities through children without handicaps by encouraging appropriate social play and spontaneous use of appropriate language and communication, increases in the quantity and quality of play of children with handicaps in structured activities with children without handicaps (Strain & Kerr, 1981), increased frequency of positive social interactions (Field et al., 1981; Strain, 1984b), more social "peer entry" behavior (Jenkins et.al., 1985), and a reduced level of inappropriate play for children with more severe delays (Guralnick, 1984).

Turnbull and Blacher-Dixon (1981) found that preschool programs originally for children without handicaps may not meet the needs of children with handicaps with delays in two or more areas of development. Placing children with and without handicaps in the same room does not guarantee any interaction will occur; physical integration will occur but social integration will not (Jenkins et al., 1985). Research has found that when mere physical integration exists the normally developing children interact with their normally developing peers to the exclusion of the children with handicaps (Guralnick, 1980). Numerous recommendations in the early childhood special education literature highlight

specific intervention or programming is needed by the teacher to facilitate peer initiation and social interaction. Young children with handicaps often do not have the social skills that will allow them to interact in a meaningful way therefore intervention is necessary for these skills to develop. Detailed curricula that structures the interactions between children with and without handicaps is needed (Jenkins et al., 1985). The need for teacher skills to facilitate planning and positive social interactions in the integrated preschool classroom has been highlighted in a number of sources. These studies emphasize the need for all forms of early intervention programs to focus on both appropriate goal setting and innovative methods for enhancing social skills (Bagnato, Kontos & Neisworth, 1987; Field et al., 1982; Jenkins et al., 1985; Odom et al., 1988; Odom & Speltz, 1983; Snyder et al., 1977; Strain & Kerr, 1981; Strain & Shores, 1983).

ATTITUDES

Turnbull and Blacher-Dixon (1981) cite both the ability and the attitude of the teacher as most important to the successful outcome of the integrated preschool. The need for positive attitudes among teachers of children with handicaps is a consistently stressed factor in reports of Head Start mainstreaming efforts. Head Start, which in 1972 was the largest mainstreamed program in the United States, contributed valuable research information utilized in future mainstreaming

endeavors especially in the area of attitudes. Teachers appear to be critical for encouraging acceptance of the child with handicaps by the peer group without handicaps, for understanding and accepting children's individual differences and for maximizing success in preschool mainstreaming. Attitudes of teachers previously untrained in special education changed in a realistic direction following mainstreaming.

Esposito and Peach (1983) found that the attitudes of young (4- and 5-year-old) children without handicaps can be made more favorable toward persons with handicaps as a result of direct contact with peers having considerable and observable disabilities.

In regards to parental attitudes toward preschool mainstreaming, the research again notes that the attitudes of parents and family is critical to its success. Some parents express satisfaction with the mainstreaming placements of their children with handicaps, others are skeptical of some of the premises feeling that it does not necessarily end segregation and discrimination but rather hides it. Experience is often the key factor with parents of children with handicaps in mainstreamed settings finding beneficial efforts for the children with handicaps while parents of children with handicaps attending a segregated program and parents whose children without handicaps were enrolled in a non-integrated program had significantly less positive

attitudes toward mainstreaming. All of these attitudinal factors influence the behavior that children with and without handicaps exhibit in the mainstreamed or integrated settings.

INTEGRATION AND SOCIAL PLAY

Field et al. (1982) in her study of the play of preschool children with handicaps in integrated and non-integrated situations found that although the normal children continued to relate more frequently to their own classmates, the children with handicaps appeared to watch and make as many social overtures to their normal peers as to their own classmates. The normal preschool children continue to play as if undisturbed by the addition of less developed children and the children with handicaps appeared to make the greater effort to assimilate themselves into the ongoing stream of activity. More prosocial, child-directed and less teacher-directed, teacher-initiated behavior occurred for children with handicaps when playing with normal preschool children. This study found that social play increased only when a program was introduced that actively facilitated interaction. They also found that children of greater developmental age demonstrated less self-directed or self-stimulating behavior and more peer-directed behavior.

Available data on the observed interaction patterns of preschoolers with and without handicaps suggest that rejection of children with handicaps is likely, particularly in

mainstreamed preschools where children without handicaps are in the majority and have a large number of other peers without handicaps with whom to play. Although social rejection appears to be more probable in mainstreamed preschools, children without handicaps in integrated special education preschools may more often play with their nonhandicapped peers and may engage in solitary play when only a child with handicaps is available as a playmate. In both program types, specific activities to encourage social interaction between the two groups of children must be planned and implemented (Odom & Speltz, 1983).

Although many studies have looked at integrating preschoolers with and without handicaps, most studies focus on introducing children with handicaps into a setting originally designed for nonhandicapped children. Most studies fail to research the opposite model of introducing nonhandicapped children into a segregated setting one in which the children with handicaps are often most familiar. Reverse integration, although maybe not the ideal situation in terms of a least restrictive environment philosophy, is often considered to be the most effective and efficient means of meeting the needs of some children with severe handicaps. In situations where segregated programming occurs the involvement of normally developing children has been shown to have beneficial effects. The research is quite clear that social interactions between the two groups can be improved through various means, many of

these strategies though encourage the children without handicaps to act as peer confederates and take on a superior or patronizing role which often produces an artificial interaction or relationship.

Few research studies have investigated more normalized situations where both groups of children with and without handicaps participate in social and play activities together with the group of children without handicaps taking on a "peer" role rather than a "teacher" role.

More recent investigation in this area recognizes the importance of the concept of inclusive education with support provided to the teacher to meet the needs of children with handicaps in the regular classroom. Stainback, Stainback and Jackson (1992) explain that this philosophy encourages teachers and caregivers to celebrate the many kinds of diversity all children present to them.

In an effort to determine more precisely the difficulties or benefits of integrating nonhandicapped preschool children into a setting for children with handicaps, it is assumed that the children with and without handicaps would not likely benefit from an integration program without specialized procedures. It is therefore felt that it would be easier to accommodate the nonhandicapped children in an educational treatment program geared toward meeting the specialized needs of the children with handicaps rather than the reverse. It is believed that the major benefit of systematic exposure of

these two groups of preschoolers would be socialization, namely, the ability to relate to and play with peers.

CURRENT STUDY

Most of the previously cited studies have investigated various aspects of integrating preschoolers with and without handicaps in situations where the nonhandicapped peers are expected to interact in structured, predetermined ways. The question remains though, do less structured interactions between preschoolers with and without handicaps of comparable chronological ages make a difference or is the intensity of the interaction and training for that interaction imperative? And although it has been suggested that mere physical integration has a questionable effect on the social skills of preschoolers; what interactions are successful and what normally occurring methods or activities are beneficial and with what type of child with handicaps has received little investigation.

Although generalization is difficult in the case study approach it often provides valuable information for future research. Single case studies are relevant as it is often questionable whether control groups of children with handicaps can be matched due to the individual nature of disabilities. Single-case research is generally meant to evaluate interventions designed to bring about behavioral changes.

Naturalistic observation is often chosen as the most

effective way for the researcher to measure social behavior. This allows the child to behave naturally in a social setting. Some advantages of this method are: such studies are conducted in a natural setting to which the child has been adapted (less disruptive to the child) and it involves the measurement of freely emitted behaviors rather than responses that are structured or created by the experimenter.

Therefore, although limitations are recognized in the within subject design it is often utilized in research with preschoolers with handicaps due to its economical features as the subjects serve as their own controls.

This study was designed to evaluate the effects of a special education preschool program incorporating social skills activities, in which children without handicaps attended on a part-time basis but did not serve as confederates or as models in structured imitation training on the children with handicaps social play behaviors.

The literature is inconsistent in the use of the term handicapped which has lead to difficulty in drawing general conclusions. For the purposes of this research study the term preschoolers with handicaps will be defined as preschoolers with physical disabilities and/or developmental delays of at least one year in the areas of cognitive functioning, speech and language, fine motor, gross motor, or psychosocial skills, and is also termed multiple handicap.

Parten (1932) investigated social behavior by observing

preschool children playing in groups and defined a scale of social participation that included the categories of solitary, parallel, and cooperative play. This classification system laid the foundation for many future social play behavior coding systems for children with and without handicaps. In this study social skills are defined as social play behaviors as they pertain to preschoolers. The behaviors identified are cooperative play, parallel play, solitary play, play organizer, sharing, ignoring, defiance, request or provision for assistance from adults or peers, negative motor or vocal behaviors, and affection.

The previous research findings support the positive effects of integration of children with and without handicaps. The literature also indicates that social skill training is an important and vital aspect in improving the social interaction skills and behaviors of children with handicaps.

The present study was undertaken to examine the following research question: Does the combined interventions of interactions between preschoolers with and without handicaps and joint participation in social skills related activities positively influence the social play behaviors of preschoolers with handicaps attending a preschool educational program.

CHAPTER TWO

METHODOLOGY

The key element which was felt to be essential in this exploratory study was the investigation and measurement of social play behaviors in a natural setting. This is "perhaps the most effective and and yet demanding way for a researcher to measure social behavior - by letting the child behave naturally in a social setting and measuring the naturally occurring behavior" (Novak, Olley, & Kearney, 1980, p. 328). Preschool programs, often nursery school or daycare, is for many children their earliest structured group experience. For children with special needs it is often a structured therapeutic classroom setting such as the Preschool Multihandicapped Program (PMH) at the Alberta Children's Hospital. The afternoon program of PMH (10 children with handicaps) was chosen due to the more advanced age and functioning of the group (ranging in age from 2.7 - 5.9). Four normally developing preschoolers (average age 4.1) from a local daycare and nursery school joined the program and a social skill activity program commenced for four months (January - May).

RATIONALE

A quasiexperimental design was chosen to explore this research question using multiple data points. An observational research method was employed in a naturalistic

environment to individually study the social play behaviors of the targetted population. Baseline, intervention and post intervention (return to baseline) data was collected. It was hoped through the investigation of social play and integration, recommendations regarding the likelihood of continuing with additional research on the topic in a more tightly designed research format would come to light. Studying social play behaviors in their typical social settings through the use of a specific observational rating form was determined to be more applicable and relevant than an artificial setting with control over various factors. The main goal was to portray an accurate profile of the children in typical situations by reporting the intervention effects through the changes in the social play behavior frequencies over the three phases of the study (see Table 1).

Homogenous groups of preschoolers with handicaps in preschool educational programs are a rarity which has confounded many previous research studies thus the term handicapped has been used to provide a generic label for a diverse group of special needs children. Due to the heterogeneity and small numbers of preschoolers with handicaps in the targeted program there was difficulty in selecting a control group.

A single case research design was used due to its emphasis on the observations and analyses of the effects of interventions in regard to specific target behaviors. This

TABLE 1

RESEARCH STUDY DESIGN UTILIZED TO EXAMINE THE EFFECTS OF THE
INTRODUCTION OF CHILDREN WITHOUT HANDICAPS AND SOCIAL SKILL TRAINING
ON THE SOCIAL PLAY BEHAVIORS OF TEN CHILDREN WITH MULTIPLE HANDICAPS

<u>OBSERVATION PERIODS</u>	<u>INTERVENTION CONDITIONS</u>	<u>P R E S C H O O L ENVIRONMENT</u>	<u>OBSERVATION METHOD</u>
Baseline 1, 2, 3, (Nov. - Jan.)	→	Free - Play Activities 1:00-1:30 Everyday	10 Children With Handicaps Observed 10 minutes/Child/Trial in 10 second intervals (5 sec. for recording) for a total of 40 time s a m p l e units/child/observation trial. The potential occurrence of the 15 predetermined social play behaviors to be observed were recorded in each trial. Frequencies of social play behaviors per trial for all 10 children with handicaps totals 400.
Intervention 1, 2, 3, 4 (Feb./Mar./ Apr./May)	1. Introduction of Social Skills Activities 2. Introduction of Four Children Without Handicaps 3 days a week (MWF) over four months (Mid-January) → Children Without Handicaps Left Program and Social Skills Activities Discontinued (End of May)	Social Skill Activities 12:30 - 1:00 Mon./Wed./Fri. Free - Play Activities 1:00 - 1:30 Mon./Wed./Fri.	
Post Intervention (Return to Baseline Condition) (June)	→	Free - Play Activities 1:00 - 1:30 Everyday	

type of design utilized repeated measures to identify patterns and examine outcomes. Multiple data points could provide a representation of the effects of the intervention on the target behavior over time. Direct observation was utilized as it has been found to be the most frequently used and most appropriate method for assessing playskills (Fewell & Kaminski, 1988).

PARTICIPANTS

Ten preschool children with multiple handicaps (ages 31 mos. - 69 mos.) attending a segregated therapy program for preschoolers with special needs (six boys and four girls) and four normally developing four-year-olds (ages 47 mos. - 52 mos.) participated in this study. Strain et al., (1977) have found that in contrast to many studies in which preschool children with handicaps are grouped with developmentally similar peers without handicaps, the peers without handicaps should preferably be 42 mos. - 48 mos. Therefore the preschoolers without handicaps were chosen from four-year-old children attending a community daycare adjacent to the Children's Hospital and one was chosen from a local nursery school. The normally developing children (two boys and two girls) were of the same approximate chronological age with no developmental delays. Thus their developmental age (four years) was more advanced than most of the children with handicaps. The criteria for selection of the children without

handicaps was regular attendance in the daycare (where applicable), at least age level play skills, age appropriate level of social initiations to all peers and general compliance with teacher directions, based on previous studies involving children with and without handicaps (Odom et al., 1985).

The children with handicaps had varying perceptual-motor deficits including cerebral palsy (CP), seizure disorders and developmental delay (see Table 2). The following criteria were used to accept children with handicaps into the program. The child required an ongoing assessment and treatment program to determine the optimal type of intervention from two or more disciplines (Occupational Therapy, Physiotherapy, Speech and Language Pathology, Psychology, Social Work, Child Care), and had needs which could not be met in a less specialized environment.

TABLE 2

GENDER, DIAGNOSIS, CHRONOLOGICAL AGE AND FUNCTIONING
LEVELS FOR THE GROUP

CHILD	SEX	DIAGNOSIS	C.A.	ST	PT	OT	COGNITIVE
1	F	Dev.Delay	3.11	3.10	2.5	NA	NA
2	F	CP	2.11	2.1	Delay	2.11	43%tile
3	M	CP	3.1	3.1	1.6	3.0	91%tile
4	F	Seizures Brain Tumor	4.4	4.2	3.6	3.6	Low Average
5	M	CP	5.9	3.0	Severe Delay	3.0	4.3
6	F	CP	3.0	2.9	1.5	2.9	5%tile
7	M	CP	4.0	4.0	2.0	3.6	NA
8	M	Dev.Delay	4.0	Severe Delay	2.5	2.5	NA
9	M	CP	2.7	2.7	NA	2.7	92%tile
10	M	Seizures Dev.Delay	4.0	2.6	2.0	10%tile	2.6

CP (Cerebral Palsy)

NA (Not available)

CA (Chronological Age)

ST (Speech and Language Therapy results of assessments
in years and months*, or degree of delay)

PT (Physiotherapy results of gross motor assessments
in years and months* or degree of delay)

OT (Occupational Therapy results of fine motor
assessments in years and months* or percentile
ranking)

Cognitive (Cognitive assessments in years and months*
or percentile ranking or cognitive label)

* i.e., 3.1 C.A. denotes 3 years 1 month

Due to the differential nature of assessment instruments
caution is encouraged in interpretation of these scores.

SETTING

This study took place in the afternoon preschool program for preschoolers with multiple handicaps located at the Alberta Children's Hospital. The Preschool Multihandicapped Program (PMH) was a half-day intensive therapy program in a nursery school atmosphere. It was designed to provide children with multiple handicaps and their families with an intensive structured therapy program that could not be obtained in their own community. The goal of these services was to help each child reach his/her own potential, prevent the development of fixed handicapping conditions, and provide the foundational skills for later learning. The program was designed to provide preschoolers with handicaps with intensive therapy and prepare them for integration into less restrictive environments with less intensive therapy provisions. These preschoolers with handicaps were served in an early intervention program for children with special needs because of the availability of specially trained personnel incorporated with intensity of therapeutic intervention.

The classroom was one of two preschool programs at the Alberta Children's Hospital. The PMH Program ran two separate half-day, five day/week programs. The morning children were younger (approximately 2 - 3 years of age) and the afternoon group (selected for inclusion in this study) was approximately one to two years older. There were typically 10 children in each program, the majority of whom had a definite diagnosis of

physical handicap.

Both the morning and afternoon programs were founded on an activity center approach. Examples include playdough, puzzles, painting, listening center, dress-up center, etc. The children were encouraged to make independent choices and were helped by the staff to interact meaningfully in the activities. Staff also ensured that the activity was used to generalize skills introduced in each child's therapy session (i.e., language, fine motor, physical positioning). Other activities included snack, story and music time.

Children were involved in individual therapy sessions as needed (i.e., Occupational Therapy, Physiotherapy, and Speech and Language Therapy). The therapists also worked with the children during the various activities of the program. For example, the O.T. became involved with snack as they worked on a child's feeding program. During this study the nonhandicapped children were grouped with the children with handicaps during some therapy sessions.

The average length of stay in the program was nine months, with most of the children "graduating" to an integrated setting in their community. The children moved to a variety of programs in the community: daycares, nursery schools, segregated and integrated programs serving children with special needs.

The PMH program was chosen for this study due to its segregated structure. It was felt that the children with

handicaps enrolled in this setting could benefit from some type of integration experience. Many of the children had limited experiences in interacting with normally developing children other than siblings. Organizing reverse integration activities was felt to enhance the social skills and program components already in place and was seen as a strategy for creating integration opportunities for the children attending this program. The afternoon in particular was decided upon as a better match with the children without handicaps, due to the ages of the children and overall higher cognitive functioning levels than the morning children.

The PMH room was carpeted except for the snack and paint area and featured different play areas sectioned off by standing toy shelves containing a variety of manipulative toys. An adjoining room also featured floor-play equipment including slide, tumbling mats, balls, bikes, climbing apparatus. The group met three afternoons per week for 2 3/4 hours per day with the day's activities including circle times, freeplay, gross and fine motor activities, language development, snack and music. The program was mainly supervised by 3 - 4 Child Care Workers with various therapists (O.T., P.T., S.L.P.) available depending on the treatment schedule each day (approximately 4 - 7 adults in the program each day).

During the study the PMH treatment team consisted of the following staff:

Program Coordinator

4.5 Child Care Workers (CCW)

1.0 Occupational Therapist (OT)

1.6 Physiotherapists (PT)

1.3 Speech and Language Pathologists (SLP)

.5 Social Worker (SW)

.5 Psychologist (Psych)

The therapists (OT, PT, SLP) were involved in the program Monday through Thursday on a scheduled basis with one person from each discipline involved Monday, Wednesday and Thursday and two people from each discipline on Tuesdays. Child Care Workers were scheduled in the program Monday through Friday. Although the Child Care Workers in the program generally encouraged social and play interactions among the children in other activities, during free-play periods the staff limited their interactions to providing assistance to children when necessary.

The afternoon PMH Program schedule was as follows:

12:30 - 1:00	Arrival/Welcome Circle/Social Skills (Music, Hello Time, Introduction of Theme and Activities for the day)
1:00 - 1:30	Fine Motor/Tactile Activities/Free Play (Cutting, gluing, coloring, puzzles, playdough, sand, water, dress-up, housekeeping, store, listening center, painting, arts & crafts, toys)
1:30 - 2:00	Snack/Bathroom/Free Play
2:00 - 2:45	Free-Play/Gross Motor Activities (tricycles, balls, games, jumping, hopping, climbing, swinging, balancing)
2:45 - 3:05	Music
3:05 - 3:15	Bathroom/Departure

PROCEDURE

Application to three Ethics Committees was initiated and approved before commencement of this study, Alberta Children's Hospital Research Ethics Committee, Conjoint Medical Ethics Committee, and the University of Calgary Department of Educational Psychology Ethics Review Committee (see Appendixes A, B, and C).

Permission for each PMH Program child's participation was obtained from the parents by form letter of parental consent to the general objectives of the study. Cooperation from the parents of the children from the ACH/Knob Hill Daycare and the community was obtained by form letter stating the same general objectives (see Appendixes D and E).

In January, after the program's population had stabilized, the four normally developing children joined in the PMH activities three afternoons a week for a four month period. Their involvement included all components of the program that the children with handicaps participated in.

The social play behaviors of the PMH children were then reassessed in February, March, April, and May. Unfortunately only one post intervention data point could be obtained in June before the program closed unexpectedly at the end of June.

OBSERVATIONAL PROCEDURES

A fifteen-category, recording system was used to code social play behaviors exhibited by the subjects. The operational definitions of the behavioral categories are listed below. Categories and definitions were derived through a combination of codes from Parten (1932) and Odom et al. (1986) utilized in several previous studies of social play behaviors and children with handicaps. Three additional categories were added for the purposes of this study (Defiance, Response and Ignore) during the behavioral observers training phase.

As Strain (1983a) stated:

The observational categories were derived from two separate but closely linked theories of social competence. The first conceptual model is that of personal attraction, which posits that friendships and positive encounters are enhanced when individuals:

- a) engage in behaviors that are instrumental in another person's acquiring some positive consequence, and/or
- b) engage in motoric or verbal expressions that show approval of another's actions or appearance.

