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THE EFFECTS OF STORYTELLING AND PRETEND PLAY
ON COGNITIVE PROCESSES, SHORT-TERM AND
LONG-TERM NARRATIVE RECALL

A Dissertation Presented

by

SOOK-YI KIM

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

May 1996

School of Education

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THE EFFECTS OF STORYTELLING AND PRETEND PLAY
ON COGNITIVE PROCESSES, SHORT-TERM
AND LONG-TERM NARRATIVE
RECALL

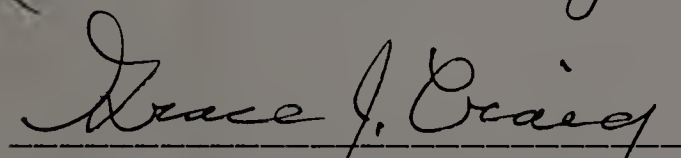
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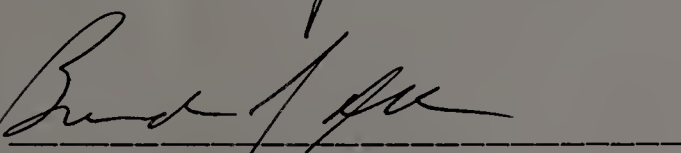
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This study is dedicated
to my parents and to all Korean
educators who teach children and have
themselves contributed to the study of
early childhood education using the
discovery approach and progressive pedagogy.

ACKNOWLEDGMENTS

My appreciation is extended to my parents who have supported me in various different ways; economically, educationally, and spiritually. Also, Jesus Christ was my greatest teacher during my study. He knew the way that I took and when he has tested me, I came forth as gold. I press on toward the goal to win the prize for which God has called me heavenward in Jesus Christ.

I am also thankful to the children with whom I have had the privilege of meeting at the preschool of Smith and Hampshire-Franklin. The big sisters, runaway babies, spaceships, rivers, and dams were a source of inspiration both in understanding child development and the children themselves. Foremost, however, they provided an ongoing opportunity to vicariously enjoy the pleasure of storytelling and pretense.

I would like to acknowledge the guidance and encouragement of professors Ernest D. Washington, Grace J. Craig, and Brenda A. Allen.

ABSTRACT

THE EFFECTS OF STORYTELLING AND PRETEND PLAY ON
COGNITIVE PROCESSES, SHORT-TERM AND LONG-TERM
NARRATIVE RECALL

MAY 1996

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This study explored and demonstrated the effects of storytelling and pretend play on short-term and long-term narrative recall. Specifically, this study examined and identified the cognitive changes which underlay children's actions during pretense enactment and narration. Educators and researchers propose that play and storytelling emerge at the same time in a "stream of symbolization" as preschool and kindergarten children learn basic skills relevant to the narrative as a cognitive model of an event.

Pretend play has long been considered an important area in the development of the child's growing cognitive and social competence. This study focused on the developmental differences between storytelling and pretend play, short-term and long-term memory, encoding and inferences and their interrelationships.

According to the data, there were significant differences between storytelling and pretend play in

facilitating narrative recall. The data also indicated that the ability to encode exceeded the ability to make inferences. The children were able to engage in storytelling and pretend play while at the same time they did not improve in their abilities to make inferences. This indicates that inferences required more complex cognitive skills, and were not related to the improvement of storytelling and pretend play. There was not a significant difference overall between the short- and long-term conditions. However, this study supports the hypothesis that storytelling and pretend play affects cognitive variables.

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CHAPTER 1

INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction and Statement of the Problem

Story narratives and pretend play have provided valid and reliable ways to measure children's feelings, and pretend scenarios reflect children's knowledge of real-life events, their concerns and their attempts to organize and make sense of their experiences (Farver and Frosch, 1996).

Pretend play has received considerable attention as a context for cognitive and social development. Piaget (1962) viewed play as indicating mastery of the concept that one thing can represent another, a representational skill requisite to the development of preoperational thought. However, he viewed symbolic play as purely assimilative, in the service of the preschool child's need for a sense of mastery over the environment, and did not accord such play a facilitative role in the development of cognitive skills (Doyle and Doehring, 1991).

