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Developmental Changes in Fantasy Play in
the Years Two to Six and the
Relationship of Social
Cognition

A Thesis
Presented to the
Department of Psychology
and the
Faculty of the Graduate College
University of Nebraska

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
University of Nebraska at Omaha

by
Diane Cole
August 1981

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THESIS ACCEPTANCE

Accepted for the faculty of the Graduate College,
University of Nebraska, in partial fulfillment of the
requirements for the degree Master of Arts, University
of Nebraska at Omaha.

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Abstract

Fantasy play is a very general type of play and includes most types of pretending, whereas symbolic and dramatic play are specific types of pretending. There has been much controversy surrounding the age at which a child initially develops the ability to role-take, and the relationship between play and role-taking. This study examined age and sex differences in eight categories of fantasy play--substitution, attribution of function, animation, insubstantial material, insubstantial situation, character attribution, dramatic, and other play. Relationships were also examined between play categories and egocentrism, role-taking, and verbal IQ. The subjects were 78 two- and six-year olds who were videotaped in free play for three 15-minute sessions, and then given Borke's (1971) role-taking task, Rubin and Maioni's (1975) egocentrism task, and the Peabody Picture Vocabulary test. The data analyses showed age differences in frequency and duration of play categories. All categories, except attribution of function and other play, increased until five years of age and then decreased. Attribution of function and other play decreased with age and then increased in six-year olds. The only sex differences found were in use versus nonuse of the categories. Positive relationships were found between material play categories (substitution, attribution of function, animation) and egocentrism, and between idea-

tional play categories (insubstantial material and situation, character attribution, dramatic) and perspective role-taking. A negative relationship was found between role-taking and egocentrism. Few significant relationships were found between the play categories and verbal IQ. Fantasy play in two-year olds seems to be based on concrete-object types of play. As the child continues to experiment and learn about his/her environment, abstract play develops until the child can gradually role play. As the child becomes proficient in role-taking, the ability to role play also develops. Around six years of age, the child becomes interested in logical activities and fantasy play decreases. Further research is needed to determine if the play categories form a scale, and situational factors need to be examined to determine what influences the fantasy play of children.

Chapter I

Introduction

Statement of the Problem

The literature in the area of fantasy play in preschool children is scant and inconsistent. Operational definitions have been vague or absent. Some researchers have used the terms, "fantasy play," "symbolic play," and "dramatic play" interchangeably, while others have proposed that these terms are distinct concepts. A second problem is that in many observational studies of free play, only brief observation periods, such as three sessions of three to five minutes per session, have been used. Fantasy episodes were usually scored according to the presence or absence of fantasy play. Only one attempt to classify types of fantasy play has appeared in the literature, and the author did not use a classification system for an in-depth examination of play. The failure to use classification systems prevents one from determining whether preschool children go through a stage progression in fantasy play. What is known is that at certain ages, specifically three to five years of age, children produce more fantasy play than other ages, but it is difficult to determine whether there are differences in the types of fantasy play. Given these criticisms, the lack of a classification scheme for fantasy play is not surprising. Further, cognitive development in the preschool child has received extensive investigation; however, only a few studies

have examined the relationship between cognitive development and fantasy play. The lack of research on this issue might be related to the methodological problems in fantasy play studies. Once a classification system of fantasy play is developed and a stage progression examined, it should be possible to detect relationships in the sequence of fantasy play and cognitive development.

The purpose of this study is to examine age and sex differences within frequency and duration of fantasy play episodes, as well as to make methodological refinements in the operational definition and categorization of fantasy play and in the use of an adequate length of observational session. This study will also examine the relationship between three facets of cognitive development--perspective role-taking, egocentrism, and verbal IQ--and fantasy play.

Review of Relevant Literature

Definition of play. Piaget's (1962) theory of play has been widely accepted as the most comprehensive explanation of play behavior. The theory is closely associated with the four major periods of intellectual growth. During the sensory motor stage, from birth until about 18 months of age, uncoordinated impressions from the different senses occur which the infant is unable to distinguish from his/her own reflex responses. The infant gradually achieves sense and motor coordination necessary to perceive and manipulate objects in space and time. The preoperational stage lasts

from approximately two to six years of age. In this developmental period, the child learns to symbolize objects and the relationships between objects. However, the child views the relationships from one point of view due to the forced attention to a single aspect of any event. The concrete operation stage encompasses the years from about seven to twelve. During this period, the child becomes capable of reversing operations mentally, but only on concrete instances, and attention becomes "decentered." Mentally reversible operations become possible and are coordinated with each other. The final stage, formal operations, is reached at about 12 years of age and upward. Operations become completely abstracted from concrete instances. The child is then capable of formal logical argument in which facts are irrelevant (Millar, 1971).

Underlying intellectual development are the processes of assimilation and accommodation. According to Piaget (1962), assimilation implies that children impose their own reality on the physical world rather than adapting to the world. Reality is forced to fit the limited cognitive conceptualizations of the child's thought. The process of accommodation appears when the child alters the cognitive structure to meet the needs and desires in reality. For Piaget, as noted in Golomb and Cornelius (1977: 247), play is a "...manifestation of cognitive imbalance and egocentric thought..." and is considered to be assimilative behavior.

Three forms of play have been distinguished by Piaget (1962). (1) Sensory motor games, which do not involve any particular technique, exercise structure for no other purpose than for the pleasure of functioning, such as asking questions for the fun of asking without any interest in the problem or answer. (2) Games with rules are the "ludic activity of the socialized being" (Piaget, 1962: 142). Games with rules are games with sensory-motor combinations, such as races, marbles, or ball games, or intellectual combinations, such as cards or chess games, in which there is competition between individuals, and the games are regulated by either a code handed down by previous generations or by temporary agreement. (3) Symbolic games imply make-believe representation or representation of an absent object. Symbolic play represents assimilative thought and freely assimilates reality to the ego. Symbolic play is egocentric thought in its pure state, and the play behavior repeats and organizes thinking and symbols in terms that are already mastered by the child. Anything important that has happened in the child's life will be reproduced in play, but the experience being reproduced will be distorted, because no effort to adapt to reality will be made by the child (Millar, 1971). Symbolic play enables the child to relive past experiences and "makes for the satisfaction of the ego rather than for its subordination to reality" (Millar, 1971: 68). Play also provides the child with live individual

language "indispensable for the expression of his subjective feelings" (Piaget, 1962: 568). This symbolic play type is seen in the preoperational stage of development. As the child enters the concrete operational stage of development, social experiences enable the child to reproduce reality with some accuracy (Millar, 1971).

Smilansky (1968) modified Piaget's play classification into four types: functional, constructive, dramatic, and games with rules. In this classification scheme, dramatic play is a more general type of play than the symbolic play of the child. Dramatic play allows the child to freely display physical prowess, creative ability, and social awareness. It also allows the child to "acknowledge the objective world situation and, at the same time, to substitute an imaginary situation that satisfies the child's personal wishes and needs" (Smilansky, 1968: 7). The basic requirement for play to be considered dramatic is that the child take on a role, pretending to be someone else. According to Smilansky (1968: 8), make-believe, specifically sociodramatic play, relies heavily on verbalization. Words take the place of reality, and four forms of make-believe verbalizations were noted. (1) Verbalization serves to change personal identity to take on make-believe roles. (2) Identity of objects is changed by verbal declarations or actions. (3) Speech is substituted for actions. (4) Language is used to describe situations.

Smilansky (1968) contended that play becomes socio-dramatic when the theme is elaborated in cooperation with at least one other roleplayer. The participants must interact with one another, both verbally and in actions, for at least 10 minutes. Smilansky believed that sociodramatic play was a combination of six essential elements which included initiative role-play, make-believe in regard to actions and situations, persistence, interaction, and verbal communication. All six elements must be involved for play to be considered sociodramatic.

Smith and Dodsworth (1978) defined fantasy play as a behavior in which the child shows evidence of nonliteral or make-believe use of verbalizations, actions, or objects. The definition is very general with only the following provisions: the child may interact with or without others, and the play situation does not have to have a theme, in that the child may simply be pretending a cupboard is a stove. Matthews (1977) isolated the following six categories of fantasy play while observing free play in preschool children.

- (1) Substitution- the attribution of an entirely new identity to a referent.
- (2) Attribution of function- the ascription of a functional property to a referent that possesses that property.
- (3) Animation- the attribution of human or living characteristics or functions to an inanimate object.