The second theoretical orientation toward social competence, that of peer acceptance, suggests that positive social encounters are more likely when individuals: a) initiate positive overtures toward peers, b) show affection c) share materials or toys, d) help

peers to perform some task, e) resolve disputes in a nonaggressive fashion, and f) maintain an equitable ratio of interactions that are self-initiated and those that are initiated by others. (p. 373)

No published reliability and validity measures were available on the categories.

Specific codes and definitions are provided in Table 3.

TABLE 3

OPERATIONAL DEFINITIONS OF SOCIAL PLAY BEHAVIOR CATEGORIES

Play Organizer:	Verbalizations or responses to verbalizations wherein a child specifies an activity, suggests an idea for play, or directs another child to engage in a play behavior
Share:	Offers or gives an object to another child or accepts an object from another child by taking the object in his or her hand and using it in play
Share Request:	Indicates to another child to give her or him an object either verbally or nonverbally
Assistance:	Helps another child complete a task or desired action
Assistance Request: (Peer)	Asks a peer to help complete a task or action (either verbally or nonverbally)
Assistance Request: (Adult)	Asks an adult to help complete a task or action (either verbally or nonverbally)
Complimentary Statement:	Makes statement indicating affection, attraction or praise
Affection:	Pats, hugs, kisses, or holds hands with another child
Negative Motor-Gestural:	Hits, pushes, sticks out tongue, takes unoffered objects, destroys others' construction, etc.
Negative Vocal-Verbal	Cries, shouts, calls another child an ugly name, refuses to engage in a requested behavior, corrections, etc.

From "Using Single and Multiple Peers to Promote Social Interaction of Preschool Children With Handicaps" by S.L. Odom, P.S. Strain, M.A. Karger and M. Smith, 1986, Journal of the Division for Early Childhood, 10, p. 56. Reprinted by permission.

TABLE 3 (continued)

Parallel Play:	Child plays independently but the activity he chooses naturally brings him within two feet of other children
Solitary Play:	Child plays alone or independently with toys that are different from those used by children within speaking distance and makes no effort to get close to other children

From "Social Participation Among Preschool Children" by M. B. Parten, 1932, Journal of Abnormal Social Psychology, 27, p. 250.

Categories added by the researcher for the purposes of this study:

Defiance:	Child refuses to comply with adult direction
Response:	Child responds to adult either verbally or nonverbally
Ignore:	Child's intentional and deliberate nonresponse to an initiated behavior (either adult or peer)

RELIABILITY

The children were observed by behavioral observers who had been trained in observational data collection. One was a psychological assistant employed to do data collection in the Department of Psychology at the hospital and the other was a Child Care Worker not previously involved with this population of children who had also previously done data collection for the Department of Psychology at the hospital. Approximately ten hours of pre-training occurred before initial data collection. Training included discussions, review of case studies and videotaped coding of observations of children with special needs in play activities. The three categories added for the purposes of this study were identified at this time from discussions with and suggestions from the behavioral observers.

Prior to initial data collection, two raters were trained for a period of two to three weeks on the observation scales. Videotapes of preschoolers with handicaps involved in free play activities were used in the training. During the training program both raters achieved an average criterion of 85% interobserver agreement for each 10 minute videotape session.

Pilot observations were undertaken until interrater reliability of at least 85% was obtained (agreements/disagreements plus agreements) $\times 100 =$ Percentage of agreement). Reliability was based on percent agreement

obtained across each of the 10 second observation intervals. This also gave the observers some time in the program to help diminish the novelty of their presence.

Reliability checks occurred at each data collection period throughout the course of the study. Percentage agreement remained high, averaging 93% agreement (range 90% to 97.5%). The observers did not talk to or otherwise interact with the children once the study had commenced.

MEASUREMENTS

Free play behaviors (social and play interactions) of each child were coded according to play categories taken from the work of Tremblay, Strain, Hendrickson and Shores (1981), Strain (1983a, 1984a) and Strain and Odom (1985) and Parten (1932). Dr. Odom was informed of the use of the observational play behavior checklist for this study (see Appendix F). The observational system contains 11 positive and 4 negative social interaction categories. Each child was observed for a consecutive 10 minutes period, frequencies of occurrence of the behaviors listed were recorded by two observers. The use of partial-interval time sampling was particularly useful for behaviors that occur fleetingly as it revealed the consistency of behavior.

This 10 minute period was divided into repetitive cycles of 10 seconds (monitored by tape recorded signals heard through portable headsets), for observation of the target

child with 5 second pauses for recording. Only one behavior could be recorded during each 10 second interval regardless of it's duration or frequency of occurrence. Eight such recording data points per child were obtained - three prerecording sessions Nov. - Jan., four during the months of Feb. - May, and one post recording in June.

Each child in the PMH afternoon program was observed in a free play setting before the nonhandicapped peers and the social skill activities were introduced. Data was collected during the 30 minute play periods. Baseline data was collected in November and December 1989 (three data points for each child). Time-sampling approach was used and each child was observed for 10 minute intervals on eight days over the eight months of the study. Each child was observed according to a randomly ordered schedule.

The observers were seated as unobtrusively as possible in the room equipped with portable tape recorders, headsets and rating sheets. Raters were uninformed as to the purpose of the study or the developmental and chronological ages of the children at the time of the observations. The identities of the children involved in the study were not revealed (other than first names).

Observations were made only during free-play periods in order to minimize the amount of adult directed activity observed. The observers used a time-sample unit (TSU) sheet of operationally defined behaviors (see Appendix G), observing

for a 10-second unit followed by recording for a 5-second unit for a total of 40 TSUs or 10 minutes per observation.

SOCIAL SKILLS ACTIVITIES

At the beginning of the intervention phase, the children without handicaps were introduced to the program. At this time social skills activities commenced for 30 minutes at the beginning of the afternoon, three afternoons each week (Monday, Wednesday, Friday), including both the children with and without handicaps. A progression of themes was introduced during these sessions generally outlined in the social skills kit My Friends and Me (Davis, 1988) which explored the children's awareness of themselves and those around them through stories, music, puppets, role-playing and problems solving experiences. The kit was used as a resource for the social skills activities with the lessons shortened, lengthened, or adapted to match the needs of the group. A daily curriculum log was kept to provide consistency and monitoring of the progression of themes as well as noting what adaptations were made and how the group reacted to the activity

The following were the themes explored in the social skills circle time January 22 - May 11, 1990.

Introduction of Group

Making New Friends

Playing Together

Cooperation/Sharing/Turn-taking

Commonalities of the group

Similarities and Differences (families, selves,
(interests)

Helping Each Other

Feelings (Happy, Sad, Fear, Anger)

Consideration for Others

CHAPTER THREE

RESULTS

Comparisons of the datum that was collected over the eight data points were examined: three during the baseline period, four after the introduction of the preschoolers without handicaps and specific social skills activities, and one final data point after removal of the interventions.

Analysis of the results of this study are presented in this section by individual examination, whole group, and grouping the data by gender, age and physical impairment.

Initially the data was visually inspected to obtain a better understanding as to the results of the study. The individual frequency data for each subject over the three phases of the study were graphed according to the observed social play behaviors (see Table 4). Social play categories for individual children with handicaps which contained no frequency data were not included on the graphs. Due to the variability and apparent randomness of the data, no emerging patterns were found in visually examining the individual subject data for each trial.

Frequencies of play behaviors were then totalled for the group as a whole for the fifteen social play behaviors across the three conditions of the study (eight data points). One category had a frequency of 0 and was dropped from the data analysis - Affection. One category contained only one occurrence - Complimentary Statement but is included in the

TABLE 4 **FREQUENCIES OF SOCIAL PLAY BEHAVIORS FOR EACH CHILD**
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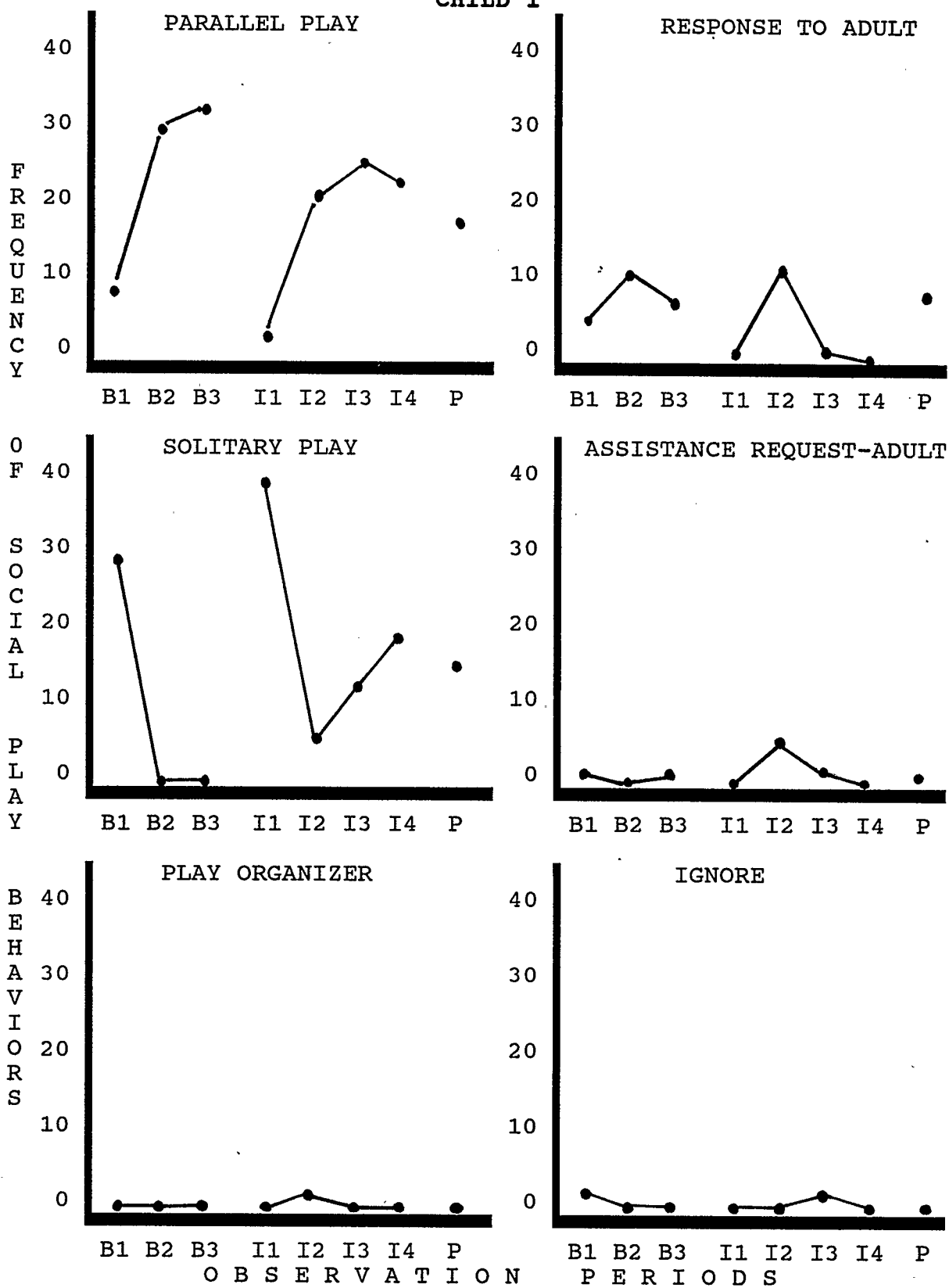


TABLE 4 (continued)

CHILD 2

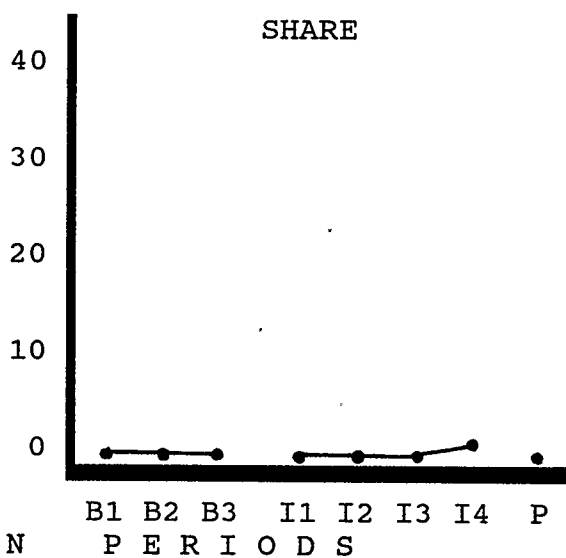
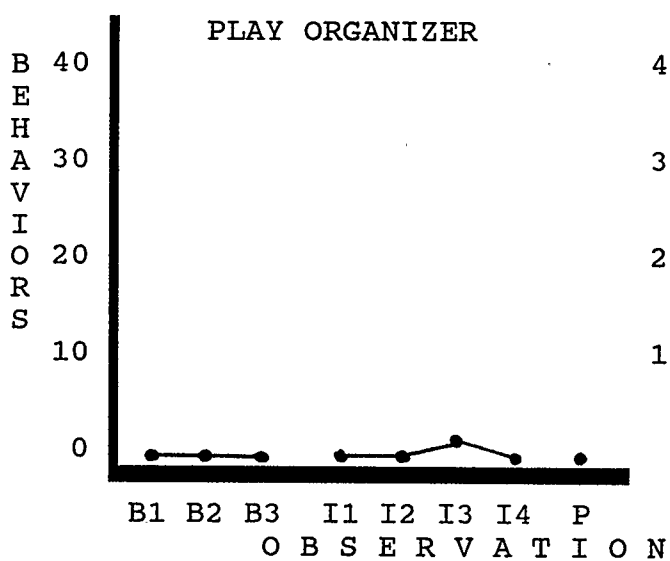
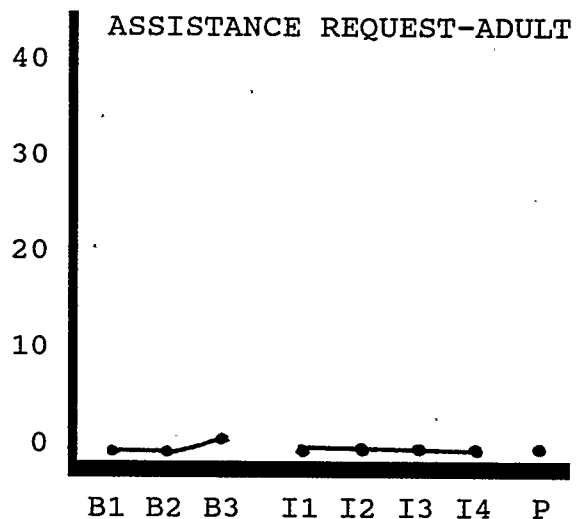
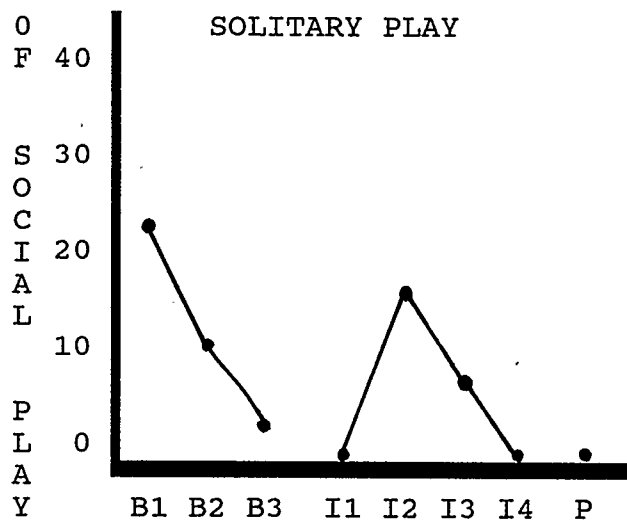
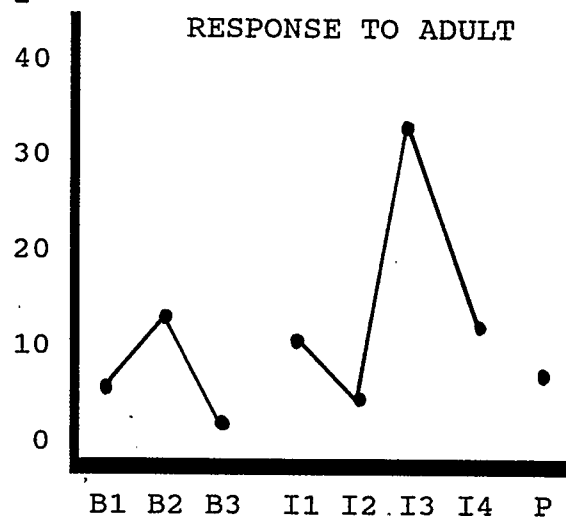
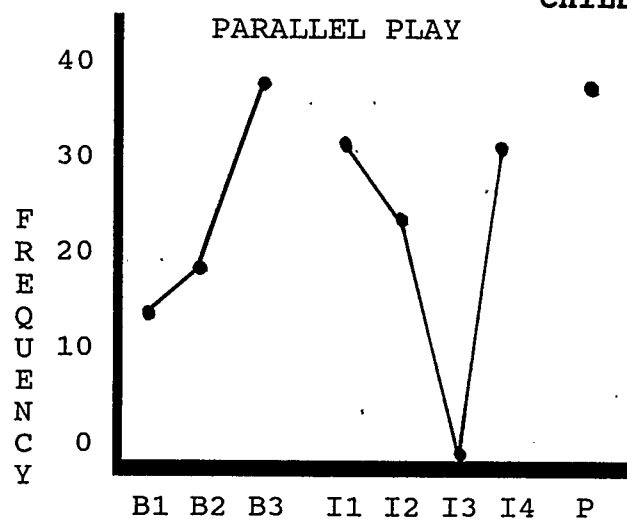


TABLE 4 (continued)

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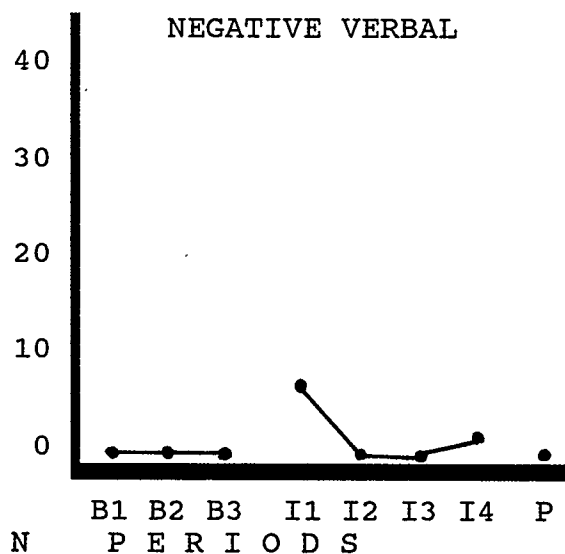
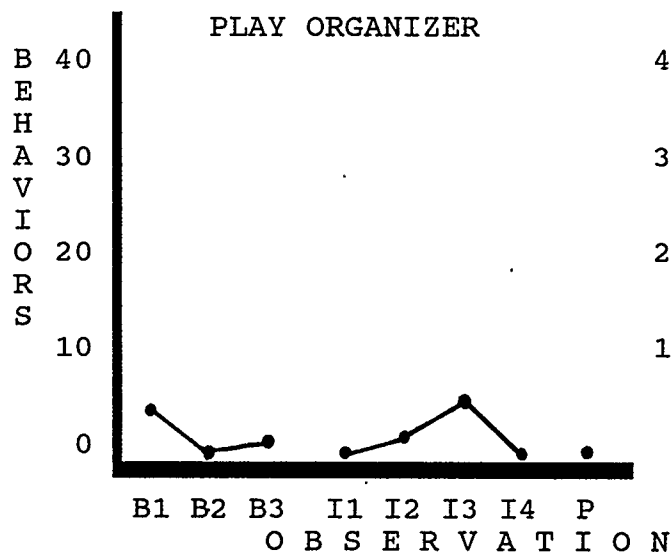
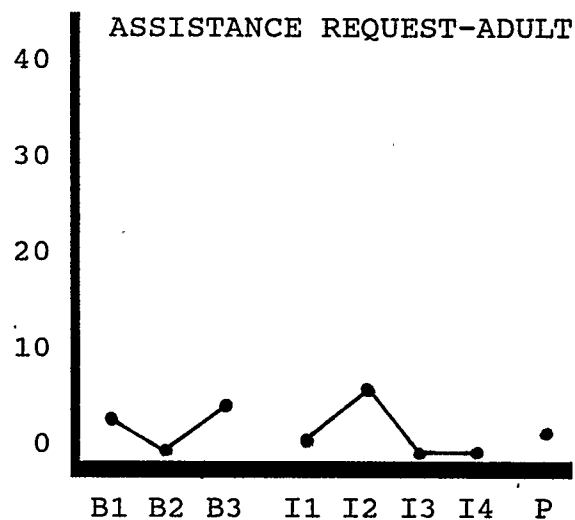
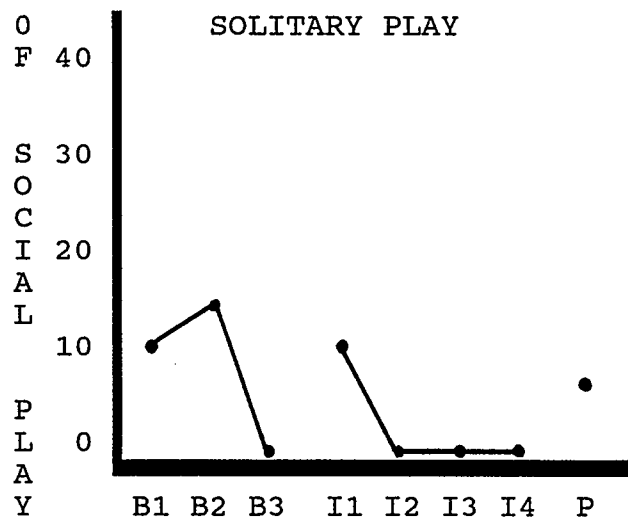
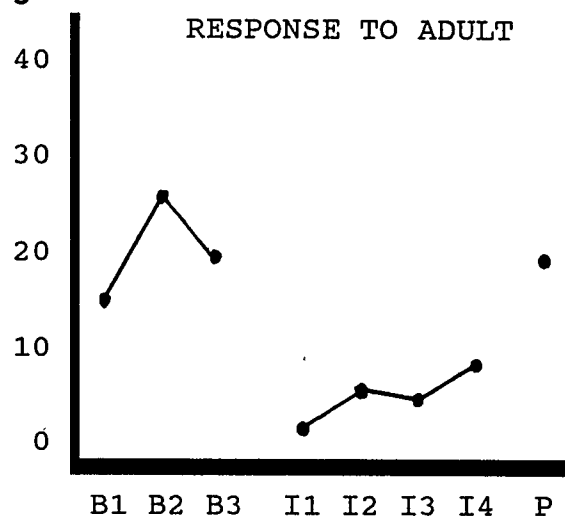
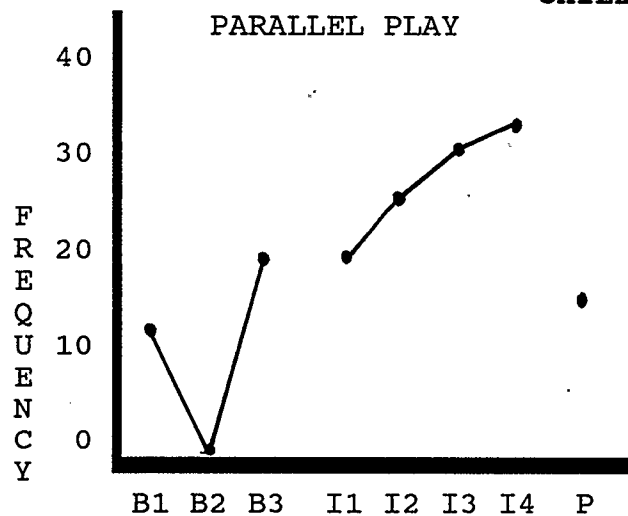


