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by

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Abstract

THE EFFECTS OF NATURALLY OCCURRING INTERRUPTIONS ON NURSERY SCHOOL CHILDREN'S PLAY IN A PEER GROUP SETTING

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Several studies suggest that having the opportunity and capacity to play imaginatively is beneficial to children and that interruptions of play may impede the development of this skill. This study categorizes naturally occurring interruptions and distractions experienced by preschool children during peer group play and demonstrates that different types of interruptions have differing effects on children's play level and affect. Fantasy predisposition and social experience as indicated by birth order are evaluated for their effect on children's responses to interruptions.

Twenty-four children from two Four Year Old classes at a suburban nursery school were each observed for 10 minutes during free play period on four different days over the course of two months. The children were divided evenly between high and low predisposition for fantasy, according to Singer's Imaginative Play Predisposition Interview (IPPI). Eleven were first born or only children and 13 were later born. Narrative accounts of each child's actions, verbalizations and facial expressions and those of people interacting with him provided the raw data. Protocols were rated by the author and an independent rater for presence and type of interruption, level of play and affect prior and subsequent to each interruption,

and predominant level of play for the observation period. Categories of interruption include adult interruption of individual child and of group, peer dispute--interruptions lacking respect for the child's activity--and peer attempt to change direction of play and distraction, which do not lack respect. Instructions and rating scales were devised or adapted by the author. Interrater reliability was adequate for all scales.

Ratings for play and affect level were converted into change scores by subtracting the play or affect level before each interruption from the after interruption level. Mean change scores for each child for each type of interruption were analyzed using t-procedures.

As hypothesized, differentiation between kinds of interruptions is both possible and useful. Interruptions which do not show respect for the child's current activity are more disruptive to both play level and affect than interruptions which are neutral or which show respect. Adult interruptions, on the average, have a more negative impact on play level than interruptions by another child. Adult interruptions appear to be more powerful than child interruptions, preceding more dramatic shifts in play level in both positive and negative directions. Children have a less negative affective response to distractions than to interruptions.

Interruptions were frequent experiences for most children (the mean frequency of interruptions is one every two minutes and one distraction every 4.5 minutes). Children are interrupted much more often by other children than by adults. The most common interruption is one child attempting to change the direction

of another child's play. Most interruptions have no noticeable effect on play or affect level, but the overall mean change scores are very slightly negative (-.146 for play level and -.057 for affect level).

Later born children, with their greater social experience, are less disrupted in their play by peer disputes, and there is a trend for them to better maintain their play level following interruptions by peers seeking to change direction of play than first born children. This difference is not seen following adult interruptions. Fantasy predisposition as measured by the IPPI is not a significant determinant of number of interruptions experienced, predominant level of play, or response to any type of interruption. It is suggested that social imaginative play be differentiated from solitary imaginative play in that it requires communication, empathy, and a willingness and ability to interact with others. Interruptions which do not lack respect for the child are an expected and integral part of social play.

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CHAPTER I

RATIONALE AND REVIEW OF THE LITERATURE

Quietly, we step outside of the nursery school classroom and stand unobtrusively on the edge of the playground. To us, it is an exciting scene. Three children are sitting in the sandbox singing "Happy birthday to you" and blowing out imaginary candles on the sand "cake" in front of them. A fourth child comes over and tries to grab a shovel from one of the singers, saying "I need this." The party stops momentarily as one of the birthday children says firmly, "I had it first." The two glower at each other for a few seconds, then the interloper retreats back to kicking sand and the children resume singing. Nearby, two children are climbing on the jungle gym, alternately shouting "I'm higher than you are." Two other children rush breathlessly toward them, shouting "Quick, onto the ship, the sharks are after us!" and clamber up the jungle gym. One of the newcomers explains to the children already on the gym, "This is the boat, see. I'm the captain. There are the sharks." He points to the ground beneath them. One of the children previously on the gym says, "No, I'm the captain" and begins turning an imaginary helm and making motor noises. "Let's get out of here." The first "captain" begins to pout, then brightens, saying "We're both captains. I'm the one who is shooting the shark." And he points an imaginary gun at the imaginary sharks. The second child who had already been on the jungle gym shouts, "I'm the highest now." Getting no response from the other three children who are busy on the ship, he sits on his perch for a moment, then gets down and begins riding a tricycle. Yet

another child, who had been drawing a picture on the ground with a stick, looks up at the noisy group on the jungle gym. Her mouth drops open, the stick falls out of her hand. For a few seconds she is motionless, staring. Then she runs over to the "ship" with a whoop and climbs aboard.

We are dazzled. We have only looked at half of the playground for two minutes and our head is swimming. What is happening here? Children are playing. They are playing together. They are interrupting, distracting and stimulating each other. Some of the games appear to involve the use of symbolism; others involve only the appropriate use of a play material without imaginative embellishment. We note that some of the children change games as we watch them; others not only change games but also change level (or type) of play. Frequently, these changes seem to be in response to some discernible activity on the part of another child. We remember watching the playground when some action of the teacher appeared to foster change in play level. But other times a child is interrupted and he returns to the same game with the same degree of imaginativeness. How can we begin to understand the vicissitudes of children's play in a peer group setting? We must define play, consider different types of play, and discern whether play has any function or value which makes it a subject worthy of our further attention. Then we may explore the conditions which tend to enhance or diminish the likelihood that any particular type of play will emerge. We may try to establish under what conditions children actually play in their everyday lives. Then we may focus on the child playing in nursery school to try to understand the ramifications of playing in an active environment

subject to the interruptions, distractions and stimulation provided by other children and by adults in authority.

Definition of Play

Defining play is not an easy task. Almost everyone is sure he recognizes play when he sees it, yet when we try to form a positive statement of just what play is, it seems to elude us. We can, however, state some characteristics which describe play. Play is inherently rewarding; it has no goal outside of itself. Play is fun: it is a source of positive affect and is frequently accompanied by expressions of joy or satisfaction by the player. Play is an activity pursued by choice; the player maintains some control over its format and content and may end his participation when it no longer suits his desires. Play requires active involvement from those playing. Garvey (1977) chooses these four features to describe play, then adds "Play has certain systematic relations to what is not play" (p. 5). Play is behavior in the "simulative mode" which contrasts with the behavior from which it is derived and requires a "non-literal" orientation. Interestingly, investigators pursuing both theoretical inquiry into (Klinger, 1964) and naturalistic studies of (Tizard, Philps and Plewis, 1976) aspects of play ended up using negative definitions. A pragmatic definition of play is everything that is not non-play. Play is not for real.

It is useful to divide the broad spectrum of activities which can be labelled play into several categories. We exclude the category of games with rules from consideration here; such games can be differentiated from the spontaneous play in which we are interested by the existence of set rules and form which are external to the players.

When we look at spontaneous play, it is apparent that some play does not involve the use of symbolism whereas other play does. Following Tizard, Philps and Plewis (1976) we find it useful to divide non-symbolic play into two categories. Appropriate play occurs when the child properly exploits the properties of the play material(s) which he is using without assigning any symbolic meaning to that material; he just digs a deep hole in the sand. Partial play occurs when the child does not utilize the particular properties of his play material, rather using it in an indiscriminate fashion; he kicks the sand. Symbolic play is play in which materials or players are assigned meanings or characteristics which they do not inherently possess or play in which imaginary materials are used; the child calls his sand hole a swimming pool and pretends that some stones are swimming in it. Symbolic play has been discussed by different authors under many different labels, including imagimative play, thematic play, make-believe play and dramatic play.

It is symbolic play which has been most discussed as having beneficial functions for the child, and it is on symbolic play which we shall focus our primary, but not exclusive, attention. A child may engage in symbolic play when playing alone, when playing by himself in the presence of other children, or when playing cooperatively with other children. Many authors do not distinguish between solitary and group symbolic play, implicitly or explicitly considering both to be manifestations of the same general category of play, though their research may focus on a child playing in a given social situation. Others, such as Smilansky (1968) feel that there are crucial distinctions to be made between the dramatic play of a child

engaged in symbolic play without reference to his fellows and the sociodramatic play, which involves interaction with at least one other child within the framework of the play episode and some verbal communication between the playing children. We shall keep in mind the possibility that all imaginative play is not the same, that we may be dealing with two different categories of play which draw upon different skills of the child and have different potential benefits for him.

Why Play is Important

When we look at the history of thoughts on play, we see a slow evolution toward the increasingly popular position that symbolic play is a useful, learned skill. Schiller, then later, Spencer, suggested that play in the broad sense provides a means for working off surplus energy which the young did not expend in activities necessary for mere survival (Gilmore, 1971). Karl Groos (1901), studying play at the turn of the century, maintains that play is instinctual, necessary practice of behaviors and skills which will later be vital for survival.

Freud (1959 a,b) directs his attention to individual, symbolic play. He theorizes that play is either a means of acting out wish-fulfilling fantasies quite directly, or of mastering a previously unsatisfactory experience through repetition and replacement of the passive mode with the active: play is a catharsis. Waelder (1933) elaborates on the psychoanalytic theory of play, suggesting that play involves a process like the repetition compulsion in which experiences which were too difficult to assimilate all at once are broken down into smaller pieces which are acted out over and over again in play until they can be assimilated. Since "traumatic stimulation in

childhood is the general rule " (p. 217), the abreaction of unpleasant experiences takes on a major role in childhood. Peller (1954) states flatly that "the central function of play is gradual assimilation of anxiety" (p. 179), including that aroused by intersystemic conflicts, although there can be play which simply repeats satisfying experiences. She correlates different kinds of play occurring at different stages of development with the kinds of conflicts likely to be salient at each stage. Seen from this perspective, play seems to be pretty grim business. It is useful in this world of trial and trouble, but the implication is that the happy child with few worries will be less likely to play than the anxious child who requires an outlet for working through his problems.

Erikson (1963), while attending to the value of play in helping the child resolve conflicts, stresses that play is a method for active mastery of the ordinary complexities of growing up, "a function of the ego, an attempt to synchronize the bodily and the social processes with the self" (p. 211).

> Child's play is the infantile form of the human ability to deal with experience by creating model situations and to master reality by experiment and planning. . . . /The child/ anticipates the future from the point of view of a corrected and shared past (p. 222).

Play is most useful in dealing with those aspects of life in which the child finds himself inadequate, when he feels that his "self," his body and/or his social role do not measure up. Then play provides the opportunity for the child to hallucinate himself to be adequate and successful while actively practicing needed skills in a protected situation.

Piaget (1963), discussing play from the perspective of a developmental cognitive psychologist, defines symbolic play as that which occurs when the child assimilates external reality to his preexisting concepts or schemata rather than altering or accommodating his schemata to correspond to external reality. Piaget labels a preponderance of accomodation over assimilation imitation which he differentiates from symbolic play. This suggests a somewhat narrower category for symbolic play than that which we are employing, for we choose to include activities which involve a great deal of close imitation, such as when the child carefully mimics each of his parent's movements as he sets the table and serves the pretend meal in the housekeeping area of his nursery classroom. There the child is accommodating his movements to the demands of the role model, thus expanding his schema. When the child pretends that a leaf is a cup, his play falls within Piaget's category; a major cognitive benefit is the expansion of the child's capacity to create and use symbols. Piaget considers symbolic play to have a major function in maintaining the child's "affective and intellectual equilibrium" (Piaget and Inhelder, 1969, p. 58). He notes that children must continually adapt themselves to a social world dominated by adults and their rules, which often do not correspond to his interests or his understanding, and to a physical world which is often incomprehensible. Play offers the child a respite from the continual adaptation to the demands of external reality; he may instead assimilate reality to himself "without coercions or sanctions" (op. cit., p. 58). Piaget says that such assimilation is of particular importance in dealing with affective conflicts,

giving the child the opportunity to compensate for unsatisfied needs and to invert roles (op. cit., p. 60).

Piaget does have a concept of symbolic play as a useful cognitive skill, seeing it as the forerunner of adult fantasy activity. Since it involves ego-centric thought, it does not contribute directly to cognitive growth. Also, in large part because of Piaget's restrictive definition of symbolic play, the emphasis lies on the restorative role of play. The world of play appears to be a haven to which the child, buffeted by emotionally unsatisfactory encounters with reality, can retreat (and perhaps regroup his forces).

Klinger (1969) arrives at several functions served by childhood play in his careful analysis of research on play which has relevance for a theory of fantasy. He concludes that either play is independent of the need to attain goals outside of itself, or has as its goal the maintenance of some optimal level of stimulation. The content of imaginative play reflects the unfinished business of the child's everyday life. Hence play involves attention to problems and possibility for progress in problem solving.

> Play yields new solutions to old problems through the opportunity in play to try out new combinations of old schemata. It contributes to the mastery and integration of overwhelming emotional experiences by enabling the child to reenact them under controlled conditions and to articulate them with his existing response repertory. It helps to establish continuity of a child's experience by providing opportunities to work them into perceptual and response patterns that have already acquired meaning. The solution of problems in play is rarely direct or deliberate. Rather, solutions emerge out of periodic fragmented enactments of salient material (p. 294).

Klinger notes that there are many gaps in the research on play, one of which was the absence of normative observational data on children's

play as it occurs naturally, leaving us to surmise the structure and content of play from laboratory and retrospective studies.

Jerome Singer and his colleagues (1973) have made a major effort to utilize existing research and to initiate new studies in order to develop a comprehensive picture of play. Singer believes that imaginative play is best seen as a useful cognitive skill at which some children are more adept than others, just as daydreaming can be a useful adult skill (1966). This represents a shift in perspective from the traditional psychoanalytic one of looking at the child's play for a clue to his problems to looking at play as a resource available to the child for many different facets of his life. Predisposition to fantasy play is then a major personality dimension with implications for how a child will respond in a variety of situations and for his cognitive and emotional development. Preliminary research indicates that children who engage in a great deal of fantasy play are not beset by more emotional conflicts than their less imaginative peers. They do, however, show increased waiting ability, decreased motility, and tell more creative stories. Singer suggests that high fantasy children have established a set toward attending to long term memory and internally generated material, which they then can elaborate and apply toward novel stimuli (Singer, 1973). This could help such children to have more play alternatives in any given circumstance, and to be less likely to respond impulsively in anger- or anxiety-arousing situations. Practice in imaginative play should help the child be more able to distinguish between internal and external stimuli. Further, it should help the child develop a longer attention span as well as the capacity

to enjoy time alone.

Singer's colleagues pursued studies reflecting this new perspective. Biblow (1973) found that children with well-developed imaginative play skills were more able to make use of fantasy films, either with or without aggressive content, to lower their own aggressive feelings following experimental frustration than were children with less developed imaginative skills. Making the premise that imaginative play is a skill which can be taught, Freyberg (1970, 1973) trained some kindergarteners from a lower socioeconomic group in make-believe play techniques. Compared with their untrained peers, the subsequent free play behavior of these children

> included more verbal communication, longer and more complex sentences, more sensitive responding to the cues of others, more spontaneity, more creativity, more labeling, more discriminating use of language, and increased attention span (1973, p. 145).

This suggests that developing the capacity to play imaginatively may foster attitudes and cognitive skills with wide applicability to the tasks of childhood. Pulaski (1973) compared upper middle class children with high and low fantasy predispositions in the way they played with highly and minimally structured toys on an individual basis, including their flexibility in handling a request to make up a story about a new toy part way through the play session. She found that the high fantasy children used the toys to make up stories which were richer in fantasy content with more imaginary details, had greater variety of themes, and were more highly organized than the stories of low fantasy predisposition children. High fantasy children concentrated more deeply and were more able to integrate more than one category of toy into their play. When interrupted with the

request that they make up a story about a new toy, high fantasy children were more likely to accept the new instructions and they told more original, well-developed stories than low fantasy children. Pulaski concludes that high fantasy children exhibit the important cognitive skills of "originality, spontaneity, verbal fluency, free flow of ideas /and/ flexibility in adapting to new situations"(p. 102), all of which are aspects of creativity.

Singer developed a brief structured interview to assess a child's predisposition toward fantasy play, the Imaginative Play Predisposition Interview (IPPI) (1973, p. 59), which was also employed in the Freyberg and Pulaski studies. Singer found that when asked direct, simple questions about their preferred play activities, even very young children could give meaningful answers. Three out of the four questions elicit the fantasies and activities of the child when alone; the fourth asks the child's "favorite game." This reflects Singer's general orientation toward imaginative play; he focuses on the child playing by himself in almost all of his discussions of play. Singer does not exclude several children playing imaginatively together from his label "make-believe" play; indeed he has done work involving observations of children playing in nursery school, which necessarily is not private play. Rather, he does not specifically include cooperative imaginative play when he considers the value, the development or the motivation for play. His statements may not always be fully applicable when extended beyond the solitary child to the child playing in a group.

Smilansky (1968), working in Israel at a time which parallels Singer, focuses specifically on sociodramatic play. Just as symbolic

play is a special form of play, sociodramatic play is a specialized form of symbolic play. It involves two or more children participating in imaginative play together, each taking a dramatic role (or roles), and cooperating with each other other to produce a dramatic play sequence. Smilansky stresses the importance of such play in enabling children to integrate concepts into meaningful relationships, to elaborate concepts, and to see things from more than one point of view.

Many of the numerous skills fostered by sociodramatic play listed by Smilansky appear to be equally applicable to solitary imaginative play: synthesis of experiences and imaginative combination of details; selective use of knowledge, based on a judgment as to the requirements of a given role; concentration on a given theme; self-control according to the child's "own internalized sense of evolving order" (p. 13); the ability to discipline his actions according to the requirements of a role (suppressing tears because the figure whose part the child is playing would not cry when hurt); the experience of being a creator; close observation and heightened perception of his environment; the development of abstract thought; and the ability to generalize.

Other benefits of sociodramatic play listed by Smilansky appear to be peculiar to the peer group setting and do not seem likely to accrue to the child playing alone. Valuable behaviors and skills evolving from playing imaginatively in cooperation with others include: the ability to discern the most salient features of a role, which must be those portrayed in the child's characterization; flexibility in approach to various situations, since other children use different but comparably relevant approaches; realization that he sets his own standards for his actions and other children set standards for theirs;

development of cooperation and social interaction; learning of new concepts, such as differing behavior patterns for the role of father; and the ability to learn vicariously from the experience and knowledge of others (see pp. 12-15). In addition, it is likely that some of the benefits which we have indicated to be applicable to all imaginative play are more likely to occur and to be reinforced when more than one child play together. The pressure to maintain a role should be stronger in a group setting, as should the pressure to concentrate on a given theme, since other children are not likely to bend to idiosyncratic shifts in play content. However, a child's internalized sense of what is proper would replace peer-group judgment as the enforcer of role-appropriate activity when he is playing by himself, stalking tigers behind the living room chairs.

Smilansky developed her list of valuable behaviors nurtured by sociodramatic play after analyzing the skills which disadvantaged, immigrant Israeli children lacked and which advantaged Israeli children of European heritage possessed. She noted that the advantaged children played sociodramatically and then went on to do well in grade school, whereas the disadvantaged children did not play and did not succeed in grade school. It made sense to her that the skills nurtured by experiences the disadvantaged children were missing would be related to the skills they were missing when they attempted the school "game" in later years. Observation of the play activities in advantaged classrooms led her to list the behaviors involved in those activities with confidence, although she did not use any independent tests on the children to see if those skills were manifested in other settings and she did not systematically observe

all children, preferring to write down all play which occurred in a given section of the room.

Lovinger (1974) pursues some of Smilansky's ideas in a study which, while not rigorous, does provide some correlates to sociodramatic play activity. She found that underprivileged American children who were non-systematically encouraged to play and interact with a playing adult during the daily classroom free play period for twenty-five weeks performed significantly better on the Verbal Expression Scale of the Illinois Test of Psycholinguistic Abilities, emitted more words during free play sessions, and exhibited more complex play than they had previous to exposure to the playing adult. Control children showed no change. Lovinger interprets the results as showing that children exposed to sociodramatic play increased their use of language which in turn increased their ability to deal with a cognitive task. Basing much of her reasoning on that of Smilansky, Lovinger surmises that the development of the ability to play provided the children with the skills to conceptualize, organize and generalize previously disparate bits of experience.

Feitelson and Ross (1973), after briefly discussing a fairly long list of likely functions for thematic play, focus their attention on the possibility that the ability to play thematically may foster creativity. They note that "attitudinal constructs. . . such as innovative creative modality, intrinsic motivation, perseverance, self-confidence and active engagement" (p. 209), which seem to be called for by thematic play, are the same ones frequently used to describe creative adults. They speculate that there might be a causal link between the development of the capacity for symbolic

play as a child and the emergence of the capacity for playing with ideas--having the as if attitude necessary for creative thought--in adulthood. Although Feitelson and Ross do not distinguish between individual and group thematic play in their analysis, the model for their experimental work is the child playing alone. In their study, kindergarten children from white families living in a lower middle class community who were trained in thematic play in a series of ten 30-minute individual sessions showed a significant increase in play which was sequential and included transfers from one situation to another and/or the addition of elements to the play situation provided ("combinatory play") during an individual play session, and a decrease in pre-play behavior when compared with children exposed to toys without training, to music training, or to no training. Play tutored children also showed a significantly higher post-training score on the originality score of the Torrence test and higher ($p < .10$) scores on the CATB subtest measuring innovative and exploratory behavior.

The most recent major work on children's play is by Garvey (1977), in which she presents her own research as well as discussing relevant literature, organizing her discussion "according to the resource with which the child is primarily engaged" (p. 15) such as play with social materials or play with language. She feels that the dyadic play relationship is the basic one; the infant first learns to play with its mother as a couple which later translates into play with a single agemate. Only later are solitary and group play learned as satisfactory derivatives. [We note that B. White (1975), approaching the issues of playmates from a more general developmental perspective,

also states that the pair is the natural grouping for the under-three year old/. Accordingly, Garvey's own research placed two nursery school classmates at a time into a well-equipped playroom where their interaction could be recorded and watched by unseen observers.