- (4) Insubstantial material attribution- reference to materials that do not actually exist, at least not in the present playroom situation.
- (5) Insubstantial situation attribution- reference to situational factors not actually existing in the context of the playroom and play session.
- (6) Character attribution- portrayal of the qualities of a character by active representation.

Pretend play appears to lie on a continuum. Fantasy play is very general and includes most types of pretending. Dramatic play is usually seen within fantasy play but includes only role-playing. Symbolic play is often seen within fantasy and dramatic play. Symbolic play not only involves role-taking but also the construction of a purpose, such as recreating life experiences.

Developmental progression. Symbolic play appears to reach a peak between the ages of three to five years (Bailey, 1933; Buhler, 1935; Piaget, 1962). Specifically, Piaget believed that symbolic play appeared after the child could articulate verbally (Millar, 1971). Recent studies (e.g. Chaille, 1978; Routh, Walton, & Padan, 1978; Smilansky, 1968; Weybright, 1976) have supported this assumption. However, Chaille (1978), Smilansky (1968), and Weybright (1976) did not observe children younger than three years of age. Routh et al (1978) used children ranging in age from 10 months through 11 years, but the amount of activity, rather than actual pretend play was observed.

One of the difficulties in examining a stage progression in fantasy play is the manner in which fantasy is operationally defined. The majority of studies have categorized play in terms of the presence of a fantasy episode. This system permits one to assess only the duration of fantasy episodes at varying ages, but this classification has been used infrequently. Previous studies usually focused on sex rather than age differences, and three- to five-year olds or four- and five-year olds were grouped together for the purpose of detecting differences. Iwanaga (1973) has reported a stage-like progression in interpersonal play structure. Three-year olds engaged in two types of play: independent and parallel. Three types of play were found in four-year olds: independent, parallel, and complementary. Five-year olds engaged in the types found in four-year olds, but an integrative interpersonal play structure was also observed. Boys began engaging primarily in independent play at age three with little time spent in parallel play involving another peer. Around the age of four years, boys shifted to some complementary play structure while still engaging predominantly in independent forms of play. At five years of age, boys divided the time between independent and integrative types of play, whereas the progression for girls was that of parallel play at three years of age and predominantly complementary play at four years. Five-year old girls spent more time in the independent level of play than in the

other types of interpersonal play structure. Matthews' (1977) classification of fantasy play, previously noted, was a product of the observations of children engaged in play behavior. However, Matthews did not use this classification to examine further the evolution of fantasy play. If a classification system of fantasy play was used, one might find that certain ages of children use some types of fantasy play more than others, or that a stage progression is evident.

There has been some speculation about the decrease in pretend play after five years of age. Piaget (Millar, 1971) noted that symbolic social play is abandoned when the child focuses on games with rules. Piaget suggested that with growing experience of the physical and social environment, there is a transition to a more accurate representation of reality. The transition involves more sensorimotor and intellectual practice so that play becomes constructive, adapts to reality, and ceases to be play altogether. At about six years of age, the child attends school where intellectual development is stressed, and free play decreases significantly. Schools often prescribe how children will play together and what specific activities will be performed. Therefore, social development takes on a new aspect. The child becomes more concerned about what other children are doing and saying rather than being concerned about his/her own actions. Also, at this age period, language becomes

more accurate. Children are able to express their views and ideas verbally, and thus, do not have to rely on play for representation of reality (Weybright, 1976).

Sex differences. Sex differences in preschool children have been investigated on a number of behavioral dimensions. No differences have emerged in the amount of positive social interaction with peers (Barnes, 1971; Pederson & Bell, 1970; Reuter & Yunik, 1973; Smith & Connelly, 1972). Social interaction, in the above noted studies, included cooperative, associative, and parallel play categories (Parten, 1932). Similarly, other writers (Barnes, 1971; Moore, Evertson, & Brophy, 1972) found no sex differences in the amount of time the child spent playing alone. However, Fagot (1974) observed that when left to play alone, boys engaged in more play than girls.

Other writers have reported that girls used more persons in play scenes, and boys used more blocks and vehicles in play scenes (Cramer & Hogan, 1975; Fagot, 1974; Honzek, 1951; Rubin, 1977). The above mentioned studies used structured doll play or home observations. Only Rubin (1977) observed free play. However, Rubin's findings need to be interpreted with caution, because the length of the observation period was one minute even though 30 days of free play observations were used. It is questionable whether Rubin obtained a reliable sample of the children's behavior. Rubin, Maioni, and Hornung (1976) observed that males showed greater increase

than females in dramatic, solitary, constructive, and associative-dramatic play. Werton (1975) used Smilansky's six categories with preschool children and found that 32 out of 48 children engaged in elements from all six categories, but no significant sex differences appeared.

Harper and Sanders' (1976) study is the most current and reliable work done on the issue of sex differences in fantasy play. Three- to five-year olds were observed in free play once per week throughout the entire school year for two consecutive years. Observation sessions lasted from 35 to 50 minutes. The data showed that boys displayed more fantasy play, specifically solitary fantasy play, than girls. Boys performed the most solitary fantasy in the fall and the least in the winter, while girls displayed the most fantasy play in the winter and the least solitary fantasy play in the fall. Further, older children engaged in more fantasy play than younger ones. Interestingly, younger children engaged in progressively more fantasy play from fall to spring. Boys and older children engaged in more interactive fantasy play than girls and younger children. Fantasy play in younger children peaked during the winter, while a decline in the amount of fantasy play was seen in the spring for the older children.

The fantasy play setting may be a factor in the interpretation of the various studies. Rubin and Maioni (1975) found no sex differences in the amount of fantasy play that

occurred indoors. However, Matthews (1978) reported that indoor play sessions were generally more lengthy for four-year old girls than boys. Sex differences were not significant when the proportion of interactive time spent in fantasy was analyzed rather than duration. Singer (1973) and Harper and Sanders (1976) found a greater amount of fantasy play in boys in an outdoor setting, although an analysis of the ratio of fantasy play indoors to the total time showed no sex differences. When the time spent outdoors for each category of fantasy was expressed as a proportion of the total time spent in that category, solitary and interactive fantasy play showed significant sex differences favoring boys, whereas no sex differences in cooperative role-playing were found.

Other researchers (e.g. Parten, 1932; Rabinowitz, Moely, & Finkel, 1974; Roper & Hinde, 1978) reported that the preferred size for play groups appeared to be two, and children preferred to play with other children of the same sex. Galejo (1974) found that opposite sex pairs of children displayed more leading, demonstrating, assisting, and sharing behaviors during play sessions, while same sex pairs of children showed more giggly, happy, grabby, and unfriendly behaviors. Overall, girls displayed more pronounced behaviors than boys did.

Social class differences. Studies on social class differences in symbolic or fantasy play seldom appear in the

literature. Results from the few available studies are inconsistent. Smilansky (1968) reported that culturally deprived three- to seven-year old Israeli children did not develop the ability to engage in symbolic play. Eifermann (1970) proposed a developmental lag in the production of fantasy and sociodramatic play instead of a lack of ability. However, Eifermann's study did not include observations of children below the first grade. Some studies (e.g. Griffing, 1974; Rosen, 1974; Rubin, 1976; Tizard, Philips, & Plewis, 1976) indicated less symbolic and sociodramatic play in the lower class children when compared to middle class children. Smith and Dodsworth (1978) reported that middle class pre-school children showed more episodes of fantasy play than the working class children, and the middle class children were more likely to show elaboration in the fantasy episodes, but no significant sex differences were found in the length of the play episodes, and working class children were more likely to show replica use of objects. However, one must exercise caution in considering these results, because all observations were collected by one person. Also, the three play sessions were only five minutes in length. Tizard et al (1976) observed preschool children in free play and found no significant social class differences in the amount of "appropriate" use of materials, complexity or length of games, the amount of talk directed either to other children or to the staff, the level of social play, the themes used

in symbolic play, or the frequency of dramatic impersonations. Overall, it appears that the number of studies showing social class differences are similar to the number that do not report social class differences. Research on this factor is needed.

Cognitive measures. The literature on the relationship between cognitive development and play development is limited. The relationship between play behavior and conservation (e.g. Fink, 1976; Golomb & Cornelius, 1977) has been considered in several articles as well as the relationship between play behavior and concept development (Elder & Pederson, 1978). Role-taking and egocentrism are two cognitive factors that may be related to play behavior. Rubin (1976) and O'Connor (1976) examined the relationship between social participation and role-taking. Using the categories developed by Parten (1932), Rubin found that role-taking was positively related to associative play and negative related to parallel and onlooker-unoccupied activity. O'Connor (1976) reported that relative measures, such as social interaction, proximity, and interest for peer presence were positively related to spatial role-taking.