TABLE 4 (continued)

CHILD 4

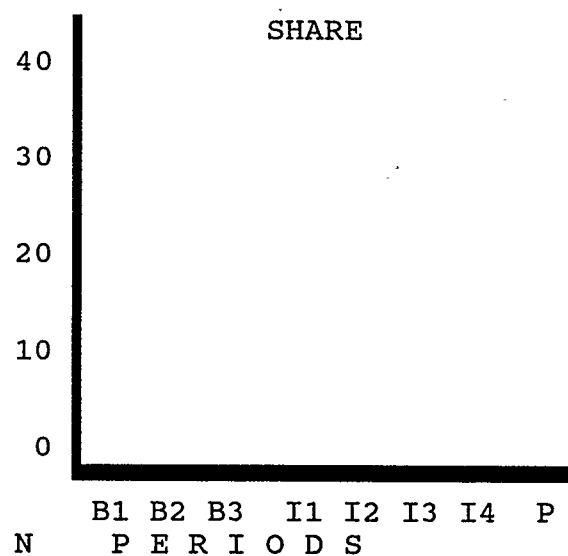
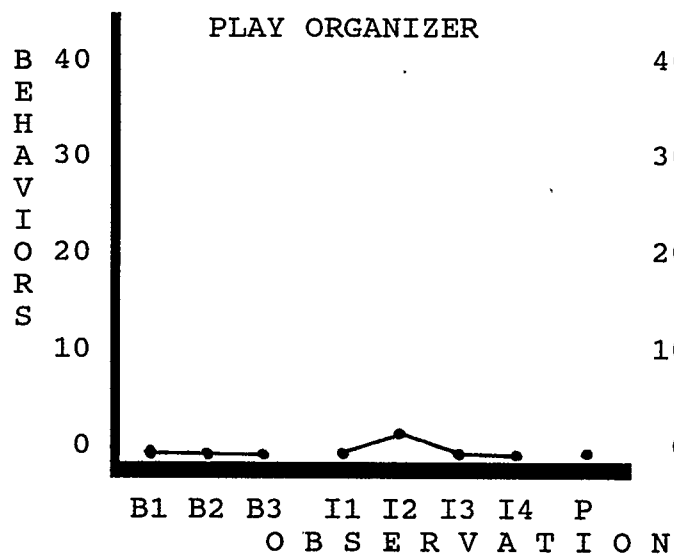
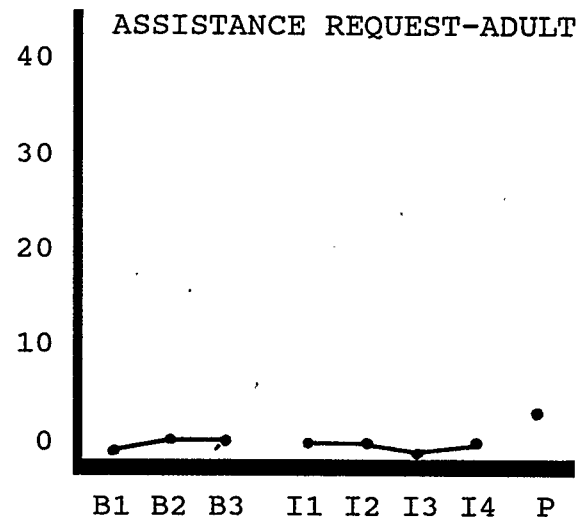
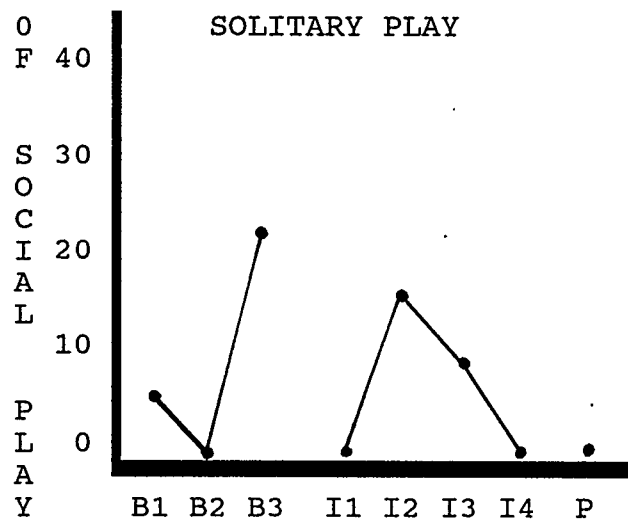
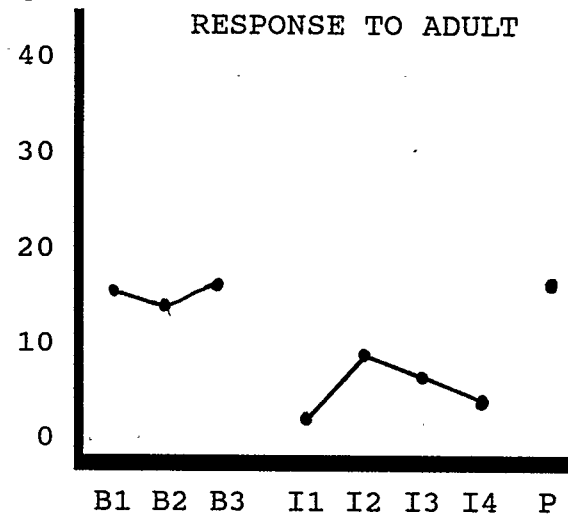
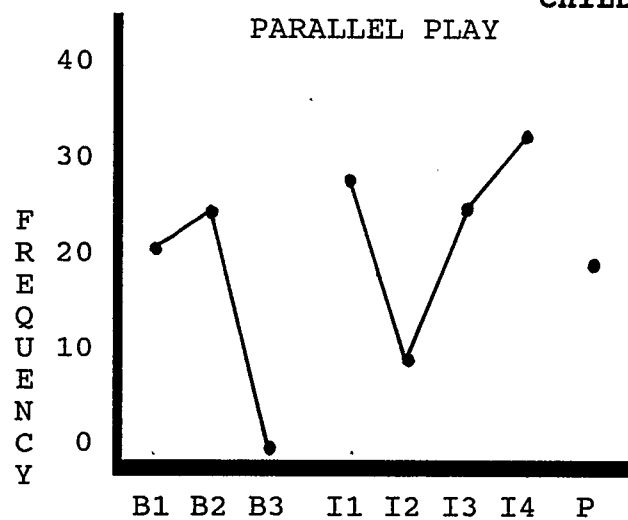


TABLE 4 (continued)

CHILD 5

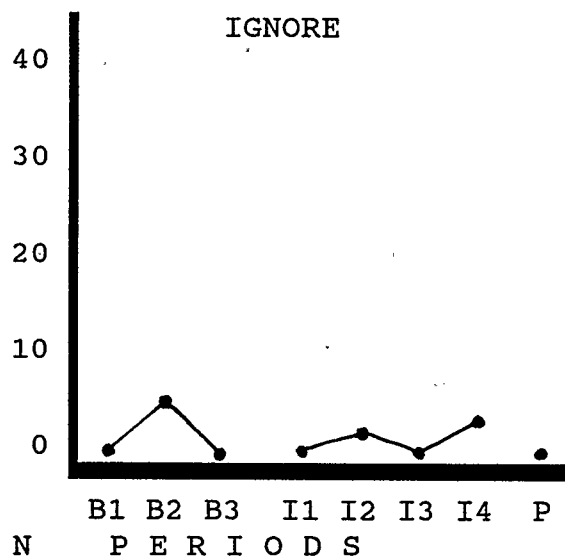
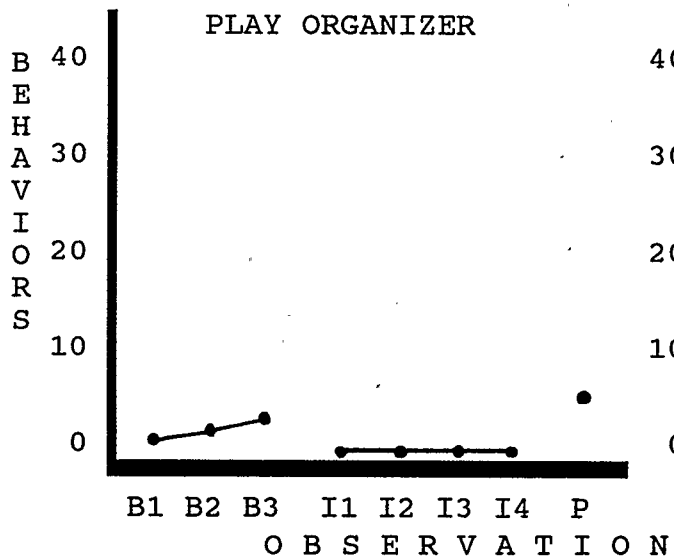
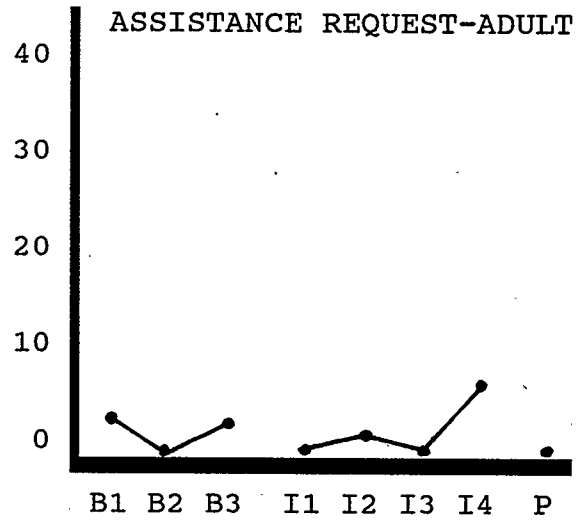
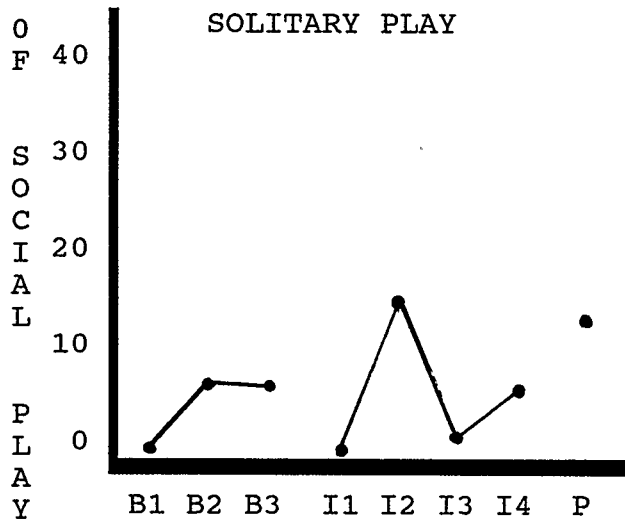
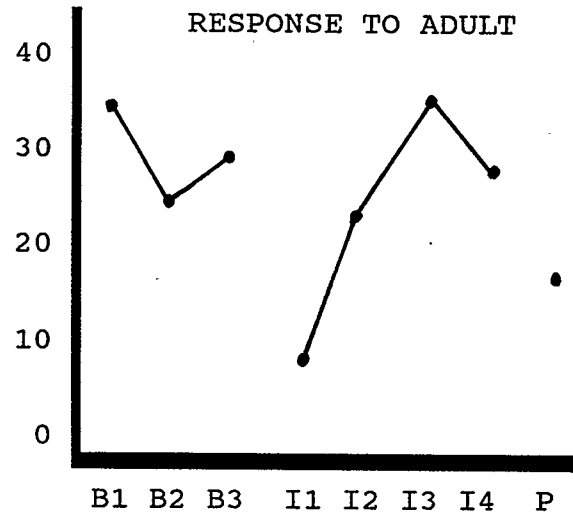
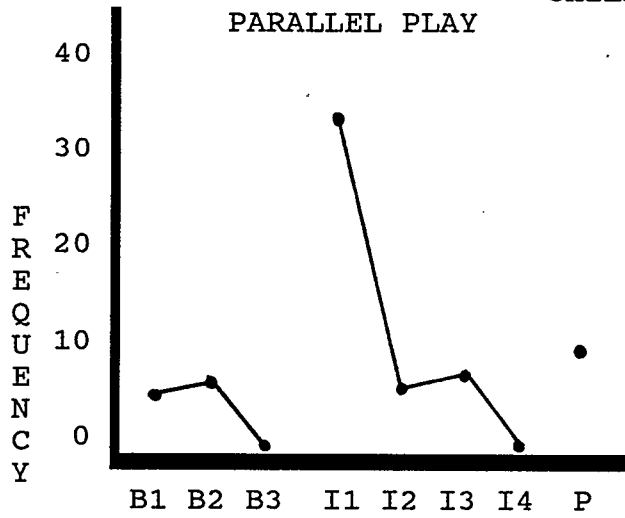


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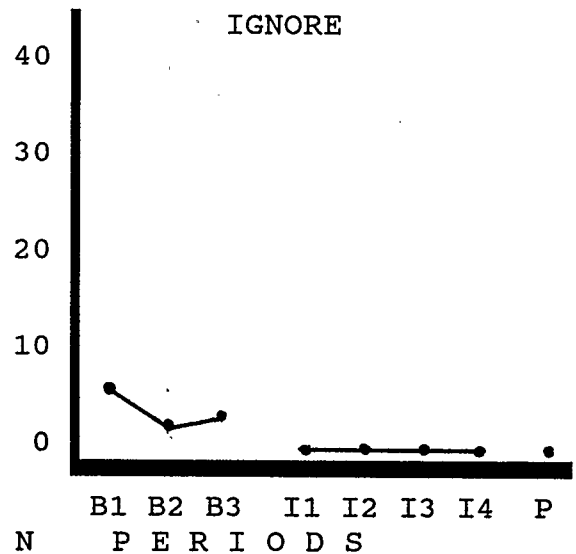
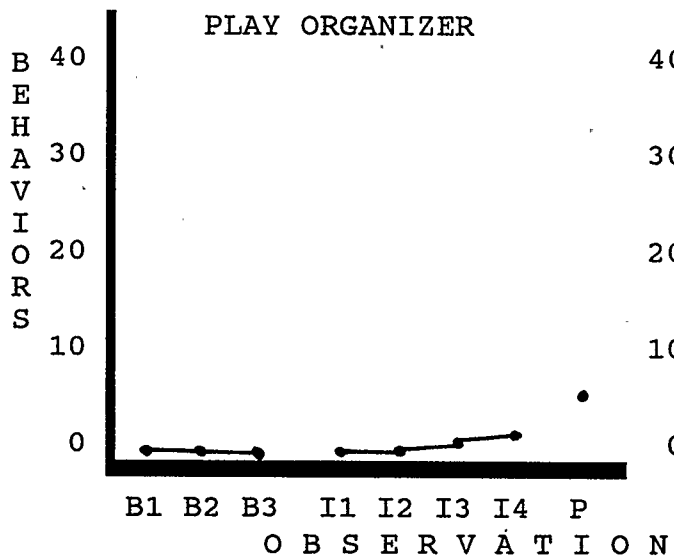
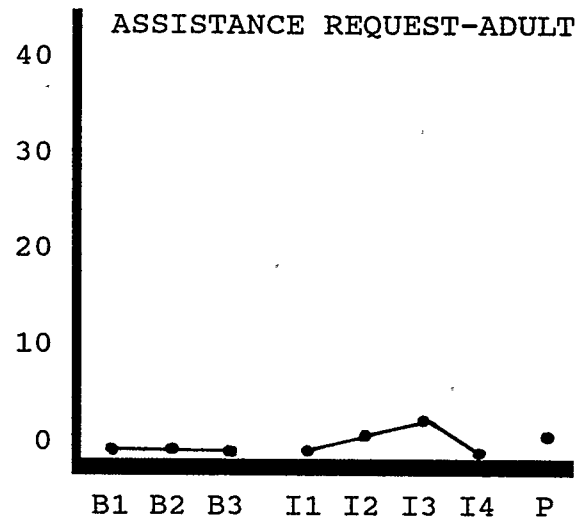
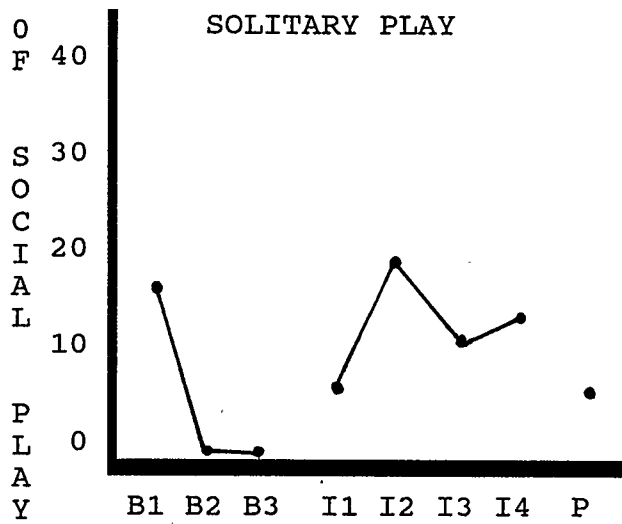
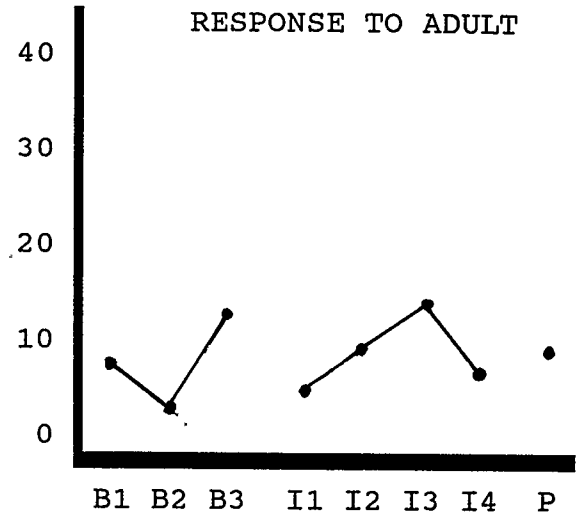
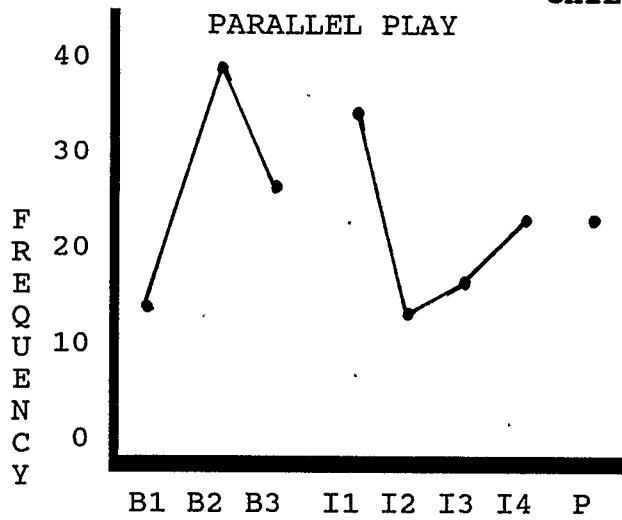