Garvey stresses that as soon as a behavior has made its way into a child's repertoire, it becomes available as a resource for the child to treat in a nonliteral manner--a subject for play. Since play is not for real, most behaviors exhibited in play may be said not to count in the real world. Thus a child can safely try out a new behavior in a familiar setting or a familiar behavior in an unfamiliar physical or social context. Play provides the child with the opportunity to explore the properties of each resource available to him--the objects around him, his own physical skills, the use of language, social roles and social conventions, for example--stretching and consolidating his ability to use a particular resource as well as ascertaining the limitations of its use. Play helps the child to integrate his behavior. It also helps him to learn how to talk with, to behave in a socially acceptable manner with other people. Garvey was struck by the way young children were able to signal to each other which behavior was to be taken literally and which was not. Further, acquainted pairs of children were able to engage in spontaneous, clearly marked ritual interactions, some of which were quite lengthy. Observational study indicates that dyadic play allows the child to develop his skill in receiving and transmitting important social cues. She notes that to sustain make-believe play the children need to formulate roles or identities for themselves and imagined

others, plans for action and story lines, and settings for their actions, including the invention of needed objects. Then the children need to indicate those formulations to each other. Garvey comments, "Carrying out the make-believe is largely a matter of communication" (p. 86). It is in articulating and carefully illustrating the function of communication in play and of play in developing communication skills that Garvey makes her most original contribution to our understanding of the values of play.

In summary, we see that there are three clusters of values ascribed to symbolic play. First, the capacity for imaginative play can be seen as a cognitive skill fostering language development, the creation of symbols, organization of disparate bits of information into meaningful sequences with a central theme, and sustained attention. Symbolic play can be used as a fruitful problem-solving technique to master the complexities of everyday life through rehearsal and planning. Second, symbolic play demands and develops an as if attitude, a willingness to consider the possible and the flexibility to try different possibilities. This non-literal attitude can heighten the awareness of one's inner thought processes as opposed to what is real and out there. Third, imaginative play involving more than one child develops sensitivity to social cues and the capacity for communication and mutual regulation. To the extent that dramatic personification is involved in solitary play, it too may enhance awareness of social roles and of the feelings of others.

Fostering the Development of Imaginative Play

There is ample reason to believe that symbolic play has value

for children. Both individual and social imaginative play can well be seen as beneficial. It is of great interest, therefore, to understand how the development of symbolic play can be fostered. What conditions enhance and what conditions decrease the likelihood that imaginative play will appear and be sustained? Are there identifiable factors which are associated with the presence or absence of symbolic play, or with fluctuations in the level of play?

For the traditional psychoanalytic theorists (A. Freud, 1966; S. Freud, 1959, a,b; Greenacre, 1959; Peller, 1954; Waelder, 1933), the appearance of symbolic play serves as a signal that the child is experiencing anxiety; we would therefore look for an overwhelming experience or an intersystemic conflict which has elicited play as a defensive response. Erikson (1940) became interested in play disruption--why a given child's play abruptly ceases. He found that careful analysis of play disruption can often reveal that particular child's core conflict. He also speaks in general terms about the kinds of experiences which foster a healthy ego, which in turn allows a child to engage in sustained, integrative play. But he does not give detailed consideration to individual differences in the capacity to use play as a resource, nor to the genesis of such differences.

Piaget (1963; Baldwin, 1967) discusses symbolic play as something manifested by all children at a given stage of cognitive development. He does not address himself to the possibility that a child might not manifest such behavior even though he has reached the appropriate age for symbolic play. He does not discuss the differences between children who have reached the level of symbolic play in the amount or richness of their imaginative play.

Smilansky (1968) found that large numbers of children in Israeli preschools did not engage in sociodramatic play at all and rarely played solitary imaginative games in school. These children virtually all came from non-European immigrant families and were labelled "disadvantaged" by Smilansky. Smilansky notes that children from this group do play organized games at the appropriate age, simply skipping the stage of symbolic play, in contrast with the orderly progression of stages outlined by Piaget. Similarly, Freyberg (1970, 1973) found that American kindergarten children from an urban poverty area engaged in virtually no imaginative play during their classroom free play periods; their play consisted primarily of disconnected manipulation of toys. The level of play exhibited by the kindergartners from a lower middle socioeconomic group observed by Feitelson and Ross (1973) in an individual free play setting was also quite low; most children spent much time simply manipulating toys, and any thematic play was generally stereotyped, though there was individual variation.

In each of these studies, the investigators provided some children with training in sociodramatic or make-believe play. An adult played along with the children, providing a model for thematic play as well as offering encouragement to the children in their own attempts at play. The Feitelson and Ross tutoring was on an individual basis using the variety of toys in the experimental playroom. Freyberg trained small groups using pipe-cleaner people and table-top props, and Smilansky had experimenters and teachers work with the children in their regular classrooms with more or less standard props. In each case, children who had been trained in imaginative play were

later observed to engage in significantly more sociodramatic (in Smilansky's study) or thematic play than did children who had not been tutored. Saltz and Johnson (1971) had similar results after teaching kindergartners to enact roles in fantasy play based on fairy tales.

Play, then, appears to be a learned skill. Warm adult attention, granted to control groups by Freyberg and Feitelson and Ross, is not enough. Nor is simple exposure to enriching experiences which could be dramatized in play. Children in the Smilansky study who were given new experiences and the chance to discuss them (such as a trip to the store, including conversations with the storekeepers) but did not receive play training, showed no significant increase in level of play. This suggests that it is not a lack of experience or even a lack of the chance to verbalize about experiences which holds children back in the development of play skills. Interestingly, the group of children in the Smilansky study who were exposed to new experiences and also received sociodramatic play training made significantly greater improvements in level of play than did the children who received play training alone. Smilansky speculates that it is necessary to have training in play skills in order to make use of new experiences in imaginative play, but that once one has those skills, the new experiences provide important raw material to be synthesized in play. She also suggests that the play training methods became more effective when the teacher and the children had some common experiences around which to weave play themes: these teachers reported their task to be much easier than did those teachers who had no idea of the extent of their pupils' experiences

around a given subject.

Studies involving upper middle class children indicate that most of these children have (a) acquired some imaginative play skills, (b) presumably at home, although they, (c) can benefit from specific dramatic play instruction (Marshall and Hahn, 1967), and (d) show considerable individual variation in usual level of play (Pulaski, 1973). Smilansky visited the homes of 60 advantaged children (European, non-immigrant background) who engaged in socio-dramatic play in order to compare them with 60 disadvantaged families. She found that the families did not differ in the amount of love and security which they provided for their children. However, advantaged parents were more likely to feel that they should take an active teaching role with their children, to help the child move toward independence by breaking down complex tasks into small parts which could be mastered, to talk a lot with each other and with their children, and to listen to the child as if he had something important to say. Advantaged parents also were directly involved with their children's play activities. They provided many toys, both for dramatic play and for didactic games which parent and child could play together. They often joined the dramatic games of their children and in so doing taught them to play, frequently encouraging them to enter make-believe elements into the activity. They were willing to interrupt their own activities and conversations in order to respond to their child's play needs. Advantaged parents tried to maximize peer contacts and to encourage games between their children and other children. And advantaged parents praised their children when they were able to play for extended periods of time. All of

these child-oriented behaviors were missing in the disadvantaged parent group who did not provide this quite direct training in the skills and attitudes necessary for sociodramatic play.

Although all of the children in Freyberg's study were from a lower socioeconomic group and none played at a very high level prior to training, Freyberg was able to divide them according to predisposition for fantasy play. Within the "high" group, there were six children who stood out as having some rudimentary imaginative play skills at the start of the study. Freyberg interviewed the principal caretakers of these children and of six children who were particularly low in fantasy predisposition. The high fantasy children tended to come from families with fewer children, live in dwellings with more rooms per person, and were more likely to be the first or only child. They were more likely to have an especially close relationship with one family member. Mothers of high fantasy children exhibited a favorable attitude toward make-believe play and reported that the child engaged in some imaginative play at home. In contrast, mothers of low fantasy children tended to be negative toward imaginative play. Mothers of high fantasy children were also more likely to be judged highly interested in their child as an individual.

In a clinical paper dealing with the ability of a small group of middle class preschoolers to make use of play therapy, Fineman (1962) noted that some toddlers are able to use play as a resource early on and continue to use it whereas others never really do. The mothers of the children who were able to play effectively could accept and encourage imaginative play at home, whereas the other mothers could not do so and had difficulty thinking imaginatively

themselves. Fineman could not be sure from her data whether or not it was essential for the mother to actually join in the child's symbolic play; however, it was clear that the mother needed to have a favorable attitude toward make-believe play for it to flourish in her child.

Singer (1973) devotes considerable attention to formulating hypotheses about what conditions foster the development of imaginative play. He suggests that long periods of uninterrupted solitary play with a warm and interested but nonintrusive adult close at hand provides the optimum circumstances for a child to develop thematic play skills. The nurturant adult provides a model for imitation and identification, fostering play skills indirectly or, more preferably, directly. Singer feels that it is essential for the child to have periods free from external stimulation so that he can attend to his own internal activities. These periods must be of fairly long duration because "the development of imagery requires the unfolding of relatively longer sequences which inevitably will compete for 'channel space' with the processing of new material from the external environment" (p. 198). Singer feels that this combination of nurturant adult model, relative privacy, and lack of interruption is most likely to occur when the child is a first or only child or when there are many years separating a later born child from his elder siblings. Singer states frankly that little is known about the effects of peer interaction on play, but he clearly views it as a probable source of interference in the development of imaginative play ability. He talks about the likelihood that peers will disrupt each other's concentration and reduce the possibility for the unfolding of long,

coherent play sequences. Peers frequently are not playing on the same level or thinking about the same things, so one may hold the other back.

We note that Singer's observations of middle class nursery school children reveal surprisingly little imaginative play taking place in this large group setting (1973, p. 46). Only about 10% of the total activities in which the children engaged during free play period were make-believe play. In their observations of English pre-school centers, Tizard, Philps and Plewis (1976) found that the children spent about 28% of their time in symbolic play. The authors feel that this play was of quite a low level, almost never involving dramatic impersonation and primarily centering around domestic play themes, cars and trains, and pretending to shoot and kill. Games were simple and children remained at one activity for less than five minutes on the average. The authors speculate that the great variety of play materials available, the distraction of large numbers of other children, and the lack of pressure from the staff to persist in one activity all militated against the children maintaining long play sequences. The brevity of the play sequence, we note, limits the dramatic elaboration of a theme. Recalling the Smilansky study, it seems plausible that the teachers who had shared experiences with the children and then engaged in sociodramatic play centering on those experiences would be able to make interventions which would extend the child's sequence of thought. Teachers who had no such common background with the child might be more likely to simply interrupt the child's chain of ideas when they made their interventions.

The Factor of Interruption

Is relative lack of interruption an essential factor in an environment permissive for symbolic play? It is not clear from the reports of Smilansky, Freyberg, or Fineman. Certainly there is the implication that if parents value and encourage imaginative play they will not lightly interrupt it. The greater amount of space per person in Freyberg's high fantasy families suggests more privacy. Singer's model of the imaginative child spinning out long strands of fantasy, solitary and attentive to this inner world, demands substantial periods of time in which the child is alone and uninterrupted. But there have been few studies focused specifically on the factor of interruption of children's play.

Farnham-Diggory and Ramsey (1971) found that adult interruption of children during a free play session greatly reduced play persistence in a subsequent play session with parquetry blocks. Initial play with defective toys and social reinforcement of play did not lead to subsequent persistence levels differing from those of children initially exposed to neutral play conditions. The authors suggest that "constant intrusion upon the play activities of young children may set up emotional tensions, and/or scrambled expectancies, that interfere significantly with subsequent play persistence" (p. 298). We recall that Pulaski's study (1973) compared children with high and low fantasy predisposition in their response to interruption by an adult requesting that they make up a story using a new toy. High fantasy children were found to be more flexible when interrupted, accepting the request and coming up with original, creative stories. It may be, then, that interruption lowers play level, but has less

of an effect on children with many resources for make-believe than it has on others.

Porter (1977) has done the most extensive work to date on the effects of play interruption on subsequent play. She designed an experiment in which 30 children were allowed to play individually without interruption for 17 minutes, save for inquiry as to fantasy theme if necessary. This control group was contrasted to 30 experimental children who were interrupted by an adult five times during the course of their play session. Children were returned to their classrooms for 30 minutes, then brought back to the playroom for a second individual play session for 10 minutes, during which time they were not interrupted. The child's second play session was then assessed for level of fantasy and level of positive affect. Equal numbers of high and low fantasy predisposition children, rated according to Singer's test, were placed in the experimental and control groups.

Children who had not been interrupted show significantly higher levels of fantasy play and significantly more positive affect in the second free play period than do the children who had been interrupted. Children with high fantasy predisposition have higher levels of fantasy and positive affect while playing than low fantasy children. There is no interaction effect between fantasy predisposition and response to interruption. Indeed, the interaction effect for fantasy predisposition/interruption on fantasy level of play (although not for affect) is strikingly smaller than one would predict by chance, indicating that the main effects are extremely strong. Thus, children who report high levels of fantasy at home tend to play more

imaginatively whether their play is intruded upon or not than do those who report little fantasy activity in their everyday lives. The children who are allowed to play without interruption play more imaginatively in a subsequent play session than do children of comparable fantasy predisposition who have been interrupted.

Questionnaires regarding home environment were returned by 40 of the parents of children participating in Porter's study. Child's fantasy predisposition relates significantly and positively to: being first born, having more than one room available for play, having a mother who spends time reading, spending time reading together with a parent, engaging in solitary play at home, playing with parents, and not being interrupted frequently at home. Again, the combination of a parent who can be a model for use of imagination and uninterrupted time alone seems to be conducive to the development of make-believe.

How are we to reconcile Porter's strong experimental findings in support of Singer's analysis that interruptions seriously disrupt play with the reports of naturalistic observers of group imaginative play such as Isaacs (1933), Hartley, Frank and Goldenson (1952), Hartley (1952) and Smilansky (1968) who find that the interplay between several children can escalate the make-believe? To read Smilansky's somewhat impressionistic account, one might conclude that interruptions and the process of handling them are an important leaven for the sociodramatic play of advantaged children. She describes the many sorts of problems which can occur during the course of play, many of which are impingements on a child's unfolding of his dramatic play sequence, such as an additional child wanting to play, a teacher asking the children to move, or direct interference from other

children. Then she states, "It becomes clear that the whole game is comprised of the process of raising of problems and the search for various, satisfactory means to their solution" (p. 32). Freyberg and Lovinger both describe instances of children who did not themselves initiate dramatic play being drawn into it by other children--a kind of constructive distraction.

To truly understand the role played by interruptions in the course of children's play, we must examine four major facets of the problem. First, we need data on the prevalence of interruptions in everyday life. Is it realistic to compare an interruption-free environment with an interruption-rife environment, or must we rather think that all children experience some interruptions and what we want to know is how many and of what kind? Second, we must consider whether interruption is itself too broad a category of events and which is most usefully broken down into several different categories which have differing effects on play. Third, we must further explore the idea that children with differing capacities for symbolic play will respond differently to interruption--perhaps to different kinds of interruptions. And fourth, we may raise the possibility that the solitary play studied by Porter and discussed by Singer is different enough from group play to receive a different impact from interruptions.

Work done by a group of psychologists who have labeled themselves "ecological psychologists" provides us with useful data and a useful perspective on interruption of children's play.

These psychologists attempt to record and to understand behavior in its full environmental context, clarifying and analyzing the actual

impact of the context on the subject's action. R.G. Barker (1963) edited a collection of studies by a team of researchers in a small Midwestern community. They attempted to make complete observational records of 16 children throughout their entire waking day, including all behaviors of the child and all characteristics and behaviors of the child's physical and social environment. Record was made of the frequency and type of impingement made on the child by people or things and of the child's response to that impingement. Schoggen defines an Environmental Force Unit (EFU) as "an action by an environmental agent which: (1) occurs vis-a-vis the child, (2) is directed by the agent toward a recognizable end-state with respect to the child, and (3) is recognized as such by the child" (1963, p. 43). He found that the median rate of EFUs for this sample was one EFU per every 1.73 minutes, with a range of 1/1.02 min. for a toddler to 1/3.32 min. for a 10 3/4 year old girl (p. 49). The environment is very active in relation to children; their lives are frequently acted upon by someone else.

Fawl (1963) directs his attention toward disturbances experienced by the child during the progress of an ordinary day. Fawl defines a disturbance as"an unpleasant disruption in the ongoing feeling tone of immediate awareness, evoked by, and in reference to, a discernible event or situation" (p. 100). He found that preschoolers experienced an average of 93.67 disturbances a day or 7.58 disturbances an hour. School age children experienced an average of 44.50 disturbances a day or 5.42 disturbances an hour (p. 103). Disturbances are common experiences. Fawl rated the disturbances as mild, moderate or strong, and found that 61.7% of the total disturbances experienced by the

group were rated as mild, 35.1% as moderate and only 3.2% as strong. The mean intensity rating per child was not related to child's age. Disturbances were evoked by an adult, usually the mother, over 50% of the time for preschoolers, by children 25-30% of the time, and by other evokers (such as falling off a step or discovery of a broken toy) 25-30%. This contrasts with the school age children, for whom the three categories of evokers divided almost evenly. Although adults evoked more disturbances than children, the latter evoked more disturbances per interaction (EFU). Fawl speculates that child associates provide a more antagonistic (meaning oppositional, not hostile) environment than do adult associates.

Working from an orientation as educators, Jackson and Wolfson (1968) sought to establish norms for the amount of interference experienced by the young child in the pursuit of his desires in a nursery school setting. Observing each of 97 children in the classroom during spring term for 15 two-minute periods, they found that the average child experienced about six constraints during the 30 minutes recorded. There was no significant difference between children on the basis of sex, age, or length of school attendance. There was a wide range of frequencies for constraints, however, with the bottom 10% of the sample experiencing two or fewer impingements and the top 10% encountering nine or more during the observation period. A follow-up study of some of the same children at the beginning of the next school year indicated an even higher mean frequency of constraining events--over eight in the 30 minutes. (The authors attribute the increase to the vicissitudes of beginning anew in a social setting in the fall semester.) The correlation between

frequency of constraining events for the same children in both school terms was significant, indicating that some children indeed experience many more environmental impingements than do others. Thus all children experience many constraints, but there are wide differences between children. The authors point out that a child on the low end of the curve will undergo about 2,000 constraining events during his first year of half-day nursery school while the child at the high end will experience 15,000 or 16,000 impingements.

Environmental constraints are not confined to nursery school. Wolfson and Jackson (1969) observed four year olds at a public playground and at the beach during the summer time and found the average number of constraints to be over five during a half hour, once again with much variation between children. Other people accounted for the majority of environmental impingements in both settings. In the classroom, conflict of desire with another child accounted for 29% of constraints in the spring and 48% in the fall. Conflict with teacher expectation accounted for 27% of spring constraints and 23% of fall constraints. The playground/beach conflicts were with other children 47% of the time and with adult expectation 30% of the time. Thus 56% of the constraints in the spring nursery observations, 71% in the fall, and 77% of the constraints in the public playground and beach observations were caused by other people's desires or expectations conflicting with those of the child.

Berk (1971) attempts to view the Jackson and Wolfson data from the perspective of the ecological psychologists and conceptualizes environmental constraints as a special case of conflict Environmental Force Units. She designed a new study to test differences in the

types of conflict EFUs engendered by schools with widely differing educational philosophies--traditional nursery school vs. Montessori school--to carry the analysis of the impingement experience one step further to include child's adaptation to the constraint. Once again, she finds that environmental impingements are a very frequent occurrence in the nursery school child's life--an average of slightly more than one EFU every two minutes. Conflict of child's desire with that of another child or with teacher expectation accounts for about 69% of total EFUs for all schools. The Montessori school, with its teacher-guided educational techniques, shows a strikingly higher percentage of conflict with teacher expectation EFUs than does the nursery school. The older children experienced somewhat more constraints than the youngest children, and boys average a somewhat greater number of EFUs than girls. There is no social class difference in the number of EFUs. Most EFUs evoke one or two predominant modes of adaptation. Desire vs. teacher expectation, for example, almost always evokes a compliant response. Only child's desire vs. another child's desire calls forth a wide variety of response categories, with eight different response categories manifesting a response rate of 5% or more; no other EFU elicits more than four categories with a response rate of at least 5%. This suggests that the "desire vs. desire" category is really an umbrella for several different types of impingements; other children can exert a variety of environmental pressures which may be experienced in different ways and responded to in differing fashions.

Like Jackson and Wolfson, Berk finds that some children experienced disproportionately many or few EFUs. She is able to make a

first step in a comparison between children who were noticeably high or low in number of EFUs. The high EFU child appears to be more likely to experience a greater proportion of desire vs. teacher expectation EFUs than is the low EFU child, who in turn is more likely to find himself constrained by his own inability to complete a task than the high EFU child. The high EFU child is more likely to respond to constraints in a belligerent, reactive manner, exhibiting significantly more physically attacking adaptations than the low EFU child. The low EFU child is significantly more likely to make no response at all to an attempted constraint, merely continuing in what he was doing before; he is also significantly more likely to persist in a request or a task in the face of initial failure to obtain results. There appears, then, to be one group of children who very frequently find themselves constrained by their environment, particularly by adults in authority, to which interruptions they may respond by lashing out in some manner. On the other hand, there seems to be another group of children who play undisturbed by others, only occasionally constrained by their own inability to complete a task; when they are impinged upon, they are virtually unruffled.

Aim of the Present Study

Data from observations of children as they live their everyday lives, then, indicates that children spend significant periods of time in environments which are very active vis-a-vis them, frequently impinging upon the unfolding sequence of their thoughts and actions. While some children do have fewer interactions with their environments than others, it is clear that we cannot talk realistically about providing children interruption-free play experiences as their

staple fare.