It is difficult to examine the two cognitive measures, perspective role-taking and egocentrism, separately, because one often assumes that egocentrism is a part of role-taking. Role-taking, specifically perspective role-taking, infers another person's thoughts and feelings. Egocentrism is the

"confusion of one's point of view with that of others or of the activity of things and persons with one's own activity" (Piaget, 1962: 74).

Initial role-taking ability. The age at which children are able to first engage in perspective role-taking has been a controversial issue. Data from Piaget and Inhelder's (1956) mountain experiment is most frequently cited in support of early egocentrism. Children between the years of 4 and 12 were asked to imagine how a doll would view a mountain scene from several different positions. The ability to visualize the doll's viewpoint was determined by (1) selecting one picture from a group of pictures to show how the mountain looked to the doll from different perspectives, (2) selecting one picture and placing the doll in an appropriate position for taking an identical snapshot, and (3) arranging the cardboard replicas of the mountains to reconstruct the doll's viewpoint. Piaget and Inhelder noted that when asked to indicate what the doll saw, the four- and five-year olds responded by giving their own perspective. The six-year olds showed some awareness that the doll's viewpoint was different from their own, but they were not able to take the doll's perspective. At nine years of age, children demonstrated a comprehension of the doll's point of view. Walker and Gallin (1977) used a modified version of Piaget and Inhelder's mountain task with four- to seven-year old children. All of the subjects were accurate in the

prediction of the character's perception on the three scenes containing toy objects, but the children made significantly more errors when responding to the Piaget and Inhelder mountain task. This study confirmed the idea that children find it easier to show awareness of another's perspective when asked to turn the display rather than to select a picture or build a model. Other studies (e.g. Flavell, Botkin, Fry, & Wright, 1968; Chandler & Greenspan, 1972) have also shown that children under nine years of age are unable to demonstrate perspective role-taking. Chandler and Greenspan reported that it was not until the age of 13 years that 85 per cent of the subjects were able to successfully complete the role-taking tasks.

When stimuli containing less information and requiring responses with few linguistic demands are used, children as young as three years of age seem able to engage in perspective role-taking. Borke (1971) had children select a picture to match the affective state of a child in a given story. Children as young as three years of age were able to give correct responses in simple contexts. However, Borke's study has been faulted for using a task that appeared to measure a social skill other than perspective role-taking. According to Chandler and Greenspan (1972), perspective role-taking tasks need to be constructed so that the child's perspective is different from that of the other person's viewpoint. In response to this criticism, Borke (1972)

pointed out that the assessment of a child's ability to perceive another's viewpoint may easily be confounded with the cognitive complexity of the task used to measure the ability. A child's recognition that others exist apart from him/her and have viewpoints of their own may develop early, and the ability to determine the actual content of another's viewpoint may be limited by the child's cognitive capabilities (Urberg & Docherty, 1976).

Mossler, Marvin, and Greenberg (1976) used a simplified variation of a privileged information situation, designed by Flavell et al (1968), and gave the task to two- to six-year old children. Among three-year olds, 60 per cent were unable to follow the questions. Only five per cent of the three-year olds, compared to 60 per cent of the four-year olds and 85 per cent of the five-year olds, answered the questions in a nonegocentric fashion. Although none of the two- and three-year olds were able to justify their responses correctly, 40 per cent of the four-year olds and 60 per cent of the five-year olds correctly justified their responses. Mossler et al concluded that four- and five-year olds were able to engage in conceptual perspective role-taking.

Role-taking patterns. The sequence of social role development has been reviewed by Watson and Fischer (1980). At one and one-half years of age, most middle class children can understand that people are independent agents and can begin to understand social roles. At two years of age, a

child can make a doll do something as if acting on its own. A three-year old child is able to make a doll carry out several activities relating to a role. Around four years of age, a child can act out a social role relating a behavioral role, such as a doctor, to a complementary role, such as a patient. Finally, at six years of age, a child can carry out several roles simultaneously.

Feffer and Gourevitch (1960) identified three patterns of role-taking. The first pattern is a total lack of decentration characteristic of six-year olds. Sequential decentration occurs when the child can decenter by focusing successively on the aspects or dimensions involved. This pattern usually occurs at about seven to eight years of age. Simultaneous decentration is the third pattern which occurs around nine years of age. The pattern is characterized by the simultaneous consideration or coordination of two or more aspects of the situation. Selman and Byrne (1974) found that the levels of role-taking, which corresponded approximately to those of Feffer and Gourevitch (1960) formed a highly reproducible Guttman scale.

Urberg and Docherty (1976) used the tasks from Borke (1971), Burns and Cavey (1957), Flavell et al (1968), and Chandler and Greenspan (1972), and strong support was found for a hierarchy of role-taking skills in three- to five-year olds. Borke's two tasks established that subjects did have in their cognitive repertory the emotional states required

by the tasks, and the subjects recognized common situations that produced the emotional responses. The third task, using the items from Burns and Cavey (1957) as well as from Borke (1971), required only sequential decentering for the solution. The subjects were able to first place themselves in the position of one of the characters and then decide what effect the situation would produce in that character. The subjects were then able to place themselves in the position of the other character and repeat the process. The two viewpoints were essentially independent dimensions and no coordination was necessary. In the fourth task, using the items from Flavell et al (1968), if the subjects considered the two viewpoints in isolation from each other, the point was missed that one character had information unavailable to the second character. Simultaneous consideration and integration of the two viewpoints was necessary for the solution. The Chandler and Greenspan (1972) task required both simultaneous decentering and iterative thinking for the solution. Children had difficulty understanding the situations being represented even before any questions as to the viewpoint were asked.

Urberg and Docherty (1976) found the following three levels of role-taking. Level zero involved no role-taking skills. Subjects did not pass any of the previously cited tasks, and level zero involved 14.2 per cent of the subjects with a median age of three years, five months. Level

one, sequential decentration, involved subjects that passed two out of the first three tasks. The subjects were able to infer another's viewpoint if it could be done by sequentially focusing on the aspects of the situation. The 50 per cent of the subjects who were at this level had a median age of four years, five months. Level two, simultaneous decentration, were subjects who passed task four. The subjects were able to infer another's viewpoint even when it involved simultaneous consideration of two aspects. Only 35.8 per cent of the subjects were at level two, and their median age was five years, five months. No children passed task five.

Walker and Gallin (1977) partitioned egocentrism into two developmental levels. Children who showed the capacity to symbolically represent what object another person saw but were unable to infer how the subject looked to the other person were classified as level one. Level two children were able to identify the object of another's viewpoint and recognized that the same object could be seen from various perspectives. Coie, Costanzo, and Farnhill (1973) confirmed the sequence in preschool children on simple, one object tasks.

Relationship between play behavior and role-taking.

Rubin and Maioni (1975) looked at the relationship between play preference, egocentrism, popularity, and classification. Borke's (1971) stories were used as a measure of

empathetic role-taking, and Piaget and Inhelder's (1956) mountain task was used to measure spacial egocentrism. Play preference was determined by Parten's (1932) categories of play. Empathetic role-taking was not significantly related to the incidence of dramatic play. Also, there were no significant sex differences for either of the play categories or the cognitive measures. The most frequent behavior was constructive play. The frequency of dramatic play was positively related to spatial perspective, but a negative relationship was found between the frequencies of functional and dramatic play. Rubin and Maioni (1975) suggested that children low in cognitive skill could have been moving from a functional play preference to a constructive play preference, whereas children of higher cognitive skill levels could be moving from a constructive to a dramatic play preference. Peer interactions allow the children to take the role of another person and provide situations in which children learn to understand reciprocal relations.

Relationship between intelligence and play behavior.

Few studies have looked at the relationship between verbal IQ and play behavior. Rubin (1981) examined the relationship between play and cognitive and social skills in four-year olds. Solitary-functional play onlooker play was correlated negatively with mental age. Parallel-constructive play was positively related with mental age. Relationships between mental age and solitary and parallel-dramatic were not

discussed. A negative correlation was found between chronological age and the production of parallel-dramatic play and between chronological age and the frequency of solitary-dramatic play.

Purpose of Study

The present study will examine age and sex differences in the frequency and duration of play episodes, and will make some methodological refinements in the definition and categorization of fantasy play and in the use of an adequate length of observational sessions.