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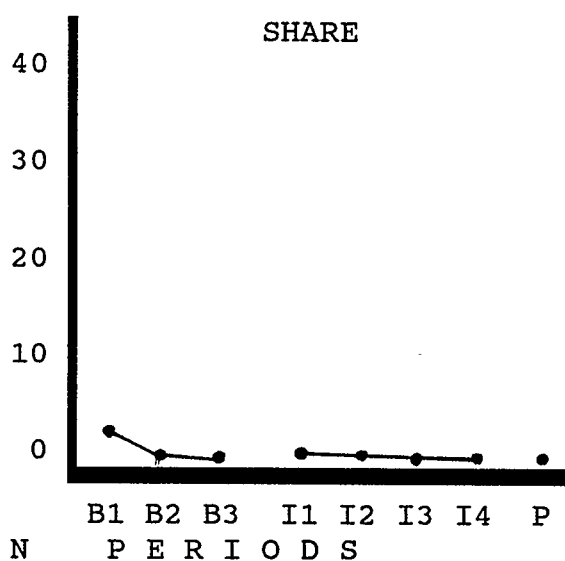
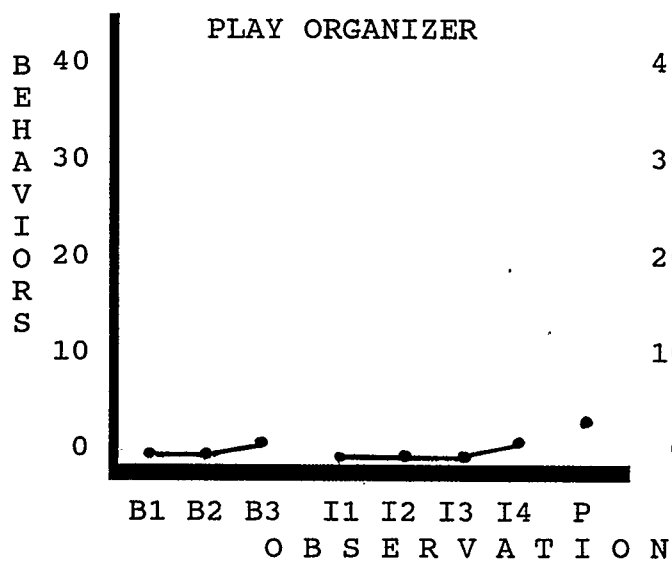
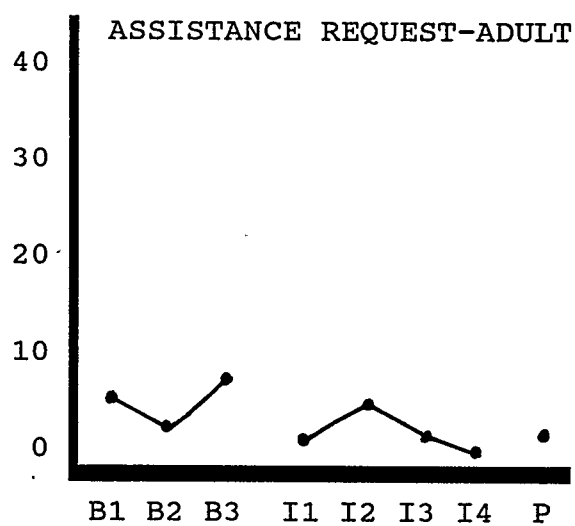
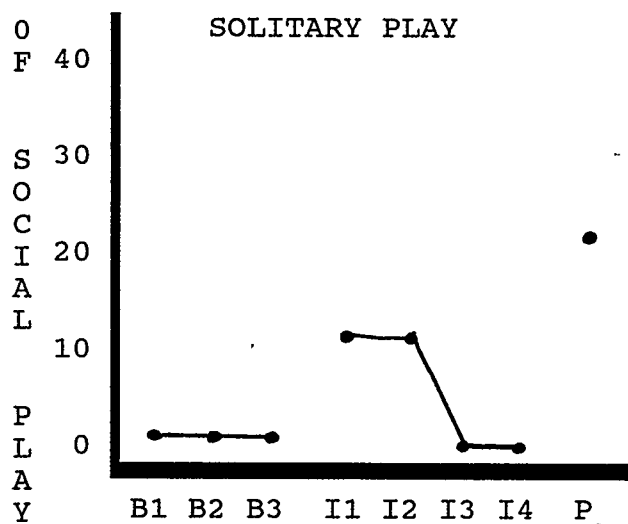
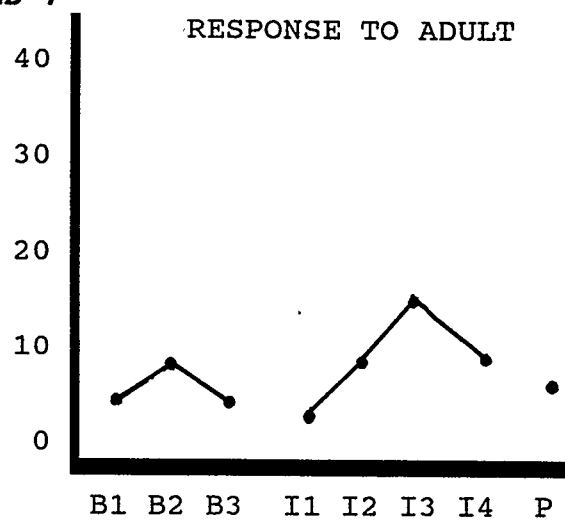
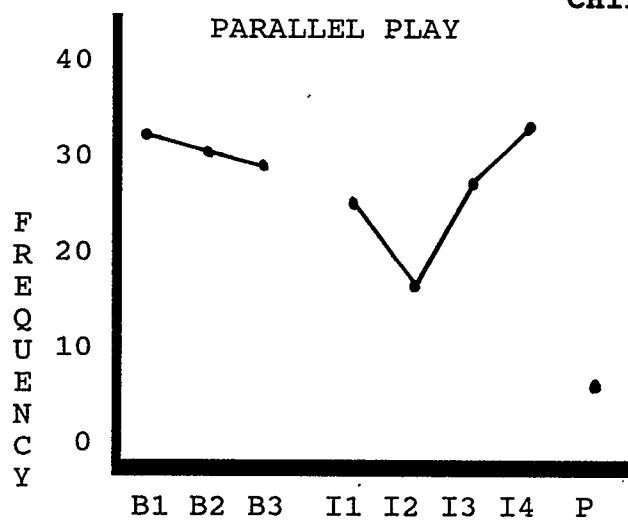


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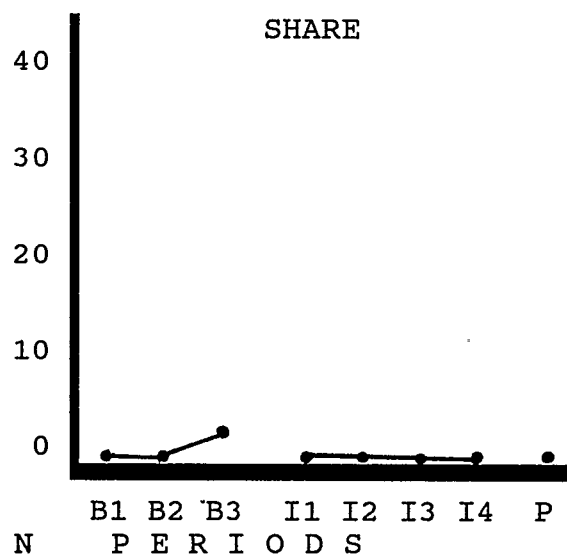
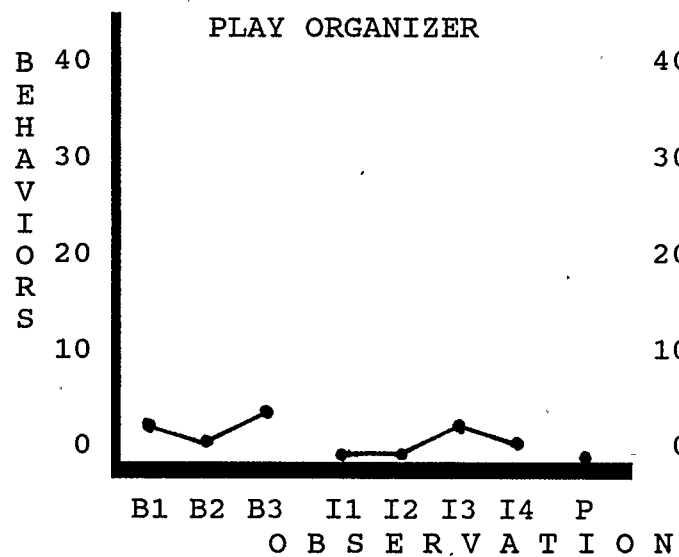
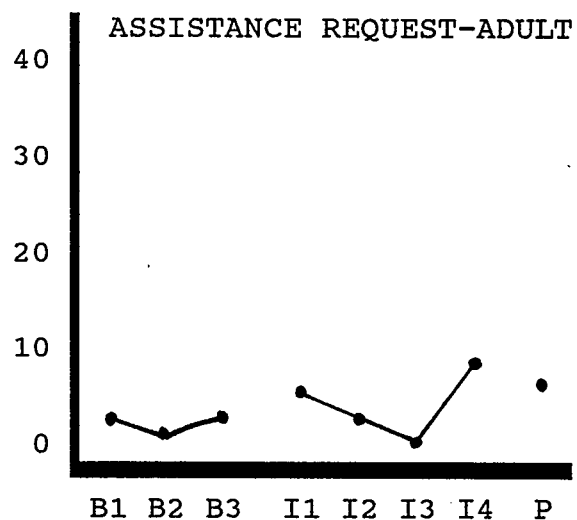
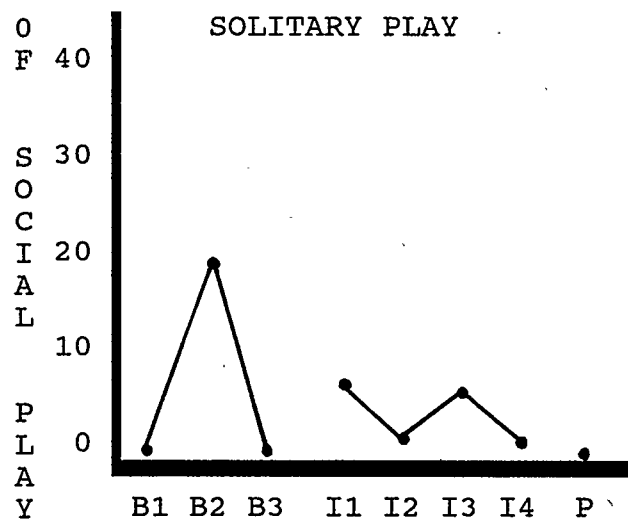
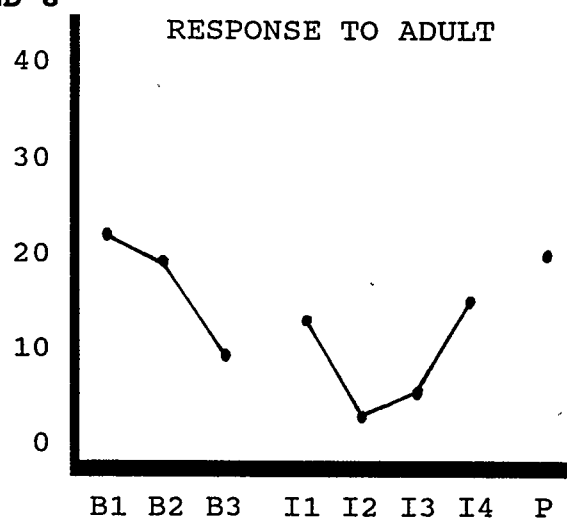
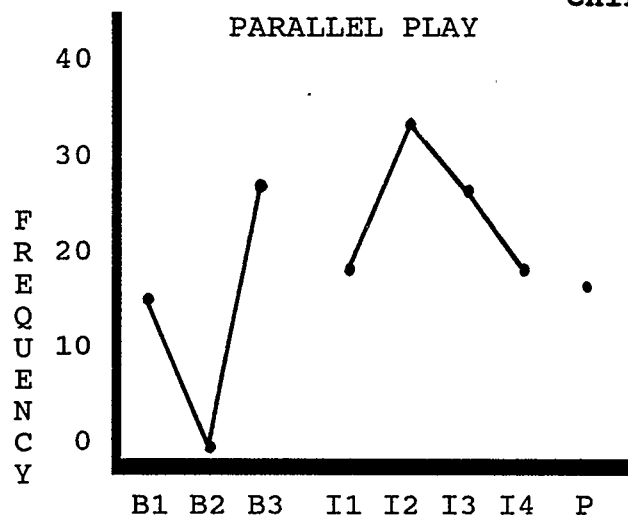


TABLE 4 (continued)

CHILD 9

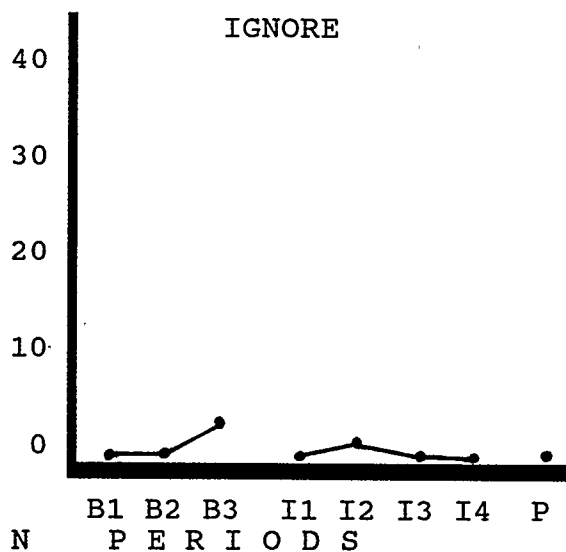
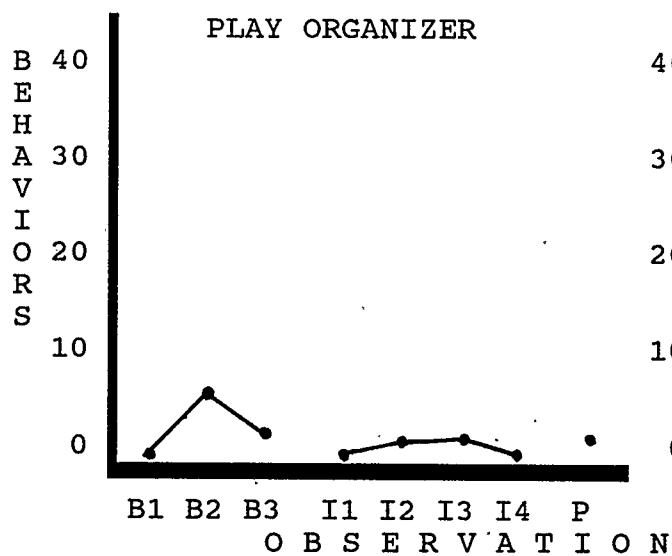
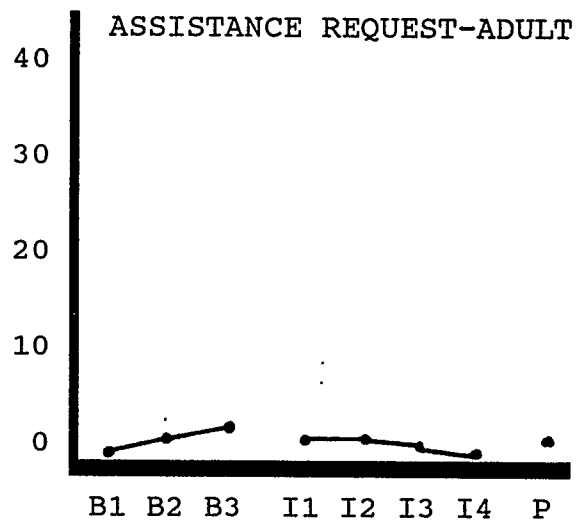
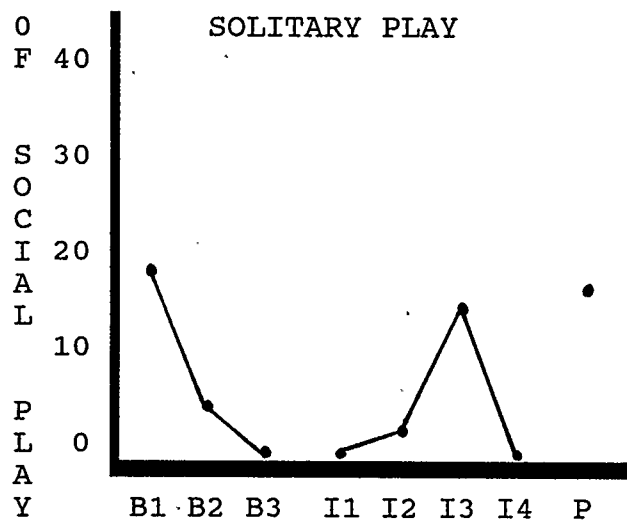
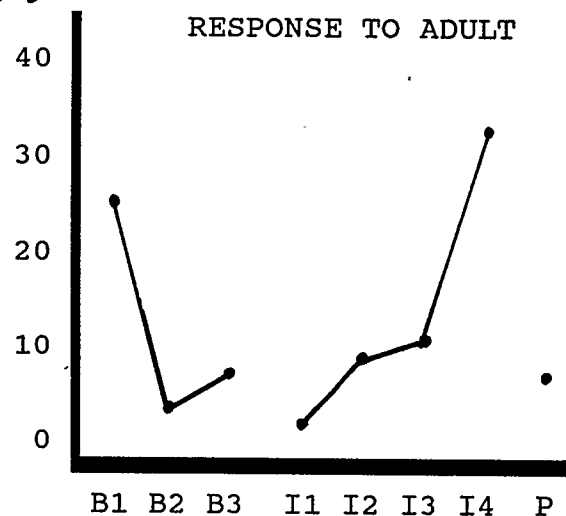
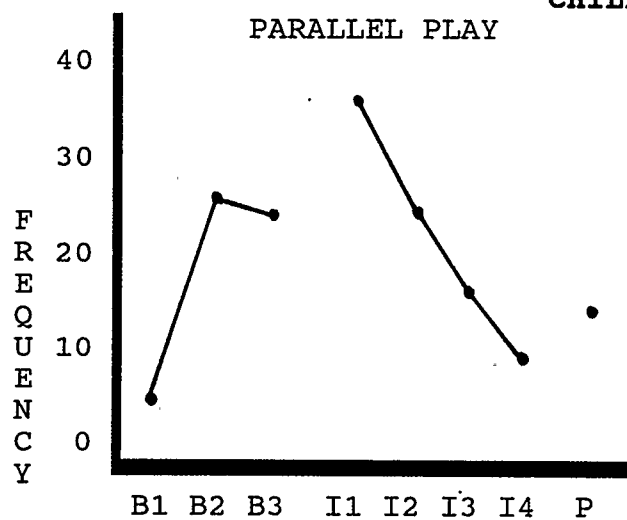
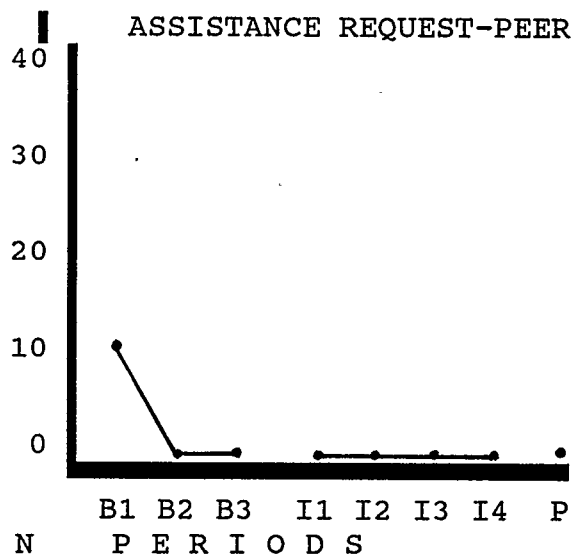
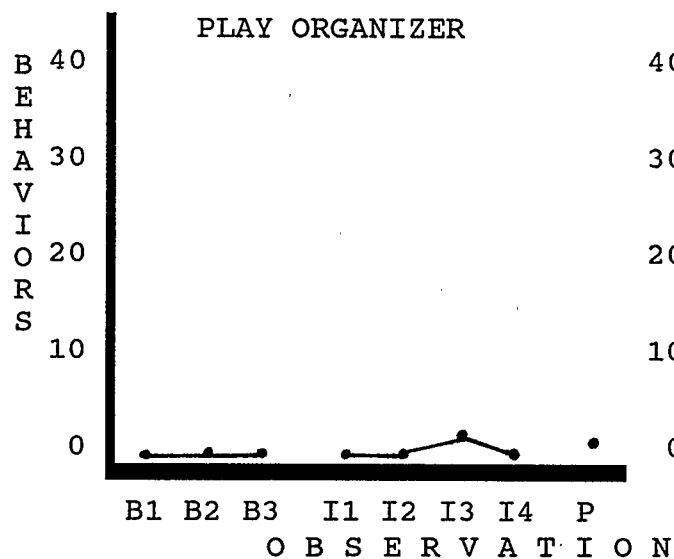
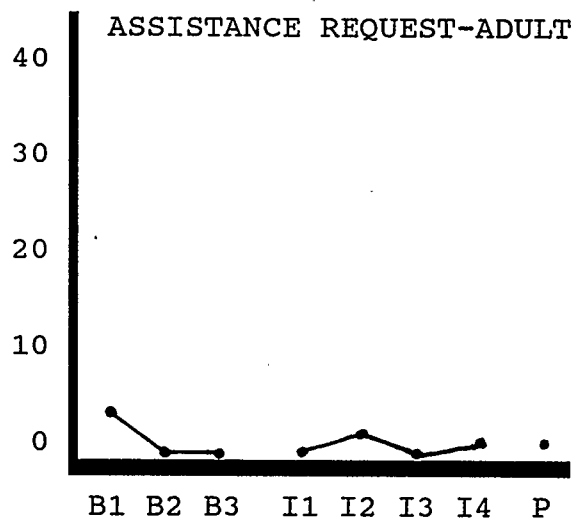
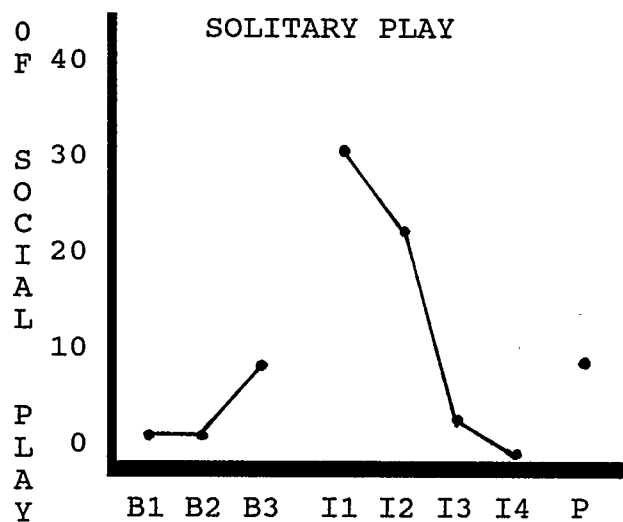
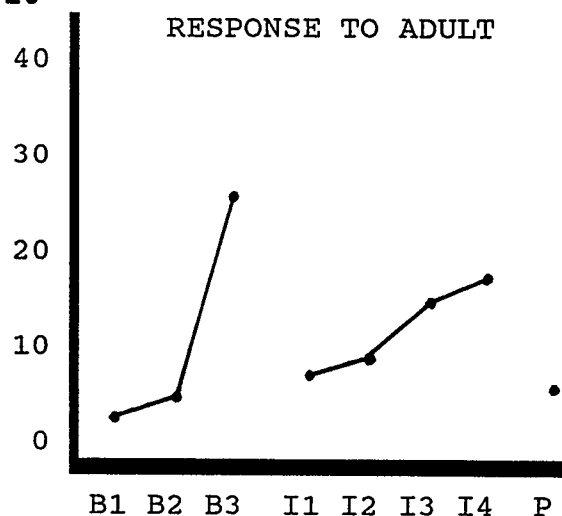
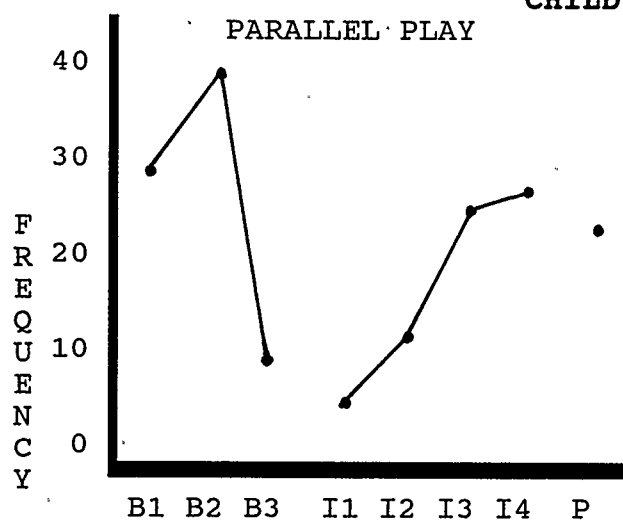