It is important to consider whether some interruptions are more disruptive than others. We recall Fawl's data (1963) indicating that although disturbances are a frequent occurrence in a child's life, most are only of mild intensity and only about 3% could be rated as "strong." We should not expect routine impingements upon a child's activities to have dramatic effects. Examining Porter's experiment, we realize that her dramatic results occurred following dramatic interruption. A child is playing alone in a room in which he does not normally play, accompanied by a relatively unfamiliar adult who interacts with him in a manner quite different from his teachers. Suddenly a strange adult barges in, making requests which are irrelevant to his play and to his life. She repeats this behavior again and again. It is not surprising that such circumstances are unsettling. This is, of course, quite different from everyday life where most interruptors are known, many are other children, and interruptions may have some bearing on the child's interests.

In general, even in a natural setting, adult interruptions, particularly when directed at the individual child, appear to be more coercive than child interruptions. Berk (1971) finds that children responded with compliance 72% of the time when a teacher's desires clashed with their own; in other words, they interrupted the flow of their own activities to do as the teacher asked. A common theme throughout the various home studies of children who play imaginatively is parental acceptance or approval of make-believe play. We can imply that these parents do not gratuitously interrupt behavior toward which they hold an attitude of respect, unlike the

confederate in Porter's study.

In contrast, interruption by another child appears to have varying effects. Berk finds that eight different adaptations were used at least 5% of the time in response to an impingement by another child. "Unresponsive" and "Refusing" are the two most common responses, each given about one fifth of the time, followed by "Complying," "Commanding," and "Physically attacking," each given about one tenth of the time. Thus some child interferences go virtually unheeded, while others provoke strong responses.

The preliminary investigative step of observing a nursery school classroom as a whole confirms that there are indeed several different types of child-generated interruption. First, we can distinguish the peer dispute over right to play and/or possession of a toy; ("Only boys can play in the hideout" or "That's my block, I need it.") Such interruptions are a major affront to the playing child, and we would expect them to be disruptive in many instances. They imply a lack of respect for the playing child, which, like lack of adult respect, can be undermining. Further, they demand some kind of response, if only a firm hand on the block and a steely glare at the interloper while continuing to play.

Second, we can distinguish a very different kind of interruption when another child attempts to change the direction of the target child's play; ("You be King Kong.") The flow of the first child's play is impinged upon, but with further play as the intent. This type of interruption has the potential for raising the target child's level of play from manipulation of toys to imaginative play. It can be a stimulus either for a more interesting direction for play

or for the target child to come up with a counter-suggestion, either of which may be enriching. Of course, for the child already engaged in high level imaginative play, such an interruption may pull him away from elaboration of his theme.

A third category of interruption occurs when a peer talks to a child about a subject extraneous to the play sequence: (Jason is playing fireman; Tom tells him that he just got a haircut.) In this case the interrupting child's remarks are simply irrelevant to the target child's play and do not directly challenge that play's legitimacy. This kind of interruption appears to be the clearest test of the target child's capacity to "shift gears" from play to nonplay and back again and to maintain his concentration. Garvey is extremely impressed at the ability of preschoolers to transmit cues as to what is play and what is not, switching back and forth between the two modes without losing their place. We have noticed that children who are very adept can respond to real life questions or comments and then return to their ongoing sequence of play without missing a beat. Sometimes a child's hands will continue setting up the doll house while his voice answers his friend. Other children maintain their concentration by continuing to play and simply ignoring the other child's remarks. We note that such an interruption does not absolutely command a response; only social convention does so. Still other children will drop their play activity to become engrossed in conversation. We can speculate that these children have less developed make-believe play skills and/or the conversation was particularly compelling for them.

A fourth way that peers impinge upon a child's pursuit of his desires is by distraction. Distraction would not qualify as an Environmental Force Unit according to Schoggen's (1963) definition because it is not directed specifically toward the child nor toward a recognizable end-state with respect to the child. But distraction can be a powerful source of interruption. Both Singer and Tizard, et. al. single out distraction as probable major cause for the low level of play observed in nursery schools. They feel that there is simply too much going on for a child to be able to develop an extended play sequence. Conversely, Garvey suggests that the lack of distractions enabled the pairs of preschoolers to engage in "more episodes of focused interaction, that is--of mutual attending and responsiveness" (1977, p. 13) than one would expect on the basis of classroom observations. However, peer modeling can begin as distraction, as when the child working on a puzzle looks up when he sees some other children all dressed up as adults and pushing baby carriages pass by. First he watches them intently, then he imitates their movements and joins the game. He has profited by the distraction, for it has provided him with the opportunity to watch other children at play. And we know that children need models to learn how to play--surely parents are not the only models. Distraction would appear to be useful in moderation as a source of new play ideas. If the child is continually distracted, he could find it difficult to develop and pursue his own play sequence.

As we have considered various types of interruptions, we have suggested that different children may respond to them differently. It is clear from Berk's (1971) data that there is one group of children

who experience few environmental impingements, to which they often respond in an unruffled manner, and another group of children who have many conflictual encounters with their environment, to which they often respond in a combative fashion. Since Berk is not concerned with fantasy predisposition or the level of play at which the child was playing when impinged upon, we cannot distinguish whether her groups are the same as the high and low fantasy groups identified by Singer and associates. The cluster of attributes found for the high fantasy child, including decreased motility, increased concentration, and decreased likelihood of making an aggressive response to frustration, are consonant with Berk's description of the low EFU child.

The two studies bearing on the relationship between fantasy predisposition and response to interruption yield different results. Pulaski finds that HP children are more flexible when their play is interrupted by an adult asking them to play with another toy; they are more likely to accept the instructions and to make up more creative stories than were LP children. Porter, however, finds no interaction between fantasy predisposition and response to interruption in her study. This discrepancy may be explained in part by the overwhelming nature of the interruptions in the Porter study which would tend to blur the distinctions between the two groups. Pulaski employed an adult version of the Attempt to change direction of target child's play interruption; further imaginative play was clearly the aim of the intervention. We have suggested that this type of interruption may not lower the level of play and can even serve to raise it. Unfortunately, adult intervention of this type is so rare in most nursery school classrooms that its effect on level of play cannot be

studied. The various peer-peer interruptions, as well as naturally occurring adult interruption, are amenable to study. We can determine if a child's fantasy predisposition does have an effect on his response to these more modulated interruptions.

As we study naturally occurring interruptions in a group setting, we must bear in mind the likely distinctions between solitary play and group play. Solitary and group play take place under different circumstances. They draw upon different skills as well. For the child playing alone, his own inner fantasy is of prime importance and requires great attention. He himself is the sole generator and elaborator of ideas. A major reward for his play is his ability to make his environment interesting. He also is in total control of his make-believe world. In contrast, the child engaged in group play must pay attention to the social cues of others and must be prepared to adapt his fantasy so that it meshes with the ideas of others. He can contribute ideas to the game, but he also can follow someone else's imaginative lead or take-off from someone else's ideas and still be a most effective member of the dramatic scene. The social interaction with peers can be a primary reward for group play. Social skills as well as imaginative skills are required of the sociodramatic player. And for the child whose play necessarily entails focusing on stimuli outside of himself, routine interruptions should be expected and dealt with as part of the game.

Children who play in a highly imaginative fashion in a group setting may therefore comprise a somewhat different group from Singer's HP children, since Singer's IPPI is primarily directed toward assessing private fantasy and play. It seems quite likely that ability for

solitary fantasy does not translate directly into ability to engage in sociodramatic play. Indeed, Garvey believes that both of these skills are derivative from the primary skill of playing in a dyad, for the child's first play experience is in the mother-child dyad. After the child learns imaginative play from the parent, he can translate those skills, with practice, into either solitary play, play with peers, or both, depending on his opportunities for practicing the different kinds of play. Children who are adept at playing in nursery school should be those who have had the chance to gain some expertise in dealing with other children.

Birth order offers us an easily obtainable indication of a child's opportunities to practice the skills used in dealing with peers. Simply by virtue of always having had to cope with one or more older sibling(s), later born children usually have had considerably more experience in dealing with child-generated interruptions than have first born children by the time they enter preschool. Later born children are described in the literature as being more peer-oriented, more friendly (McArthur, 1956) and more popular (Schachter, 1964; Sutton-Smith and Rosenberg, 1970) than first born children, suggesting that they know how to get along successfully with other children. Later born children are characterized as more easy-going (McArthur), more "flexible" and as having a greater versatility of interests (Hall and Barger, 1964), and are said to be more able to "give and take" with those whom they perceive as similar (Stotland, et. al., 1971) than are first born children. Additionally, later born children show relative insensitivity to adult reprimand (McArthur) and appeared to be "vurtually invulnerable

to differences in acceptance" by peers (Dittes, 1961, p. 358, in a study of college age males), indicating that later borns should be less perturbed by the attempts of others to change their activities. Indeed, later born children have weathered a great deal of bossiness and interference by their older siblings (Sutton-Smith and Rosenberg, 1970), so such tactics directed at them in nursery school should come as no surprise.

In contrast, first born children are repeatedly described as "sensitive," meaning that their feelings are easily hurt and that they are very concerned about the acceptance they get from others, shy, dependent, conforming and anxious or fearful (Carrigan and Julian, 1966; Hilton, 1967; McArthur; Schachter, 1959; Stotland, et. al.; Sutton-Smith and Rosenberg; Warren, 1966). This is a portrait of a child who appears likely to have some difficulty taking interruptions by others in stride. He should be more bothered by petty interpersonal annoyances than his later born peer, and may be less able to negotiate the give-and-take necessary for group play. Garvey (1977) notes that first born children spend more time watching and wandering about in nursery school than do their classmates with older siblings.

Birth order, then, may give us a rough estimate of a child's experience with other children as playmates and interruptors. If weathering the vicissitudes of play in a group setting requires such social experience, we may expect later born children to maintain their play level more successfully in the face of interruptions than first born children. This would be a first step in understanding the different requirements for social imaginative play in contrast

to solitary imaginative play.

We have proposed three independent variables for consideration in the study of the effects of naturally occurring interruptions on children's play in a peer group setting. Since the many various interruptions and distractions encountered by a child differ from each other, type of interruption is an important variable. Fantasy predisposition may interact with type of interruption in determining a child's level of play and affect following an environmental impingement, and its relationship to the frequency with which a child is interrupted needs to be explored. Birth order, a variable which indicates amount of experience with other children, may influence the child's response to interruptions in general and may interact with type of interruption. The change in a child's level of play and the change in the child's level of affect from before the interruption to after the interruption are useful dependent variables in this study of the vicissitudes of children's play in its natural habitat.

General Statement of Hypotheses

We suggest that when record is made of all interruptions and distractions that children experience in a nursery school setting, their net effect when taken together will not be an extremely negative one. When distractions are differentiated from interruptions, they will be less likely to have a negative effect on play level and affect level than will interruptions.

Interruptions can be divided into several meaningful categories. There will be more interruptions in which the impinging agent is a child than in which the agent is an adult. Child-generated interruptions will have a less negative effect on play level and affect

level than will adult-generated ones. Interruptions which show a lack of respect for the child's current activity--which imply that what the child is doing is not important or not right--will have a more negative effect than those interruptions and distractions which do not show disrespect for the child's current activity.

Children with a high fantasy predisposition will experience fewer interruptions than low fantasy predisposition children. In other words, HP children play in such a way that their behavior does not "ask" to be interrupted. Ratings of the predominant level of play throughout entire observation periods will be higher for HP children than for LP children.

Later born children will be less likely to respond negatively to interruptions and distractions than first born or only children.

There will be no differences between HP and LP children, nor between first born and later born children in their responses to teacher interruptions directed to them individually.

HP children will be less likely than LP children to show negative changes in play level and affect level following teacher interruptions directed at the group. Later born children will be less likely than first born or only children to show negative changes in play level and affect level following teacher interruptions directed at the group.

There will be no differences between HP and LP children in their responses to peer disputes over right to play or right to a toy. First born/only children will be more likely than later born children to show negative changes in play level following peer dispute interruptions.

Following interruptions by a peer who wishes to change the direction of their play, HP children will be less likely to show negative changes in their play level and affect level than LP children. Later born children will be less likely to lower their play level and affect level following this type of interruption.

HP children are less likely than LP children to lower their play level following interruption by a peer who converses about a subject extraneous to the child's current activity.

CHAPTER II

METHOD

Subjects

The subjects for this study are 24 children from two Four Year Old Group nursery school classes held at a Montgomery County Y.M.C.A. in suburban Washington, D.C. All of the children are from middle- to upper-middle class families; most fathers are either professionals or government employees. All children in one morning and one afternoon class were observed, with the following exceptions: children from foreign diplomatic families, the son of one of the classroom teachers, and one boy considered deviant by the teachers and the observer because he spent every free play period sitting motionless in a chair. Two boys from the original sample of 27 were used for the pilot study and the observations for a third boy are not included in the final study in order to equalize the number of boys and girls in the final sample.

The children ranged in age from four years three months to five years four months at the end of the observation period, which lasted approximately two months. The period from four to five and a half years has been found by a number of observers (Denzin, 1975; Markey, 1935; Millar, 1974; Piaget, 1963; Tizard, Philps and Plewis, 1976) to be one when imaginative or dramatic play is at its peak. Children speak clearly by four. In addition, Stodolsky (1974) found that children achieve a base level of maturity at age four which enables them to find successful ways of managing transitions; in contrast to younger children, four year olds showed wide variance

in their presolution behavior when faced with the nursery school mandate of "Find something to do." Therefore, different patterns of response to interruptions should become apparent after age four.

Procedure

The children were given the vocabulary portion of the Vane Kindergarten Test (Vane, 1968) individually and were asked to draw a person on a group basis (scored by the Vane method) as screening tests to insure that all were of normal intelligence.[1] Following the completion of all observations, the investigator interviewed each child individually according to Singer's Imaginative Play Predisposition Interview (see Appendix A). The IPPI consists of four questions designed to elicit from the child the extent to which he engages in fantasy activities, with possible scores ranging from 0 to 4. In previous studies using this measure (Singer, 1973; Porter, 1977), it has been possible to divide children into two groups; Low Predisposition (LP) children attain a score of 0 to 1 and High Predisposition (HP) children attain a score of 2 or higher.[2] Fantasy predisposition has been demonstrated to be independent of intelligence (Freyberg, 1970; Pulaski, 1973; Singer, 1973; Porter). In addition, the children were asked whether they had any brothers or sisters and what the ages of their siblings were.

Observations

All observations were made by the investigator between March 24, 1977 and May 19, 1977, prior to the investigator obtaining any information on the children's fantasy predisposition or approximate intelligence.[3] In the week before March 24, 1977, the investigator observed the two classes for a total of six hours to establish

meaningful classification for interruption, to identify children, to become familiar with classroom routine and equipment, and to gain additional expertise in observation.[4] Each child was observed for ten minutes at a time on four different occasions during free play period. During the observation period, the observer attempted to write down everything that the child said or did, including his facial expressions wherever possible. All actions or verbalizations made by others in the target child's immediate environment were recorded. Observations were made in a random order, with each child being observed once before any child was observed for a second time, with the following exceptions: (a) If a child was absent, the next child was observed and the absent child was watched on the first day of his return; (b) Every child was observed three times inside the classroom and one time outside in the playyard; (c) No child was observed more than once at the very beginning or the very end of the school day.

If the children asked what the observer was doing, she explained that she wanted to write down all the different things that children like to play and do in school. If a child asked the observer for help, he was directed to a teacher. If a child showed the observer a piece of art work, he received a smile, a brief nod, and the explanation that the observer had to return to her writing. In practice, the children almost never interrupted the observer at her task. All of the classroom teachers present during the observations commented spontaneously on the lack of any noticeable impact on the children's normal activities. They marvelled that they could not

tell the difference between those days when the observer was present and those days when she was not.

Instruments

The author devised three rating scales for use in this study. The first gives six categories for Type of Interruption: 1) Adult interruption directed specifically at the target child; 2) Adult interruption directed at a group of children (or at a child with whom the target child is playing); 3) Peer disputes of the target child's right to play and/or possession of a toy; 4) Peer attempt to change direction of the target child's play; 5) Peer conversation about a subject extraneous to play or activity sequence; 6) Distraction, which is defined as an activity or verbalization which is not directed at the target child but which occurs in such close proximity to him, at such high volume or with such vigorous motion that the target child would have to actively ignore it in order not to respond to it.[5]

The second scale rates level of play and has been adapted from one used by Tizard, Philps and Plewis in their naturalistic studies of children's play. Play Level includes: 1) Non-play; 2) Partial play; 3) Appropriate play; 4) Symbolic play (basic); 5) Symbolic play (advanced). These scores follow a continuum from a low level of play to a high level of play.[5]

The third scale rates Affect Level on a continuum which ranges from 1) Clearly negative, to 5) Extremely positive affect. Negative affects are sadness, anger and disgust. Positive affects are joy, excitement and mild surprise.[5]

These rating scales were applied to the typed protocol of each observation by two raters, one of whom is the experimenter, the other of whom is an independent rater unfamiliar with the hypotheses of this study and who does not know the fantasy predisposition, birth order or IQ of the subjects. The independent rater is an experienced nursery school teacher with advanced training in early childhood education. The instructions to the rater are to read the protocol through and mark all interruptions and distractions first. Then the rater is to go back and rate the level of play and the level of affect exhibited by the child in the play or activity sequence just prior to the interruption. The rater scores the activity or play sequence following the interruption for level of play and affect. The rater is also asked to give his overall impression of the predominant level of play throughout the entire ten minutes, including those periods during which the child was not interrupted, to be expressed as a number score using the Play Level Scale.

Each ten minute observation protocol, then, yields the following information: (a) The number and type of interruptions and distractions experienced by the child; (b) The level of play before and after each interruption and distraction, hence any change in level of play following each interruption or distraction. This can be expressed as a change score, obtained by subtracting the pre-interruption Play Level score from the post-interruption Play Level score. Such change scores can range from a low of -4 to a high of +4; (c) The level of affect before and after each interruption and distraction, hence a change score for Affect Level following each interruption or distraction; (d) A Play Level score for the child's

predominant level of play throughout the total observation period. There are four such protocols and sets of ratings for each child.

These rating scales were used successfully in the pilot study, which included eight protocols from two children. Interrater reliabilities between the author and an educational psychologist serving as an independent rater are satisfactory for all scales. For Type of Interruption, there is 79% total agreement between the two raters. When instances where the independent rater spontaneously changed her rating when questioned, or where a rater suggested a second choice for a rating (e.g., a "4 or a 6"), are included as basic agreement, the percentage agreement is 92. Pearson's r for interrater reliability on Play Level is .86. Pearson's r for interrater reliability on Affect Level is .73. Although the Affect Level reliability is adequate, it was felt that the inclusion of "interest" as a positive affect in the rating scale, following Singer and Pulaski (Singer, 1973), created an unnecessary source of confusion in the pilot study since ratings must be made covering only a short time span. Therefore, in the revised Affect scale to be used for the final study, "interest" is not listed.

Hypotheses

Hypothesis 1. The sum change scores for all subjects following all interruptions and distractions (Type of Interruption 1-6) will not be significantly less than zero

a) for Play Level

b) for Affect Level.

Hypothesis 2. Change scores will be higher[6] following distractions (Type of Interruption 6) than following interruptions (Types 1-5)

a) for Play Level

b) for Affect Level.

Hypothesis 3. There will be more interruptions in which the impinging agent is a child (Types 3-5) than there will be interruptions in which the impinging agent is an adult (Types 1, 2).

Hypothesis 4. Change scores following adult-generated interruptions (Types 1, 2) will be lower[6] than change scores following child-generated interruptions (Types 3-5)

a) for Play Level

b) for Affect Level.

Hypothesis 5. Change scores will be lower following interruptions which show a lack of respect for the child's current activity (Types 1-3) than following interruptions and distractions which do not show a lack of respect for the child's current activities (Types 4-6)

a) for Play Level

b) for Affect Level.

Hypothesis 6. High fantasy predisposition (HP) children will experience fewer interruptions (Types 1-5) than low fantasy predisposition (LP) children.

Hypothesis 7. Ratings for predominant level of play will be higher for HP children than for LP children.

Hypothesis 8. LP children will have lower change scores following interruptions and distractions (Types 1-6) than HP children

a) for Play Level

b) for Affect Level.

Hypothesis 9. First born and only children will have lower

change scores following interruptions and distractions (Types 1-6) than later born children

a) for Play Level

b) for Affect Level.

Hypothesis 10. Following teacher interruptions directed at the target child (Type 1), there will be

a) no difference between the change scores of HP and LP children

1) for Play Level

2) for Affect Level;

b) no difference between the change scores of first born/only children and later born children

1) for Play Level

2) for Affect Level.

Hypothesis 11. Following teacher interruption directed toward the group (Type 2),

a) HP children will have higher change scores than LP children

1) for Play Level

2) for Affect Level;

b) later born children will have higher change scores than first born/only children

1) for Play Level

2) for Affect Level.

Hypothesis 12. Following peer dispute interruptions (Type 3),

a) there will be no difference between the change scores of HP and LP children

1) for Play Level

2) for Affect Level;

b) later born children will have higher change scores than first born/only children

1) for Play Level.

Hypothesis 13. Following peer attempt to change direction of play interruptions (Type 4),

a) HP children will have higher change scores than LP children

1) for Play Level

2) for Affect Level;

b) later born children will have higher change scores than first born/only children

1) for Play Level

2) for Affect Level.

Hypothesis 14. Following peer conversation about a subject extraneous to the target child's current activity (Type 5),

a) HP children will have higher change scores than LP children

1) for Play Level.