Social pretend play is a favored activity of preschool children (Connolly, 1988). Educators and psychologists have argued that it is also important for children's intellectual and psychosocial growth. This belief is reflected in the curriculum of many early childhood education programs which are organized to provide opportunities for fantasy play activities (Curry and

Arnaud, 1984). It is also central to the interests of many researchers who have examined the specific contributions of pretend play to learning and development in early childhood (Fein, 1981). Empirical research generally supports the claim that social pretend play is associated with psychosocial maturity, peer popularity and teacher-rated peer social competence (Connolly and Doyle, 1984).

Current explanations for these findings emphasize the unique features of the pretend mode which are thought to facilitate children's social interactions. By definition, the pretend mode entails the nonliteral treatment of objects or the self (Garvey, 1977). It has been further characterized by a particular cluster of behaviors. Smilansky (1968) emphasized the qualities of persistence and reciprocity in the child's behavior. Garvey (1977) has stressed the role of effectiveness in social communication in pretend play.

To participate in human culture, children must be familiar with several narrative forms. One of the most complex may be the invented story. To understand or create invented stories, children must learn to understand the roles characters may play, the way they think and feel, and what motivates them to act. They must also understand and create plots, the organizing dynamic around which the actions of a story are built (Brooks, 1985). Developmentalists want to know, among other things, at

what age children can construct competent (plotted) stories, and under what circumstances (Benson, 1993).

Play is a vehicle children have available to them for imagining roles and the thoughts and feelings that go with them, as well as the setting in which they are performed. Thus play may be a means of learning skills that can be used in inventing stories. On the other hand, children can also directly invent stories with characters and situations.

Researchers at Project Zero, at Harvard University, argue that play and storytelling emerge at the same time, as a 'stream of symbolization,' and have used replica play situations to study how preschool children learn basic skills relevant to narrative (Gardner and Wolf, 1982). They find that by the time they are four, children engaged in pretend play with replica toys can handle the actions of two or more characters, the interrelationships among them (Rubin and Wolf, 1979), and make attributions about their internal states (Wolf, Rygh and Altshuler, 1984).

The present study was designed to assess the facilitative effects of pretend play and storytelling on memory for detail. It was proposed that the demands of these two tasks for narrative structure will facilitate both the encoding of details and the ability to make inferences.

Several recent studies suggest that retelling significantly improves kindergarten children's story

comprehension, sense of story structure, and oral-language complexity when used as a follow-up to listening to stories (Morrow, 1984; 1985; 1986). Only a few studies, however, have been reported that investigate retelling as an instructional strategy for enhancing reading comprehension.

Children's story production abilities undergo developments similar to retelling abilities. Making-up and telling an original story is somewhat more complex than retelling a remembered story, however. At the very least, new information is presented while the story is being told, and the information must be casually related to be comprehensible to the listener.

The structure of young children's original stories changes across early elementary school. Stein and her colleagues (Stein, 1988; Stein and Kilgore, 1988) have found evidence that young children have a much broader story concept than older children and that preschool children include information from fewer story categories than older children. Salgo (1988) found both qualitative and quantitative differences between preschoolers and kindergarten children in terms of causal connectivity in story production. In Shapiro and Hudson's (1991) study, Grade 1 children produced structurally more complex picture-elicited stories than did preschoolers, even though their stories were of the same length. Trabasso and his colleagues (Trabasso and Nickels, 1992) described

a sequence of development in children's ability to produce causally related goal plans in picture-elicited stories: Descriptions of depicted states and actions were typical for three and four-year old children; causally related goal plans were produced by some five-year olds; and complex, hierarchical goal plans predominated in the narratives of older children.