Definitions of symbolic, dramatic, and fantasy play have been noted previously and these play types are assumed to form a continuum. Observational sessions of play will consist of three 15-minute periods. This length of time should be adequate for accuracy in observing play behavior. Fantasy play will be categorized into seven play types, using Matthews' (1977) and Smilansky's (1968) categories of play. The relationship between play behavior and cognitive development will also be investigated. The cognitive elements involved will be perspective role-taking and egocentrism. A classification system of fantasy play should produce a more defined relationship to cognitive development.

The following predictions will be examined.

- (1) There will be no sex differences among frequency of play types or duration of play episodes.
- (2) Children will increase in the number of fantasy

categories used until five years of age when the number of categories used will decrease.

- (3) As age increases, duration of play episodes increases.
- (4) Younger children will engage primarily in material play categories and older children will engage in more ideational play categories.
- (5) Boys will use more material categories than girls, and girls will use more ideational categories than boys.
- (6) There will be a positive relationship between ideational play categories and perspective role-taking.
- (7) There will be a positive relationship between egocentrism and materialistic play categories.
- (8) There will be a negative relationship between egocentrism and perspective role-taking.
- (9) There will be no sex differences on either of the cognitive tasks.
- (10) There will be a positive relationship between verbal IQ and play categories.

Chapter II

Method

Subjects

The subjects were 78 children, from two to six years of age, who were selected from three schools in an adjoining middle-class neighborhood of west suburban Omaha. School I was a preschool from which 20 three-year olds ($\underline{M} = 44.70$, $\underline{SD} = 2.34$), 20 four-year olds ($\underline{M} = 57.30$, $\underline{SD} = 2.18$), and 10 five-year olds ($\underline{M} = 69.30$, $\underline{SD} = 1.27$) participated. The school was chosen because there was a large selection of children, and the preschool was more agreeable to the research than other preschools. School II was an elementary school which many of the preschool subjects' siblings attended. A group of 6 five-year olds ($\underline{M} = 65.33$, $\underline{SD} = 1.60$) and 14 six-year olds ($\underline{M} = 76.79$, $\underline{SD} = 2.19$) from the kindergarten classrooms participated. School III was a day-care center located several miles away from the other two schools and was chosen because there was a larger number of two-year olds enrolled in their program than other day care centers. From this school, 8 two-year olds ($\underline{M} = 29.13$, $\underline{SD} = 2.23$) participated. All children in the school were placed into same sex and similar age (within four months) groups. Once separated into these categories, the children were randomly selected for participation where possible. The number of children available was limited for certain sessions in the schools. These children were used if age and sex requirements could be

satisfied. Friendship between subjects was not controlled due to the limited number of subjects. All subjects attended their school for a minimum of three months, with an average attendance of seven months. It was assumed that the children were familiar with the other children in their school session. Intelligence quotient was not controlled, but children with any special education problems were not included in the study. Teacher advisement was used to make this distinction.

Play Setting

School I. A portion of the preschool normally used for free play was selected as the setting. The playroom, 4 meters by 7 meters, was partitioned off by particle board from the remainder of the preschool. The experimental playroom setup was the same as that used by the children during their usual school period. No toys were added, deleted, or rearranged. A wide variety of toys were included in the room, such as blocks, cars and trucks, houseplay, puzzles, playdough, Fisher-Price toys, and a sliding board. A camera and a videotape recorder were placed in one corner of the playroom. The microphone was placed .6 meters away from the camera. The equipment was not disguised in any manner. During the practice sessions, the children were told that pictures would be taken in the manner that parents take pictures. Discussion and examination of the equipment was encouraged. Children, who did not understand what the camera was (three-year olds),

were told that the equipment was similar to a person in that it had a body (tripod), ears (microphone), and eyes (camera). Practice tapes were made on six occasions to allow the children to become accustomed to the equipment and to enable the researcher and another scorer to practice scoring techniques.

School II. A room separate from the kindergarten classrooms was used for the play sessions. The room, approximately 4 meters by 4.3 meters, had a door which remained closed during the sessions. Toys were taken from the selection in the kindergarten classrooms to control for novelty effects in different toys. The toys used in the sessions were similar to those used in School I. The videotape recorder, camera, and microphone were placed in a far corner of the room. The equipment was not disguised. The children were told that pictures would be taken similar to when teachers and parents took pictures. Any questions about the equipment were answered. Due to the limited time in the school year, only one practice tape was made to allow the children to become accustomed to the equipment and the experimenter.

School III. A portion of a separate room, approximately 5 meters by 6 meters, was used for the play area. The experimenter and equipment were at a far end of the room away from the play area, and the door remained closed during the sessions. The children were told that pictures would be taken in the same manner that their parents took pictures, and

they were also given the person explanation used in School I. Any questions asked by the children were answered. A large selection of toys familiar to the children were used in the play area. These toys were similar to those used in Schools I and II and consisted of such items as blocks, houseplay, puzzles, vehicles, and Fisher-Price toys.

Fantasy Play

Play categories. Fantasy play was partitioned in one of seven categories. The first six categories were taken from Matthews (1977), whereas the last category was adapted from Smilansky (1968).

- (1) Substitution- the attribution of an entirely new identity to a referent.

Example: Andrea asks Ann where the oven is. Ann slides the cupboard open and says, "The oven is back here; this is the oven."

- (2) Attribution of function- the ascription of a functional property to a referent that possesses that property.

Example: Mike takes a picture of Tom with the toy camera. The quality ascribed to the camera is a functional capability of a real camera.

- (3) Animation- the attribution of human or living characteristics of function to an inanimate object with no logical personification.

Example: Susan and Mary are playing with the blocks. Susan puts one block on top of another and says, "Charlie Brown, stay up there." Nancy adds, "Else you're going to get hit."

- (4) Insubstantial material attribution- reference to materials that do not actually exist at least not in the present playroom situation.

Example: Richie taps the carpet with a toy horn. When the tip falls off, he says, "I found it! The magic...stays clogged up in this."

- (5) Insubstantial situation attribution- reference to situational factors not actually existing in the context of the playroom.

Example: Mike is pounding with a hammer. Suddenly, he announces, "You're about to have fireworks. Turn off the lights."

- (6) Character attribution- portrayal of the qualities of a character by active representation.

Example: Susan tells Nancy, "Pretend I'm a lady. Pretend I'm the lady who serves you."

- (7) Dramatic- taking on of a role of another person or situation.

Example: Susan and Mary use character attribution in an expanded form. The girls continue to pretend they are in a restaurant, leave,

and go to Nancy's house for a visit.

All play episodes were coded by assigning each category a number from 01 through 07. For example, substitution was coded by the number, 01, and dramatic play by the number, 07. If episodes were a combination of the play types, the category to appear first in the episode was the first number in the two number code. For example, the code, 37, indicates that animation appeared first in the episode followed by dramatic play. The code, 00, was given to any type of play other than the above categories, and was labeled "other" play. This play category included such activities as putting puzzles together, playing board games, standing or sitting without activity, and continued repetition of an activity. Continued repetition consisted of a child repeating one particular activity four times in a row.

Fantasy play was further categorized into the same two groups used by Matthews (1977). The first three above noted categories of fantasy play were placed into a "material" classification, because the act involved the child's manipulation of and fantasy reference to actual material in the play environment. The last four categories were considered "ideational," because the referents were ideas or mental images of things not present to the senses. For purposes of analysis, combination episodes were assigned to the ideational group.

Category reliability. Matthews (1977) based the assignment of 90 fantasy initiations into six modes by two independent coders. An average coefficient of agreement of .87 was established by employing a technique for nominal scaling proposed by Cohen (1960). Smilansky (1968) defined dramatic play, but used a more specific sociodramatic play in the experimental sessions: There were five observers, who observed in detail and with as much accuracy as possible, the behavior of children in kindergarten and nursery school classes, but reliability measures were not reported. This strict limitation on sociodramatic play was not used in the present study. However, Smilansky's definition of dramatic play was used.

Inter-rater agreement. Fantasy episodes were coded in the previously stated manner by the experimenter. Another graduate student independently coded 20 per cent of the videotapes in each age group. Practice tapes were used to obtain a 95 per cent inter-rater agreement between the two scorers before the experimental tapes were scored. Inter-rater agreement for the experimental tapes was 90 per cent.