Statistical Treatment

The individual child will be the unit of analysis. Since there are no hypotheses regarding change over time, stable aggregate scores will be obtained by calculating a mean change score for each child for each dependent variable, based on all instances of the relevant interruptions recorded for that child. If a given child does not have a change score for a specific type of comparison (e.g., was never distracted), the number of cases used in making that comparison will not include him. *t*-procedures will be used for the statistical analysis.

Hypothesis 1: The average change score across all children for all interruptions and distractions will be tested against zero. Hypothesis 1 is supported if the null hypothesis cannot be rejected at the .05 level of confidence. Mean change scores for all interruptions and distractions will be obtained for each child for both play level and affect level. These scores will be summed and divided by 24.

$$t = \frac{\bar{X} - 0}{\hat{s}_{\bar{X}}} \quad (\bar{X} = \text{mean of all children's means}),\ df = 23.$$

Hypothesis 2: Calculate a mean play level and affect level change score for Type 6 and for Types 1-5 for each child. Using a correlated t-test, obtain the mean difference between the change scores for Type 6 and Types 1-5, $df = 23$. The null hypothesis is that there is no difference; the alternate hypothesis is that Type 6 change scores are greater than Types 1-5 change scores.

Hypothesis 3: Calculate the proportion of adult/child interruptions for each child. Find the average proportion of adult/child interruptions for the group. The null hypothesis is that this proportion is .5 (i.e., a 50% chance of interruption by adults or children). The alternate hypothesis is that the proportion of child interruptions is greater than .5. Test the obtained proportion against the hypothesized .5 value.

$$z = \frac{\text{obtained proportion} - .5}{\sqrt{p\,q/N}}$$

Hypothesis 4: Calculate a mean play level and affect level change score for each child for each category (Types 1-2 and Types 3-5). Using a correlated *t*-procedure, obtain the mean difference between change scores: (3-5) - (1-2), *df* = 23. The null hypothesis is that there is no difference; the alternate hypothesis is that Types 3-5 change scores are greater than Types 1-2 change scores.

Hypothesis 5: Use the same procedure as Hypotheses 2 and 4, except that Types 1-3 are to be contrasted with Types 4-6.

Hypothesis 6: Calculate the mean number of interruptions (Types 1-5) for HP (12) children and LP (12) children. The *t*-test for this hypothesis is for independent groups:

$$t = \frac{\bar{X}_{HP} - \bar{X}_{LP}}{\hat{s}_{pooled}}, \quad df = 22.$$

Hypothesis 7: Calculate the mean predominant level of play for HP children and LP children. Use the *t*-test for independent groups, *df* = 22.

Hypothesis 8: Calculate the mean change scores for play level and affect level across all types of interruptions and distractions for HP and for LP children. Use the *t*-test for independent groups, *df* = 22.

Hypothesis 9: Use the same procedure as for Hypothesis 8, except that mean change scores for each child will be calculated for first born (11) versus later born (13) children.

Hypothesis 10:

a) Calculate means for each child under Type 1 (Adult interruptions of individual) for HP versus LP children for play level and affect level. Use the *t*-test for independent groups. *N*'s

will be dependent upon the number of children who have experienced a Type 1 interruption. *df*'s will be $(N_1 - 1) + (N_2 - 1)$.

b) Same as 10a except birth order is used as a classification variable rather than fantasy predisposition.

Hypothesis 11: Use the same procedure as 10a and 10b except that Type 2 (Adult interruption of group) is used instead of Type 1.

Hypothesis 12: Use the same procedure as 10a and 10b except that Type 3 (Peer dispute) is used instead of Type 1.

Hypothesis 13: Use the same procedure as 10a and 10b except that Type 4 (Peer attempt to change direction of play) is used instead of Type 1.

Hypothesis 14: Use the same procedure as 10a except that Type 5 (Peer conversation) is used instead of Type 1.

Footnotes

[1]The vocabulary subtest was later scored by a clinical psychology graduate student who was in his residency (or internship) year. The drawings were scored by a child psychiatrist with extensive experience in evaluating children's drawings.

[2]IPPI responses were scored by the clinical psychology resident.

[3]The tape-recorded transcript of a protocol for one child was damaged prior to written transcription. A repeat observation was done on that child after the vocabulary test and the IPPI had been given.

[4]The observer had already done over 100 hours of classroom observation for a different project.

[5]See the Instruction Manual for Raters for complete rating scales and examples (Appendix B).

[6]Higher = more positive or less negative. Lower = more negative or less positive.

CHAPTER III

RESULTS

Descriptive Data on the Subjects

The 24 subjects were enrolled in the morning or the afternoon Four Year Old classes at the same nursery school. Six boys and six girls from each class were used in the final study. Both classes had the same head teacher but each had a different assistant teacher. The children's scores on the Singer Imaginative Play Predisposition Interview ranged from 0-4 with a mean of 1.625. Six boys and six girls had scores of 0-1; these children comprise the low fantasy predisposition (LP) group. The other six boys and six girls obtained scores of 2-4; they comprise the high fantasy predisposition (HP) group.

The average IQ score on the abbreviated Vane Kindergarten Test was 123, with a range of 99-148. High fantasy children had an average IQ of 126; low fantasy children had an average IQ of 120.1. The difference between the two groups is not significant, $t(22) = .211$, $p > .05$.[1]

Eleven children were first born or only children (eight first born, three only). Thirteen children were later born. In contrast to previous studies (Singer, 1973; Porter, 1977), birth order was not related to fantasy predisposition. The HP group is comprised of six first/only children and six later born children. The LP group is comprised of five first/only children and seven later born children.

The children experienced an average of 31.8 interruptions and distractions during the 40 minutes in which they were observed as

the target child; the median is 31. Thus each child was subject to an average of eight interruptions and distractions during each 10 minute observation period. The range for total number of interruptions and distractions is from 20 for the child with the fewest to 53 for the child with the most. The range for number of interruptions and distractions during a single 10 minute observation period is from one to 20.

When we consider the number of times the impingement was directed specifically at the target child (e.g., excluding distractions), we find that the children were subjected to an average of 22.25 interruptions per 40 minutes, or about 5.5 interruptions during each 10 minute observation. The lowest child experienced a total of eight interruptions during 40 minutes of observation; the highest experienced 47.

Mean number and ranges for occurrences of each category of interruption and distraction are as follows:

	40 Minutes		Single Observation	
	Avg.	Range	Avg.	Range
Type 1 (Adult-individual child):	1.7	0-7	.425	0-3
Type 2 (Adult-group):	2.7	0-6	.675	0-3
Type 3 (Peer dispute):	4.0	0-9	1.000	0-5
Type 4 (Peer change direction):	12.9	2-30	3.200	0-9
Type 5 (Peer conversation):	1.5	0-7	.375	0-4
Type 6 (Distraction):	9.0	3-18	2.250	0-7

Interrater Reliability

All ratings were done by the author and by an independent rater who did not have access to information on the fantasy predisposition, birth order or IQ of the subjects, and who was unfamiliar with the specific hypotheses of the study. Raters first read the narrative play protocols independently and indicated where they thought interruptions existed. These initial ratings, which took the form of marks on the protocol wherever the rater felt an impingement on the target child to have taken place, were then compared. The incidents marked as impingements by each rater were the same 74% of the time. The rest of the time, only one of the two raters singled out a given incident as an impingement. The latter incidents were discussed and a consensus reached as to whether or not an impingement occurred. Then each rater independently completed all of the additional ratings on each protocol. Interrater reliabilities are good for all scales, as reported in Table 1. Following completion of all ratings, discrepant ratings were discussed and a consensus rating obtained for use in the final data analysis.

Table 1

Reliability Coefficients for Rating Scales

Instrument	Rating	Raters	Correlation Coefficient	Value
Type of Interruption Scale		E, Independent rater	Spearman r_s	.78
Play Level Scale	before interruption	E, Rater	Spearman r_s	.82
Play Level Scale	after interruption	E, Rater	Spearman r_s	.80
Play Level Scale	predominant level of play	E, Rater	Spearman r_s	.94
Affect Level Scale	before interruption	E, Rater	Spearman r_s	.70
Affect Level Scale	after interruption	E, Rater	Spearman r_s	.71

Tests of Hypotheses

The results of the tests of each hypothesis are considered separately. They are summarized in Table 2.

Hypothesis 1: The sum change scores for all subjects following all interruptions and distractions (Type of Interruption 1-6) will not be significantly less than zero

a) for Play Level

b) for Affect Level.

This hypothesis was designed to test our assertion that, in general, naturally occurring interruptions and distractions do not have an extremely negative effect on children at play in a peer group setting.

Hypothesis 1 as stated in the Method section is not confirmed. The mean of the children's mean change scores is less than zero. The mean of the mean change scores for play level is -.1456 with a standard deviation of .183, t (23) = -3.89, $p < .001$. The mean of the mean change scores for affect level is -.057 with a standard deviation of .096, t (23) = -2.923, $p < .01$. For most children, the mean change score is close to zero, but just barely negative. Thus our general hypothesis that interruptions and distractions will not have an extremely negative effect on children's play or affect level appears to be confirmed, since for the individual child the mean changes are only minimally negative. For affect change, no child has a mean change score of less than -.3. For play level change, only four children have mean change scores of less than -.3. For most children, positive and negative changes almost balance out, but the balance tilts slightly toward the negative.

Another way to understand the changes in play level--or the lack

Table 2

Summary of Tests of Hypotheses

Hypothesis	Criterion Measures	Tests & Results	Conclusions
1. The sum change scores for all subjects following all interruptions and distractions (Types 1-6) will not be significantly less than zero		*t*-test	
a) for Play Level	Rating Scale for Play Level	$p < .01$	Not Confirmed
b) for Affect Level	Rating Scale for Affect Level	$p < .001$	Not Confirmed
2. Change scores will be higher following distractions (Type 6) than following interruptions (Types 1-5)		*t*-test	
a) for Play Level	Rating Scale for Play Level	N.S.	Not Confirmed
b) for Affect Level	Rating Scale for Affect Level	$p < .01$	Confirmed

Table 2 (Continued)

Hypothesis	Criterion Measures	Tests & Results	Conclusions
3. There will be more interruptions in which the impinging agent is child (Types 3-5) than there are interruptions in which the impinging agent is an adult (Types 1 & 2)	Rating Scale for Type of Interruption	test for proportion $p < .01$	Confirmed
4. Change scores following adult-generated interruptions (Types 1 & 2) will be lower than change scores following child-generated interruptions (Types 3-5)		t-test	
a) for Play Level	Rating Scale for Play Level	$p = .01$	Confirmed
b) for Affect Level	Rating Scale for Affect Level	N.S.	Not Confirmed
5. Change scores will be lower following interruptions which show a lack of respect for the child's current activity (Types 1-3) than following interruptions and distractions which do not show a lack of respect for the child's current activities (Types 4-6)		t-test	

Table 2 (Continued)

Hypothesis	Criterion Measures	Tests & Results	Conclusions
5. (continued)			
a) for Play Level	Rating Scale for Play Level	$p = .01$	Confirmed
b) for Affect Level	Rating Scale for Affect Level	$p < .01$	Confirmed
6. High fantasy predisposition (HP) children will experience fewer interruptions (Types 1-5) than low fantasy predisposition (LP) children	Rated Frequency for observed event	t-test N.S.	Not Confirmed
7. Ratings for predominant level of play will be higher for HP children than for LP children	Rating Scale for Play Level. Predominant Level of Play Rating.	t-test N.S.	Not Confirmed
8. LP children will have lower change scores following interruptions and distractions (Types 1-6) than HP children		t-test	
a) for Play Level	Rating Scale for Play Level	N.S.	Not Confirmed

Table 2 (Continued)

Hypothesis	Criterion Measures	Tests & Results	Conclusions
8. (continued)			
b) for Affect Level	Rating Scale for Affect Level	N.S.	Not Confirmed
9. First born and only children will have lower change scores following interruptions and distractions (Types 1-6) than later born children		*t*-test	
a) for Play Level	Rating Scale for Play Level	N.S.	Not Confirmed
b) for Affect Level	Rating Scale for Affect Level	N.S.	Not Confirmed
10. Following teacher interruptions directed at the target child (Type 1), there will be			
a) no difference between the change scores of HP and LP children		*t*-test	
1) for Play Level	Rating Scale for Play Level	N.S.	Confirmed

Table 2 (Continued)

Hypothesis	Criterion Measures	Tests & Results	Conclusions
10. (continued)			
2) for Affect Level	Rating Scale for Affect Level	N.S.	Confirmed
b) no difference between the change scores of first born/ only children and later born children		t-test	
1) for Play Level	Rating Scale for Play Level	N.S.	Confirmed
2) for Affect Level	Rating Scale for Affect Level	N.S.	Confirmed
11. Following teacher interruption directed toward the group (Type 2),			
a) HP children will have higher change scores than LP children		t-test	
1) for Play Level	Rating Scale for Play Level	N.S.	Not Confirmed
2) for Affect Level	Rating Scale for Affect Level	N.S.	Not Confirmed

Table 2 (Continued)

Hypothesis	Criterion Measures	Tests & Results	Conclusions
11. (continued)			
b) Later born children will have higher change scores than first born/only children		*t*-test	
1) for Play Level	Rating Scale for Play Level	$p = .095$[a]	Not Confirmed (trend in opposite direction)
2) for Affect Level	Rating Scale for Affect Level	N.S.	Not Confirmed
12. Following peer dispute interruptions (Type 3),			
a) there will be no difference between the change scores of HP and LP children		*t*-test	
1) for Play Level	Rating Scale for Play Level	N.S.	Confirmed
2) for Affect Level	Rating Scale for Affect Level	N.S.	Confirmed

[a] Indicates 2-tailed; other comparisons are 1-tailed tests of significance.

Table 2 (Continued)

Hypothesis	Criterion Measures	Tests & Results	Conclusions
12. (continued)			
b) later born children will have higher change scores than first born/only children		t-test	
1) for Play Level	Rating Scale for Play Level	$p = .03$	Confirmed
13. Following peer attempt to change direction of play interruptions (Type 4),			
a) HP children will have higher change scores than LP children		t-test	
1) for Play Level	Rating Scale for Play Level	N.S.	Not Confirmed
2) for Affect Level	Rating Scale for Affect Level	N.S.	Not Confirmed
b) later born children will have higher change scores than first born/only children		t-test	

Table 2 (Continued)

Hypothesis	Criterion Measures	Tests & Results	Conclusions
13. (continued)			
1) for Play Level	Rating Scale for Play Level	$p = .07$	Not Confirmed (trend in predicted direction)
2) for Affect Level	Rating Scale for Affect Level	N.S.	Not Confirmed
14. Following peer conversation about a subject extraneous to the target child's current activity (Type 5),			
a) HP children will have higher change scores than LP children		t-test	
1) for Play Level	Rating Scale for Play Level	N.S.	Not Confirmed

of change--is to consider the following figures for the group as a whole:

66% of all interruptions and distractions resulted in no change in play level.

13.8% of all interruptions and distractions resulted in an increase in play level. The children played at a higher level than they had before they were interrupted.

7.5% of all interruptions and distractions were followed by a minor decrease in play level (change scores of -1).

12.8% of all interruptions and distractions were followed by a major decrease in play level (change scores of -2 to -4).

For affect level, even fewer interruptions and distractions resulted in noticeable change.

75.6% of interruptions and distractions resulted in no change in affect level.

9.9% of interruptions and distractions were followed by a positive change in affect (the child appeared happier).

13% of interruptions and distractions were followed by a mild negative change in affect (change score of -1; the child appeared somewhat less happy).

1.5% of all interruptions and distractions were followed by a major negative change in affect (change score of -2 or -3).

Hypothesis 2: Change scores will be higher following distractions (Type of Interruption 6) than following interruptions(Types 1-5).

a) for Play Level

b) for Affect Level.

Interruptions are differentiated from distractions in that they are not directed toward the target child; this hypothesis tests whether that is a useful distinction when we are considering the effects which these events have on children at play. It was felt that distractions, which are simply events occurring in the child's environment, would have less of a negative impace than would interruptions.

Hypothesis 2 is not confirmed for play level, t (23) = 1.25, N.S.[2] Hypothesis 2 is confirmed for level of affect; children are less likely to show a negative affect change following a distraction than following an interruption, t (23) = 2.59, p .01.[3] The directedness of the impingement on the child's stream of behavior has a clear emotional impact.

Hypotheses 3, 4, and 5 are designed to test the general hypothesis that interruptions can be divided into several meaningful categories.

Hypothesis 3: There will be more interruptions in which the impinging agent is a child (Types 3-5) than there are interruptions in which the impinging agent is an adult.

This hypothesis is strongly confirmed. The average proportion of child interruptions is .7416, z = 2.7037, p .01. The child playing in a traditional nursery school classroom is much more likely to be interrupted by a peer than by a teacher. When we consider all interruptions of all children, we find that 440 interruptions or 80.6% were by another child, whereas only 106 interruptions or 19.4% were by an adult.

The most useful model for a typical classroom interruption would be Child A asking if he can join Child B's game; an adult interrupting

a child by making a specific request is actually quite a rare event. Frequency percentages for each of the different categories of interruption are as follows:

Type 1 (Adult interruption directed specifically at target child):	7.5%
Type 2 (Adult interruption directed at a group of children):	11.9%
Type 3 (Peer dispute):	17.6%
Type 4 (Peer attempt to change direction of play):	56.8%
Type 5 (Peer conversation about extraneous matter):	6.2%

Hypothesis 4: Change scores following adult-generated interruptions (Types 1 and 2) will be lower than change scores following child-generated interruptions (Types 3-5)

a) for Play Level

b) for Affect Level.

This hypothesis was an attempt to test the idea that adult interruptions would be more powerful and more negative than child interruptions. Adult interruptions were expected to have a greater effect on the interrupted child. Since initial observation of the nursery classes revealed so few instances of an adult attempting to engage a child in play, it seemed appropriate to group all adult interruptions together and consider them potentially negative.

Hypothesis 4 is confirmed for play level. Children are more likely to play at a lower level following an adult interruption

than they are following a peer interruption, t (23) = 2.491, p = .01.[4] There is no significant difference in affective response to child versus adult interruptions, t (23) = .0959, N.S.[5] Teacher interruptions are more likely than peer interruptions to disrupt the flow of play, but they do not necessarily produce negative affect.

Close examination of the data on all interruptions of all children adds another dimension to our understanding of the differences between response to adult versus peer interruptions. Adult interruptions appear to be more powerful than child interruptions in both directions. For some children they can be a positive force. A contingency table for all child versus adult interruptions by play change reveals that adult interruptions contribute disproportionately large numbers to the major changes in play level whether they are positive or negative, whereas child interruptions contribute a disproportionate number of minor changes. Similarly, for affect, adult interruptions account for a disproportionate number of major negative changes and of positive changes, whereas child interruptions contribute a disproportionate number of minor negative changes. Adult interruptions have a stronger impact than do child interruptions; this impact is often more negative than that of child impingements, but we need more information about the nature of the adult interruption to confidently predict the direction of change engendered.

Hypothesis 5: Change scores will be lower following interruptions which show a lack of respect for the child's current activity (Types 1-3) than following interruptions and distractions which do not show a lack of respect for the child's current activities (Types 4-6)

a) for Play Level

b) for Affect Level.

Hypothesis 5 tests the theoretically important distinction be-between interruptions which indicate that the interruptor does not value the child's play, either because the interruption, although directed at the child, is wholly arbitrary with respect to his play ("Music time. Sit in a circle now.") or actively antagonistic to it ("You can't be Superman.") and those interruptions and distractions which are either neutral (John and Amy noisily chase each other past the sandbox where Fred is digging) or supportive ("You can be the big sister.").

Hypothesis 5 is strongly confirmed both for play level, t (23) = 2.61, $p < .01$[6] and for affect, t (23) = 3.31, $p < .001$.[7] The dimension of respect/disrespect is a very important one in evaluating the potential negative impact of an interruption on the way in which a child plays and on his relative happiness.

Hypotheses 6, 7, and 8 were designed to test some of the properties of Singer's fantasy predisposition distinction in the context of peer group play.

Hypothesis 6: High fantasy predisposition (HP) children will experience fewer interruptions (Types 1-5) than low fantasy predisposition (LP) children. Since Singer postulated that children require long uninterrupted play sessions to spin out fantasy themes, it seemed appropriate to ask whether high fantasy children conduct themselves in such a way so as to make such uninterrupted sequences possible. This is of particular interest since Berk found that there is a group of children who are rarely interrupted in peer group play.

Hypothesis 6 was not confirmed. There is no significant difference between children in the high and low fantasy groups in number of interruptions experienced, t (22) = -1.102, N.S.[8] As a group the high fantasy children accounted for 56.6% of all interruptions received. They are not especially likely to have long undisturbed play sequences in the nursery classroom.

Hypothesis 7: Ratings for predominant level of play will be higher for HP children than for LP children. Does Singer's test have predictive value for how children play in a group setting?

Hypothesis 7 was not confirmed. The mean predominant level of play for HP children (3.17) and that for LP children (2.88), are not significantly different, t (22) = 1.218, N.S.[9] Fantasy predisposition does not determine level of play in this nursery school setting.

Hypothesis 8: LP children will have lower change scores following interruptions and distractions (Types 1-6) than HP children

a) for Play Level

b) for Affect Level.

This hypothesis is designed to test the possibility that HP children are more impervious to interruptions and distractions than LP children. Does having a high fantasy predisposition enable children to maintain their play and their equilibrium in the classroom setting?

Hypothesis 8 is not confirmed. There is no difference between the two groups for play change, t (22) = -.21, N.S.,[10] or for affect change, t (22) = -.51, N.S.[11] When only interruptions are considered (Types 1-5), there is still no relationship between fantasy predisposition and response to interruption.

Hypothesis 9: First born and only children will have lower change

scores following interruptions and distractions (Types 1-6) than later born children

a) for Play Level

b) for Affect Level.