Although these studies have documented remarkable developments in story memory and story production, none have isolated the cognitive factors that might influence the development of these abilities. Piaget (1960) argued that children's causal and logical thinking does not develop until between five and eight years of age. This is supported by the literature on the development of story memory and story production: Children become capable of comprehending and using the informational and causal structure in stories around the time that they begin formal schooling. It is therefore reasonable to investigate the influences of age-related and schooling-related experiences on the young child's ability to remember and create stories according to their causal and informational structure.

The present study used procedures to measure cognitive processes as defined and developed by Allen (1996), that is (1) encoding or the cognitive processes used to define the bits of information presented in a situation and to access our knowledge of relevant problems

such as identifying the terms in a verbal analogy or recalling the main characters in a story; and (2) inferring or the cognitive processes employed to show one or more relationships between objects or events (i.e., how term "A" relates to character "B" in a story).

This study examined several elements of significance. First, storytelling and pretend play include encoding and inferences that underlie the narrative structures. Encoding and inferences are very different in terms of their cognitive complexity, and the first is easier for young children to learn than the second. Secondly, narrative structures persist over time, and this study is concerned with discerning whether short-term and long-term memory are differentially influenced by the form of narrative structure. Thus, storytelling and pretend play behavior was seen as an important indicator of the level of symbolic functioning and a reflection of increasing cognitive maturity of the child.

Purposes of the Study and Research Questions

This study focused on the measurement and development of narrative structure and pretend play in preschool and kindergarten classrooms in a semi-rural Massachusetts community. There are general agreements in child development that pretend play and storytelling are critical to social cognitive development. The primary research questions guiding this study were the following:

1. Are there significant differences between storytelling and pretend play in the facilitation of short-term and long-term recall of narrative structure?

2. Are there significant differences in the influence of children's short-term and long-term memory upon narrative structure and memory questions?

3. Are there significant differences between encoding and inference upon storytelling and pretend play with narrative recall?

4. Do storytelling and pretend play influence the answering of questions in narrative recall?

One major purpose of the study was to measure the effects of pretense and story comprehension upon narrative structure. Thus, this study examined the effects of pretend play and storytelling upon narrative recall. Pretend play has long been recognized as central to the cognitive development of children. This study also explored narrative structure and information processing as cognitive processes that were influenced by play. The assessment of narrative structure revealed the overall grasp that children had of the schemata of a story. At the same time the cognitive content of the story analyzed by examining the child's ability to encode and draw inferences from what they have learned. The linking of the narration, encoding and inference making showed the complexities of the cognitive skills that children routinely used in pretend play.

Limitations of the Study

This study is limited in several ways. This research employs primarily a study of white Americans in a kindergarten and a preschool. There is limited ethnic, religious, and economic diversity in the sample. Many of the narrations and enactments in the play were designed to stimulate the experience of children's memory. There was also a strong focus on role playing, storytelling, and narrative activities that promoted the understanding of the feelings of those who were developmentally different from them.

Another inherent limitation in this study was the size of the sample. A larger sample size would have strengthened the findings, and the data analysis could have used advanced statistical methods more effectively. An increase in the number of children would have provided separate age groups, i.e., a four and five-year-old group instead of a younger and an older group ranging from four to five years. A quantitative study approach has been chosen for this study in an effort to understand the complexities of children's narration and behavior. Thus, this study traded off the predictive nature of the findings of a research design for a less detailed account of a complex phenomenon.

Additionally, there is a problem in the precision of the study instrument. The reliability and validity of the research instruments were not firmly established prior to

implementation of the study. However, the researcher sought to reduce this limitation by both scrupulous examination of reactions and interpretations of the results throughout the research, as well as through the use of quantitative methodology such as precise measurements and tests of hypotheses.

The present study is intended to stimulate and to challenge further research on children's storytelling and pretend play with empirical, theoretical, and methodological concepts.

CHAPTER 2

REVIEW OF THE LITERATURE

Story Comprehension and Representation

Stories with their narration are an important factor of early childhood education. Children love listening to old stories, telling stories, and sharing stories about real and imagine events. Children learn about the world of literature from their experiences with stories.

"Children learn that stories have certain formal openings (Once upon a time), and closings (and they lived happily ever after.), and that stories have characters which behave in predictable patterns of events that related to story structure" (Muth, 1989).