Cognitive Tasks

Role-taking task. The role-taking task was taken from Borke (197). Test-retest reliability of .44 with IQ partialled out was reported by Ford (1979). The role-taking task was divided into two sections. In part I, the child was first shown drawings of four faces depicting the emotional

responses of "happy," "sad," "afraid," and "angry" which the child was asked to identify. If the child had difficulty recognizing any of the faces, the experimenter identified the emotion for the child. The child was then told eight separate stories in which another child might be perceived as feeling sad, happy, afraid, or angry, such as eating a favorite food, losing a toy, getting lost in the woods at night, or being forced to go to bed. Each story was accompanied by a picture of a child with a blank face engaged in the described activity. Following the presentation of each story, the experimenter again named the emotion represented by each of the four faces and asked the child to complete the picture by selecting the face that best showed how the child in the story felt. In part II, the child was presented with eight additional stories which described a behavior toward another child that might make the other child feel happy, sad, afraid, or angry, such as sharing candy, refusing to let him/her play, pushing him/her off a bike, etc. The child was shown four faces (happy, sad, afraid, angry) and was asked to point to the one face which best indicated how the other child felt in the situation. The child received one point for each story for a total of 16 points. The subject was given the point if he/she pointed to the correct face. If the child answered verbally, he/she was asked to point to the face. If the correct face was not pointed to, a score of 0 was given. If the child pointed

to a different face than the one described, the face pointed to was accepted as the answer.

Egocentrism task. The egocentrism task was taken from Rubin and Maioni (1975) and had a test-retest reliability of .44 with IQ partialled out (Ford, 1979). The task was presented in the following manner. A large box was used with different pictures (sailboat, house, flower, drum) on the four sides. A second box, half the dimensions of the large box, had the identical pictures on it. The subject was shown the large box. The box was rotated so the child could view and name each picture. The child was then given the smaller box. The subject was first shown each picture on the large box and then was asked to identify the corresponding picture on the smaller box. The small box was placed in the center of the table with a picture facing each of the four chairs. The drum faced the child (0°), the boat was on the right-hand side (90°), the flower was opposite the subject (180°), and the house was on the left-hand side of the subject (270°). The experimenter asked the child to take the small box and (1) match his/her own perspective of the bigger box, (2) match the perspective of an imaginary person sitting at 90° , (3) at 180° , and (4) at 270° .

The boxes were removed from the table, and the child was shown a ball that was red on one side and white on the other side. The child was asked to name the colors on the ball. The experimenter either corrected or affirmed the

the response. The ball was placed in the middle of the table so that the child saw the colors hidden from view if so inclined. The red side faced the child, and the white side was opposite the child. The experimenter asked the child to identify the color/colors that were seen at 90° , 180° , and 270° . A doll was placed on the table opposite the child (180°). The experimenter then asked what color/colors the child saw. The ball was rotated a half turn (180°), and the child was asked the color/colors seen by the subject and by the doll. The doll was then placed at 90° . The child was asked what color/colors the subject and the doll saw at this position and also at a one-fourth rotation. The doll was finally moved to 270° , and the experimenter asked the child what color/colors the subject and the doll saw.

The doll was placed at 180° , and the ball was completely removed from the table. A paper mache village was placed on the table. The village included a 12 inch circular base which contained a hill with a tree (200°), a pond with a pipe-stem bridge over it (90°), and a schoolhouse (directly in front). The experimenter asked the child the order in which he/she would pass the objects on a road if he/she went to visit the doll, and the order in which the doll passed the objects on a road to visit him/her. The experimenter provided the child with materials identical to the model (tree, bridge, and schoolhouse). The child was

asked to match the model. The doll was then placed at 180° , and the child was asked to build a model so that it portrayed the viewpoint of the doll facing the original model. The doll was placed at 90° and then at 270° , and the child was asked to turn the display so that it portrayed the viewpoint of the doll.

The score for this task consisted of one point for each correct answer, except for the paper mache village task, with 26 maximum points. The answers concerning the order in which the child/doll pass the objects along the patch counted two points each, and three points were given for building a model to portray the doll's viewpoint. An answer that was partially correct was one where one of three or two of three correct answers were given. The role-taking task was to determine if the child was able to understand the role of another person. The egocentrism task, on the other hand, was to determine if the child was able to see the viewpoint of others compared to his own viewpoint.

Vocabulary task. The Peabody Picture Vocabulary test was administered to each subject individually according to the rules of administration in the test manual. The test was given separately from the taping sessions and the cognitive tests. The raw score was recorded for each subject and converted into a verbal IQ score.

Inter-rater agreement. The experimenter administered the three tasks to the 78 subjects individually. At the same

another graduate student scored the cognitive tasks for 20 per cent of the subjects in each age group. The inter-rater agreement was 100 per cent.

Procedure

Each pair of children was brought separately into the playroom and was told that it was free time and that they could play with any of the toys in the playroom. At School I, the experimenter was in the playroom with the children during free time for two weeks previous to the experimental sessions. This procedure increased the likelihood that the children would feel comfortable during the experimental situation. At schools II and III, the experimenter was with the children for a 15 minute pre-taping session. Once the children were in the playroom, the experimenter sat on a chair in the corner of the room by the equipment. The camera and recorder were then turned on. The experimenter interacted with a child only if the child made a request, but the experimenter did not encourage any type of play or response. At the end of 15 minutes, the children were told it was time to clean up, and the recorder was turned off. The experimenter walked the children back to their school session. Three fifteen-minute sessions were held once per week on the same day and time of the week for three consecutive weeks at schools I and II. At school III, sessions II and III were held in the same week.

Each tape was viewed once by the experimenter. The tape was then viewed on a second occasion using a datamyte

to transcribe the playcode. Each child was scored separately for the entire 15 minutes using the previously noted play code. The recorded play code was then stored in a computer data set.

After the last play session, each child was given the perspective role-taking and egocentrism tasks. The order of these tasks were counterbalanced. The experimenter and the subject sat at a round table with four chairs placed at 0° , 90° , 180° , and 270° . The two tasks were given to the child as described above. All subjects in the two- and three-year old age group were given the role-taking task twice on two separate days. Borke (1973) found that it was advisable to administer the task twice to subjects between the ages of three to three, one-half years. The task was sufficiently new to the younger subjects that even when the child knew the examiner, the child frequently was non-responsive the first time the task was given. Because no learning was involved, the double presentation simply insured greater validity of the results. The Peabody test was administered to the children on a day other than when the other two cognitive tests were given. The child and experimenter sat at a round table, and the test was administered according to the procedure in the test manual. Upon completion of the tasks, the child was thanked for answering the questions and was told that he/she could go back to the group.

Chapter III

Results

Overall, the analyses indicated that with an increase in age, children engaged in a larger number of play categories and play for longer periods of time. Frequency differences were found for all play categories except animation play. Sex differences in frequency of play were found in animation and character attribution play among three-year olds, and insubstantial situation play in four-year olds. Sex differences in duration of play episodes were found in animation and substitution play among three-year olds. The hypothesized relationships between egocentrism, role-taking, and the play categories were confirmed. Few significant relationships were found between verbal IQ and the play categories.

Play Categories

Age Differences

Frequency. A Kruskal-Wallis one-way analysis of variance, used to test the hypothesis that frequency of fantasy play categories would differ among age groups, was significant, $H = 19.164$, $p < .00001$. Table 1 shows the mean number of play categories used by each age group. Mann-Whitney U tests were used to determine differences between age groups. The U tests showed significant differences, indicating an increase in the number of categories used, between two- and three-year olds and between three- and four-year olds. Table 2 shows the U scores and significance levels for each age group.

Table 1
Total Play Categories Used by Each Age Group

Age Group	<u>M</u>	<u>SD</u>	<u>Md</u>	Range
two	2.27	.408	2.28	2-3
three	2.90	.792	2.76	2-5
four	3.66	.998	3.71	2-6
five	3.83	1.164	3.79	1-7
six	3.78	1.055	3.89	1-5

Table 2
Mann-Whitney Scores for Total Play Categories
for Each Age Group

Age Groups	<u>U</u>	<u>p</u> <
two, three	29.5	.0081
three, four	84.0	.0013
four, five	127.0	.3049
five, six	98.5	.5799

A chi square analysis was used to detect age differences in each of the play categories. All play categories except for animation play showed age differences. Table 3 presents the chi square value and significance level for each play category. One-way chi square analyses were performed to determine age differences within play categories. Table 4 presents the chi square value for each age group.

Table 5 shows the mean frequencies for the play categories at each age level. Substitution, insubstantial material, and dramatic play increased with age until five years of age and then decreased. Insubstantial situation and character attribution play also increased with age, but the frequency of play among six-year olds was similar to that of the five-year olds. The attribution of function play frequency decreased with age. Three-year olds used attribution of function play more than other age groups. Furthermore, this play category was used more than any other play type by two- to five-year olds. Frequency of dramatic play increased sharply from four to five years of age; however, two- and three-year olds did not use this play category. Two-year olds did not use the ideation categories, while six-year olds used the other play category more than the remaining play categories.