This hypothesis was designed to test whether social experience, as indicated by birth order, is a factor in a child's response to interruptions and distractions.

Hypothesis 9 is not confirmed for either play level or affect level. There is no significant difference between the two groups for change in play level, t (22) = .25, N.S.[12] or in affect level, t (22) = .69, N.S.[13] If only interruptions (Types 1-5) are considered, first born and only children have significantly lower play level change scores than later borns, t (22) = 1.86, $p < .05$.[14] Birth order is a useful dimension in studying children's responses to impingements which are directed at them--interruptions. Birth order does not appear to be relevant in responses to distraction.

Hypotheses 10-14 were designed to test, in a discriminating fashion, the relationships between the variables of type of interruption and fantasy predisposition, and between type of interruption and birth order. If different types of interruptions have different kinds of impacts on children, we may find that an aspect of a child's experience or temperament is relevant to some interruptions but not to others.

Hypothesis 10: Following teacher interruptions directed at the target child (Type 1), there will be

a) no difference between the change scores of HP and LP children

1) for Play Level

2) for Affect Level;

b) no difference between the change scores of first born/only children and later born children

1) for Play Level

2) for Affect Level.

Hypothesis 10 was designed to test the formulation that adult interruptions directed specifically at the individual child are so overwhelming that differences between children are not generally relevant to their response.

Hypothesis 10 was supported on all counts. There were no significant differences between the children to this type of interruption. (See Tables 3 and 4 for specific statistics.)

Hypothesis 11: Following teacher interruptions directed toward the group (Type 2),

a) HP children will have higher change scores than LP children

1) for Play Level

2) for Affect Level;

b) later born children will have higher change scores than first born/only children

1) for Play Level.

Hypothesis 11a was designed to test the formulation that for a less overwhelming adult interruption, the fantasy predisposition factor would come into play. 11b tested whether later born children, presumably less conforming, would be more impervious to a teacher's attempt to control the group.

Hypothesis 11a was not confirmed for either play level or affect level. Fantasy predisposition is not a relevant factor in response

Table 3

t-Test for Change in Play Level and Affect Level Following Adult Interruptions Directed at the Target Child, According to Fantasy to Fantasy Predisposition of Child (Hypothesis 10a)

Group	*N*	Mean	*s*	*t*	*df*	*p*
		Play Level				
HP	10	-.325	1.054			
				-1.105	17	N.S.†
LP	9	.1233	.8828			
		Affect Level				
HP	10	-.10	.8756			
				-.1466	17	N.S.†
LP	9	-.043	.8151			

† Indicates hypothesis cannot be rejected.

Table 4

t-Test for Change in Play Level and Affect Level Following Adult Interruptions Directed at the Target Child, According to Birth Order of Child (Hypothesis 10b)

Group	*N*	Mean	*s*	*t*	*df*	*p*
		Play Level				
First born	8	-.1875	.7647			
				.2884	17	N.S.†
Later born	11	-.0582	1.083			
		Affect Level				
First born	8	-.0031	1.0215			
				.2712	17	N.S.†
Later Born	11	-.1036	.7001			

† Indicates hypothesis cannot be rejected.

to adult to group interruptions. (See Table 5 for statistics.)

Hypothesis 11b was not confirmed; there appears to be a trend in the opposite direction, in that later borns had somewhat more negative changes in play level than first born/only children, t (20) = -1.75, p = .095 (2-tailed), (Table 6).

Hypothesis 12: Following peer dispute interruptions (Type 3),

a) there will be no difference between the change scores of HP and LP children

1) for Play Level

2) for Affect Level;

b) later born children will have higher change scores than first born/only children

1) for Play Level.

Hypothesis 12 tested the formulation that for a generally negative, potentially overwhelming peer interruption, fantasy predisposition would not be an important factor. Previous experience with disputant older siblings should be relevant, and one would expect later born children to be more able to maintain their play level in the wake of negative peer interruptions.

Hypothesis 12 was supported on all counts. There is no significant difference between high and low fantasy groups for either play level or affect level following peer dispute interruptions. (See Tables 7 and 8 for statistics.) First born/only children showed significantly more negative play level changes than did later borns, t (21) = 1.97, p = .03.

Hypothesis 13: Following peer attempt to change direction play interruptions (Type 4),

Table 5

t-Test for Change in Play Level and Affect Level Following Adult Interruptions of a Group, According to Fantasy Predisposition of Child (Hypothesis 11a)

Group	*N*	Mean	*s*	*t*	*df*	*p*
		Play Level				
HP	10	-.3650	.981			
				1.13	20	N.S.
LP	12	-.9517	1.377			
		Affect Level				
HP	10	-.1660	.317			
				-.79	20	N.S.
LP	12	-.0283	.465			

Table 6

t-Test for Change in Play Level and Affect Level Following Adult Interruptions of a Group, According to Birth Order of Child (Hypothesis 11b)

Group	*N*	Mean	*s*	*t*	*df*	*p*
		Play Level				
First born	10	-.2070	1.002			
				-1.75	20	.095[a]
Later born	12	-1.0883	1.286			
		Affect Level				
First born	10	-.1500	.332			
				.62	20	N.S.[b]
Later born	12	-.0417	.461			

[a] Indicates 2-tailed; other comparisons are 1-tailed tests of significance.

[b] Indicates no specific hypothesis tested.

Table 7

t-Test for Change in Play Level and Affect Level Following Peer Dispute Interruptions, According to Fantasy Predisposition of Child (Hypothesis 12a)

Group	*N*	Mean	*s*	*t*	*df*	*p*
		Play Level				
HP	12	-.6742	.830			
				.11	21	N.S.†
LP	11	-.7100	.763			
		Affect Level				
HP	12	-.3417	.349			
				.85	21	N.S.†
LP	11	-.4736	.400			

† Indicates hypothesis cannot be rejected.

Table 8

t-Test for Change in Play Level and Affect Level Following Peer Dispute Interruptions, According to Birth Order of Child (Hypothesis 12b)

Group	N	Mean	s	t	df	p
		Play Level				
First born	10	-1.0350	.849			
				1.97	21	.03†
Later born	13	-.4269	.635			
		Affect Level				
First born	10	-.4269	.337			
				.47	21	N.S.[a]
Later born	13	-.3724	.406			

† Indicates hypothesis confirmed.

[a] Indicates no specific hypothesis tested.

a) HP children will have higher change scores than LP children
   1) for Play Level
   2) for Affect Level;
b) later born children will have higher change scores than first born/only children
   1) for Play Level
   2) for Affect Level.

This hypothesis was designed to test the relevance of fantasy predisposition and of social experience as indicated by birth order to the most common interruption in a traditional nursery school, that of a peer wishing to alter the course of the target child's play in some way. If a high fantasy predisposition is helpful to a child in maintaining his play level despite input from the outside world, HP children should show fewer negative changes in play level and affect level than LP children. If previous social experience with children (as measured by birth order) helps children to cope with peer impingements, later born children should show fewer negative changes in play level and affect level. (See Tables 9 and 10 for statistics.)

Hypothesis 13 was not confirmed for fantasy predisposition. There was no significant difference between high and low fantasy groups for either play level or affect level. There is a strong trend for first born and only children to have more negative play level changes following peer attempt to alter the direction of their play than later born children, t (22) = 1.52, p = .07. There was no difference between first born and later born children for affect change. For the children's affect, the overriding factor appears to be the benignness of the Type 4 interruption. All the children took

Table 9

t-Test for Change in Play Level and Affect Level Following Peer Attempt to Change Direction of Play, According to Fantasy Predisposition of Child (Hypothesis 13a)

Group	N	Mean	s	t	df	p
			Play Level			
HP	12	-.0608	.336			
				-.18	22	N.S.
LP	12	-.0317	.460			
			Affect Level			
HP	12	-.0767	.331			
				-.59	22	N.S.
LP	12	-.0150	.143			

Table 10

t-Test for Change in Play Level and Affect Level Following Peer Attempt to Change Direction of Play Interruptions, According to Birth Order of Child (Hypothesis 13b)

Group	N	Mean	s	t	df	p
		Play Level				
First born	11	-.1755	.430			
				1.52	22	.07†
Later born	13	.0631	.340			
		Affect Level				
First born	11	.0137	.184			
				.27	22	N.S.
Later born	13	.004	.132			

†Indicates trend in predicted direction.

this kind of impingement in stride; the mean affect change was close to zero for all groups. This suggests that social experience may be useful in helping children to deal with peer involvement in their play. However, peer impingement is not per se an affectively charged experience.

Hypothesis 14: Following peer conversation about a subject extraneous to the target child's current activity (Type 5),

a) HP children will have higher change scores than LP children

1) for Play Level.

This hypothesis was designed to test the formulation that HP children, who have been found to have higher levels of concentration and who are presumed to have a greater investment in their play, will be more likely to return to their play following extraneous comments than LP children.

Hypothesis 14 was not confirmed; there was no significant difference between the play level change scores for HP and LP children following Type 5 interruptions, $\underline{t}$ (10) = -1.13, N.S.[15] There also were no differences between HP and LP children for affect change, nor for birth order on either play level or affect level change; there were no hypotheses about these relationships. Only half of the children experienced Type 5 interruptions at all.

It appears that fantasy predisposition, as measured by the Singer IPPI, is not a useful dimension for the understanding and prediction of children's responses to naturally occurring interruptions in a peer group setting. Social experience, indicated in this study by birth order status, is a relevant variable for peer interruptions. Children who have had the experience of having their play

impinged upon by other children at home are less likely to be negatively affected by such peer interruptions at school. Their advantage does not hold for adult interruptions, however, where their greater experience with other children is not relevant.

Footnotes

[1] $\underline{s}_{HP} = 14.857$; $\underline{s}_{LP} = 12.31$.

[2] $\underline{s}_{interruptions} = .274$; $\underline{s}_{distractions} = .592$.

[3] $\underline{s}_{interruptions} = .108$; $\underline{s}_{distractions} = .141$.

[4] $\underline{s}_{peer} = .824$; $\underline{s}_{adult} = .657$.

[5] $\underline{s}_{peer} = .162$; $\underline{s}_{adult} = .430$.

[6] $\underline{s}_{lack\ respect} = .512$; $\underline{s}_{respect} = .241$.

[7] $\underline{s}_{lack\ respect} = .182$; $\underline{s}_{respect} = .117$.

[8] $\underline{s}_{HP} = 1.567$; $\underline{s}_{LP} = 1.528$.

[9] $\underline{s}_{HP} = .469$; $\underline{s}_{LP} = .471$.

[10] $\underline{s}_{HP} = .591$; $\underline{s}_{LP} = .536$.

[11] $\underline{s}_{HP} = .541$; $\underline{s}_{LP} = .497$.

[12] $\underline{s}_{FB} = .563$; $\underline{s}_{LB} = .565$.

[13] $\underline{s}_{FB} = .537$; $\underline{s}_{LB} = .499$.

[14] $\underline{s}_{FB} = .244$; $\underline{s}_{LB} = .244$.

[15] $\underline{s}_{HP} = .309$; $\underline{s}_{LP} = .474$.

CHAPTER IV

DISCUSSION

Following a review of the literature, we concluded that previous research has given us reason to believe that imaginative play has value for children as (a) a cognitive skill fostering language development, the creation of symbols, organizational capacity, and problem solving; (b) an aid in the development of a non-literal or as if attitude, a willingness to consider the possible and the flexibility to try different solutions; and (c) a means for enhancement of the child's sensitivity to social cues and empathic awareness of others, if the play is social imaginative play. We then asked what kind of environment was permissive for the appearance of imaginative play, with particular focus on interruptions as a potential impediment to such play. Singer (1973) has stressed the importance of a largely interruption-free environment for play if make-believe play is to emerge. Porter states, "It appears that in young children, imaginative play skills are quite malleable, and that even relatively few incidents of interruptions are sufficient to effect quite dramatic [negative] changes in the child's readiness to bring fantasy to and derive enjoyment from the play situation" (1977, p. 65). In contrast stand Smilansky's (1968) views that sociodramatic play with other children in which interruptions are an integral part of the game is the type of play most beneficial to young children. The ecological psychologists provided evidence that interruptions are common events in the every day lives of small children and that most of them can be characterized as having a mild effect.

We suggested that most naturally occurring interruptions

encountered by preschoolers would not have a markedly negative effect on their level of play or their relative happiness. Rather, the time has come to differentiate between different types of interruptions and examine their differing impacts instead of referring to interruptions as a single entity, as did Singer and Porter in their earlier work. Further, we suggested that social imaginative play, involving two or more children playing make-believe together, should be distinguished from solitary imaginative play. Singer's model appears to focus on the child playing alone, spinning out long fantasy sequences, attentive to his internal thought processes; Porter observed children playing by themselves. When social imaginative play takes place, several children contribute ideas which they must communicate and coordinate. On the one hand, no child need be totally responsible for providing all fantasy elements; on the other hand, each child must be prepared to adapt his fantasy to that of the other(s). Rather than attending primarily to his inner thoughts, the child engaged in social imaginative play must be attentive to cues from others. We suggested that social skills would take on much greater importance in group play and we questioned whether Singer's high and low fantasy predisposition would have the same importance in a peer group setting as they apparently do when a child plays by himself.

Frequency and Overall Impact of Interruptions and Distractions

Interruptions and distractions are a frequent experience for children in nursery school. The average child in our group was interrupted about every two minutes and distracted about every $4\frac{1}{2}$ minutes. The interruption figures are quite comparable to those found by Berk (1971) in several different preschool settings. These

impingements do not exert a monolithic force on children's play: there is no dramatic overall effect. For the average child, the net effect of all interruptions and distractions is very close to zero, but more likely to be slightly negative than positive. While most interruptions have no discernible impact on the play level or affect of the target child, certain types of interruptions are more likely to have a negative impact than others, and some can be positive. We find that it is now both possible and useful to distinguish between different types of interruptions.

Differentiating Between Different Types of Interruptions

The most important distinction we need to make is between those interruptions which indicate a lack of respect for the child's current activity and those which do not connote a lack of respect. It is those interruptions which we have characterized as lacking respect which have a negative impact on the child's play, while the other interruptions and distractions must be considered neutral. The mean play change for Types 1-3 (lack respect) is -.4532, significantly less than zero, t (23) = 4.34, $p < .001$,[1] whereas the mean play change for Types 4-6 is -.0517, which is not significantly different from zero, t (23) = -1.053, N.S.[2] For affect, it is again those interruptions which lack respect for the child's activity which yield negative changes; the mean change for Types 1-3 is -.2316, t (23) = 6.23, $p < .001$.[3] Interruptions and distractions which do not imply lack of respect are neutral; the mean affect change for Types 4-6 is .0027, t (23) = .0111, N.S.[4]

What do we mean by interruptions which lack respect? This category is meant to encompass all those interruptions which indicate that the interruptor does not consider the target child's play to be of value, to be worthy of consideration, to be an activity which has a right to continue. The most obvious examples are those in which the activity is explicitly devalued, as in many of the Type 3 (peer dispute) interruptions. Lack of respect is also shown by many of the adult interruptions of a group of children (Type 2): the individual child's activity is simply not taken into account. By not being recognized as important, the child's play is thereby devalued.[5] The mean change scores for play level and affect for Type 2 and 3 interruptions are negative. In response to the combination of brief stoppage of his activity and the explicit or implied negative evaluation of his play, the child's enjoyment may diminish and his level of play drop.

Standing in contrast to this kind of interruptions are distractions and interruptions which do not show lack of respect. Distractions are defined as not being directed toward the target child; therefore, they cannot show lack of respect for his activities. Neither can they show respect; they are neutral. The mean change scores are essentially zero for both play level (.01) and affect (-.0002). No change in play level was recorded following 72% of all distractions and 87% were followed by no change in affect level. Further, there are interruptions which do not imply lack of respect for the child's activities--indeed the majority of them imply no negative evaluation of the target child's play. Type 4 (peer attempt to change direction of target child's play) make up the bulk of these

neutral or positive interruptions. The mean change scores are essentially zero for both play level (-.026) and affect (-.0048) following Type 4 interruptions. When Margie asks Nancy, who is pretending to wash dishes, if she can help, Margie is interrupting Nancy's game but positively evaluating it. If Nancy goes over to Patrick, who is crayoning, and asks if he will come be the Daddy, she is interrupting him. While suggesting that another activity might be more desirable than the one in which he is currently engaged, Margie is not devaluing Patrick's ability to play, his right to play, or his capacity to choose his play activity. The Type 4 interruptions are by far the most common interruptions in this nursery school setting, accounting for 57% of all interruptions. While most of the time play level does not change following Type 4 interruptions, if we look at a contingency table for play change and focus on the mild positive changes (+1), we find that Type 4 accounts for a disproportionately large percentage of the +1 changes. This type of interruption is particularly likely to result in the target child moving from appropriate to basic symbolic play, or from basic to advanced symbolic play.

In retrospect, it would have been useful to rate the adult interruptions along the respect-disrespect dimension. In our preliminary observations at this particular nursery school, it appeared that most of the teacher interruptions could be characterized as lacking in respect. While this remained true for the majority of the teacher-group interruptions, which tended to be arbitrary in regard to the individual child, many of the teacher-individual interruptions did show respect for the child. This was particularly true of the interruptions directed by the assistant teachers to individual children,

in contrast to the head teacher. Adult to individual interruptions have the potential for being tailor-made for the particular child, and a teacher can use direct intervention to encourage the child to pursue a more productive activity than that in which he is currently engaged. While being singled out could be more devastating to the child if he is reprimanded, individual attention <u>can</u> be very respectful of that particular child's needs at that particular time. Using our categories of adult-group (Type 2) vs. adult-individual (Type 1) as rough indicators of the lack of respect vs. respect dimension for adult interruptions, we find Type 2 interruptions are significantly more likely to have a negative effect on play level than Type 1, $t\ (16) = 1.945,\ p < .05$.[6]

We can refine our categories for the lack of respect dimension using only interruptions by combining Type 2 (adult-group) with Type 3 (peer dispute) interruptions and contrasting them with Type 1 (adult-individual) and Type 4 (peer change direction of play) interruptions. (We have already found that distractions are neutral.) Types 2-3 (lack respect) are significantly more likely to result in negative change scores for both play level, $t\ (20) = 2.58,\ p < .01$,[7] and affect level, $t\ (20) = 4.51,\ p < .001$.[8] Further evidence of the contrast between these two categories of interruption comes when we compare their mean change scores with zero. Types 2-3 combined (lack respect) have a mean change score of -.6204 for play level, significantly less than zero, $t\ (23) = 4.53,\ p < .001$.[9] The mean affect change for Types 2-3 is -.2601, also significantly less than zero, $t\ (23) = 5.31,\ p < .001$.[10] In contrast, Types 1 and 4 combined (no lack of respect) have a mean change score of -.0344 for play

level, which is not significantly different from zero, $\underline{t}$ (23) = -.63, N.S.[11] For affect, the mean change is .0119, essentially zero, $\underline{t}$ (23) = .38, N.S.[12] It is clear that we are making a useful distinction between different types of interruptions.

Our data suggest that differentiating between adult and child interruptions may be useful if we want to consider the extent of change engendered by an interruption. If we consider all interruptions of all children, adult interruptions account for a disproportionately high number of dramatic play changes. Adults are the interruptors only about 19% of the time, yet they account for 29% of the -4 play level changes, 30% of the -3 play changes, and 21% of the -2 play changes. They also account for 42% of the +2 changes. Child interruptors, by contrast, account for 92% of all +1 play level changes. A disproportionately high percentage of the mild play level changes are precipitated by a child interruption, whereas a disproportionately high percentage of the more major play level changes are precipitated by adult interruptions. Adult interruptions are coercive. Adults have the power to insist that children do what they want them to do, and whether or not they choose to exercise that power in any particular instance, everyone knows that the potential is there. Thus, by and large, an adult suggestion or comment carries more weight than a comparable suggestion by a child. We recall Berk's data that adult environmental force units most often provoked a compliant response from the children, whereas impingement by other children did not. The ability to promote compliance is another aspect of the power of the adult as interruptor.

Thus we have found that there are two major dimensions which

appear to be useful in the categorization of interruptions: 1) lack of respect versus neutral or respectful, a dimension which influences the direction of play and affect change (negative to positive); and 2) the status of the interruptor, e.g., whether s/he is an adult or a child; this is a power dimension. It is possible to set up a chart (see Table 11) for the most common interruptions and distractions which occur in a pre-school setting, with one axis indicating likely extent of play change and one axis indicating likely direction of play change.

Type 5 (peer conversation about subject extraneous to play) interruptions are not included in the chart because they are so rare and so maldistributed that generalizations about them are not appropriate or necessary. Type 5 accounted for only 4.5% of all interruptions and distractions. Half of the children were never observed as the targets of extraneous conversations. One boy alone was the target of 20% of all recorded Type 5 interruptions. The children who were most often interrupted by conversation appeared to be the most interesting conversationalists. Typically, they seemed to respond to such interruptions by replying to the other child, sometimes continuing to play, sometimes stopping briefly to talk and then returning to their previous activity.

For affect level, for which there was less recorded movement in our sample, we can speak with confidence about three change trends. Adult-individual interruptions (5.4% of all interruptions and distractions) account for a disproportionate percentage of all positive changes in affect (12%). Adult-individual and adult-group interruptions combined (14% of all interruptions and distractions) account

Table 11

Summary of Effect of Interruption Type on Play Change

	Power	
	Child Interruptor	Adult Interruptor
Direction	Often negative but usually mild	Often negative, with strong effect
Lack Respect	disproportionately high percentage of mild negative play level changes; somewhat elevated percentage of major negative play changes	disproportionately high percentage of major negative play level changes
	low-moderate frequency	infrequent
	Type 3	Primarily Type 2
Direction	largely neutral, most changes mild	neutral or positive; changes often major
Neutral or Respectful	disproportionately high percentage of mild positive play changes; somewhat elevated percentage of major positive play changes	disproportionately high percentage of major positive changes
	very frequent	very infrequent
	Type 4, most Type 6s	Primarily Type 1

for a disproportionate percentage of major negative changes in affect (50%). Peer dispute interruptions (13%) account for a disproportionate percentage of all mild negative affect changes (39%). Again, we are impressed by the power of the adult interruptions and by the contrast between the usual peer interruption, which is generally benign, and the peer dispute interruption, which is often mildly unsettling.