TABLE 4 (continued)

CHILD 10



analysis. The subcategories coded most frequently were: Parallel Play (47%), Response to Adult (27%), Solitary Play (18%) and Assistance Request - Adult (4%), the remaining nine categories accounted for the remaining 4%.

Visual examination of the whole group data did not lend itself to useful interpretation of the results (see Table 5).

The data fluctuated a great deal during baseline data collection and intervention data collection points. No significant trends or inferences could be detected. Parallel play decreased somewhat after the intervention was discontinued and as would be expected solitary play increased.

As there were several play categories with few or no occurrences it was felt that collapsing the data into four categories would be prudent and give a better idea of the emerging patterns.

The thirteen categories were collapsed into the following four categories: Positive Social Play Behaviors (Parallel Play, Play Organizer, Share, Assistance Request - Peer, Complimentary Statement, Assistance), Adult Social Play Behaviors (Assistance Request - Adult, Response to Adult), Negative Play Behaviors (Ignore, Defiance, Negative Motor, Negative Gestural) and Solitary Play (see Table 6).

Analysis of the collapsed data again showed a slight decrease in positive social play behaviors with peers after intervention was withdrawn and an increase of 48-points in solitary play behaviors from the last intervention data point

TABLE 5

TOTAL FREQUENCIES OF PLAY BEHAVIORS FOR TEN CHILDREN
WITH HANDICAPS

OBSERVATION PERIODS	PLAY BEHAVIOR CATEGORIES												
	SP	PP	RP	PO	AS	SH	CS	RS	RA	IG	NV	NM	DF
Baseline 1	91	147	10	5	1	1	0	123	12	8	0	0	2
Baseline 2	51	203	0	7	0	0	0	125	5	5	0	0	4
Baseline 3	40	203	3	10	0	2	0	121	18	2	0	1	0
Inter. 1	100	217	0	0	0	0	0	53	10	0	11	9	0
Inter. 2	102	175	1	7	0	0	0	82	23	2	3	3	2
Inter. 3	58	188	0	11	1	2	0	127	9	3	1	0	0
Inter. 4	34	215	0	3	0	1	1	120	16	3	3	1	3
Post	84	170	1	15	0	0	0	104	19	2	1	4	0

SP - Solitary Play

PP - Parallel Play

PO - Play Organizer

RP - Assistance Request - Peer

AS - Assistance

SH - Share

CS - Complimentary Statement

RS - Response to Adult

RA - Assistance Request - Adult

IG - Ignore

NV - Negative Verbal

NM - Negative Motor

DF - Defiance

Inter. - Intervention

TABLE 6

FREQUENCIES OF PLAY BEHAVIORS OVER ALL OBSERVATION
PERIODS FOR ALL CHILDREN WITH HANDICAPS N = 10

OBSERVATION	PLAY BEHAVIOR COMBINED CATEGORIES				
PERIODS	Positive	Adult	Negative	Solitary	Total
Baseline 1	164 (41%)	135 (34%)	10 (2.5%)	91 (22.5%)	400
Baseline 2	210 (52.5%)	130 (32.5%)	9 (2%)	51 (13%)	400
Baseline 3	219 (54%)	138 (35%)	3 (1%)	40 (10%)	400
Mean	(198)	(134)	(7)	(61)	400
Inter. 1	219 (54%)	63 (16%)	18 (5%)	100 (25%)	400
Inter. 2	182 (46%)	105 (26%)	11 (3%)	102 (25%)	400
Inter. 3	202 (50.5%)	136 (34%)	4 (1%)	58 (14.5%)	400
Inter. 4	220 (55%)	136 (34%)	8 (2%)	36 (9%)	400
Mean	(206)	(110)	(10)	(74)	400
Post	186 (46.5%)	124 (31%)	6 (1.5%)	84 (21%)	400

POSITIVE (Parallel Play, Play Organizer, Share, Assistance
Request-Peer, Complimentary Statement, Assistance)

ADULT (Assistance Request - Adult, Response to Adult)

NEGATIVE (Ignore, Defiance, Negative Motor, Negative
Gestural)

SOLITARY (Solitary Play)

(36) and post intervention data point (84) with the range of intervention frequencies 36 - 102 (see Figure 1). Repeated measures randomization tests comparing the baseline mean, intervention mean and post observation points found no significance differences (positive $p = 0.65$, solitary $p = 0.62$). Adult behaviors dropped initially from the baseline mean to the first intervention point (71 points) and then gradually increased over the next three intervention points ($p = 0.61$). Negative play behaviors, as mentioned previously, were a very low frequency category. The data showed that these behaviors were relatively consistent during baseline data collection, increased slightly during the initial intervention phase and remained virtually the same throughout the rest of the study.

Statistical comparison of all four categories of social play behaviors was not appropriate due to the high frequencies of play behaviors in some categories and the low frequencies in others.

There were no significant differences found in the combined group data for all the children with handicaps using chi square calculations ($\chi^2 = 8.14$ $df = 6$ ns) (see Table 7).

The next step in the analysis of the results of the study was to explore the effects of sex, age and physical disability on the social play behaviors of the children with handicaps.

FIGURE 1

FREQUENCIES OF PLAY BEHAVIORS OVER ALL OBSERVATION PERIODS FOR ALL CHILDREN

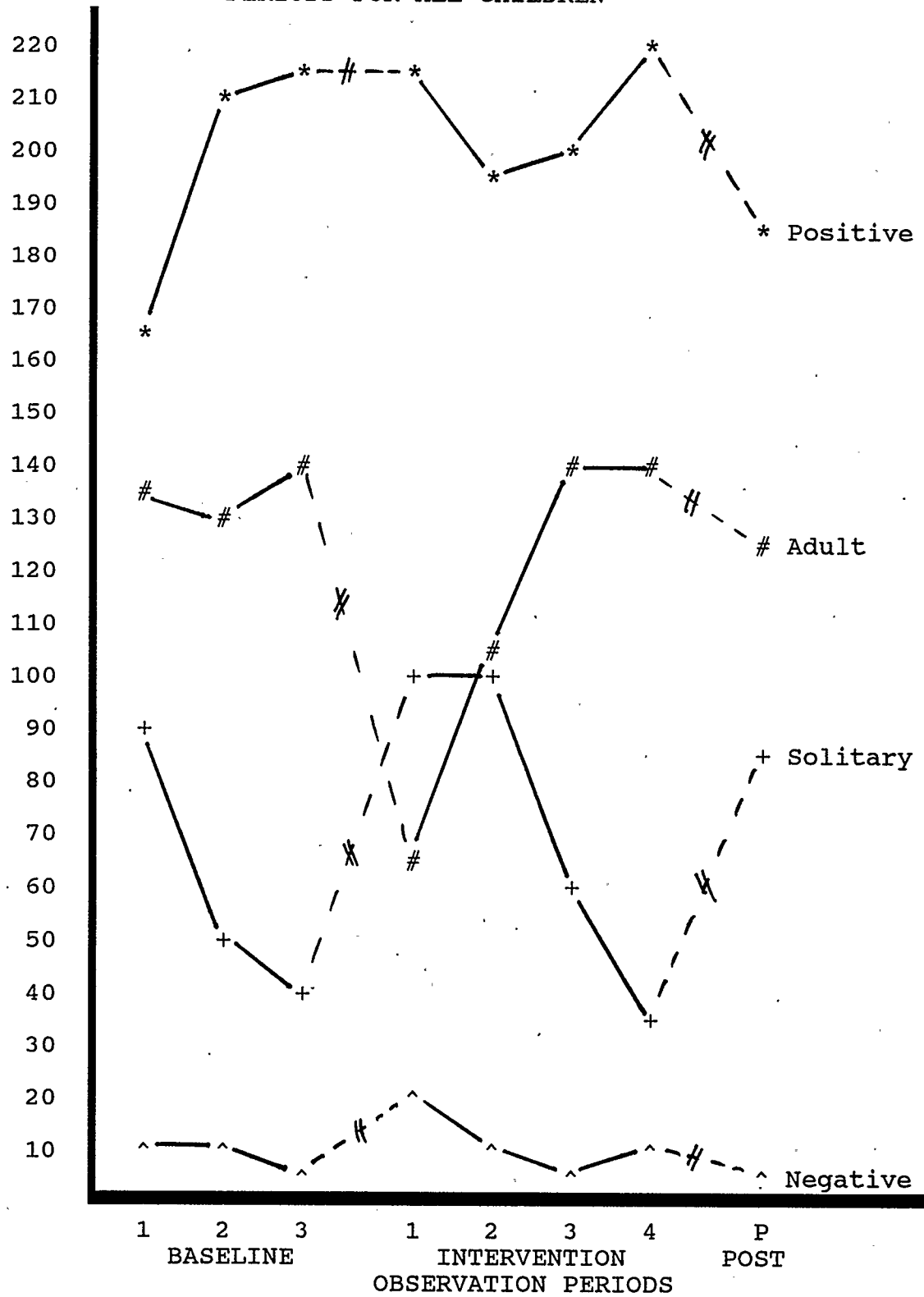


TABLE 7

WHOLE GROUP MEAN FREQUENCIES OF SOCIAL PLAY BEHAVIORS

	BASELINE	INTERVENTION	POST	TOTAL
POSITIVE PEER	198	206	186	590
ADULT INTERACTIONS	134	110	124	368
NEGATIVE	7	10	6	23
SOLITARY	61	74	84	219
TOTALS	400	400	400	1200

$$\chi^2 = 8.14 \quad df=6 \quad ns$$

AGE

Play behaviors increase in sophistication with an increase in developmental age. At approximately the age of four, children seem to begin to focus on social relationships. Evidence suggests that children's friendships first become true relationships at this age instead of being merely an enjoyable companion (Furman, 1984; Hartup, 1978). Taking this into consideration, the group was divided into two groups, those under four and those over four. The rationale for this division was that normally developing preschool children acquire increasingly more complex play behaviors starting with toy directed play (solitary), moving to adult directed play interactions, and finally social peer interactions such as parallel and cooperative play behaviors. The data in this area showed some interesting trends and patterns.

In the over 4 group (four boys and one girl) there was a 69-point increase in solitary play from the last baseline data point (16) to the first intervention data point (85) then a 61-point drop in solitary play during the intervention period (range 24 - 85) and then an apparent increase at post intervention (58) (see Table 8 and Figure 2). One-sample chi square calculations comparing baseline and intervention means (22 and 45 respectively) indicated significance at the .01 level ($\chi^2 = 8.06$, $df=1$); comparing baseline, intervention and post means (22, 45 and 58 respectively) - .001 level. Comparison of baseline frequencies and the first three

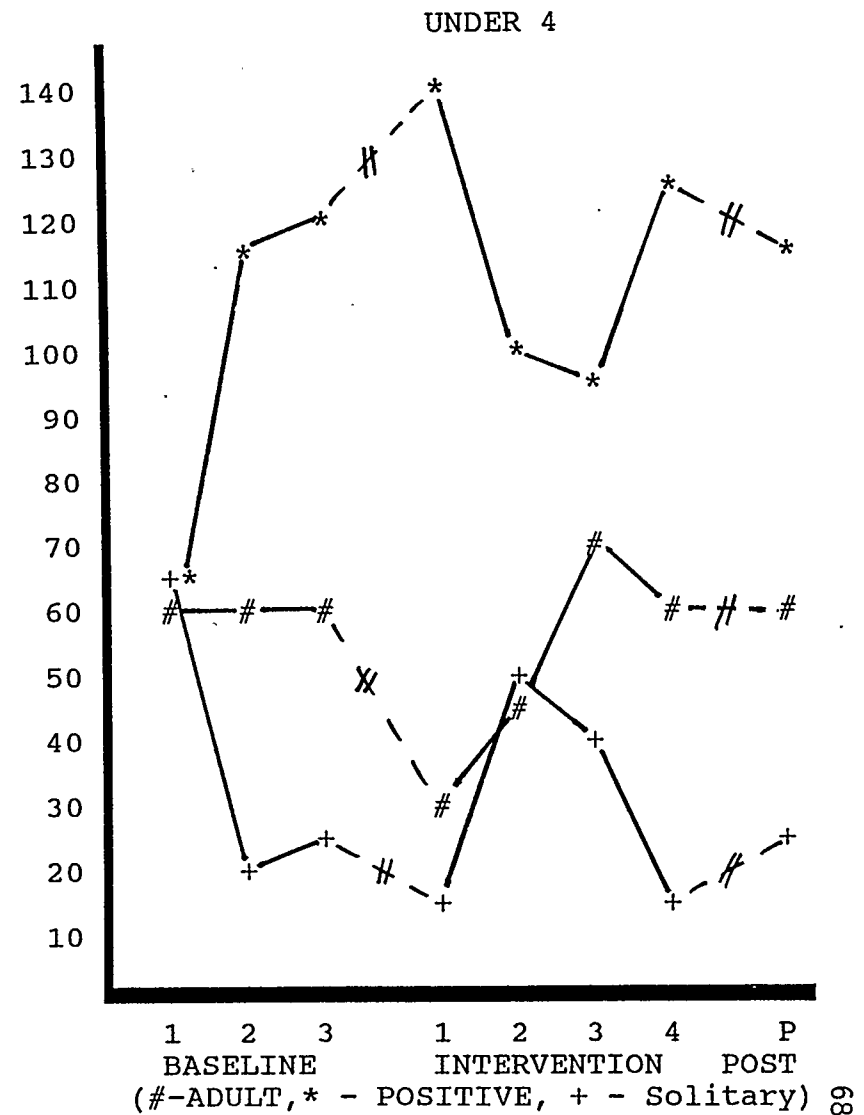
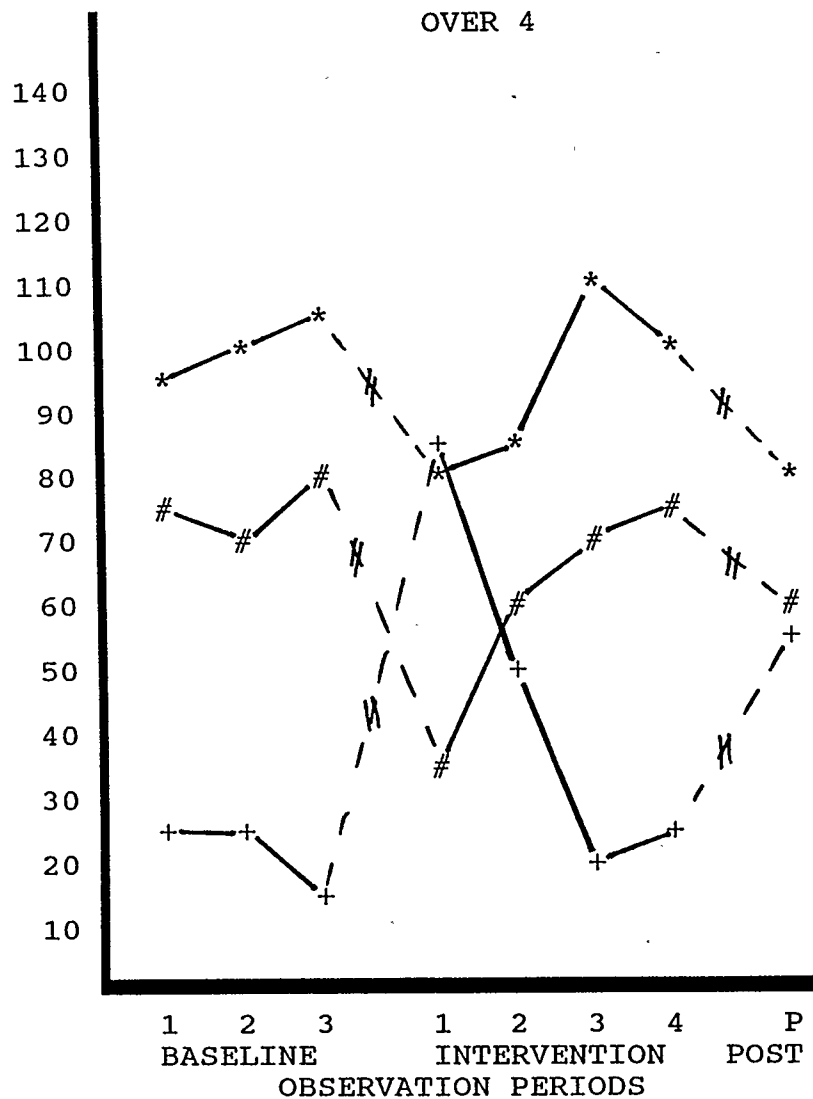
TABLE 8

FREQUENCIES AND MEANS OF PLAY BEHAVIORS FOR
CHILDREN OVER AND UNDER 4

OVER 4											
PLAY BEHAVIORS	OBSERVATION PERIODS										
	BASELINE				INTERVENTION					POST	
	1	2	3	MEAN	1	2	3	4	MEAN	P	
Positive	98	102	104	(101)	78	82	109	97	(92)	79	
Adult	73	68	80	(74)	36	61	69	75	(60)	62	
Negative	3	6	0	(3)	1	5	1	4	(3)	01	
Solitary	26	24	16	(22)	85	52	21	24	(45)	58	
TOTALS	200	200	200	(200)	200	200	200	200	(200)	200	
UNDER 4											
Positive	66	108	115	(97)	141	100	93	123	(114)	107	
Adult	62	62	58	(61)	27	44	67	61	(50)	62	
Negative	7	3	3	(3)	17	6	3	4	(7)	05	
Solitary	65	27	24	(39)	15	50	37	12	(29)	26	
TOTALS	200	200	200	(200)	200	200	200	200	(200)	200	

FIGURE 2

FREQUENCIES OF PLAY BEHAVIORS FOR CHILDREN OVER AND UNDER 4



intervention frequencies indicated no significance.