Duration. A Kruskal-Wallis one-way analysis of variance, used to test the hypothesis that duration of fantasy play

Table 3

Age Differences in Frequency of Play Categories

Play Category	<u>df</u>	<u>χ^2</u>	<u>p</u>
substitution	32	49.56	.0245
attribution of function	96	176.45	.0000
animation	16	19.32	.2523
insubstantial material	16	26.29	.0500
insubstantial situation	20	33.02	.0336
character	40	70.88	.0019
dramatic	32	74.36	.0000
other	68	132.02	.0000

Table 4

Chi Square Values for Play Categories among Age Groups

Play Category	Age Group			
	two-three	three-four	four-five	five-six
substitution	13.13	3.8	14.66I	9.35
attribution of function	7.35	16.05	12.89	23.57*
insubstantial material	N/U	115.64**	28.31***	39.83***
insubstantial situation	N/U	56.49***	25.31***	13.68**
character	N/U	41.58***	37.00***	22.67**
dramatic	N/U	48.61***	44.00***	7.80
other	7.99	9.57	9.00	25.98*

Note. N/U = not used

*p < .05

**p < .01

***p < .001

Table 5

Mean Frequencies of Play Categories Used by Each Age Group

Play Category	Two		Three		Age Group Four		Five		Six	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
substitution	1.87	2.10	2.40	2.11	3.95	1.85	4.13	1.86	3.71	1.98
attribution of function	15.50	2.83	22.25	3.24	17.75	2.71	10.81	4.20	6.43	1.16
animation	.13	.36	1.05	1.43	.80	1.01	.06	.25	.14	.36
insubstantial material	N/U		.35	.67	.65	.67	1.13	1.36	.50	.86
insubstantial situation	N/U		.35	.49	.70	1.13	1.13	.96	1.14	1.40
character	N/U		.30	.66	1.80	1.82	2.63	3.69	2.79	2.39
dramatic	N/U		N/U		.35	.59	3.75	2.52	2.00	1.92
other	15.25	1.75	15.20	2.14	8.55	2.81	5.19	2.29	6.50	1.09

Note. N/U = not used

episodes would differ with age, was significant, $\underline{H} = 34.93$, $\underline{p} < .0001$. Means and standard deviations for the play categories are presented in Table 6.

Age differences were further analyzed by Mann-Whitney \underline{U} tests. Significant differences were found between all age groups. Duration increased in two- to five-year olds and decreased in six-year olds. The \underline{U} scores and significance levels are presented in Table 7. Table 8 shows the mean duration for each play category.

Sex Differences

Frequency. The presence of sex differences in frequency of play differences was examined with a chi square analysis. Table 9 reveals sex differences for three- and five-year olds. The resulting value for animation play in three-year olds was $\underline{\chi}^2 (4) = 2.40$, $\underline{p} < .0082$. Cramer's \underline{V} indicated a relationship strength of .8286 favoring girls. Only 10 per cent of the boys, compared to 90 per cent of girls, used this play category, but 50 per cent of the girls used this category only once during the play sessions.

Sex differences in the frequency of character attribution play were present for three-year olds. The resulting value was $\underline{\chi}^2 (2) = 5.0$, $\underline{p} < .0821$. Cramer's \underline{V} indicated a relationship strength of .5000 favoring boys. Only 40 per cent of the boys and none of the girls used this category.

Sex differences appeared in the frequency of insubstantial situation play among five-year olds, $\underline{\chi}^2 (3) = 10.13$,

Table 6
Duration of Play Episodes for Each Age Group

Age Group	<u>M</u>	<u>SD</u>	<u>Md</u>	Range
two	26.73	6.76	23.65	18.55-35.64
three	43.06	8.12	42.40	31.58-63.07
four	62.03	9.80	59.67	46.65-78.86
five	77.65	15.54	76.72	48.71-105.70
six	56.77	19.47	54.96	30.52-89.16

Note. Duration is expressed in minutes.

Table 7

Differences in Duration between Age Groups

Age Group	<u>U</u>	<u>p</u> <
two, three	7.0	.00002
three, four	24.0	.00001
four, five	67.0	.0031
five, six	45.0	.0045

Table 8

Total Duration of Play Categories for Each Age Group

Age Group	Substitution		Attribution of Function		Animation		Insubst. Material		Insubstitution		Character		Dramatic		Other	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Two	3.36	3.79	23.33	4.71	.04	.10	N/U	N/U	N/U	N/U	N/U	N/U	N/U	N/U	36.85	4.84
Three	4.75	4.59	35.91	5.22	1.17	1.71	.45	1.17	.29	.55	.48	1.01	N/U	N/U	21.84	5.08
Four	10.24	5.38	48.05	6.11	.99	1.34	1.22	1.82	2.18	3.96	3.42	3.94	.93	1.61	12.23	4.61
Five	15.58	7.95	32.67	5.25	.18	.71	3.02	3.55	3.54	2.71	7.68	11.15	14.98	9.82	14.03	9.10
Six	12.66	8.27	21.25	7.86	.43	1.13	1.45	2.52	4.40	3.58	8.39	8.55	8.25	8.48	27.84	9.73

Note. Numbers are expressed in minutes.

N/U = category not used.

Table 9

Sex Differences in Frequency of Play Categories among Each Age Group

Play Category	Two Years df	Two Years χ^2	Three Years df	Three Years χ^2	Four Years df	Four Years χ^2	Five Years df	Five Years χ^2	Six Years df	Six Years χ^2	F
Substitution	3	5.0	7	8.20	6	4.53	7	8.46	4	6.37	
Attribution of Function	5	8.0	10	13.33	8	8.40	10	8.88	4	3.11	
Animation	F		4	13.73**	3	5.60					F
Insubstantial Material	N/U		2	2.40	2	2.00	3	2.08	2	.84	
Insubstantial Situation	N/U				4	3.20	3	10.13**	3	4.47	
Character	N/U		2	5.0*	5	8.11	6	7.46	6	6.37	
Dramatic	N/U				2	1.48	8	5.68	5	5.49	
Other	4	5.33	7	4.33	8	7.53	8	4.62	3	2.72	

Note. N/U = category not used.

F = Fisher's Exact test used.

* = < .05

** p < .01.

$p < .0175$. Cramer's V indicated a relationship strength of .7958 favoring boys. None of the boys and only 40 per cent of the girls used this category. Among males, 70 per cent, compared to 20 per cent of the girls, used the category only once.

There were no sex differences in any of the play categories, among the two-, four-, and six-year old age groups.

Duration. Sex differences in duration of play categories were examined by Mann-Whitney U tests. Table 10 presents the scores and significance levels for this analysis. No sex differences were found for two-, four-, five-, and six-year olds. Sex differences in substitution and animation play appeared in three-year olds. Longer durations of substitution play in three-year olds were used by males, with 50 per cent of the males using the category for seven or more minutes, compared to females who used the category for five or less minutes.

Among three-year olds, 90 per cent of the males, compared to 20 per cent of the females, did not use the animation category.

Material and Ideation Play

Frequency. The prediction that younger children would engage in more materialistic fantasy categories, whereas older children would engage in more ideational fantasy categories, was evaluated with an age by frequency grouping. The resulting chi square analysis values were: material

Table 10
 Mann-Whitney U Scores for Sex Differences in
 Duration of Play Categories Among Each
 Age Group

Play Category	Two	Three	Four	Five	Six
Substitution	4.5	26.*	41.	29.	18.
Attribution of Function	6.0	46.	44.	29.	40.
Animation	6.0	10.5**	27.5	27.	23.5
Insubstantial Material	N/U	42.	36.	21.	23.
Insubstantial Situation	N/U	30.	50.	20.	17.
Character	N/U	30.	44.	19.	13.
Dramatic	N/U	N/U	42.	30.	23.
Other	4.0	40.	29.	29.	23.

Note. N/U = Category not used.

* $p < .05$.

** $p < .001$.

play χ^2 (92) = 144.42, $p < .0004$; ideation play χ^2 (64) = 98.34, $p < .0038$. Table 11 presents the frequency means and standard deviations.

Duration. Duration of material and ideation play was analyzed by an age by total duration chi-square analysis. The resulting values were material play, χ^2 (304) = 311.99, $p < .3638$; and ideation play, χ^2 (236) = 244.67, $p < .3354$. Table 12 presents the duration means and standard deviations. Duration in material play increased until four years of age and then decreased. Ideation play increased in duration until five years of age and then decreased. There was a sharp increase in duration from 7.87 minutes in four-year olds to 29.29 minutes in five-year olds.