The Type 4 (peer attempt to change direction of play) interruption warrants particular attention for several reasons. It is by far the most frequent interruption encountered by children playing in a peer group setting. Its effects stand in greatest contrast to those discussed by Singer and Porter as the usual interruption effects. And when we examine the incidence of Type 4 interruptions, we find that its occurrence in a child's protocol is an indicator of that child's integration into the play group. It appears that Type 4 interruptions should comprise at least a third of the total number of interruptions and distractions experienced by the nursery school child or a total number of at least 11 in 40 minutes if that child is to be an active and valued participant in peer play. A child's failure to receive a sufficient number of benign peer interruptions is a warning flag that something is amiss in his capacity to be a part of the give-and-take of peer group play. Similarly, an unusually high percentage of distractions indicates that the world is passing the child by without inviting his participation.[13]

Social Play and Social Experience

Peer group play, most especially peer group imaginative play, requires that children come to terms with other children and deal

with them in such a way as to further their mutual enterprise. Players must be recruited, props must be acquired and arranged, roles must be established, a story line must be developed. While occasionally a small group of children "clicked" and pursued an imaginative game at a very high level with a mutual empathic understanding which made interruptions unnecessary, in the vast majority of instances progress was much more jerky. As Garvey notes, "carrying out the make-believe is largely a matter of communication" (1977, p. 86). Interruptions are necessary to clarify roles and the identity of make-believe objects, to add or subtract players, to alter the plot. When Smilansky writes in glowing terms about interruptions as an integral part of sociodramatic play, it is probably the Type 4 interruption to which she is referring.

Given that Type 4 interruptions are common and probably even necessary in peer group play, and that Type 3 interruptions are the other type of interruptions which the average child can expect to encounter in a 10 minute play period, are there any children who are more well equipped than others to deal with them effectively? Children with older siblings are often more able to handle such interruptions than are their only or first born peers. Children who do not have older brothers or sisters show significantly more negative play changes following Type 3 interruptions, and there is a strong trend ($p = .07$) for them to have more negative play changes following Type 4 interruptions, which is noteworthy in a small sample. Small children who have always been exposed to the exigencies of life with another small child are better able to maintain themselves and their activities in the face of peer interference than small children for

whom such interruptions are a less routine occurrence. Often the first born children seemed almost shocked and quite hurt by peer rejection or taunts, whereas most later born children either remained impervious or got angry. Interestingly, birth order status did not make a difference in the children's response to adult interruptions; in fact, there is a trend for later born children to lower their play levels more than first/only children following adult-group interruptions. This suggests that we are measuring differences in social experience rather than differences in personality characteristics. If the later borns were showing the cluster of personality traits sometimes ascribed to them, we would expect them to be more unperturbed and easygoing in general, as unmoved by adult pressures as they are by peer pressures. Instead, we find them better able to cope only in the arena in which they have had specific experience. Our findings indicate that previous experience with child interruptions may be a major factor in determining a child's capacity to deal with peer interruptions in other settings.

Role of Fantasy Predisposition

Singer has used the concept of imaginative predisposition as a major personality variable. According to Singer (1973), children who have high fantasy predispositions have the cognitive skill to think and play imaginatively, to concentrate, to respond with flexibility to novel situations, to respond to anger- or anxiety-arousing situations in a non-impulsive manner, and to be less motorically active than children with low fantasy predispositions. Given this cluster of traits ascribed to HP children, one would expect such children, with their low activity levels and high concentration,

to experience fewer interruptions than their LP peers who might simply bump into others more often. In addition, with their greater flexibility and lack of impulsiveness, such children would reasonably be expected to be less perturbed by interruptions than their LP peers, especially if the interruption was not an overwhelming one. Further, since Singer and Porter have both stressed the importance of freedom from interruption for the emergence of make-believe play, it would be interesting to find out whether HP children either manage to create a relatively interruption-free environment around themselves or to manage interruptions so well as to make their effects comparatively negligible.

In our study of peer group play replete with naturally occurring interruptions, fantasy predisposition as measured by Singer's IPPI turned out to be essentially irrelevant. High fantasy children did not, on the average, play more imaginatively than low fantasy children in this setting. There is no significant difference in the number of interruptions experienced by high and low fantasy children; as a group, the HP children experienced slightly over half of the total interruptions. Clearly they do not conduct themselves in such a way as to attract fewer interruptions than less imaginative children. There is no significant difference between the change scores of HP and LP children for either play level or affect level following any of the specific types of interruptions. Fantasy predisposition appears to make no difference in a child's capacity to manage interruptions, either in terms of maintaining his play at the same level of constructiveness and imaginativeness as it was prior to the interruption or in terms of maintaining his level of enjoyment. These findings

can be elucidated by comparing them with those of Singer and Porter.

Comparison of Findings with Previous Studies

How can we understand our findings in relation to the previous literature, most particularly the work done by Singer and Porter? It seems clear that there are limits on the power of the fantasy predisposition concept to explain the various phenomena related to children's play. Most particularly, fantasy predisposition does not help us to understand why some children are more impervious to interruptions than others. Whether or not high fantasy children lead comparatively interruption-free lives at home, they do not bring to school a style of playing or behaving which lessens their chance of being interrupted in a social setting. Further, once interrupted, they are no more immune to negative change in play level and affect than are other children; whatever their different cognitive skills and personality characteristics, they are not different from other children in their response to interruptions. This finding corroborates that of Porter's in which she found no interaction effect between fantasy predisposition and the factor of interruption on level of fantasy in play. All children in her study showed lowered play fantasy and affect levels following interruption; there was no difference between HP and LP children in the amount of change.

In our study, children with high fantasy predisposition did not have higher average predominant levels of play than did the low fantasy children. When each play protocol is examined to determine at what play level the child spends the majority of his time (or plurality, if there is a great deal of movement in play level), the HP children are no more likely to get a high rating than the

LP children. In other studies, children have been evaluated for the fantasy level of their play while playing alone in a playroom with an abundance of toys selected to stimulate make-believe play, in the presence of an examiner who encourages them to "make up a story;" under these conditions, HP children do play at a significantly higher level than LP children (Pulaski, 1973; Porter).

Interestingly, when Singer examined the protocols of children observed in a nursery school setting for the amount of time spent in make-believe play, he also found that for the group as a whole, fantasy predisposition was not predictive of fantasy play. He explains this discrepancy by suggesting that the play area was unsuitable for girls, since by considering the boys alone he did find some differences between those boys whose scores on the IPPI were lower than the boy's mean and those whose scores were higher. In our study, there was no difference between the play levels of high fantasy and low fantasy boys; in fact, the LP boys had more instances of imaginative predominant play levels than the HP boys (11 vs. 8). The LP girls did play at a lower level than the other children. This is a different subgroup than that for which Singer's study may have indicated some predictive power for the IPPI; they are also a subgroup who were distinctive in their lack of social skills. Fantasy predisposition, while it indicates imaginative skills which may be helpful for group play, is clearly not a powerful predictor of the ability to sustain group imaginative play. The most parsimonious explanation of these findings is that in peer group situations, the factor of fantasy predisposition is secondary to other factors, such as the presence of social skills, in determining predominant play level.

Imaginativeness alone is not enough to guarantee the ability to pursue imaginative play in a social setting. Clearly, the fantasy predisposition concept is useful in studying the child operating on his own. Singer's interest in make-believe play appears to have developed out of his interest in daydreaming, of which it may be the precursor. His primary model is of the solitary child spinning out long sequences of imaginative play unmolested by and unaccountable to the world around him. Later, this same child may be able to use his capacity to fantasize to help him fill up empty time while waiting or to tell creative stories. This orientation is reflected in Singer's IPPI in which the questions are primarily designed to tap what the child does while alone. We have seen, however, that social imaginative play demands social skills in addition to imaginative skills. A child needs to be able to communicate his ideas to others, to understand their input, and to withstand the interruptions which are well-nigh inevitable. While a degree of imaginativeness is useful in generating ideas for the play and in enabling one to follow the drift of the story line, a high degree of imaginativeness is not necessary for one to be an active participant in the play. Many children are able to follow the lead of others more imaginative than they and do quite an acceptable job of holding up their end. A new model may be needed for assessing and predicting a child's capacity to sustain symbolic play in a peer group setting. Such a model would combine an ability to pretend with an ability to exchange ideas with others.

It is instructive to note which children failed to receive a predominant play rating of 4 or 5, denoting symbolic play, for any of the four observed play sessions. There were eight children,

five of whom are discussed in Footnote 13 as especially low in Type 4 interruptions (the initially lively girl and the pressured boy did engage in symbolic play at some point). The sixth was the sad boy with a high proportion of distractions. Another child was considerably younger than most of the other children in the class, having turned four only a month before the first observations; at one point the rater remarked, "Her play shows her immaturity," for she simply wasn't able to keep up with the others. The last girl (who actually scored high on the IPPI) simply never showed the slightest interest in imaginative play, although she dealt comfortably with other children on the jungle gym or while working on table games and art projects. With the exception of the last girl, all of these children had specific impediments to their capacity to sustain group play. The presence of social impediments seems to be far more important than the absence of great imagination in determining who will have difficulty joining and/or sticking with group symbolic play. Interestingly, none of the LP boys failed to spend most of at least one observed play session engaged in imaginative play. Several girls combined low imaginative skills with undeveloped social skills, a combination which almost guaranteed their exclusion from the mainstream of peer group play.

One of the major benefits of social imaginative play may be the opportunity for children to integrate and balance their imaginative and social skills. Children with only rudimentary imaginative skills who are comparatively adept at social communication can "read" cues from their imaginative peers and thus increase their own capacity for non-literal behavior. Similarly, an imaginative child who is not adept at communicating his ideas to other children and is unused to

having his ideas challenged or modified can learn valuable social behaviors in a relatively safe setting; his ability to enter in and contribute to the flow of make-believe can make him a desirable enough play partner to be tolerated despite his lack of social prowess. These two clusters of benefits which may accrue from social imaginative play are congruent with those emphasized by Smilansky and Garvey.

We find interruptions less awesome than do Singer and Porter for two reasons: our focus on social play and our ability to distinguish between different interruptions. We have discussed our finding that by far the most frequent interruption, the peer attempt to change the direction of the target child's play, is generally benign and may well be a necessary occurrence if high level peer group play is to take place. There are interruptions which often do lower a child's play level and render him less happy than he was before--interruptions lacking in respect for the child's play. Later born children, used to bossy and interfering older siblings (Sutton-Smith and Rosenberg, 1970), have learned to be comparatively impervious to disrespectful interruptions from another child, but the arbitrary adult interruption appears to have a strong effect on all children. An adult interruption which lacks respect for the child's play should be both powerful and negative in effect. This is the type of interruption employed by Porter; indeed, the uniform adult interruptions were designed to be arbitrary with respect to the play of the individual target child. The negative effect on play and affect of such an interruption is congruent with our findings. Extreme caution should be used in generalizing from this particular situation to those involving other types of interruptions, however.

The indications in our data that the adult interruption is a powerful one which can be either positive or negative are supportive of the growing body of evidence that children's imaginative capacity is nurtured by parental acceptance or encouragement of make-believe play. Freyberg (1973), Fineman (1962), Singer (1973), Smilansky, and Porter all cite evidence suggesting that children who show good imaginative skills have parents who at least tolerate imaginative play and may encourage or model as if thought. A parent who has a positive attitude toward make-believe play is not as likely to treat it with disrespect, arbitrarily interrupting the child to deal with household concerns without considering his involvement in play or negatively interrupting him to limit the noise and confusion, as is a parent who finds such play frivolous or disruptive. Actual parental encouragement of symbolic play would correspond to our category of powerful, positive interruptions, which generally raise play levels.

An atmosphere permissive for imaginative play, then, need not be interruption-free. In fact, there would be a moderate number of peer interruptions as the play jerkily proceeds and the children develop their social communication skills. The playing child would not be subject to more rebuffs and challenges from his peers than his social experience has equipped him to master. Arbitrary teacher interruptions would be minimal, but the teacher would not hesitate to interrupt a child if she determines after watching him closely that his current activity is self-defeating. Distractions would occur; with little effect on the playing child unless they were truly excessive in number or suggestive of an unusually attractive alternative play option. We do not know whether an atmosphere permissive

for imaginative play by four or five year olds is sufficient to develop imaginative play skills initially. This study does not attempt to assess Singer's model for the development of imaginative capacity in the very young child. We are able to caution against overextending that model by using it to prescribe conditions necessary for the exercise of imaginative play in a peer group setting.

Clinical Impressions and Implications

One of the most exciting things about observing two nursery school classes for a two month period was watching the children grow. There were many examples of children who did not know how to join with others in imaginative play or who did not dare to try who were gradually lured into some degree of productive peer play. Such a child typically spent a great deal of time playing on his own, sometimes watching, sometimes being distracted by, the activities of others. Later, he would tentatively and fleetingly engage in imitative play on the edge of the group or in reference to one other child whose movements he copied. Then he might try to play more actively, often with a child who was socially adept but not frighteningly imaginative; symbolic play with such a child as leader is not as dizzying as symbolic play with an unusually creative child. Meanwhile, the socially adept but only moderately imaginative child often plays with the highly imaginative child, thus stretching his own imaginative capacities. There seems to be a great deal of important peer modeling going on in a nursery school which provides ample free play time. Gottlieb (1973) has found that adult models can encourage fantasy and suggests that peer models may also be important. Our observations suggest that rather than focusing as Singer does on the potential negative

effects of peer presence on the development of imaginative play skills, we should set out to learn under what conditions peers can be models for social imaginative behavior.

Both the observer and the independent rater were struck by the difference between the boys' play and that of the girls. In general, the boys seemed to play with more abandon and greater enjoyment; most of the really original play involved boys. Every boy observed spent some time engaged in symbolic play, and all but two had at least one predominant play level of 4 or 5. The girls played with much more constraint, as if unwilling to let their imaginations carry them out of bounds. The rare occasions when a girl was really joyous or really creative came in mixed-sex group play. The girls got much more bogged down in the mechanics of playing together and establishing a pecking order than did the boys. Three girls were never observed to play symbolically, and six had no predominant play level of 4 or 5. This corresponds to the findings reported by Singer (1973) in his discussion of the nursery school observations made by his team. This is striking, for the girls report as much (in our study) or more (in Singer's study) fantasy activity as do the boys. Singer felt that the space provided for free play in the school he observed may have been less suitable for girls than for boys. The classroom observed in this study, however, had a housekeeping corner including dress-up clothes, a puppet theater, an easel for painting, and available small figures which could be used for dollhouse-like play. This leads us to speculate that there may be some difference in the socialization of the two sexes which renders girls more inhibited in their play on the one hand, and more preoccupied by social relationships and status

on the other.

While the data suggest that teacher interruptions are powerful ones, our observations suggested that this power was not being used as effectively as it could be. One of the most common teacher interruptions was for her to announce to the whole group that it was time to change activities; another was to tell a small group of children to stop being noisy or overly active. Positive interruptions directed at individuals almost always consisted of helping a child get established in appropriate or constructive play. Other positive teacher-child interactions involved giving information or comfort. The teachers tended to view any comments or suggestions which might lead a child to symbolic play as inappropriate interference; they felt that inspiration for imaginative endeavors is supposed to spring from within the child. Every indication is that such an attitude is common to early childhood educators. Yet those few occasions when a teacher did make a comment which presented an idea for symbolic play or conveyed a "go ahead" attitude, such a comment made an enormous impact. The teachers missed many opportunities to be truly helpful to children who were floundering in their attempts at symbolic play or wavering at the brink of making a symbolic play attempt.

There was a definite difference in the atmosphere of the two classes. The afternoon class was better integrated, spent more time in imaginative play, was happier, and was more fun to watch and to rate. It is difficult to know just why this was so. There were more later borns in the afternoon, more boys (all three pilot study boys came from this class), more children with a high predisposition for fantasy, and the children had somewhat higher IQs according to our

rough measures. They also had a different assistant teacher. This teacher was the only one to actually encourage children to play make-believe games and she clearly enjoyed watching the children play imaginatively. Under her influence, the children had a longer stretch of truly free play time before being called together to sit in a group for the class discussion period called "calendar time," and calendar time (which was rated as one long interruption in our records) was much shorter for this class than for the morning children. This teacher was also a much more careful observer of the children. This showed in her ability to make find discriminations when teacher intervention was called for by inappropriate behavior. Gottlieb speculates that classroom differences in the fantasy predisposition of her elementary and junior high school subjects may have been produced in part by teacher-influenced classroom climate. It certainly seems possible that teacher influence was operating in our school. There may have been an important disinhibiting effect allowing the afternoon children--whether unusually imaginative or not--to play imaginatively and happily in the classroom and to admit to fantasy-oriented behavior when questioned during the IPPI.

Teachers can be helped to use themselves and their nursery school classrooms to foster growth in the children in more effective ways. A psychologist-consultant (or other early childhood professional) can begin by helping the teacher to observe individual children carefully, noting the levels at which the child plays, how he interacts socially with the other children, and with what kinds of interruptions and play situations he has difficulty. While this seems like an overly elementary recommendation, in practice most teachers are both so

involved in classroom activities and so oriented toward the group that they feel neither inclined nor able to watch a given child continuously for a long sequence. Simultaneously with fostering observational skills on the part of the teachers, the consultant should foster teacher attitudes favorable to imaginative play through discussion of the benefits to children well documented in the literature. Then the consultant can evaluate with the teacher how different particular children can make more effective use of their classroom time. For example, the angry girl (see Footnote 13) frequently appeared in the housekeeping corner, but was never able to put together a play sequence which would have helped her to deal with some of her angry feelings about her prospective sibling. Then the teacher and consultant can consider how to introduce small changes in the classroom and in the teacher's habitual role in order to help that child. In this case, the introduction of baby dolls and some initial teacher modeling of doll play expressing an ambivalent attitude toward babies and their mothers could have been a major help to an unhappy girl who was disruptive to others. For those children who are unusually intimidated by active, interruption-filled peer play, periods of play in pairs or small groups could be arranged. The groups could be carefully planned to be complementary, so that children would be grouped with others slightly but not overwhelmingly more adept than they in the skills in which they are weakest. Finally, general classroom procedures, such as the amount of teacher disruption of the free play period, the freedom of access to fantasy-conducive toys, and methods for handling peer disputes can be discussed by consultant and teachers. Mental health consultants can be partners in

making nursery school classrooms places in which many developmental and emotional problems can be worked out. Since parents do not take preschoolers to mental health professionals unless their problems are extraordinarily serious (Stein, Beyer and Ronald, 1975), the nursery school is the best available resource for providing professional help for most small children.

Suggestions for Further Study

An important function of a naturalistic, observational study such as this is to suggest fruitful areas for more detailed or more rigorous research. A more refined study dealing with the differences between interruptions which lack respect and those which do not would be a useful next step. Audiovisual aids would be helpful in assessing when the message "I do not respect your play" is being given by the interruptor and when it is not. Such aids would also be useful in evaluating children's affective responses to different interruptions; many important subtleties simply cannot be recorded by an observer taking notes by hand and thus were lost in this study.

It should be possible to assess in a more detailed fashion just what kinds of social experience are valuable to children in learning how to deal with common interruptions. One could begin with parental questionnaires or interviews, determining what kinds of experiences were common to children with particularly high or low capacity to maintain themselves despite interruptions. Areas such as amount and type of peer contact in the neighborhood, previous day care or nursery experience, and relationship with siblings could be explored.

It is important that further research be done on the differences between solitary and social imaginative play. A comparative study

determining their differing requirements and characteristics could deal with such issues as (a) props commonly used, (b) how a story line develops, (c) how characterization is achieved, (d) duration of play sequences, (e) level of fantasy achieved, (f) affective level of the participants, and (g) themes frequently employed. The same children could be observed at play by themselves and in a group setting. Children who are particularly adept at playing by themselves should be compared with those who are particularly adept at playing with other children. Are they the same children? If not, what are the special requirements of each situation? Can we develop a model for the child with a predisposition to play imaginatively in a peer group setting?

A study on the effects of peer modeling can follow up on tantalizing observations in this study and the evidence for adult modeling of fantasy put forward by Gottlieb (1973). Can peer contact be beneficial to the development of make-believe play skills, and if so, under what circumstances?

A study focusing on the differences between the social play of boys and of girls seems warranted and could be of a considerable interest. Such a study should go beyond the spate of literature dealing with "masculine" vs. "feminine" toy or role preferences. Rather, it should deal with the kinds of issues here mentioned as relevant in distinguishing between solitary and social play, and with the differences in social interaction between boys and girls as they pursue their play time.

Footnotes

[1] $\underline{s}$ = .512.

[2] $\underline{s}$ = .241.

[3] $\underline{s}$ = .182.

[4] $\underline{s}$ = .117.

[5] Examples of interruptions lacking in respect from our protocols:

Adam tries to join Billy and Vincent in building a house of blocks. Billy says, "You have to be bigger." A few moments later, Vincent pretends to be a cat and climbs onto a chair. Adam imitates a dog chasing him. Billy says, "Dogs can't climb." These are Type 3 interruptions.

Gail is pretending to be a child on Easter morning. George hands her a piece of paper. Gail says, "Oh thank you. An Easter egg." Then she says to Helen, "Here's an egg." She holds the "egg" up to her face. The bell rings and the teacher announces clean-up time. This is a Type 2 interruption.