This group also demonstrated an initial decrease in positive social play from baseline ($\bar{x}=101$, range 98-104) to initial intervention data point (78), then a 19-point increase over the intervention period (range 78-109) and finally an 18-point decrease at post intervention (79). One-sample chi square calculations comparing baseline, intervention, and post mean data revealed no significance.

Examination of the mean frequencies of positive social play behaviors in terms of age exhibited a decrease throughout the study for the children over four while the mean frequencies of solitary play behaviors increased steadily throughout the study.

The under 4 group (two boys and three girls) increased in positive social play during the baseline period, varied during intervention and decreased from the last intervention point to the post data point. Solitary play decreased during baseline data collection, varied during intervention with a 14-point increase following intervention at the post intervention data point.

The under four mean frequencies of play behaviors showed an increase in positive play behaviors from baseline to intervention and then decreased to post intervention. Adult interactions decreased from baseline to intervention and then increased at post intervention. Solitary play behaviors decreased from baseline to intervention and again from

intervention to post intervention. Comparisons of the two groups (over and under 4) over the three conditions of the study by chi square analyses revealed statistical significance at the .001 level for solitary play behaviors comparing the increase from baseline to post intervention (return to baseline) for the over 4 group and the decrease baseline to post intervention for the under 4 group (see Table 10).

Overall the over 4 group spent slightly less time engaging in positive play than the children under 4 (over 4 - 47%, under 4 - 53%) which one-sample chi square calculations revealed as significant at the .01 level (see Table 9).

TABLE 9

FREQUENCIES AND PERCENTAGES OF PLAY BEHAVIORS BY AGE

	POSITIVE	NEGATIVE	ADULT	SOLITARY	TOTAL
OVER 4	749 (47%)	21 (1%)	524 (33%)	306 (19%)	1600
UNDER 4	854 (53%)	48 (3%)	442 (28%)	256 (16%)	1600
TOTALS	1603	69	966	562	3200

TABLE 10

TYPE OF PLAY FOR CHILDREN OVER AND UNDER 4

	MEAN BASELINE	MEAN INTERVENTION	POST
POSITIVE OVER 4	101	92	79
UNDER 4	97	114	107

$$\chi^2 = 3.08 \quad df = 2 \quad ns$$

randomization over 4 $p = 0.79$

randomization under 4 $p = 0.89$

ADULT

OVER 4	74	60	62
UNDER 4	61	50	62

$$\chi^2 = 0.73 \quad df = 2 \quad ns$$

randomization over 4 $p = 0.54$

randomization under 4 $p = 0.99$

SOLITARY

OVER 4	22	45	58
UNDER 4	39	29	26

$$\chi^2 = 16.33 \quad df = 2 \quad p < .001$$

randomization over 4 $p = 0.62$

randomization under 4 $p = 0.98$

correlated t-test: mean baseline and first intervention
positive play behaviors
under 4 $t=0.87$ ns over 4 $t=0.14$ ns

GENDER

The next step was the examination of the effects of gender on the social play behaviors of the group (see Table 11). As mentioned previously there were four girls and six boys involved in the study.

In examining the graph representation of Table 11 (see Figure 3), the boys data showed a gradual decline in solitary play during the intervention phase and then increased 58-points between the last intervention point and the post data point. The girls data showed a 20-point increase in adult interactions from the last intervention data point to the post data point.

When the group means were examined according to sex of the children, overall the boys demonstrated more adult interactions than the girls consistently through all phases of the study. Overall the boys spent more time engaging in adult focussed activities than the girls (boys - 35%, girls - 23%), which chi square calculations found significant at the .01 level (see Table 12).

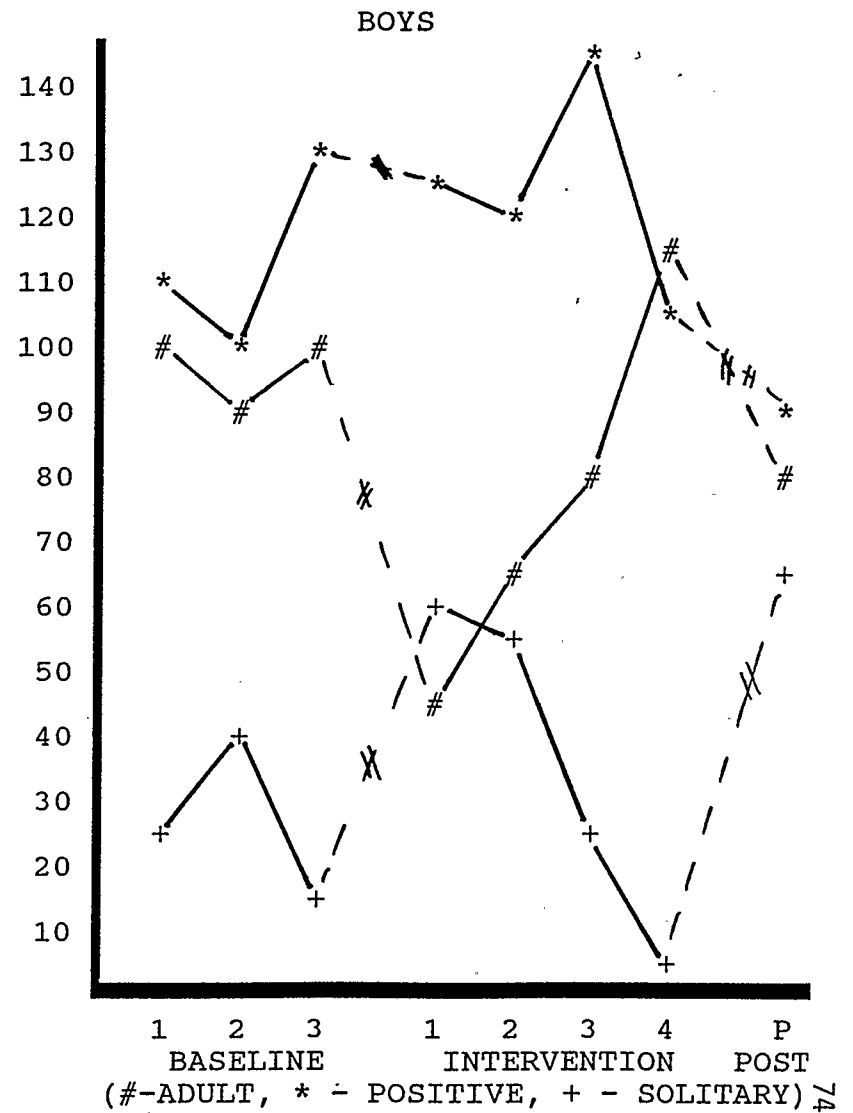
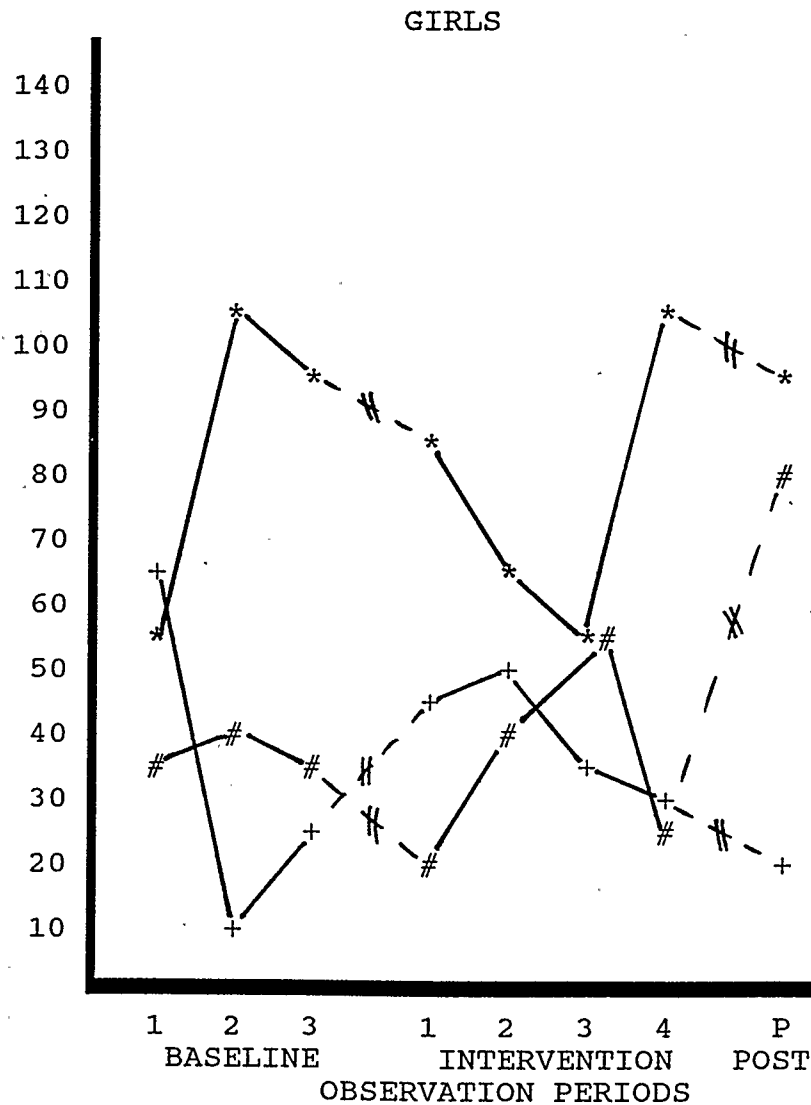
The mean data of the girls indicated that positive play behaviors increased from intervention to post intervention and adult interactions remained relatively stable. Solitary play behaviors of the girls increased from baseline ($\bar{x}=33$) to intervention ($\bar{x}=39$) and decreased from intervention to post intervention ($\bar{x}=20$) which one-sample chi square calculations

TABLE 11**FREQUENCIES AND MEANS OF PLAY BEHAVIORS FOR GIRLS AND BOYS**

PLAY BEHAVIORS	GIRLS									
	BASELINE				INTERVENTION					POST P
	1	2	3	MEAN	1	2	3	4	MEAN	
Positive	54	105	97	(85)	89	66	66	107	(82)	95
Adult	34	41	38	(38)	19	39	54	22	(34)	42
Negative	6	4	3	(4)	10	4	4	3	(5)	3
Solitary	66	10	22	(33)	42	51	36	28	(39)	20
TOTALS	160	160	160	(160)	160	160	160	160	(160)	160
BOYS										
Positive	110	105	121	(112)	128	117	136	113	(123)	91
Adult	101	89	101	(97)	44	66	82	114	(77)	81
Negative	4	5	0	(3)	10	6	0	7	(6)	4
Solitary	25	41	18	(28)	58	51	22	6	(34)	64
TOTALS	240	240	240	(240)	240	240	240	240	(240)	240

FIGURE 3

FREQUENCIES OF PLAY BEHAVIORS FOR BOYS AND GIRLS



indicated significance at the .05 level ($\chi^2 = 6.09$, $df=2$).

The mean data of the boys displayed a decrease in positive play behaviors from intervention to post (return to baseline), adult interactions decreased from baseline to intervention with a slight increase at post intervention. Solitary play behaviors increased from baseline (28) to intervention (34) slightly with a dramatic increase from intervention to post intervention (64) which one-sample chi square calculations revealed as significant at the .001 level ($\chi^2 = 17.7$, $df=2$).

Use of chi square calculations to make comparisons of the two groups over the three conditions of the study on the basis of gender revealed statistical significance at the .01 level for solitary social play behaviors (see Table 13). The mean frequency of the boys solitary social play behaviors was significantly higher at post (return to baseline) than baseline or intervention. The boys post intervention solitary social play behavior frequencies were also significantly higher than the frequency data of the girls solitary social play behaviors.

TABLE 12

FREQUENCIES AND PERCENTAGES OF PLAY BEHAVIORS
FOR BOYS AND GIRLS

	POSITIVE	NEGATIVE	ADULT	ISOLATE	TOTAL
BOYS	921 (48%)	36 (2%)	678 (35%)	285 (15%)	1920
GIRLS	679 (53%)	37 (3%)	289 (23%)	275 (21%)	1280
TOTALS	1600	73	967	560	3200

TABLE 13

FREQUENCIES OF PLAY BEHAVIOR BY GENDER

PLAY BEHAVIORS	MEAN	MEAN	
<u>POSITIVE</u>	BASELINE	INTERVENTION	POST
GIRLS	85	82	95
BOYS	112	123	91
$\chi^2 = 5.08$ df = 2 p < .10			
girls randomization p = 0.80		boys randomization p = 0.41	
<u>ADULT</u>			
GIRLS	38	34	42
BOYS	97	77	81
$\chi^2 = 1.093$ df = 2 NS			
girls randomization p = 0.74		boys randomization p = 0.59	
<u>SOLITARY</u>			
GIRLS	33	39	20
BOYS	28	34	64
$\chi^2 = 18.96$ df = 2 p < .01			
girls randomization p = 0.26		boys randomization p = 0.19	

PHYSICAL DISABILITY

Next the data was visually inspected for differentiation on the basis of physical disability. The whole group was divided according to a combination of abilities involving motor skills i.e., ability to walk unassisted, ability to manage independently in fine motor tasks, ability to move around the room independently, etc. (see Table 14 and Figure 4).

The more physically impaired group (five boys) demonstrated positive social play behavior data which was numerically lower but not significant at post intervention (76) than during baseline ($\bar{x}=96$, range 91-104) or intervention data points ($\bar{x}=99$, range 83-112). This group's solitary play behaviors increased initially during intervention (53) from baseline ($\bar{x}=21$, range 17-25) and then decreased (48-points from first intervention data point to fourth intervention data point, range 5-53) and then increased 58-points from the fourth intervention data point (5) to the post intervention (63) which one-sample chi square calculations revealed significant at the .001 level ($\chi^2 = 25.34$, $df=2$). Their adult interactions decreased dramatically (64 points) at the first intervention point (28) from the last baseline data point (92) and then increased (64 points from the first to fourth intervention data point, range 28-92) and then decreased 34-points at post intervention (58). Although chi square calculations utilizing the mean adult frequency data for the

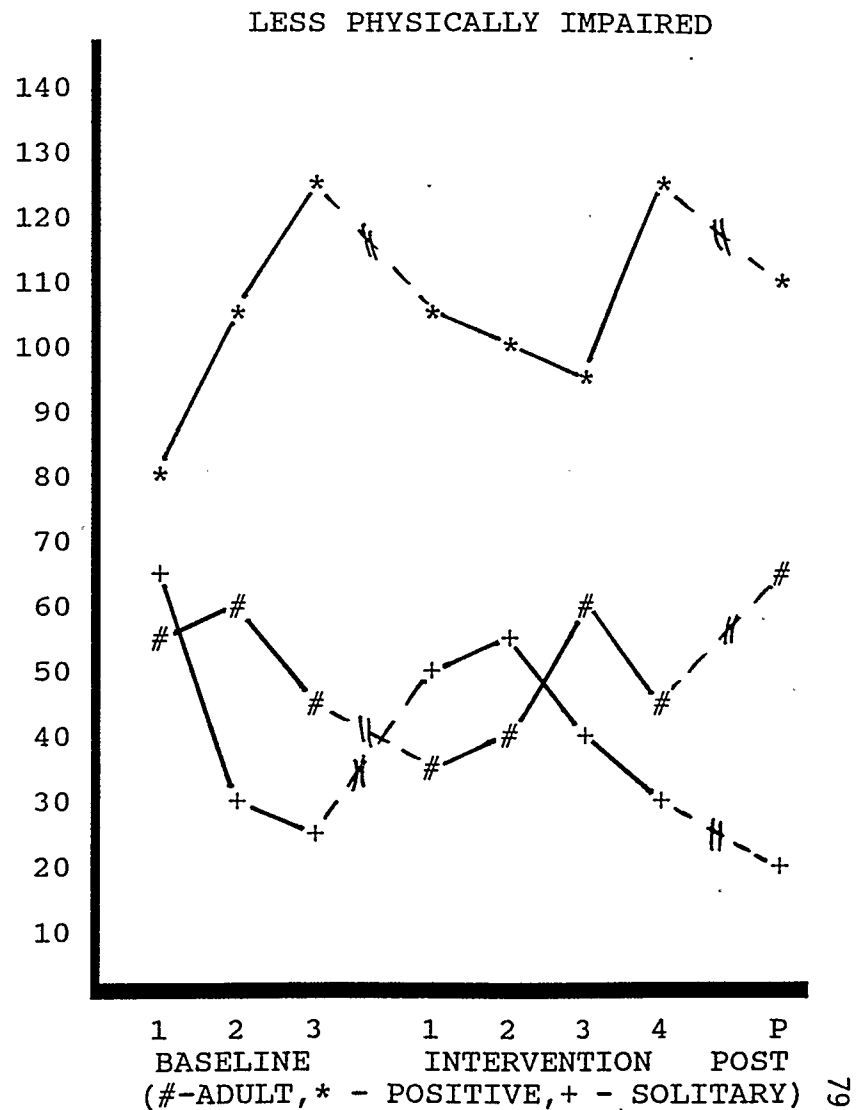
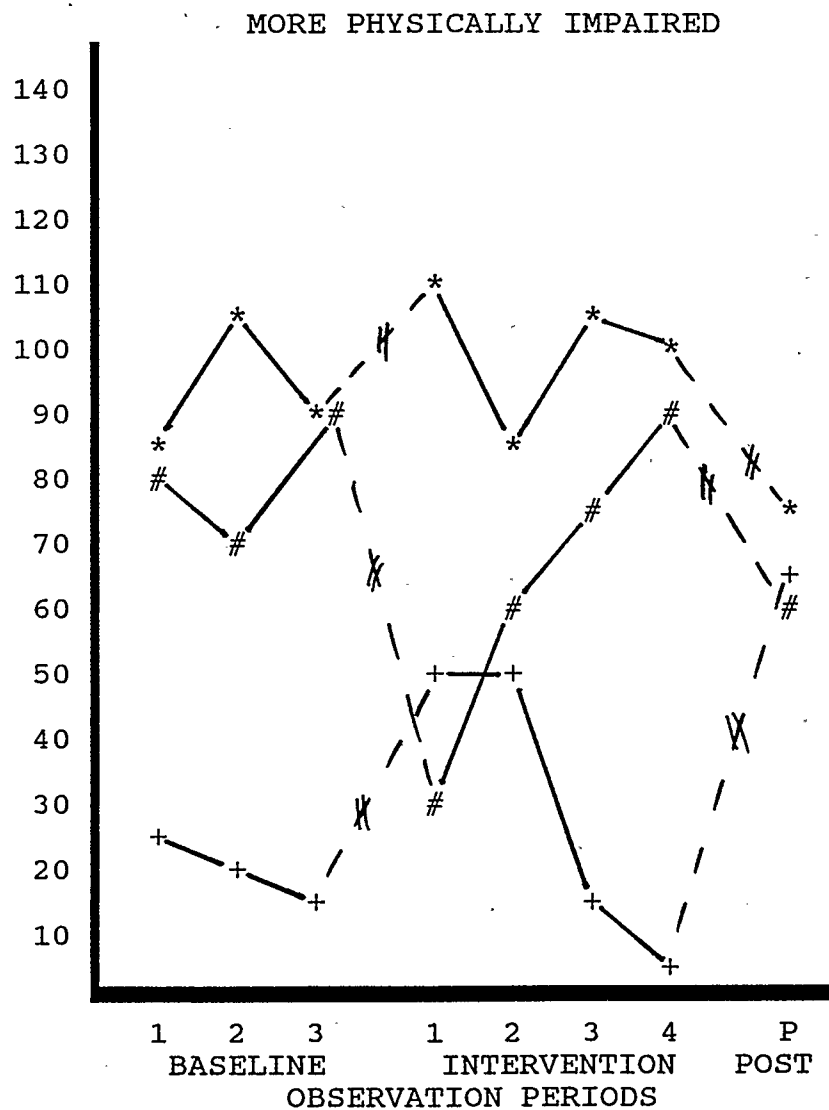
TABLE 14

FREQUENCIES OF PLAY BEHAVIORS FOR CHILDREN WITH
MORE AND LESS PHYSICAL IMPAIRMENT

PLAY BEHAVIORS	MORE PHYSICALLY IMPAIRED									
	BASELINE				INTERVENTION				POST	
	1	2	3	MEAN	1	2	3	4	MEAN	P
Positive	93	104	91	(96)	112	83	106	96	(99)	76
Adult	78	69	92	(80)	28	63	76	92	(65)	58
Negative	4	5	0	(3)	7	4	1	7	(5)	3
Solitary	25	22	17	(21)	53	50	17	5	(31)	63
TOTALS	200	200	200	(200)	200	200	200	200	(200)	200
LESS PHYSICALLY IMPAIRMENT										
Positive	71	106	127	(101)	105	100	96	124	(106)	110
Adult	57	61	47	(55)	35	42	60	44	(45)	65
Negative	6	4	3	(4)	13	6	3	3	(6)	04
Solitary	66	29	23	(40)	47	52	41	29	(43)	21
TOTALS	200	200	200	(200)	200	200	200	200	(200)	200

FIGURE 4

FREQUENCIES OF PLAY BEHAVIORS FOR CHILDREN WITH MORE AND LESS PHYSICAL IMPAIRMENT



three conditions of the study revealed no significance, chi square calculations utilizing adult frequency data over the three baseline and the first three intervention data points revealed significance at the .001 level ($\chi^2 = 17.88$, $df=2$).