Individual age differences were examined by a test for significance of differences between two proportions. Table 13 presents the z values and significance levels. Significant differences were found in material play for all age groups except the three/four-year old age group, whereas no significant differences were found in ideation play except for the four/five-year old age group.

Sex differences. A chi square analysis was used to examine the prediction that boys would use more material play categories, while girls would use more ideation play categories. No significant differences were found for either play category. The resulting values were material play, χ^2 (9) = 13.99, $p < .1223$ and ideation play, χ^2 (5) = 9.23, $p < .1000$.

Table 11
 Frequency of Ideation and Material Play
 among Each Age Group

Age Group	Material Play		Ideation Play	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
two	17.00	4.21	N/U	N/U
three	25.35	3.92	.29	.55
four	22.70	4.01	2.18	3.96
five	15.13	4.44	3.54	5.58
six	10.21	2.61	4.40	2.71

Note. N/U = category not used.

Table 12
Duration of Material and Ideation Play
among Each Age Group

Age Group	Material Play		Ideation Play	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Two	25.88	6.69	N/U	N/U
Three	41.42	8.66	6.20	19.49
Four	55.58	10.99	7.87	5.71
Five	50.73	9.23	29.29	19.17
Six	39.40	12.42	22.69	19.00

Note. Duration is expressed in minutes.

N/U = category not used.

Table 13

Significant Differences in Duration of Material
and Ideation Play

Age Group	Material Play		Ideation Play	
	<u>z</u>	<u>p</u>	<u>z</u>	<u>p</u>
two/three	2.65	.004	.44	.330
three/four	.59	.277	.59	.275
four/five	1.56	.059	3.64	.0002
five/six	1.99	.023	1.42	.077

Cognitive Measures

Role-taking

The hypothesis that a positive relationship between ideation play and perspective role-taking would occur was analyzed with a Spearman correlation. The resulting ρ was .5355, $p < .001$, indicating a positive relationship. Table 14 presents the correlation table for role-taking, egocentrism, and intelligence.

Egocentrism

The hypothesis that a positive relationship would occur between the frequency of material play and egocentrism was $-.4026$, $p < .001$. The egocentrism task was scored so that a decrease in score denoted an increase in egocentrism; thus, the hypothesis was confirmed.

Egocentrism and Role-taking

Table 15 presents the mean scores and standard deviations for the egocentrism and role-taking tasks. The predicted negative relationship between perspective role-taking and egocentrism was analyzed with a Spearman correlation. The resulting ρ was .5613, $p < .001$. The egocentrism scoring was reversed as noted previously; and the two measures were negatively related, confirming the hypothesis.

Sex Differences

Mann-Whitney U tests were used to test the predicted absence of sex differences on the egocentrism and role-taking tasks. The resulting values were non-significant for all

Table 14

Spearman Correlations between Verbal IQ, Role-taking, Egocentrism and Play Categories

	Role-taking	Egocentrism	Verbal IQ	Frequency of Material Play	Frequency of Ideation Play
Roletaking	1.000	.5613**	.3813**	-.2950*	-.2911**
Egocentrism	.5613**	1.000	.3363**	-.4026**	.6665*
Verbal IQ	.3813**	.3863**	1.000	.0262	.1684
Material Play	-.2950*	-.4026**	.0266	1.000	-.1488*
Ideation Play	.5613**	.6665*	.1684	-.1488*	1.000

Note. * $p < .01$.

** $p < .001$.

Table 15
 Role-taking and Egocentrism Scores among Each Age
 Group

Age Group	Egocentrism			Role-taking		
	<u>M</u>	<u>SD</u>	Range	<u>M</u>	<u>SD</u>	Range
Two	5.25	2.25	2 - 8	5.25	2.25	2 - 8
Three	13.40	3.75	7 - 18	9.10	3.37	3 - 15
Four	17.75	3.13	12 - 26	11.80	2.09	8 - 15
Five	20.44	2.92	14 - 24	12.81	1.60	9 - 16
Six	22.79	2.01	18 - 26	12.57	1.95	9 - 16

age groups on both tasks. The \underline{U} values ranged from 7.0 to 42.0, $\underline{p} < .9497$ on the egocentrism task, and the values ranged from 5.5 to 39.0, $\underline{p} < .6354$ on the role-taking task.

Verbal IQ

The relationships between verbal intelligence and the play categories were analyzed with Pearson correlations. The means and standard deviations for verbal IQ are presented in Table 16.

Verbal IQ with material and ideation play The relationship between frequency of the two play categories and verbal IQ was examined. The resulting coefficients yielded only one significant value--a positive relationship between IQ and the frequency of material play categories for five-year olds, $\underline{r} = .4200$, $\underline{p} < .053$. Table 17 presents the coefficients and the significance levels for the two play categories.

The relationship between duration of the two categories and verbal IQ was also examined. Significant relationships were found between IQ and material play in five-year olds, $\underline{r} = .5826$, $\underline{p} < .009$ indicating a positive relationship, and between IQ and ideation play in six-year olds, $\underline{r} = .4404$, $\underline{p} < .058$ indicating a negative relationship. The coefficients and significance levels for the material and ideation play categories are presented in Table 18.

Verbal IQ with play categories. The relationship between the frequency of each of the play categories and verbal IQ was examined. Among two-year olds, there was a significant

Table 16
Mean IQ and Standard Deviations for Each
Age Group

Age Group	<u>M</u>	<u>SD</u>
Two	93.25	8.46
Three	105.20	12.01
Four	109.55	17.83
Five	111.69	11.53
Six	108.00	9.39

Table 17

Pearson Correlation Coefficients for Verbal
IQ and Frequency of Material and Ideation
Play

Age Group	Material Play		Ideation Play	
	<u>r</u>	<u>p</u> <	<u>r</u>	<u>p</u> <
Two	N/U	N/U	-.4531	.130
Three	-.0440	.427	.3013	.098
Four	.1046	.330	.2743	.121
Five	.4200	.053	.2368	.198
Six	.3320	.123	-.3861	.086

Note. N/U = category not used.

Table 18

Pearson Correlation Coefficients for Duration of
Material and Ideation Play and Verbal IQ

Age Group	Material Play		Ideation Play	
	<u>r</u>	<u>p</u> <	<u>r</u>	<u>p</u> <
Two	=.4079	.158	N/U	N/U
Three	-.2462	.148	.2944	.104
Four	.1128	.318	.2998	.100
Five	.5826	.009	-.3490	.093
Six	.4165	.069	-.4404	.058

Note. N/U = category not used.

negative relationship between IQ and other play, $\underline{r} = -.7464$, $\underline{p} < .017$. Three-year olds had two significant relationships-- a negative relationship between IQ and frequency of animation play, $\underline{r} = .5088$, $\underline{p} < .011$, and a positive relationship between IQ and frequency of insubstantial material play, $\underline{r} = .3568$, $\underline{p} < .061$. For five-year olds, the relationship between IQ and animation play was positive, $\underline{r} = .6296$, $\underline{p} < .004$. There were no significant relationships among the four- and six-year olds, and there were no significant relationships with the frequency of substitution, attribution of function, insubstantial situation, character attribution, or dramatic play categories. Table 19 presents the correlation coefficients for each of the play categories and verbal IQ.

The relationship between verbal IQ and duration of each of the play categories was examined with Pearson correlation. Significant relationships were found in three-year olds between IQ and other play, $\underline{r} = .3868$, $\underline{p} < .046$ indicating a positive relationship, and between IQ and animation play, $\underline{r} = -.4813$, $\underline{p} < .016$, indicating a negative relationship. A negative relationship between IQ and other play, $\underline{r} = .3767$, $\underline{p} < .051$ appeared for four-year olds. Several significant relationships emerged for five-year olds: a positive relationship between IQ and attribution of function, $\underline{r} = .4481$, $\underline{p} < .041$, and between IQ and animation, $\underline{r} = .6296$, $\underline{p} < .004$, and a negative relationship between IQ and dramatic play,

Table 19

Pearson Correlation Coefficients: IQ Scores with Frequency of Play Categories

Age Group	Other	Substitution	Attribution of Function	Animation	Insubstantial Material	Insubstantial Situation	Character	Dramatic
Two	-.7464**	-.0944	-.4833	.1313	N/U	N/U	N/U	N/U
Three	.1273	.1731	.2204	-.5088*	.3568	.0860	-.1081	N/U
Four	-.1644	.0951	.1162	.0346	.1665	.1394	.1265	.0359
Five	.1334	.2874	.2979	.6296**	-.1414	.2325	-.1390	-.3761
Six	-.3902	.2858	.0425	-.2707	-.4121	.2750	-.1953	.2388

Note. N/U = category not used.