Charlie is among a group of boys noisily pushing extra-large tinkertoy constructions around the room, calling them lawnmowers. Mrs. Smith calls out, "You're supposed to build things with the big tinkertoys, not just run around with them." This is a Type 2 interruption.

[6] $\underline{s}_{\text{Type 1}}$ = .996; $\underline{s}_{\text{Type 2}}$ = 1.271.

[7] $\underline{s}_{\text{Types 2-3}}$ = .670; $\underline{s}_{\text{Types 1 and 4}}$ = .267.

[8] $\underline{s}_{\text{Types 2-3}}$ = .241; $\underline{s}_{\text{Types 1 and 4}}$ = .155.

[9] $\underline{s}$ = .670.

[10] $\underline{s}$ = .241.

[11] $\underline{s}$ = .267.

[12] $\underline{s}$ = .155.

[13] Three of the children who were especially low in Type 4 interruptions almost never played with the other children and were usually ignored by them. Another began the observation period as a lively member of the group, but rapidly became morose and at loose ends, indicating to me some adjustment problem worthy of attention. Another child, the youngest of three, announced that her mother was going to have a baby; she became involved in the most angry and argumentative interactions of any child observed. One boy, under intense pressure at home where he had learned to read the Washington Post although his IQ was not unusually high, spent much time watching and wringing his hands before engaging in solitary activities or joining the group as a passive follower, always leaving if any of

the lively boys joined in. One boy was almost hyperactive. Five of these children were among the six highest for percentage of distractions experienced. Instead of the angry girl, who was not in this group, the sixth frequently distracted child was a boy whom the independent rater began to worry was "seriously depressed" after reading his protocols.

CHAPTER V

SUMMARY AND CONCLUSIONS

What are some of the features of an environment permissive for symbolic play by preschool children; specifically, what effects do different kinds of naturally occurring interruptions have on the level of play and affect of small children playing in a peer group setting? There is a growing body of literature which indicates that having the opportunity and the capacity to engage in imaginative play is beneficial to children. Singer (1973) has suggested that children require long periods alone and uninterrupted in order to develop make-believe play sequences. Porter (1977), in an experimental study in which children playing alone were subjected to adult interruptions, found that the fantasy level of play and the child's affect level were reduced following interruption. In contradistinction, other researchers have stressed the value of playing with peers even though such play involves repeated interruption.

We hypothesized that, on the whole, naturally occurring interruptions and distractions would not be extremely negative experiences for small children. Further, we hypothesized that interruptions could be usefully divided into several different categories to which children would respond differently. We also sought to determine if we can differentiate between children likely to maintain their play and affect levels following some types of interruptions and those who are likely to respond negatively. Fantasy predisposition, as measured by Singer's Imaginative Play Predisposition Interview, and social experience with other children, indicated by birth order status, were selected as possible determinants of a child's response to

differing types of interruptions.

Twenty-four children from two Four Year Old Group classes in a suburban Washington, D.C. nursery school comprised the subjects for this naturalistic study. There were 12 boys and 12 girls, all from middle income families, and all of average or above average intelligence. The 12 children (six boys and six girls) who scored above the group mean on the IPPI were designated high fantasy predisposition (HP) and the 12 who scored below the mean as low fantasy predisposition (LP). Six HP children were first born or only children and six later born. Five LP children were first born/only and seven later born.

Each child was observed during free play time by the author for four separate 10-minute periods over the course of two months. The observer endeavored to write down everything done or said by the child and those around him, and to record his facial expressions. Interviews and screening tests to determine fantasy predisposition, birth order status and approximate intelligence were given after the classroom observations had been completed.

The written protocols of the observations were rated by the observer and by an independent rater who had no knowledge of the children's interview and test scores nor of the specific hypotheses of the study. Ratings were made indicating when interruptions or distractions occurred, the type of interruption, the level of play prior and subsequent to the interruption, the level of affect prior and subsequent to the interruption, and the predominant level of play for the entire protocol. Instructions and rating scales were devised or adapted by the author for this study and are delineated

in the Rater's Manual (Appendix B). Interrater reliability was adequate for all measures.

Ratings for play level and affect level were converted into change scores for each interruption or distraction by subtracting the before interruption play or affect level from the after interruption play or affect level. Mean change scores were obtained for each child for each applicable dependent variable, based on all instances of the relevant interruptions for that child, thus yielding a stable aggregate score. t-procedures were used for the statistical analysis.

The results of this study indicate that interruptions and distractions are a frequent occurrence in nursery school free play. Differentiation between different kinds of interruptions is both useful and important. Interruptions which lack respect for the child's play precede significantly more negative changes in play level and affect level than interruptions and distractions which do not lack respect. Mean change scores for interruptions lacking in respect are significantly less than zero, whereas other change scores are essentially zero. Distractions have a significantly less negative impact on affect level than do interruptions. Interruptions generated by a child are more frequent than adult interruptions. Adult interruptions are more likely to cause negative changes in play level than are child interruptions. Further, when all interruptions of all children are examined, it appears that adult interruptions precede a disproportionate number of major changes in play level and affect level in both negative and positive directions. Fantasy predisposition as measured by Singer's IPPI is not a significant determinant of number of interruptions experienced, predominant level of play,

or response to any type of interruption. Later born children are significantly more able to maintain their level of play following peer dispute (Type 3) interruptions and there is a trend indicating that they may be more able to maintain their level of play following peer attempt to change direction of play (Type 4) interruptions than are first born or only children. Additionally, it appears that children who experience too few benign peer interruptions (Type 4) or too many distractions (Type 6) stand out as not being well integrated into the ongoing peer group play.

We conclude that naturally occurring interruptions and distractions can and should be differentiated along at least two major dimensions: 1) Lacking respect for the child's play--not lacking respect (neutral or positive); the former will produce negative changes in play and affect level, the latter will be neutral; 2) Adult-generated--child-generated; the former will have strong effects, the latter, mild effects. Children who receive very few benign peer interruptions are children who, generally, are not able to play successfully in a peer group. Fantasy predisposition alone is not a major determinant of success in maintaining high level group play; the child must possess social skills which enable him to play cooperatively with others. Social imaginative play should be differentiated from solitary imaginative play. Social imaginative play requires communication, empathy, and a willingness and ability to interact with others in play; solitary play makes no such requirements. Social play provides an opportunity for children to enhance both imaginative and social skills through practice and exposure to peer models. Nursery school teachers can modify classroom procedures

and make use of their powerful position to enhance the children's opportunities for beneficial imaginative play.

APPENDICES

APPENDIX A

IMAGINATIVE PLAY PREDISPOSITION INTERVIEW

1. What is your favorite game? What do you like to play the most?
2. What game do you like to play best when you're all alone? What do you like to do best when you're all alone? Do you ever think things up?
3. Do you ever have pictures in your head? Do you ever see make-believe things or pictures in your mind and think about them? What sort of things?
4. Do you have a make-believe friend? Do you have an animal or toy or make-believe person you talk to or take along places with you?

APPENDIX B

INSTRUCTION MANUAL FOR RATERS

General Instructions to Raters

Read each protocol which you intend to score at this sitting and label each interruption or distraction. Jot down your impression of predominant level of play for the entire 10 minute period, including those periods during which the child was not interrupted. This should be a number score using the Play Level rating scale.

Read through each protocol again to determine the child's level of play and level of affect during the play or activity sequence just prior to each interruption or distraction. Then score the level of play and the level of affect in the play or activity sequence following that interruption or distraction. Look for what the target child does next, rather than for fleeting reactions.

Example: Johnny grabs the block from Fred (target child). Fred frowns, then resumes building his house. He is singing to himself and smiling. (In this case, you would score level of play and affect for the play sequence in which Fred builds and smiles.)

Example: Johnny grabs the block from Fred (target child). Fred frowns and sits staring at Johnny. After awhile he resumes building his house. . . . (In this case, the frowning and staring response was sustained, and should be considered the next activity sequence.)

Rating Scale for Type of Interruption

Interruption: An action or vocalization by a person other than the target child which, if successful, would somehow alter the course of the target child's activities. Think of the child as having a

stream of behavior; an interruption is aimed at blocking, deflecting, or changing the direction of that stream. When judging whether or not an interruption occurs, do not base a decision on the target child's subsequent behavior; concentrate on the interruptor. If the target child has initiated the change in direction of activity, someone else's response is not scored as an interruption.

Immediately successive comments or movements by the same interruptor or group of interruptors, all of which are directed at effecting the same change in the target child's stream of behavior, may be coded as the same interruption. If in doubt, look to see whether the target child has had the opportunity to begin a new play sequence between interruptions; if he has, score as two separate interruptions; if not, score as one interruption. (Example: Ann is holding a toy doctor and a toy patient, pretending they are talking together. Tom says, "Let's pretend the doctor goes inside." Ann glares at him. Tom says, "Move the doctor in here," and points inside the hospital. This is one interruption. If Ann had glared, then put the doctor in the ambulance and had him drive the patient around prior to Tom's second speech, they would be two separate interruptions.)

Type 1. Adult interruption directed specifically at the target child.

Examples: "Johnny, would you like to paint now?"

"Would you girls lower your voices," to target child and another girl who are shouting.

"Harry, what is the rule about throwing sand?" when Harry is throwing sand.

Type 2. Adult interruption directed at group of children (or

at a child with whom the target child is playing):

"This room is too noisy."

"Snack time."

The teacher rings the bell. This is a signal for the children to gather in front of her.

"Harry, don't throw sand," when Amy, the target child, is sitting next to Harry in the sandbox.

Type 3. Peer disputes target child's right to play and/or possession of toy:

The target child is told by another child that he may not play a particular game, with a particular toy, or with a particular group, or he is physically blocked from doing so. Destruction of the target child's project falls in this category, even when there is the possibility that the destruction is accidental. Offensive taunts are also included. Note that if the target child initiates the dispute by grabbing for someone else's toy, name-calling, shoving, etc., the other child's response is not an interruption.

Examples: "Only boys can play in the hideout."

"That's my block. I need it."

Johnny snatches a toy tiger from Fred.

Robert pushes his truck across the floor; it crashes into Judy's block tower and knocks it down.

"You're a dirty poo-poo!"

Type 4. Peer attempt to change direction of target child's play:

Another child attempts to alter the content or format of, or the personnel included in, the target child's play. The interruptor is not trying to prevent the target child from engaging in an

activity all together; rather he wishes to change that activity in some way.

When another child comments on what he himself is doing, this cannot be scored unless there is some indication that he is addressing the target child with an intent to alter the target child's activity. (Such comments may fall under the category of distraction.)

Examples: "Let's don't be robbers any more."

"Want some /sand/ birthday cake?"

"Can I play, too?"

"Now you be King Kong."

Type 5. Peer conversation about subject extraneous to play or activity sequence:

Another child talks about something unrelated to the activity in which the target child is engaged. Conversation about play or about the activity in which the target child is engaged is not included in this category. Thus when Tom says to Susan as both are painting, "The teacher chose icky colors today," this is not an interruption. When Tom says, "Let's play Indians instead of painting anymore," this is talk about play and is scored as #4 to attempt to change direction of play. When Tom says, "I got a haircut today," this <u>is</u> conversation about a subject extraneous to the activity sequence.

Examples: Joan and Mary are digging in the sandbox. Joan says, "We both have yellow dresses on."

<u>Distraction</u>: A distraction is an activity or verbalization which is not directed at the target child but which occurs in such close proximity to him, at such high volume or with such vigorous motion that the target child would have to actively ignore it in order not

to respond to it. Inanimate distractions, such as wind blowing sand in the child's eyes, are not scored.

Type 6. Distraction: All distractions caused by another person.

Examples: Sally is painting. She looks up when a group of children run past her yelling, "Emergency!"

Susie is building with blocks. Ron sits down next to her.

Jason is pretending to cook in the play kitchen. Wendy and Sally have been "cooking" next to him. Wendy announces, "I'm tired of this. Come on, Sally, let's go play on the jungle gym."

Rating Scale for Play Level[1]

1. Non-play:

a. Non-play, non-constructive: Child is an onlooker, observing events or objects and listening to conversation. Child is apparently unoccupied, e.g. aimless wandering or gazing around, thumbsucking, unaccompanied by other activities. Child is crying or whining.

b. Non-play, aggressive/belligerent: Child engages in physical attacks or threats. Child attempts to break or destroy object. Child is engaged in verbal quarrels, taunts and screams.

c. Non-play, constructive: Child is involved in goal-directed activity directed toward satisfying physical needs, e.g. eating, dressing (but not "dressing up"), toileting. Child is engaged in goal-directed activity initiated or supervised by an adult which has as its aim an acceptable end-product, e.g. cleaning up the room, preparing snack. Child is engaged in goal-directed activity in which the aim clearly is in the end result rather than in the process, e.g. looking for a specific object or person. Child is talking,

except about play. Child is looking at a book. Child is listening to a story or to music.

Activities which cannot be classified as non-play are presumed to be play. Eye contact with toys is not sufficient to be labelled as play.

2. Partial play: The child uses play material(s) indiscriminately, in the sense that a wide variety of materials could be used in a similar way, or its properties are only partially exploited but the play is not symbolic. Thus the material might be thrown, knocked over or pounded, or materials which could be used to make a construction or pattern are not used, e.g. sand is thrown or raked, but not molded; blocks are knocked down or piled up, but there is no evidence of selective placement; play dough is rolled out or pounded, but no definite shape is made; paints and crayons are used for scribbling, without regard for color or form. A child simply twirling the pedals of a tricycle is engaged in partial play. A child playfully making noises in no definite pattern and without symbolic is partially playing. Likewise, a child playfully moving his body around--twirling around, watching his knees as he bangs them together and pulls them apart--but not coordinating his movements into a definite pattern or using his body fully (e.g. not exercises, real running, acrobatics) is said to be playing partially.

Examples: Judy swirls her hands around in the water.

Ray indiscriminately stuffs a variety of small toys (cars, animals, blocks) into a paper bag and carries them around. (If he called them "Halloween candy" this would be level 4).

Liz says, "Wah-wah" over and over again, putting her hand over

her mouth to change the sounds. (There is no evidence to indicate that she is playing "Indian.")

3. Appropriate play: The child exploits the properties of the play material well, but there is no symbolic play. If the toy has wheels, it is propelled. If the material can be used to make a structure or a pattern, this is done. Water in the water table is poured from one container to another rather than simply splashed. The child actively climbs on the jungle gym, bounces the ball, draws on the paper with regard for shape and color, or simply uses his body fully by chasing another child across the playground. Play with words or sounds upon which the children impose some structure--"ritual play"--is included in this category, as are spontaneous games of "London Bridge" or "Ring around the Rosie." A child actively playing a board game (such as Candyland or Winnie-the-Pooh) is considered to be playing at the appropriate level, even if he does not succeed in playing the game correctly, unless he introduces symbolic elements (level 4 or 5).

Examples: Johnny and Mary are doing somersaults on the mat.

Bob is carefully building an intricate structure out of tinker toys (but does not label it or play with it in any symbolic fashion).

Tom says, "Maybe it's a cow." Ben says, "Maybe it's a horse." Tom says, "Maybe it's a turtle." Ben says, "Maybe it's a dinosaur." (Ritual play).

Fred and Judy push their toy trucks all the way across the floor, kind of chasing each other.

4. Symbolic play, basic: Materials or players are assigned meanings or characteristics by the child which they do not inherently possess,

or imaginary materials are used. (But the child does not engage in dramatic characterization, nor does he pretend to speak for objects, toys or dolls). Sheer manipulation of dolls or toy animals is not scored here, but moving such a toy as if it were walking or eating or interacting with another toy (chasing another toy, for example) is considered symbolic. Look for some evidence of an as if orientation.

Play which might otherwise be considered appropriate, such as piling up blocks, sorting out dress-up clothes, etc., may be included with symbolic play if reasonable context indicates that it is essential preparation for symbolic play.

Examples:

The child piles up blocks and calls it a house.

The child holds a small tiger in one hand and a small bear in the other; he has the tiger jump on top of the bear, then moves both animals about as if they were fighting.

The child rides a tricycle, saying that it is a racing car.

The child draws a representational picture or labels the random-appearing lines on his painting "rain."

The child sets the toy table and pretends to eat some imaginary food.

5. Symbolic play, advanced: Materials or players are assigned meanings or characteristics by the child which they do not inherently possess, or imaginary materials are used and in addition the child alters his voice, manner or word usage in order to portray a character, or he speaks for an object, toy, or doll.

Merely saying, "I'm the mommy," is not sufficient for this level; the child must give some indication that she has altered her voice, the way in which she uses words, her gestures or way of moving her body for this level to be scored. Reasonable context may be used to judge whether there is such an attempt at characterization. If the observer notes at the beginning of a sequence that the child is speaking in a deep, gruff "lion" voice, subsequent vocalizations by the child in his capacity as lion may be presumed to be at a 5 level unless there is conflicting evidence.

This level may be scored if the observer notes that the child is speaking for a play object even if all the words cannot be heard; e.g. observation reads "Jeff has his hands on the Mommy cat and the boy cat, having them talk together. I hear the words, 'Mommy' and 'I want,' but Jeff speaks virtually inaudibly."

Examples: Mary and Jane are in the housekeeping corner. Mary says, "Now dear, be sure to drink all of your milk." (Alteration of usual use of words indicates characterization here, even in the absence of specific observer notation that Mary has altered her voice.)

Tom holds a toy tiger in one hand and a toy bear in the other. He has the tiger say, "Let's escape from the circus" to the bear, and moves both animals about the table.

Meg says, "I'm the Easter Bunny," and hops about the room pretending to hide eggs. (If Meg had walked with her normal gait, this would have been a #4.)

Rating Scale for Affect Level

This scale is a continuum from negative affect to highly positive

affect.

Negative affects include: sadness, anger, disgust.

Positive affects include: joy, excitement and mild surprise.

In rating, look first at the anchor scores of 1, 3, and 5. If the child's affect does not fit into one of those categories, rate it as a 2 if he shows less than moderate pleasure (does not appear happy), as a 4 if he shows more than moderate pleasure (appears very happy). A child may be given a 4 rating if he is serenely "lost" in play, but do not give a 5 rating without clear indications of smiling and/or laughter.

1. Child shows clearly negative affect. Child is crying or sustains expression of sorrow. Child pouts or whines in a sustained fashion. Child manifests anger (screaming, flushed face, fighting, angry shouts). Child looks disgusted for sustained period.

3. Child shows moderate enjoyment, pleasure and interest in his activity. The child appears happy; he sometimes smiles and may laugh. He seems involved in what he is doing. This is the rating category for the level of affect one normally expects to see in a child who is playing under ordinary circumstances.

5. Child shows extreme pleasure and delight in his activities. He is clearly exuberant and thoroughly involved in his activity. He smiles, laughs, and/or sings frequently.

Footnotes

[1]This scale has been adapted from one used by Tizard, Philps and Plewis (1976) and expanded.