The less physically impaired children (four girls and one boy) showed little differences in their positive social interactions across baseline, intervention and post intervention. They showed an increase in adult interactions at the post intervention data point (65) as compared to the baseline ($\bar{x}=55$, range 47-61) and intervention data points ($\bar{x}=45$, range 35-60) which was not significant. Adult interactions for this group decreased slightly from baseline to intervention and intervention to post. One-sample chi square calculations revealed no significance in comparing baseline mean, intervention mean and post intervention data points. Solitary play behaviors increased slightly from baseline to intervention and doubled at post intervention.

Visual inspection of the data in regards to the means of the baseline and intervention data and compared to the single post intervention data point revealed additional information. The more physically impaired children showed a slight increase in positive social play behaviors from baseline to intervention and decreased dramatically at the post intervention data point.

The less physically impaired children's mean frequencies of positive social play behaviors remained stable throughout

the study. Their adult interactions decreased slightly baseline to intervention and then increased at post intervention.. The solitary play behaviors of this group decreased from intervention to post intervention.

The more physically impaired children spent more time engaging in adult focussed activities over the course of the study than less physically impaired children (LPI - 26%, MPI - 35%) which one-sample chi square calculations found significant at the .001 level ($\chi^2 = 21.76$, $df=1$). The less physically impaired children spent slightly more time engaging in solitary play (19%) over the course of the study than more physically impaired children (15%) (see Table 15) which was significant at the .05 level ($\chi^2 = 5.22$, $df=1$). Overall the children with more physical impairment demonstrated more adult interactions than the children with less physical impairment.

Comparisons of the two groups on the basis of physical handicap by chi square analyses revealed statistical significance at the .001 level for solitary social play behaviors across the three conditions of the study (see Table 16). A significant difference was found between the frequency of solitary social play behaviors when comparing the two groups of children (more and less physically impaired). The more physically impaired group had a higher frequency of solitary play behaviors at the post intervention data point compared to the previous baseline and intervention means. The less physically impaired group had a lower frequency of

TABLE 15

FREQUENCIES AND PERCENTAGES OF TYPE OF PLAY FOR CHILDREN WITH
MORE AND LESS PHYSICAL IMPAIRMENT

	POSITIVE	NEGATIVE	ADULT	ISOLATE	TOTAL
LESS PHY.	839 (52%)	42 (3%)	411 (26%)	308 (19%)	1600
MORE PHY.	761 (48%)	31 (2%)	556 (35%)	252 (15%)	1600
TOTALS	1600	73	967	560	3200

TABLE 16

MEANS OF TYPE OF PLAY BY PHYSICAL DISABILITY

PLAY

BEHAVIORS

<u>POSITIVE</u>	MEAN	MEAN	
	BASELINE	INTERVENTION	POST
MORE PHYSICALLY	96	99	76
LESS PHYSICALLY	101	106	110
$\chi^2 = 3.0 \quad df = 2 \quad ns$			
MPI randomization p = 0.55		LPI randomization p = 0.72	

ADULT

MORE PHYSICALLY	80	65	58
LESS PHYSICALLY	55	45	65
$\chi^2 = 4.8 \quad df = 2 \quad ns$			
MPI randomization p = 0.53		LPI randomization p = 0.39	

SOLITARY

MORE PHYSICALLY	21	31	63
LESS PHYSICALLY	40	43	21
$\chi^2 = 28.39 \quad df = 2 \quad p < .001$			
MPI randomization p = 0.06		LPI randomization p = 0.19	

solitary play behaviors compared to the baseline and intervention means. The children with more physical impairment also had a significantly higher (.001) frequency of solitary play behaviors at post intervention than the children with less physical impairment.

SUMMARY

In the previous analyses, the effects of gender, age and physical disability on the social play interactions of the preschoolers with handicaps in this study were examined.

When the social play behaviors of all the children were examined there were no significant differences. When age, gender and physical disability were examined individually, the following significant differences were observed: a significant difference in solitary play for gender ($p < .01$), age ($p < .001$) and physical involvement ($p < .001$) over the three conditions of the study.

The over 4 group spent slightly less time engaging in positive social play than the under 4 group (47% and 53% respectively) over the three conditions of the study. The children with more physical impairments spent more time engaging in adult social activity than the children with less physical impairments (35% and 26% respectively). The children with less physical impairments spent slightly more time engaging in solitary play than the children with more physical impairments (19% and 15% respectively).

Over all three conditions of the study, the boys spent more time in adult social interactions than the girls (35% and 23% respectively).

Through the course of the study, a relatively small percentage of time was spent by all children in negative social behaviors (2%).

TABLE 17

FREQUENCIES OF SOCIAL PLAY BEHAVIORS
FOR EACH CHILD IN THE STUDY

CHILD 1

	BASELINE			MEAN	INTERVENTION				MEAN	POST
	1	2	3		1	2	3	4		
POSITIVE	8	29	34	(24)	2	21	26	23	(18)	17
ADULT	5	10	6	(7)	1	15	2	0	(6)	8
SOLITARY	26	0	0	(9)	37	4	11	17	(20)	15
NEGATIVE	1	1	0	(1)	0	0	1	0	(.3)	0

CHILD 2

POSITIVE	13	18	37	(23)	30	21	2	29	(21)	33
ADULT	6	12	2	(7)	10	5	31	11	(14)	7
SOLITARY	21	10	1	(11)	0	14	7	0	(5)	0
NEGATIVE	0	0	0	(0)	0	0	0	0	(0)	0

CHILD 3

POSITIVE	14	0	20	(11)	19	29	35	31	(29)	13
ADULT	16	26	20	(21)	4	11	5	7	(7)	21
SOLITARY	10	14	0	(8)	10	0	0	0	(3)	6
NEGATIVE	0	0	0	(0)	7	0	0	2	(2)	0

TABLE 17 (continued)

CHILD 4

	BASELINE			MEAN	INTERVENTION				MEAN	POST
POSITIVE	20	21	0	(14)	26	11	22	32	(23)	18
ADULT	16	16	17	(16)	4	10	6	6	(7)	19
SOLITARY	4	0	21	(8)	0	15	8	0	(6)	0
NEGATIVE	0	3	2	(2)	10	4	3	1	(5)	3

CHILD 5

POSITIVE	4	6	3	(4)	32	4	5	0	(10)	13
ADULT	36	24	30	(30)	8	21	33	30	(23)	14
SOLITARY	0	5	7	(4)	0	14	2	5	(5)	13
NEGATIVE	0	5	0	(2)	0	1	0	5	(2)	0

CHILD 6

POSITIVE	13	37	26	(25)	31	13	15	22	(27)	27
ADULT	7	3	11	(7)	4	9	15	5	(8)	8
SOLITARY	15	0	2	(6)	5	18	10	12	(11)	5
NEGATIVE	5	0	1	(2)	0	0	0	1	(.25)	0

CHILD 7

POSITIVE	32	29	29	(30)	22	14	24	32	(23)	10
ADULT	8	11	11	(10)	6	13	16	8	(11)	9
SOLITARY	0	0	0	(0)	12	12	0	0	(6)	21
NEGATIVE	0	0	0	(0)	0	1	0	0	(.25)	0

TABLE 17 (continued)

CHILD 8	BASELINE				MEAN	INTERVENTION			MEAN	POST
POSITIVE	17	1	30	(16)	18	33	29	17	(24)	15
ADULT	23	20	10	(18)	16	3	6	22	(12)	24
SOLITARY	0	19	0	(6)	6	1	5	1	(3)	0
NEGATIVE	0	0	0	(0)	0	3	0	0	(.75)	1
CHILD 9										
POSITIVE	5	32	32	(23)	35	27	18	8	(22)	15
ADULT	17	5	8	(10)	5	9	10	32	(14)	7
SOLITARY	15	3	0	(6)	0	3	12	0	(4)	15
NEGATIVE	3	0	0	(1)	0	1	0	0	(.25)	3
CHILD 10										
POSITIVE	38	37	8	(28)	4	10	24	25	(16)	24
ADULT	1	3	23	(9)	6	9	12	15	(11)	7
SOLITARY	0	0	9	(3)	30	21	3	0	(14)	9
NEGATIVE	1	0	0	(.33)	0	0	1	0	(.25)	0

CHAPTER FOUR

DISCUSSION

This observational study was undertaken to examine whether interactions with peers without handicaps in combination with social skills activities positively influences the social play behaviors of preschoolers with handicaps. The results of this study appear to generally support the research question although there are other possible explanations (e.g., maturation, history). The effects appear to diminish with removal of the intervention and therefore generalization of social play behaviors does not appear to have occurred. The exploratory nature of this study did not allow for the control of intervening variables or measurement of other interaction effects.

Some of the possible explanations for these results that are outlined in this section involve the interactive nature of the factors involving age, gender, physical disability as well as other issues involving familiarity, ability to deal with change, peer stimulation and adult presence.

Many of the patterns that emerged from the data involved the statistically significant differences in solitary play behaviors with regard to age, sex and degree of physical disability. Solitary play increased significantly: a) for the over 4 group from baseline to intervention, b) for the boys, intervention to post (return to baseline), and c) for the children with more physical impairment, intervention to post

(return to baseline).

Examination of the total frequencies of solitary play showed a decrease throughout the baseline period, dramatic increase at initial intervention, decrease throughout the intervention phase and dramatic increase post intervention. These trends may possibly indicate developmental maturity of play skills over time due to age and level of comfort in the classroom. An increase in these solitary play skills upon introduction of normally developing peers and social skill education may indicate an increase in anxiety and decrease in comfort levels when confronted with new situations and people. One interpretation of these results may be that as the unfamiliarity of the new children in the program diminished the play skills of the preschool children with handicaps increased developmentally beyond what they had demonstrated in the previous baseline and intervention periods. Another possibility is that both the children with and without handicaps gradually became accustomed to one another's abilities and styles of interacting. Unfamiliar children have been noted to silently observe each other before more complex social interchanges, such as mutual play are seen (Furman & Child, 1981). Also, unfamiliar pairs of children tend to play together less frequently and in a less complex manner, making fewer overtures, and are less successful when they do compared to more familiar pairs of children (Doyle, Connolly & Rivest, 1980). Thus, the results of this study were compatible with

many previous findings.

Later when experiencing another change in the program with the removal of the normally developing peers and discontinuation of the social skills activities they again demonstrated an increase in solitary play skills. These children had previously demonstrated more sophisticated or more socially interactive play skills so lack of more interactive social play behaviors would most likely indicate a lack of motivation on their part to interact with the other children with handicaps.

Past results of attempts at initiations of interactions with their peers with handicaps would also certainly influence their present behaviors. For instance if previous attempts at interactions resulted in ignoring these initiations, or negative behaviors in response to these initiations, then present interactions would probably decrease. Therefore the history of the relationship either previous to the introduction of the normally developing peers or during the study would mostly likely influence the patterns of later behavior.

Also the principle of reciprocity suggests that less interactive children may be encouraged to engage in more frequent social exchanges through their involvement with classmates more interactive than themselves (Cairns, 1979). When the more interactive children were removed from the group, positive social play behaviors decreased and solitary

play behaviors increased.

A description of the observation of one child provides an individual example of this interpretation (see Table 15): Child 3 was a three-year-old boy diagnosed with cerebral palsy. His cognitive functioning was tested at the 91 percentile on the Leiter International Performance Scale. He was a cheerful, personable child although his expressive language was difficult to understand. He was more physically impaired than many of the children in the group and had recently begun using crutches in the classroom.

During the study his solitary play behaviors were variable during the baseline phase (10, 14, 0, $\bar{x}=8$) and intervention phase (10,0,0,0, $\bar{x}=3$) and increased at post (6). His positive social play behaviors were variable during baseline (14,0,20 $\bar{x}=11$) increased during intervention (19,29,35,31 $\bar{x}=29$) and decreased at post (13). His adult interactions decreased from baseline (16,26,20, $\bar{x}=21$) to intervention (4,11,5,7 $\bar{x} = 7$), and then increased at post (21).

Generally when he was not involved in positive social play behaviors he was engaged in solitary play. For this child the introduction of peers without handicaps seems to have made a difference in his play skills. His positive social behaviors increased dramatically with appropriate modelling, language stimulation and increased activity level.

Previous studies (Field, 1984) have noted that when

experiencing loss of object attachment, "depressive symptomatology" is seen in young children separating from their friends. This could be a conceivable interpretation of the results of the study. After the removal of the normally developing children, there were many questions from the children with handicaps about where they were and when they were coming back even though explanations had been provided previously and a farewell party was organized for their last day together to provide closure for both groups of children.

Another possible explanation for the increase in solitary play from the last half of the intervention phase to post intervention as has been mentioned previously is the influence of the normally developing peers level of play skills. Specifically, these children provided appropriate modelling, language stimulation and responsiveness to their peers both physically and verbally. It has been well established that children tend to observe and imitate more competent peers (Field, 1980). The preschoolers with handicaps appeared to become more sociable in the presence of children with more developed social skills as has been cited in other studies (Strain, 1984b). The normally developing children provided a linguistically richer and more varied communicative perspective in the classroom.

The children without handicaps also demonstrated a change in their social play behaviors during their transition into the classroom. All four children were more reserved upon

arrival and for the first few weeks. Over time they grew accustomed to the routines and began to establish bonds with both the adults and children in the program. The different phases in their relationship development were observed. In the beginning both groups of children were quite shy and reserved with each other. Two of the children from the daycare (both girls) were barely acquainted previously but became good friends when they began attending the classroom. Half way through the study one of the girls moved and therefore dropped out of the study. At that time the remaining girl without handicaps became much more involved with the other girls with handicaps in the program.

The two boys without handicaps who joined the group had not met each other previously and their interactions were comparable to the interactions they had with all the other children in the group.

By the end of the study the parents of the children without handicaps were asked if they felt their children considered the children with handicaps as friends. The parents of the children without handicaps felt that they did. All of the children without handicaps shared with their parents the things they had done during their time in the classroom and related many stories about what the other children had said and done.

One boy initially attempted to assume an adult or helping role in the program with the children with handicaps and

treated them in a babyish manner. He eventually became an advocate for several of the handicapped children by speaking up to let others know that certain children were quite capable of doing many tasks independently and was protective of them being given the opportunity to do so. After attending the program for three weeks he reported liking the Multihandicapped Program more than the playschool he was attending. He was also the child who was the most disappointed about not being able to attend the PMH program at the end of the study and said he could come back anytime we wanted him.

The other boy without handicaps was more reserved during the study and rarely expressed much enthusiasm in participating (often asking if he had to go to the program each time). He reportedly asked his mother daily after the study was completed if he could go visit his friends at the PMH program to play.

AGE

In regard to solitary play of children with handicaps over and under 4 this difference may be indicative of their comparative level of maturity and awareness of those around them as well as their reaction to the changes what were occurring in the classroom throughout the study. Cognitive maturity is reflected in the older child's ability to sustain increasingly complex social interactions; children demonstrate

increased sociability with age and experience. Solitary play encourages the young child's sense of mastery of the environment whereas parallel play may represent great social maturity (Almy et al., 1980). In previous studies with developmentally delayed 4- and 5-year-olds, they appeared to be considerably less socially interactive with their peers in comparison to developmentally equivalent groups of 3- and 4-year-old normally developing children (Field, 1980). The over 4 group of children with handicaps pattern of solitary social play behaviors was consistent with the previous explanation of reversion of play skill behaviors due to lack of familiarity with their new peers. This could conceivably be due to their inability to ease into play activities with other children and therefore engaged in observing the activities of the newcomers. The decrease in both adult and positive play behaviors upon introduction of the normally developing preschoolers although not statistically significant reinforces this theory of reversion to less sophisticated or more isolated play behaviors.

The under four group showed less of a pattern in this area with more variability in their frequencies of play behaviors throughout the study. When examining the mean frequencies of solitary play for the under 4 group, the trend was in the opposite direction of the over four group with a continual decrease in solitary play behaviors throughout the study. Again this may possibility indicate less mature play

skills overall when behavior is more object oriented and becomes more peer directed with increased cognitive development and maturity. This could also be due to fewer previous group experiences with peers than the over 4 group. Children with limited peer experiences have been found to have less sustained interactions than children with prior experience. The influence of unfamiliarity issues would come into play with this group as would attainment of the necessary social skills which are developmental in nature. There is evidence which suggests that intellectual development facilitates social adaptation (Emmerich, Cocking & Sigel, 1979), understanding the concepts of social interactions emerge with age and become more complicated as the child comes to understand social interactions. As with all areas of development there is no single age at which an ability is seen in all situations. Therefore specifying an age level for each step in the development of social interactions is not possible.

Age may also be a factor in these results in that the younger children may have been exposed to fewer changes in their lives than the older children. Children with handicaps especially those identified early in life are subjected to a variety of adults, programs and continual changes through early intervention efforts. These children in all likelihood could have been treated by a dozen or more therapists by the age of three or four years. Children with handicaps in

comparison to normally developing children experience more exposure to foreign situations, environments, professionals and stresses. A typical child in this group, identified at or shortly after birth would usually undergo numerous medical tests, as well as a variety of physical intrusions and examinations, receive follow-up through a hospital clinic or early intervention program both at home and in a hospital environment, most would have attended an infant therapy program at least weekly, before being referred to this program. All of these activities follow a general routine which includes long hours of waiting for appointments, a feeling of anxiety on their parents part as well as anxiety on the child's part, introduction to a variety of professionals numbering in the dozens by the time they are 3 or 4 years of age. The children with physical handicaps usually have added appointments for fittings of adapted devices and in some cases surgical procedures.

GENDER

The dramatic decrease in adult social play behaviors for the handicapped preschool boys and the statistically significant increase in solitary social play behaviors may reflect a trend on the boys part to observe from a distance the new additions to the group therefore were less interactive with anyone (peer or adult). As the boys became accustomed to the additional children in the room their adult interactions

increased. This may show that behavioral differentiation occurs as children become increasingly familiar with one another as has been found by Gottman and Parkhurst (1980). This same pattern was duplicated to a lesser extent by the girls. The fact that the boys overall had more adult interactions than the girls and the girls engaged in more solitary play may be due to the fact that passive behavior is encouraged in girls (Mindes, 1982). It is interesting to note that the boy's solitary play increased dramatically upon removal of the normally developing peers. One can only speculate that perhaps the loss of age appropriate peers created a void or lack of stimulation needed to encourage this group to engage in positive social play behaviors. This withdrawal from the group could indicate a reaction to loss of friends and responsive peers in the classroom as mentioned previously. The change in the overall environment with regard to age appropriate role models, physical activity, language stimulation, reciprocity and level of play was quite dramatic. The noise level decreased, the activity level in the room decreased as did the amount of verbal interactions.

The opposite reaction was seen with the girls. Their solitary play behaviors declined minimally while their adult interactions increased after removal of the children without handicaps. This may again be an indication of gender role identification with girls reaching out for stimulation and reassurance from caregivers in situations of change and

uncertainty. It may also merely suggest that with the boys not clamoring for adult attention the adults had more time and inclination to spend interacting with the girls. Unfortunately there appears to be a lack of data or investigation into this area with regard to gender differences in play behaviors of children with handicaps. A majority of the studies in this area look at the handicapped population as a homogeneous group and fail to differentiate by gender or disability.

PHYSICAL IMPAIRMENT

Some obvious patterns emerged in the results of the groupings by physical impairment. The children with more physical impairment spent more time engaging in adult social play behaviors, most likely due to their limited ability to manoeuvre around the room to the different activities. Also their physical dexterity to manipulate the materials, toys and fine motor activities often required adult intervention and assistance which would of course lend itself to verbal and nonverbal adult interactions. The less physically impaired children spent more time in solitary social play behaviors than the more physically impaired children. This again is more likely due to adults intervening to make sure the more physically impaired children were in close proximity to other children and were not excluded from the group and their

activities. More decisions were probably made for the more physically impaired children than were for the less physically impaired children. The limitations in mobility of the children with more physical impairment reduced their opportunities for exploring their environment and for seeking out social play interactions independently.

The group of children with handicaps as a whole demonstrated an increase in solitary play upon introduction of the normally developing children. The children with more physical impairments increased in solitary play upon withdrawal of the intervention while the children with less physical impairments decreased slightly. In the case of the children with more physical impairments, their positive play behaviors decreased post intervention while the children with less physical impairments' positive play behaviors remained virtually the same. This may suggest that, with less children to interact with, the adults made less effort to ensure the children with more physical impairments were stationed near peers to interact with or that the children themselves made less effort to physically place themselves near to other children and as has been mentioned previously they may have withdrawn due to lack of stimulation.