* $\underline{p} < .05$.

** $\underline{p} < .01$.

*** $\underline{p} < .001$.

$\underline{r} = -.1375$, $\underline{p} < .034$. There were no significant relationships with IQ and any of the play types for two- and six-year olds or with IQ and the play categories of substitution, insubstantial material, insubstantial situation, and character attribution. Table 20 presents the correlation coefficients for each of the play categories.

Table 20

Pearson Correlation Coefficients: IQ Scores with Duration of Play Categories

Age Group	Other	Substitution	Attribution of Function	Animation	Insubstantial Material	Insubstantial Situation	Character	Dramatic
Two	.1737	-.1568	-.3956	.1313	N/U	N/U	N/U	N/U
Three	.3868*	.1694	-.2346	-.4813*	.2488	.0580	-.1056	N/U
Four	-.3767*	.1143	.2261	-.2118	.3340	.1728	.0171	.0660
Five	-.0161	.3678	.4481*	.6296**	-.1676	.0120	-.1375	-.4640*
Six	.0547	.3282	.4034	-.3642	-.3360	.3759	-.1728	-.4066

Note. N/U = category not used.

* \underline{p} .05.

** \underline{p} .01.

Chapter IV

Discussion

Although fantasy play was coded into seven categories, the data analyses indicate that these categories can be reduced to three basic play categories. Attribution of function, animation, and substitution play revolve around play with concrete objects, whereas insubstantial material and insubstantial situation play focus on symbolic imagery. Character attribution and dramatic play use both subtypes in what is referred to as roleplaying.

Distinct play patterns emerged within the age groups. Two-year old children used primarily one play type--replica use of objects. Three-year olds used concrete-object types of play, although they also showed movement toward play using symbolic imagery. Four-year olds increased their amount and duration of play types using imagery and role-playing. By five years of age, children displayed the greatest number of play types and the longest duration of play types for all categories except animation and replica use of function. Six-year olds decreased in the use and duration of all play types except other play insubstantial situation, and character attribution play. This developmental pattern supports previous studies (e.g., Bailey, 1933; Buhler, 1935; Piaget, 1962) which have reported that fantasy play peaks between the ages of three to five years. This pattern also supports Piaget's (1962) stages of play development. According to

Piaget, the two-year old is still participating in sensori-motor activities, and the symbolic ability has not yet developed. Therefore, the child continues to actively explore newly-learned objects in the environment. Fein (1979) speculated that language development influences the usage of this play category. As language develops, the child begins to associate a word to the object, and he/she actively experiments with the role of these newly-learned objects. For example, the car is moved across the floor in a manner similar to which cars move along the road. The toy horn is used for pretend play. Replica use of objects enables the child to rehearse roles of newly-learned objects as well as to imitate roles of unfamiliar objects. With an increase in age, the child becomes more proficient in imagery and can distinguish between words or images and the perceptually absent object. The discrimination process was evident among three-year olds in this study in their use of concrete-object types of play and their experimentation with the imagery types of play. Experimentation with role playing increases with age until the child becomes somewhat proficient at it, at around five years of age. The play pattern for four-year olds shows the developmental transition.

At about six years of age, the child reaches a preference for games with rules over symbolic play. The present study showed that six-year olds preferred to play with puz-

zles, board games, and making up their own games with rules rather than fantasy play. However, character attribution and insubstantial situation play continued at the level of five-year olds. Character attribution and insubstantial situation play types require much verbalization, but the child does not have to be involved in a dramatic scene. Rather, these play types permit the child to practice his/her newly acquired role playing skills without relying as much on play, per se. Therefore, the six-year old can use these categories while still involved in non-play activities, such as board games or puzzles.

Animation play was the only play category that did not display age differences. The data showed that animation was seldom used, and the longest play duration for any age group was one minute. Although this brief play time does not permit any differences to be examined, the limited use of the category resulted from the variety of toys available to the children. If a child wanted to play with a "living" toy, it is easier to take a toy which has some logical living qualities, such as a toy bear or dog, rather than taking a toy which had no living quality, such as a block or a wooden stick, and then having to assign a state of being alive. With age, the child does not need to engage in animation play because of the availability of appropriate associated living play objects; therefore, the child never becomes proficient at it. Instead, the child develops the ability to

imagine objects or situations not in the playroom. If a child wants to play with a living bear, he/she can imagine or role-take this animal instead of giving the quality to a nonsimilar object.

Frequency and duration of the play categories followed the same pattern of age differences with the exception of attribution of function play. The frequency of this category peaked at four years of age and then decreased, whereas play duration did not peak until five years of age. While the five-year old child did not use this play as frequently as younger children, he/she played for longer durations. The emergence of new role-playing abilities enabled the child to reduce the use of this category. On many occasions, the play category was used in connection with a role playing category, and therefore attribution of function play had longer episode times than when the child used only this play type. Further, when attribution of function play was used alone, only the object was involved. This pattern contrasted with those occasions where role playing occurred in that now the child had varying roles and situations to incorporate into the play patterns.

Sex differences were found in frequency of animation, and character attribution play in three-year olds, in insubstantial situational play in five-year olds, and in the duration of substitution and animation play of three-year olds. For all categories except duration of substitution, the sex difference was not in the extent of category use, but

rather in the use versus nonuse of the category. No sex differences were associated with the nonuse of categories. All but one play category occurred in the play of three-year olds. This is the time when the child is beginning to experiment with new role-playing abilities. Play skills, like other cognitive abilities, develop at varying rates in children. Those children who did not use these play categories either did not yet have the ability to engage in them, or they chose to experiment with and use other play categories.

Overall, the results did not show sex differences in the extent of category use. This finding supports previous research (e.g., Harper & Sanders, 1976; Matthews, 1978; Rubin & Maioni, 1975; Werton, 1978) which reported no sex differences in pretend play. Harper and Sanders (1976) have suggested that sex differences are a result of situational influences, such as availability of large muscle activities, season of the year, outside versus indoor play, and type of play (solitary versus interactive). In the present study, intensity of the play session was a situational factor. Although intensity was not measured, it was observed that boys participated in ideational categories with a much greater intensity than girls. Boys used more verbalization, describing the play themes with great detail. For example, two girls played house while getting ready to go to a dinner party, but physical movement was minimal, with the play con-

fined to one corner of the playroom. The girls fixed their hair in front of a mirror, talked with each other about preparations, and made many interruptions during the play scenes. The two males who played Batman and Robin, used louder voices than girls, more rapid talking and physical movement, and the play themes were detailed. For example, the boys had a batcave, batmobile, and city hall and went through the process of capturing several robbers, each plot building in intensity. This observation supports the research of Harper and Sanders (1976) who noted that sex differences were found when a situational factor was introduced to the play session. Boys differed from girls in the amount or type of play.

A parallel relationship was found between the play categories, role-taking and egocentrism. The emergence of role-taking in play was associated with role-taking and egocentrism levels in the child as assessed by the relevant measures. The ability to role-take develops as the child learns to role play, and therefore decreases his/her use of concrete-object types of play. This is an important precursor to the use of dramatic play and helps to account for the age differences in the use of role playing found in this study. According to Fein (1979), before a child is able to participate in dramatic play, the child must (1) know something about relationships and roles of people in the real world, (2) learn roles and rules required in which they play, and (3) coordi-

nate their roles with those of the other players. Fein (1979) further contends that children learn to take roles from play and that roles are reversible. That is, play helps the child to learn to role-take and role-taking enables the child to role-play. Accompanying this developmental transition is the subsequent decrease in egocentric thought reported in the present study. Role playing helps the child to understand the effects of his/her actions on others, and he/she learns to see playmates as individuals.

In summary, the data in this study show that a number of fantasy play types exist, and that age differences occur among frequency and duration of play categories. However, no sex differences were found. The developmental progression of play begins with the use of concrete-object play which decreases with age and is gradually replaced by symbolic imagery and role playing types of play. With the development of role playing in the child, one sees the emergence of role-taking and a decrease in egocentric thought. The results support this developmental progression and show that the role playing precedes role taking and the movement away from egocentric thought. But, further research needs to be done on other factors that may be influencing fantasy play, such as social class, type of pre-school attended, previous peer experiences, and the influence of a child leader on play behavior in the other children in the play group.

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