APPENDIX C

FANTASY PREDISPOSITION, BIRTH ORDER AND SEX OF SUBJECTS

Subject Number	Fantasy Predisposition	Birth Order	Sex
1	High	First/only	Male
2	High	Later	Female
3	High	First/only	Female
4	Low	Later	Male
5	Low	First/only	Male
6	High	Later	Female
7	High	Later	Female
8	High	Later	Male
9	Low	Later	Female
10	High	Later	Male
11	High	Later	Male
12	Low	First/only	Female
13	High	First/only	Male
14	Low	Later	Female
15	Low	First/only	Male
16	High	First/only	Female
17	Low	Later	Male
18	Low	Later	Female
19	High	First/only	Female
20	Low	Later	Male
21	Low	First/only	Female
22	Low	First/only	Female
23	High	First/only	Male
24	Low	Later	Male

APPENDIX D

CROSSTABULATIONS OF PLAY CHANGE AND AFFECT CHANGE BY TYPE OF INTERRUPTION FOR ALL CHILDREN

Crosstabulation of Play Change by Type of Interruption: Child 1

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4		1[a] (2.8)[b]	2 (5.6)				3 (8.3)
-3			2 (5.6)				2 (5.6)
-2				1 (2.8)		1 (2.8)	2 (5.6)
-1				2 (5.6)			2 (5.6)
0	1 (2.8)	4 (11.1)	2 (5.6)	11 (30.6)		6 (16.7)	24 (66.7)
1							
2				1 (2.8)			1 (2.8)
3						1 (2.8)	1 (2.8)
4						1 (2.8)	1 (2.8)
Column Total	1 (2.8)	5 (13.9)	6 (16.7)	15 (41.7)		9 (25)	36 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 1

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2		1[a] (2.8)[b]	1 (2.8)				2 (5.6)
-1		2 (5.6)	1 (2.8)				3 (8.3)
0		2 (5.6)	4 (11.1)	10 (27.8)		7 (19.4)	23 (63.9)
1	1 (2.8)			4 (11.1)		2 (5.6)	7 (19.4)
2				1 (2.8)			1 (2.8)
3							
4							
Column Total	1 (2.8)	5 (13.9)	6 (16.7)	15 (41.7)		9 (25)	36 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 2

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2				1[a] (3.6)[b]			1 (3.6)
-1							
0	3 (10.7)	1 (3.6)	5 (17.9)	6 (21.4)		7 (25)	22 (78.6)
1				2 (7.1)			2 (7.1)
2	1 (3.6)			2 (7.1)			3 (10.7)
3							
4							
Column Total	4 (14.3)	1 (3.6)	5 (17.9)	11 (39.4)		7 (25)	28 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 2

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1			1[a] (3.6)[b]			1 (3.6)	2 (7.1)
0	4 (14.3)	1 (3.6)	4 (14.3)	11 (39.3)		6 (21.4)	26 (92.9)
1							
2							
3							
4							
Column Total	4 (14.3)	1 (3.6)	5 (17.9)	11 (39.3)		7 (25)	28 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 3

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3		1[a] (1.9)[b]	1 (1.9)	2 (3.8)		1 (1.9)	5 (9.6)
-2		2 (3.8)		1 (1.9)			3 (5.8)
-1			5 (9.6)			2 (3.8)	7 (13.5)
0	2 (3.8)	2 (3.8)	2 (3.8)	7 (13.5)		13 (25)	26 (50)
1				6 (11.5)		2 (3.8)	8 (15.4)
2			1 (1.9)	2 (3.8)			3 (5.8)
3							
4							
Column Total	2 (3.8)	5 (9.6)	9 (17.3)	18 (34.6)		18 (34.6)	52 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 3

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2				1[a] (1.9)[b]			1 (1.9)
-1			6 (11.5)			3 (5.8)	9 (17.3)
0		4 (7.7)	2 (3.8)	13 (25)		14 (26.9)	33 (63.5)
1	2 (3.8)	1 (1.9)	1 (1.9)	4 (7.7)		1 (1.9)	9 (17.3)
2							
3							
4							
Column Total	2 (3.8)	5 (9.6)	9 (17.3)	18 (34.6)		18 (34.6)	52 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 4

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3			1[a] (4)[b]				1 (4)
-2		1 (4)					1 (4)
-1			1 (4)	1 (4)			2 (8)
0			1 (4)	7 (28)	1 (4)	5 (20)	14 (56)
1				3 (12)	2 (8)		5 (20)
2				1 (4)			1 (4)
3						1 (4)	1 (4)
4							
Column Total		1 (4)	3 (12)	12 (48)	3 (12)	6 (24)	25 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 4

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1			2[a] (8)[b]	1 (4)			3 (12)
0		1 (4)	1 (4)	8 (32)	2 (8)	5 (20)	17 (68)
1				3 (12)	1 (4)	1 (4)	5 (20)
2							
3							
4							
Column Total		1 (4)	3 (12)	12 (48)	3 (12)	6 (24)	25 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 5

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3				1[a] (2.9)			1 (2.9)
-2		1 (2.9)					1 (2.9)
-1				1 (2.9)			1 (2.9)
0	1 (2.9)	2 (5.7)	3 (8.6)	9 (25.7)		15 (42.9)	30 (85.7)
1							
2	1 (2.9)						1 (2.9)
33							
4						1 (2.9)	1 (2.9)
Column Total	2 (5.7)	3 (8.6)	3 (8.6)	11 (31.4)		16 (45.7)	35 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 5

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1			2[a] (5.7)[b]	2 (5.7)			4 (11.4)
0	1 (2.9)	3 (8.6)	1 (2.9)	9 (25.7)		15 (42.9)	29 (82.9)
1	1 (2.9)					1 (2.9)	2 (5.7)
2							
3							
4							
Column Total	2 (5.7)	3 (8.6)	3 (8.6)	11 (31.4)		16 (45.7)	35 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 6

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4		1[a] (3.4)[b]					1 (3.4)
-3		1 (3.4)		1 (3.4)			2 (6.9)
-2					1 (3.4)	3 (10.3)	4 (13.8)
-1				1 (3.4)			1 (3.4)
0	1 (3.4)	1 (3.4)	2 (6.9)	5 (17.2)	4 (13.8)	7 (24.1)	20 (69)
1							
2						1 (3.4)	
3							
4							
Column Total	1 (3.4)	3 (10.3)	2 (6.9)	7 (24.1)	5 (17.2)	11 (37.9)	29 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 6

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1		1[a] (3.4)[b]				1 (3.4)	2 (6.9)
0	1 (3.4)	2 (6.9)	2 (6.9)	7 (24.1)	5 (17.2)	9 (31)	26 (89.7)
1						1 (3.4)	
2							
3							
4							
Column Total	1 (3.4)	3 (10.3)	2 (6.9)	7 (24.1)	5 (17.2)	11 (37.9)	29 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 7

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Change
-4							
-3				3[a] (9.1)[b]		1 (3.0)	4 (12.1)
-2						1 (3.0)	1 (3.0)
-1						3 (9.1)	3 (9.1)
0	1 (3.0)	1 (3.0)	6 (18.2)	9 (27.3)		3 (9.1)	20 (60.6)
1				3 (9.1)			3 (9.1)
2							
3				2 (6.1)			2 (6.1)
4							
Column Total	1 (3.0)	1 (3.0)	6 (18.2)	17 (51.5)		8 (24.2)	33 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 7

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1						2[a] (6.1)[b]	2 (6.1)
0	1 (3)	1 (3)	6 (18.2)	16 (48.5)		6 (18.2)	30 (90.9)
1				1 (3.0)			1 (3)
2							
3							
4							
Column Total	1 (3.0)	1 (3.0)	6 (18.2)	17 (51.5)		8 (24.2)	33 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 8

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2				1[a] (2.8)[b]		4 (11.1)	5 (13.9)
-1				1 (2.8)			1 (2.8)
0	1 (2.8)		5 (13.9)	9 (25)	1 (2.8)	10 (27.8)	26 (72.2)
1							
2				2 (5.6)		1 (2.8)	3 (8.3)
3				1 (2.8)			1 (2.8)
4							
Column Total	1 (2.8)		5 (13.9)	14 (38.9)	1 (2.8)	15 (41.7)	36 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 8

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1				1[a] (2.8)[b]			1 (2.8)
0	1 (2.8)		5 (13.9)	12 (33.3)	1 (2.8)	15 (41.7)	34 (94.4)
1				1 (2.8)			1 (2.8)
2							
3							
4							
Column Total	1 (2.8)		5 (13.9)	14 (38.9)	1 (2.8)	15 (41.7)	36 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 9

Play Change	Type of Interruption 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3			1[a] (2.9)[b]				1 (2.9)
-2			1 (2.9)				1 (2.9)
-1	1 (2.9)	1 (2.9)		1 (2.9)			3 (8.8)
0	6 (17.6)	4 (11.6)	6 (17.6)	4 (11.8)		5 (14.7)	25 (73.5)
1				1 (2.9)			1 (2.9)
2		1 (2.9)				1 (2.9)	2 (5.9)
3						1 (2.9)	1 (2.9)
4							
Column Total	7 (20.6)	6 (17.6)	8 (23.5)	6 (17.6)		7 (20.6)	34 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 9

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2				1[a] (2.9)			1 (2.9)
-1	2 (5.9)	1 (2.9)	5 (14.7)	1 (2.9)		1 (2.9)	10 (29.4)
0	4 (11.8)	5 (14.7)	3 (8.8)	3 (8.8)		6 (17.6)	21 (61.8)
1	1 (2.9)			1 (2.9)			2 (5.9)
2							
3							
4							
Column Total	7 (20.6)	6 (17.6)	8 (23.5)	6 (17.6)		7 (20.6)	34 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 10

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3				1[a] (3.1)[b]		1 (3.1)	2 (6.3)
-2			1 (3.1)	1 (3.1)			2 (6.3)
-1							
0	1 (3.1)	2 (6.3)	2 (6.3)	7 (21.9)	2 (6.3)	11 (34.4)	25 (78.1)
1						1 (3.1)	1 (3.1)
2						1 (3.1)	1 (3.1)
3	1 (3.1)						1 (3.1)
4							
Column Total	2 (6.3)	2 (6.3)	3 (9.4)	9 (28.1)	2 (6.3)	14 (43.8)	32 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 10

Affect Change	1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1			2[a] (6.3)[b]	2 (6.3)	1 (3.1)		5 (15.6)
0	2 (6.3)	2 (6.3)	1 (3.1)	6 (18.8)	1 (3.1)	12 (37.5)	24 (75)
1				1 (3.1)		2 (6.3)	3 (9.4)
2							
3							
4							
Column Total	2 (6.3)	2 (6.3)	3 (9.4)	9 (28.1)	2 (6.3)	14 (43.8)	32 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 11

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Directions	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2			1[a] (2.4)[b]	1 (2.4)	1 (2.4)	1 (2.4)	4 (9.5)
-1			1 (2.4)			1 (2.4)	2 (4.8)
0	1 (2.4)	3 (7.1)	5 (11.9)	9 (21.4)	2 (4.8)	9 (21.4)	29 (69)
1				3 (7.1)		1 (2.4)	4 (9.5)
2				1 (2.4)		1 (2.4)	2 (4.8)
3							
4				1 (2.4)			1 (2.4)
Column Total	1 (2.4)	3 (7.1)	7 (16.7)	15 (35.7)	3 (7.1)	13 (31)	42 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 11

Affect Change	Type of Interruption 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Directions	5. Peer Conversation	6. Distraction	Row Change
-4							
-3							
-2							
-1			4[a] (9.8)[b]	2 (4.9)	1 (2.4)	1 (2.4)	8 (19.5)
0	1 (2.4)	3 (7.3)	3 (7.3)	11 (26.8)	1 (2.4)	9 (22)	28 (68.3)
1				2 (4.9)	1 (2.4)	2 (4.9)	5 (12.2)
2							
3							
4							
Column Total	1 (2.4)	3 (7.3)	7 (17.1)	15 (36.6)	3 (7.3)	12 (29.3)	41 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 12

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4					1[a] (1.9)[b]		1 (1.9)
-3				1 (1.9)			1 (1.9)
-2	1 (1.9)		1 (1.9)				2 (3.8)
-1				5 (9.4)	1 (1.9)	1 (1.9)	7 (13.2)
0		2 (3.8)	4 (7.5)	19 (35.6)	4 (7.5)	4 (7.5)	33 (62.3)
1		1 (1.9)	1 (1.9)	3 (5.7)	1 (1.9)	1 (1.9)	7 (13.2)
2							
3				2 (3.8)			2 (3.8)
4							
Column Total	1 (1.9)	3 (5.7)	6 (11.3)	30 (56.6)	7 (13.2)	6 (11.3)	53 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 12

Affect Change	Type of Interruption 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2	1[a] (1.9)[b]		1 (1.9)				2 (3.8)
-1		1 (1.9)	1 (1.9)	5 (9.4)	1 (1.9)		8 (15.1)
0		2 (3.8)	1 (1.9)	23 (43.4)	4 (7.5)	6 (11.3)	36 (67.9)
1			3 (5.7)	2 (3.8)	2 (3.8)		7 (13.2)
2							
3							
4							
Column Total	1 (1.9)	3 (5.7)	6 (11.3)	30 (56.6)	7 (13.2)	6 (11.3)	53 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 13

Play Change	Type of Interruption 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3	1[a] (3.3)[b]	1 (3.3)					2 (6.7)
-2			3 (10)		1 (3.3)		4 (13.3)
-1			1 (3.3)				1 (3.3)
0	1 (3.3)	3 (10)	1 (3.3)	9 (30)	2 (6.7)		16 (53.3)
1				2 (6.7)		1 (3.3)	3 (10)
2		1 (3.3)		1 (3.3)		1 (3.3)	3 (10)
3						1 (3.3)	1 (3.3)
4							
Column Total	2 (6.7)	5 (16.7)	5 (16.7)	12 (40)	3 (10)	3 (10)	30 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 13

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3		1[a] (3.3)[b]					1 (3.3)
-2	1 (3.3)						1 (3.3)
-1			3 (10)				3 (10)
0	1 (3.3)	3 (10)	2 (6.7)	11 (36.7)	3 (10)	3 (10)	23 (76.7)
1		1 (3.3)		1 (3.3)			2 (6.7)
2							
3							
4							
Column Total	2 (6.7)	5 (16.7)	5 (16.7)	12 (40)	3 (10)	3 (10)	30 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 14

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2		1[a] (4)[b]		1 (4)			2 (8)
-1				1 (4)			1 (4)
0		2 (8)	3 (12)	7 (28)		8 (32)	20 (80)
1				1 (4)		1 (4)	2 (8)
2							
3							
4							
Column Total		3 (12)	3 (12)	10(40)		9 (36)	25 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 14

Affect Change	1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1			2[a] (8)[b]	1 (4)			3 (12)
0		2 (8)	1 (4)	6 (24)		8 (32)	17 (68)
1		1 (4)		3 (12)		1 (4)	5 (20)
2							
3							
4							
Column Total		3 (12)	3 (12)	10(40)		9 (36)	25 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 15

Play Change	Type of Interruption 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3				2[a] (5.6)[b]		1 (2.8)	3 (8.3)
-2			1 (2.8)	1 (2.8)			2 (5.6)
-1	1 (2.8)	1 (2.8)		3 (8.3)		1 (2.8)	6 (16.7)
0		2 (5.6)	2 (5.6)	12 (33.3)	2 (5.6)	5 (13.9)	23 (63.9)
1							
2		1 (2.8)					1 (2.8)
3						1 (2.8)	1 (2.8)
4							
Column Total	1 (2.8)	4 (11.1)	3 (8.3)	18 (50)	2 (5.6)	8 (22.2)	36 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 15

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2	1[a] (2.8)[b]						1 (2.8)
-1		1 (2.8)		3 (8.3)			4 (11.1)
0		2 (5.6)	3 (8.3)	14 (38.9)	1 (2.8)	6 (16.7)	26 (72.2)
1		1 (2.8)		1 (2.8)	1 (2.8)	2 (5.6)	5 (13.9
2							
3							
4							
Column Total	1 (2.8)	4 (11.1)	3 (8.3)	18 (50)	2 (5.6)	8 (22.2)	36 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 16

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3	1[a] (3.8)[b]					2 (7.7)	3 (11.5)
-2							
-1							
0	1 (3.8)		2 (7.7)	13 (50)		5 (19.2)	21 (80.8)
1							
2	1 (3.8)			1 (3.8)			2 (7.7)
3							
4							
Column Total	3 (11.5)		2 (7.7)	14 (53.8)		7 (26.9)	26 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 16

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1	1[a] (3.8)[b]		2 (7.7)	1 (3.8)		2 (7.7)	6 (23.1)
0	1 (3.8)			10 (38.5)		5 (19.2)	16 (61.5)
1	1 (3.8)			2 (7.7)			3 (11.5)
2				1 (3.8)			1 (3.8)
3							
4							
Column Total	3 (11.5)		2 (7.7)	14 (53.8)		7 (26.9)	26 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 17

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4			1[a] (3.3)[b]				1 (3.3)
-3		1 (3.3)		1 (3.3)		1 (3.3)	3 (10)
-2			1 (3.3)				1 (3.3)
-1							
0	1 (3.3)			10 (33.3)		7 (23.3)	18 (60)
1			1 (3.3)	2 (6.7)			3 (10)
2	1 (3.3)		1 (3.3)	1 (3.3)			1 (10)
3				1 (3.3)			1 (3.3)
4							
Column Total	2 (6.7)	1 (3.3)	4 (13.3)	15 (50)		8 (26.7)	30 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 17

Affect Change	1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1				3[a] (10)[b]			3 (10)
0	2 (6.7)		4 (13.3)	8 (26.7)		8 (26.7)	22 (73.3)
1		1 (3.3)		4 (13.3)			5 (16.7)
2							
3							
4							
Column Total	2 (6.7)	1 (3.3)	4 (13.3)	15 (50)		8 (26.7)	30 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 18

Play Change	1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3		1[a] (4.3)[b]					1 (4.3)
-2							
-1		1 (4.3)		1 (4.3)			2 (8.7)
0	2 (8.7)		2 (8.7)	9 (39.1)		6 (26.1)	19 (82.6)
1							
2				1 (4.3)			1 (4.3)
3							
4							
Column Total	2 (8.7)	2 (8.7)	2 (8.7)	11 (47.8)		6 (26.1)	23 (100)

Type of Interruption

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 18

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2		1[a] (4.3)[b]					1 (4.3)
-1							
0	2 (8.7)	1 (4.3)	2 (8.7)	11 (47.8)		6 (26.1)	22 (95.7)
1							
2							
3							
4							
Column Total	2 (8.7)	2 (8.7)	2 (8.7)	11 (47.8)		6 (26.1)	23 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 19

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2		1[a] (3.4)[b]	1 (3.4)	2 (6.9)		1 (3.4)	5 (17.2)
-1							
0		3 (10.3)		12 (41.4)	2 (6.9)	5 (17.2)	22 (75.9)
1						1 (3.4)	1 (3.4)
2						1 (3.4)	1 (3.4)
3							
4							
Column Total		4 (13.8)	1 (3.4)	14 (48.3)	2 (6.9)	8 (27.6)	29 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 19

Affect Change	Type of Direction: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1		1[a] (3.4)[b]	1 (3.4)	3 (10.3)	1 (3.4)	1 (3.4)	7 (24.1)
0		3 (10.3)		10 (34.5)	1 (3.4)	7 (24.1)	21 (72.4)
1				1 (3.4)			1 (3.4)
2							
3							
4							
Column Total		4 (13.8)	1 (3.4)	14 (48.3)	2 (6.9)	8 (27.6)	29 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 20

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2		1[a] (3.7)[b]				2 (7.4)	3 (11.1)
-1	1 (3.7)	2 (7.4)		2 (7.4)		1 (3.7)	6 (22.2)
0			2 (7.4)	8 (29.6)		3 (11.1)	13 (48.1)
1				2 (7.4)		1 (3.7)	3 (11.1)
2		1 (3.7)					1 (3.7)
3				1 (3.7)			1 (3.7)
4							
Column Total	1 (3.7)	4 (14.8)	2 (7.4)	13 (48.1)		7 (25.9)	27 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 20

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1		1[a] (3.7)[b]	2 (7.4)	1 (3.7)		1 (3.7)	5 (18.5)
0	1 (3.7)	2 (7.4)		11 (40.7)		6 (22.2)	20 (74.1)
1		1 (3.7)		1 (3.7)			2 (7.4)
2							
3							
4							
Column Total	1 (3.7)	4 (14.8)	2 (7.4)	13 (48.1)		7 (25.9)	27 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 21

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2			1[a] (4.8)[b]	1 (4.8)		1 (4.8)	3 (14.3)
-1						2 (9.5)	2 (9.5)
0	a (4.8)			5 (23.6)	1 (4.8)	5 (23.8)	12 (57.1)
1		1 (4.8)		1 (4.8)			2 (9.5)
2		1 (4.8)				1 (4.8)	2 (9.5)
3							
4							
Column Total	1 (4.8)	2 (9.5)	1 (4.8)	7 (33.3)	1 (4.8)	9 (42.9)	21 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 21

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1							
0	1[a] (4.8)[b]	2 (9.5)	1 (4.8)	7 (33.3)	1 (4.8)	8 (38.1)	20 (95.2)
1						1 (4.8)	1 (4.8)
2							
3							
4							
Column Total	1 (4.8)	2 (9.5)	1 (4.8)	7 (33.3)	1 (4.8)	9 (42.9)	21 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 22

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3		1[a] (5)[b]					1 (5)
-2						1 (5)	1 (5)
-1				2 (10)		2 (10)	4 (20)
0	3 (15)	1 (5)				8 (40)	12 (60)
1	1 (5)					1 (5)	2 (10)
2							
3							
4							
Column Total	4 (20)	2 (10)		2 (10)		12 (60)	20 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 22

Affect Change	1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2							
-1		1[a] (5)[b]				1 (5)	2 (10)
0	3 (15)	1 (5)		2 (10)		10 (50)	16 (80)
1	1 (5)					1 (5)	2 (10)
2							
3							
4							
Column Total	4 (20)	2 (10)		2 (10)		12 (60)	20 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 23

Play Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3				2[a] (5.9)[b]			2 (5.9)
-2			3 (8.8)	1 (2.9)			4 (11.8)
-1			1 (2.9)	3 (8.8)	1 (2.9)		5 (14.7)
0		2 (5.9)	2 (5.9)	11 (32.4)	1 (2.9)	3 (8.8)	19 (55.9)
1			1 (2.9)				1 (2.9)
2		1 (2.9)					1 (2.9)
3		1 (2.9)		1 (2.9)			2 (5.9)
4							
Column Total		4 (11.8)	7 (20.6)	18 (52.9)	2 (5.9)	3 (8.8)	34 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 23

Affect Change	Type of Interruption: 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2				1[a] (2.9)			1 (2.9)
-1			4 (11.8)	2 (5.9)			6 (17.6)
0		3 (8.8)	3 (8.8)	15 (44.1)	2 (5.9)	3 (8.8)	26 (76.5)
1		1 (2.9)					1 (2.9)
2							
3							
4							
Column Total		4 (11.8)	7 (20.6)	18 (52.9)	2 (5.9)	3 (8.8)	34 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Play Change by Type of Interruption: Child 24

Play Change	Type of Interruption 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4				1[a] (3.7)[b]			1 (3.7)
-3		a (3.7)	1 (3.7)		1 (3.7)		3 (11.1)
-2			1 (3.7)				1 (3.7)
-1			1 (3.7)				1 (3.7)
0	1 (3.7)			7 (25.9)	1 (3.7)	6 (22.2)	15 (55.6)
1							
2	1 (3.7)						1 (3.7)
3				2 (7.4)	1 (3.7)	1 (3.7)	4 (14.8)
4				1 (3.7)			1 (3.7)
Column Total	2 (7.4)	1 (3.7)	3 (11.1)	11 (40.7)	3 (11.1)	7 (25.9)	27 (100)

[a]Indicates number. [b]Indicates percent of total.

Crosstabulation of Affect Change by Type of Interruption: Child 24

Affect Change	Type of Interruption 1. Adult-Target	2. Adult-Group	3. Peer Dispute	4. Peer Change Direction	5. Peer Conversation	6. Distraction	Row Total
-4							
-3							
-2			1[a] (3.7)[b]				1 (3.7)
-1			1 (3.7)	1 (3.7)	1 (3.7)		3 (11.1)
0		1 (3.7)	1 (3.7)	9 (33.3)	2 (7.4)	7 (25.9)	20 (74.1)
1	2 (7.4)			1 (3.7)			3 (11.1)
2							
3							
4							
Column Total	2 (7.4)	1 (3.7)	3 (11.1)	11 (40.7)	3 (11.1)	7 (25.9)	27 (100)

[a]Indicates number. [b]Indicates percent of total.

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