Another possible explanation may be that children find it easier to engage in positive social play behaviors with peers who are responsive to them; children who take the initiative to approach another child and engage them in play scenarios

both verbally and nonverbally. Previous research studies have found that pairing children with and without handicaps is beneficial, in that, the children without handicaps often takes the lead in the friendship, opening up exchanges between them (Field, 1980). Children with physical handicaps often have difficulty in being able to appropriately engage another child in play situations and have demonstrated more solitary play behaviors and less positive social play behaviors with peers. This immobility as well as lack of language and social skills can also hinder their capacity to initiate interactions. The differences may be due to a complex interaction of variables such as age, gender, physical impairment, language and social skills. Complexity of play increases over time as competency in other domains increases (language, motor skills, etc.). The play behaviors of children with handicaps have been found to correlate positively to each child's abilities in all areas of development (Fewell & Kaminski, 1988).

An illustration is drawn from the observations of one child (see Table 15): Child 9 was a 2-and-a-half-year-old boy diagnosed with cerebral palsy. His cognitive functioning was at the 92nd percentile on the Leiter International Performance Scale. He was one of the more physically impaired children in the group and depended upon adults to move him from place to place or propelled himself in a STAR car (a self-propelled three wheeled car low to the floor). He required special

seating when at a table that provided stability through rigid support and seat belts and chest straps. His fine motor skills were age appropriate however.

During the study this child's solitary play behaviors decreased throughout the baseline phase (15,3,0, $\bar{x}=6$), increased dramatically in the third month of the intervention phase (0,3,12,0) but the overall mean of the intervention phase was 4. His solitary play behaviors again increased dramatically after the children without handicaps had left the program (15). His positive social play behaviors increased during baseline (5,32,32, $\bar{x}=23$), decreased throughout intervention (35,27,18,8, $\bar{x}=22$) and increased at post (15) from the last intervention data point.

His adult play behaviors were variable during baseline (17,5,8, $\bar{x}=10$), gradually increased during the first three intervention data points and increased dramatically at the fourth intervention point (5,9,10,32) and then decreased at post (7)

Generally when he was not engaged in positive play he was interacting with adults. Although this child demonstrated a great deal of variability in his social play behaviors he did appear to be affected by the removal of the children without handicaps by demonstrating more solitary play behaviors after their discontinuation in the program.

SOCIAL SKILL ACTIVITIES

The social skill activities that were introduced each day the preschoolers without handicaps attended the program are no doubt another contributing factor to these results. Themes and activities that focussed specifically on making friends, playing together and cooperation were only a few of the topics explored through role playing activities and exercises to increase participation and interactions among the group members. The children (both with and without handicaps) were often paired with each other for these activities and the staff noted that these pairings often continued into the free play time if only for a few minutes. The themes of these activities were also reinforced throughout the afternoon in structured and unstructured activities both in large and small groups.

One would assume that these modelling, role-playing, and problem-solving experiences would provide a forum for practicing skills that were not an integral part of the child with handicaps repertoire of social play behaviors. The free play time that immediately followed the social skill activities provided an arena to generalize and further practice these skills.

Other studies have structured these types of activities more rigorously by teaching the preschoolers without handicaps specific social play skills in isolation of the children with handicaps and then reinforcing (either tangibly or verbally)

their efforts to do so with the children with handicaps. This study attempted to introduce social skill activities in a way where each member of the group (handicapped or not) was an equal participant.

If success of these activities was measured by the children themselves, this was an overwhelming component of the program. The children thoroughly enjoyed this time together and became fast friends with Candoo and Wildoo, two of the puppet friends from the My Friends and Me kit. More objective means of determining the influence these activities had on the social play behaviors of the children with handicaps are more difficult to define and measure.

ADULT PRESENCE

The number of adults and their interactions with the children in the program was another important influence in these results. The all female Child Care staff in the room did not interact to a great extent with the children with and without handicaps during the free play activity times of the study. This was suggested to enable all of the children to, as independently as possible, interact with each other without the interference or distraction of adults. Often times when an adult joined a group of children playing, attention was focussed on the adult rather than on the interactions between the children in the group. The staff would mainly assist in providing adaptive equipment when necessary, moving the more

physically involved children to different activity centers and intervene when necessary in disputes between children. For the most part they engaged in observation of the group providing and supporting developmentally appropriate activities. When appropriate they would attempt to reinforce some of the themes introduced in the social skills group each day around friendship, problem-solving, playing together, etc. Therapy staff spent little time in the play activities; their interactions with the children were mainly in individual and group therapy sessions with both the children with and without handicaps in varying combinations. The average ratio of children to adults in the general area was usually 1:3.

To illustrate an individual example is given (see Table 15): Child 4 was a four-year-old girl diagnosed with brain tumor and seizure disorder. Her cognitive functioning was tested at the low average range. She demonstrated some behavior problems and aggressiveness with other children. She was completely independent in her mobility and gross motor skills.

Her positive social play behaviors decreased during baseline (20,21,0 $\bar{X}=14$) increased initially during intervention (26), remained variable during the following intervention data points (11,22,32, $\bar{X}=23$) and decreased at post (18).

Her negative social play behaviors were the highest of all the children and increased dramatically upon arrival of

the children without handicaps and then gradually decreased throughout the intervention phase.

Her adult interactive behaviors were stable during baseline (16,16,17, $\bar{x}=16$), were lower through the intervention period (4,10,6,6, $\bar{x}=7$) and increased dramatically at post (19).

Here solitary play behaviors fluctuated a great deal during the study - baseline (4,0,21, $\bar{x}=8$), intervention (0,15,8,0, $\bar{x}=6$) and post (0).

Generally during the intervention phase when she wasn't engaged in positive social play behaviors she was involved in solitary play as compared to the baseline phase where she was involved in adult interactions more than solitary play.

This child appears to have been affected by the introduction of peers without handicaps into the program indicated by the reduction of adult interactions during the intervention phase which increased when the children without handicaps were removed. Perhaps she sought out adult attention previous to the intervention to meet her need for stimulation and once the peers without handicaps were introduced they were able to meet these needs.

SUMMARY

The interactive nature of the many factors discussed appear to have contributed to the results of this study. Developmental maturity in play skill acquisition, unfamiliarity and familiarity influences, abilities of children with handicaps to deal with change and loss of

friendships, and the effects of stimulation by interacting with preschoolers without handicaps are some of the possible explanations for the results of this study. Age, gender and degree of physical impairment are other factors which are difficult to analyze in isolation but certainly contribute to the interpretation of these results. No one combination of factors appeared to be positively influenced by the intervention though very generally the children with higher cognitive functioning appeared to demonstrate the clearest correlation.

ADVANTAGES AND DISADVANTAGES

The results of this study were limited by several factors; some within the control of the researcher and some not.

The major limitation was working within an existing program for handicapped children. In order to plan group social skill and free play activity times involving the group as a whole, individual therapy time slots were reduced. Due to this stipulation the program limited the days that the preschoolers without handicaps could attend the program to three days per week for a four month period. A longer and more intensive time frame could have possibly been more effective. An important positive factor for this study was to measure social play behavior by letting children with handicaps behave naturally in their own social play setting.

This naturalistic setting provided observation of play behaviors in a setting and in situations which this group of preschoolers with handicaps were already familiar and comfortable. However, further research in this area would require more stringent controls or a more tightly designed study with a larger sample size and random sample selection. Absence of a control group also limits the interpretation of the results of this study in terms of generalizability to larger populations of handicapped preschoolers.

The exploratory nature of this study provided the flexibility and freedom to explore the problem area in question and build methodology that might be used in later research. However, control over a variety of variables was impossible so as to avoid interference with the day-to-day running of the classroom.

Several unanticipated events occurred during the study that may have affected the overall results. Two of the handicapped children that initially consented to be involved in the study were discharged unexpectedly at the end of the baseline data collection phase. Start of the intervention phase had to then be delayed so baseline data could be collected on the two new children joining the program. Due to the delayed start, only one post data point could be collected before the end of the program year. Also, one of the nonhandicapped children moved half way through the study and it was felt a replacement at that stage in the study would be

unwise.

The assessment tool used in this study provided valuable information in terms of the preschooler's with handicaps social play behaviors. The behavioral observation categories were adequate but in retrospect it would have been useful to note who the children were playing with when engaged in the various positive social play categories (parallel play, play organizer, share, assistance request - peer, complimentary statement, assistance). Further improvements such as expanding the solitary play category to include information about what the child was doing while engaged in solitary play (i.e., playing with toys, unoccupied - vacant staring, brief gazing at adults or peers) could increase its potential for use by providing more specific information about social play behaviors of children with handicaps. An onlooker category would have also provided useful information in determining who or what the child was focussed on when engaged in play other than solitary play or positive social play behaviors.

Parental involvement by the parents of the children with handicaps in this study was minimal. The children with handicaps were bussed to the program each day so parental contact only occurred when they were on-site to meet with the treatment team or observe the program which was scheduled approximately once or twice each month. This study could have benefited from more information and involvement from these parents, as they were the most important people in these

children's lives. Therefore, important information about the preschoolers with handicaps play behaviors outside of the classroom was not collected.

It would also have been beneficial to investigate friendships already part of the preschoolers with handicaps lives outside of the classroom. This would have most likely influenced their ability to develop friendships in the classroom. The overall insights into the group's naturally occurring play opportunities would have been useful information. Who did they play with, what social play behaviors did they exhibit and where and when did these opportunities happen. This study examined a small portion of their overall lives and a more wholistic picture of their play skills would have been worthwhile.

IMPLICATIONS FOR FUTURE RESEARCH AND PRACTICE

This study appears to reinforce previous findings that interactions between children with and without handicaps positively influences the play behaviors of the children with handicaps. Therefore one would surmise that segregated programs do not provide the necessary stimulation, modelling and responsiveness that handicapped children need in the development of their social play behaviors. This would also most likely be true for all skills and abilities. Children with handicaps need to have their needs met in community settings with age appropriate children to develop to their

fullest capabilities. This is not to say that there isn't a need for therapy and individualized programming but a concerted effort needs to be made to provide for each child's needs in the setting where they will have the greatest opportunity to practice these skills as well as observe others demonstrating these skills. Often the skills that have been targeted as requiring intervention are introduced and rehearsed in artificial environments or settings and unassisted or unsupervised practice is discouraged or not offered. Normally developing children are given the opportunity to refine skills on their own often without adult assistance or guidance. Many times children with handicaps unfortunately are not availed of these opportunities. For example, scissors are used in fine motor activities implemented by an adult and once the therapy session is over they are put back in the drawer until the next session. Professionals involved with children with handicaps need to look critically at how, when, and where they provide the services they deliver.

These findings also have a number of implications for the assessment and treatment of young children with handicaps. The major conclusion which can be drawn from these results appears to be in regards to the stress and uncertainty that handicapped children appear to demonstrate when confronted with change. There needs to be a greater sensitivity to the needs of this population of children when it comes to

professional interventions. One needs to capitalize on the notion that familiarity with those they are interacting is essential to elicit their best performance and efforts must be made to reduce the stress they must feel when confronted with numerous strangers. As these results have suggested, these children (and there is no reason to believe differently of all children) need to be given the time to adjust to not only people but environments and situations before they are assessed, examined, tested, evaluated, etc. Interactions with a multitude of professionals need to be kept to a minimum with one adult assessing and intervening on behalf of many and allowing the child time to adjust to the unfamiliarity of the setting and situation. This type of transdisciplinary focus which Ferguson and Brynensen (1991) characterize as "a joint team approach emphasizing collective problem-solving around the client's needs, ...the expertise of individual team members is recognized and used to train other team members...(and) roles and responsibilities are shared by more than one team member." (p. 263), might help to alleviate the stress that young children with handicaps must experience when introduced to a number of professionals at one time.

Due to the amount of adult interactions in this study, future research with children should address child/adult ratios. The ratio in this study of 1:3 could possibly be increased to 1:4 or 1:5 to determine if the number of adults in the room hinder or encourage more social play behaviors

and/or reduces the amount of adult/child interactions. Questions which have arisen in this study around gender of preschoolers with handicaps and competition for adult attention addresses an area that would be interesting to have more information about and important to explore.

Also, professionals interacting with children with handicaps need to monitor their contacts carefully, especially in their style of suggesting rather than directing activities. The type and amount of adult interactions with children with and without handicaps would also provide valuable information for future programming.

The ratio of children with and without handicaps was also an important variable in this study. This is another factor that could be investigated in detail to provide more information to those implementing integrated programs. Does the group composition of handicapped and nonhandicapped children influence the type of play behaviors exhibited by the handicapped children. Other factors such as age, gender and degree of physical disability in regards to friendships of children with handicaps need to also be investigated more comprehensively.

These results support the already occurring shift from integration to full inclusion of children with handicaps into community settings with their same age peers. They support the notion that all children need to be included in the activities provided in their neighborhoods - educational,

social and recreational. Every child should be provided with the opportunities to learn and socially play in their own community environments. This would mean an environment which is flexible and adaptive in meeting the special needs of all children by providing whatever support and assistance they may need. Children with handicaps should be encouraged to develop friendships with other children in naturally occurring situations as do all children. The goal should be to enable all children to be accepted and valued as worthwhile members of their communities. Services should go to where the children who need them are rather than asking the children to go where the services are. The positive benefits of allowing children with and without handicaps to interact and learn from each other would appear to outweigh the convenience of providing these services in segregated environments.

In conclusion, the results of this study appear to support other research results concerning the topic of integration and social play behaviors. It appears that interaction between preschoolers with and without handicaps is a positive and worthwhile endeavor. This study would appear to support, that for a variety of reasons, children with handicaps benefit from these interactions in conjunction with social skills education. Also, direct teaching of positive social play behaviors and early social skills education are important areas which have only recently begun to be addressed. A concerted effort needs to be made to incorporate

these activities in the daily programming of children with handicaps.

Many areas have yet to be investigated with regard to social play behaviors especially in terms of generalization of these skills with children with handicaps. Hopefully the next few years will provide more direction toward effective strategies involving the methods and procedures in meeting and assessing these very important needs.

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APPENDIXES A,B,C

ETHICS COMMITTEES LETTERS OF APPROVAL



ALBERTA CHILDREN'S HOSPITAL
CHILD HEALTH CENTRE

1820 Richmond Rd. S.W.,
Calgary, Alberta, Canada T2T 5C7

(403) 229-7211

September 13, 1989

Ms. Beth Parrott
Preschool Services
Alberta Children's Hospital

Dear Ms. Parrott:

Re: 89-18 The effect of Peer Tutoring and Social Skills
Training on the Social Skills of Handicapped Preschoolers

Thank you for responding to the reviewers comments concerning the above proposal. On the basis of this additional information your proposal has been approved by the Alberta Children's Hospital Research Committee.

We wish you every success in its execution.

Yours sincerely,

David I. Hoar, Ph.D.
(Chairman
ACH Research Committee

DIH/mem



THE
UNIVERSITY
OF CALGARY

Health Sciences Centre

3330 Hospital Drive N.W., Calgary, Alberta, Canada T2N 4N1

Faculty of MEDICINE
DEAN'S OFFICE

Telephone (403) 220-6842

1989-10-16

Ms. Beth Parrott
Department of Educational Psychology
The University of Calgary
Calgary, Alberta

Dear Ms. Parrott:

Re: The Effects of Non-Handicapped Peer
Interactions on Social Interaction
Skills of Handicapped Preschoolers

The above-named research project has been granted ethical approval by the Conjoint Medical Ethics Committee of the Faculty of Medicine, University of Calgary, and the Affiliated Teaching Institutions. Please note that this approval is subject to the following conditions:

- (1) a copy of the informed consent form, if employed in this project, must be given to each research subject;
- (2) a Progress Report will be required in one year, 1990-10-16, and/or at the termination of this project;
- (3) the Progress Report must contain the following information:
 - (i) a description of any protocol modification;
 - (ii) the number of subjects recruited;
 - (iii) any unusual and/or severe complications encountered;
 - (iv) the expected date of termination of this project;
 - (v) any other information you consider relevant.

Ms. Beth Parrott

- 2 -

1989-10-16

Please accept the Committee's best wishes for success in your research.

Yours sincerely,



T. D. Kinsella, M.D.
Assistant Dean (Medical Bioethics),
and Chairman, Conjoint Medical
Ethics Committee

TDK:smh

c.c. Research Committee,
Alberta Children's Hospital
Ms. E. Hughson (information)
Mr. E. Hicks (information)



INTER-OFFICE

TO: Dr. Wally Unruh, Chair
Faculty of Education
Ethics Review Committee

FROM: Dr. Bryan Hiebert, Chair
Department of Educational Psychology
Ethics Review Committee

DATE: 89:10:16

Re: Ethics Review

The Department of Educational Psychology Ethics Review Committee has completed its review of the following proposed research:

"The Effects of Non-Handicapped Peer Interactions on Social Interaction Skills of Handicapped Preschoolers
By: Beth Parrott

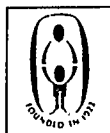
The committee recommends that this proposal be approved.

Two copies of the proposal are attached.

BH:jgms
Attachs.

APPENDIXES D AND E

PARENT CONSENT LETTERS



ALBERTA CHILDREN'S HOSPITAL
CHILD HEALTH CENTRE

1820 Richmond Rd. S.W.,
Calgary, Alberta, Canada T2T 5C7

Telephone (403) 229-7211
Fax (403) 229-7221

Dear Parent/Guardian,

I am a graduate student in Educational Psychology at the University of Calgary. In conjunction with Alberta Children's Hospital Preschool Multihandicapped Program, I will be conducting a study to be used in my Master's thesis to observe the development of play and social interaction skills in handicapped children. For purposes of the project, we will require four nonhandicapped children to be involved for two and a half hours (12:30 - 3:00), three afternoons each week (Monday, Wednesday, Friday) with a group of ten handicapped children. This project will commence the second week of January 1990 and continue through April 1990. We hope to look at the role of nonhandicapped peers and social skills training in the development of play skills in handicapped children. The data that is collected from this project will be analyzed as a group and individual children will not be identified or singled out.

If you would agree to let your child participate in this project, please sign the form below and return it as soon as possible. You may withdraw your child from the research without penalty at any time during the study. I will also contact you if I will not be using your child in the data that is obtained. If you have any further questions or concerns, please feel free to contact me:

Ms. Beth Parrott 277-8986 or 229-7012

After my study is completed, the information that is obtained will be made available to you upon request.

Thank you for your cooperation.

CHILD'S NAME _____

I agree to have my child participate in this project.

PARENT/GUARDIAN SIGNATURE _____



ALBERTA CHILDREN'S HOSPITAL
CHILD HEALTH CENTRE

1820 Richmond Rd. S.W.,
Calgary, Alberta, Canada T2T 5C7

Telephone (403) 229-7211
Fax (403) 229-7221

Dear Parent/Guardian,

I am a graduate student in Educational Psychology at the University of Calgary. In conjunction with Alberta Children's Hospital, I will be conducting a study towards a Master's thesis to observe the development of play and social interaction skills in handicapped children. In order to do this, the children will be involved in the regular program activities with four nonhandicapped children from ACH/Knob Hill Daycare, three afternoons each week. These observations will not interfere with the program activities. The data that is collected from this project will be analyzed as a group and individual children will not be identified or singled out. This study will commence the second week of January 1990 and continue for a four month period.

If you would agree to let your child participate in this project, please sign the form below and return it as soon as possible. You may withdraw your child from the research without penalty at any time during the study. I will also contact you if I will not be using your child in the data that is obtained. If you have any further questions or concerns, please feel free to contact me:

Ms. Beth Parrott 277-8986 or 229-7012

After my study is completed the information that is obtained will be made available to you upon request.

Thank you for your cooperation.

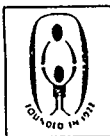
CHILD'S NAME _____

I agree to have my child participate in this project.

PARENT/GUARDIAN SIGNATURE _____

APPENDIX F

LETTERS TO AND FROM DR. SAMUEL ODOM
CONCERNING USE OF OBSERVATIONAL CODING SYSTEM



ALBERTA CHILDREN'S HOSPITAL
CHILD HEALTH CENTRE

1820 Richmond Rd. S.W.,
Calgary, Alberta, Canada T2T 5C7

Tel: (403) 229-7211
Fax: (403) 229-7221

May 1, 1991

Samuel Odom
Developmental Training Center
Indiana University
2853 East Tenth Street
Bloomington, Indiana 47405

Dear Dr. Odom,

As a graduate student at University of Calgary I am currently involved in studying the effects of non-handicapped peer interactions on play behaviors of handicapped preschoolers in a reverse integration study. I have used the operational definitions of the behavioral categories I found in an article by Odom, Strain, Karger and Smith (1986) from the Journal of the Division for Early Childhood in my research. I am writing to request any additional information you might have about this coding of social behavior with preschool children (i.e., play organizer, share, share request, etc.), especially validity and reliability information.

I have followed your work and research closely the past few years and have incorporated the Preschool Integrated Curriculum into our programs in my work here at the Alberta Children's Hospital.

Thank you for your assistance.

Sincerely,

Beth Parrott
Director of Child Care

Samuel L. Odom

5/23/91

Ms. Parrott,

I am enclosing a copy of a chapter we wrote on assessment of social interaction, the current coding system that we use (it is computer based) and an Observer Impression Scale that we use to provide supplemental qualitative information. Good luck with your research.

Sam Odom

APPENDIX G**SAMPLE OF BEHAVIORAL OBSERVATION CODING SHEET**

CHILD'S NAME				DATE OF OBSERVATION				TIME OF OBSERVATION				SETTING				OBSERVER			
	AF	AS	CS	DF	IG	NM	NV	PO	PP	RA	RP	RS	SH	SP	SR				
1																1			
2																2			
3																3			
4																4			
5																5			
6																6			
7																7			
8																8			
9																9			
10																10			
TOTAL																TOTAL			