Reading stories to children has long been recognized as beneficial by both educators and the public. Teachers acknowledge the importance of classroom story times, and generations of parents have read stories to children as part of a bedtime ritual. Such popular practices and general perceptions have been reinforced by theoretical, correlational, case studies, and anecdotal reports that identify relationships between reading stories to children and specific aspects of their literacy development.

The relationship between reading to children and literacy development has been well documented. Studies have found that early readers (including children who learned to read before they entered school) and successful

readers tend to have been read to frequently at home (Clark, 1984). Children's language development, specifically growth in syntactic complexity and vocabulary, is associated with early read-aloud experiences (Burroughs, 1972).

Recent research has shown why reading stories to children is so important. Experimental research in school settings has tried to determine the types of activity that enhance literacy skills through storybook readings. Some of these studies have involved children in different forms of active participation after the storybook reading. Others have focused on the influence of the teacher when reading to a whole class and have found that the teacher's reading style affects children's comprehension of stories (Dunning and Mason, 1984).

We are in the early stages of learning more precisely how story reading helps to develop literacy, but important practices already have been identified. Simply reading to children does not necessarily bring positive results. What happens before, during, and after the reading; how the child participates in the event; and the style in which the story is read, all play important roles in children's literacy development.

Children's interaction with adults in book reading experiences influences the development of comprehension, oral language, and sense of story structure. Brown's research (1976) suggests that the active involvement of

children in story reconstruction facilitates comprehension of the story. Reconstruction was defined in Brown's study as thinking about individual story events and arranging pictures of the story in sequence. By mentally reconstructing events and arranging pictures, children built an internal representation of the story.

Repetitive stories are important as an instructional method because children recall complex story structure. Children are introduced to repetition, recall stories, demonstrate how repeated events and words are used in the stories and then express their stories. In retelling stories, it is possible to use pictures, puppets and storylines so that children can create their stories by drawing or using pictures.

Pellegrini and Galda (1982) found that children's story comprehension and retelling ability improved with their active involvement and peer interaction in story reconstruction through role playing. Similarly, Amato and Ziegler (1973) found that retelling enables the child to play a large and active role in reconstructing stories and provides for interaction between the teller and the listener.

Story retelling has the potential for skill development. However, it has not been widely tested as an instructional technique. There have been studies of children's participation in strategies with

characteristics similar to those of story retelling. Blank and Sheldon (1971) reported that both semantic recall and syntactic complexity in the language of four to six year olds were improved when subjects were asked to repeat sentences in a story during a story reading. Zimiles and Kuhns (1976) found that retelling improved story comprehension in six to eight year olds who were asked to retell a story after it was read to them. Post-tests indicated that retelling stories shortly after listening to them facilitated recall.

Morrow (1984; 1985; 1986) carried out three different studies with kindergarten children to determine the specific instructional benefits of story retelling. Children in experimental groups retold stories after listening to them. Over eight weekly sessions, guidance in retelling was offered when children needed assistance. Significant improvement was found for the experimental groups in oral language complexity, comprehension of story, sense of story structure during retelling, and inclusion of structural elements in dictations of original stories generated by the youngsters. Children who were considered to be low achievers also made significant gains in the areas tested.

Engaging children in retelling a story reflects a holistic concept of reading comprehension. Retelling requires the reader or listener to integrate information

by relating parts of the story to one another and to personalize information by relating it to one's own background and experience. As an activity, it contrasts with the piecemeal approach of traditional teacher posed questions which require students to respond with specific bits of information about the text (Morrow, et al., 1986).

Comprehension of a story involves building a coherent representation, or situation model of story information. Some of the processes involved in building a coherent representation have emerged in research (Ackerman and Silver, 1991). One process of particular importance involves laying the foundation of a representation from early sentences and ideas in a story (cf. Gernsbacker, 1991). Subsequent information is linked onto this foundation. Salience or prominence of particular characters and concepts in a story representation is important. Prominence reflects the thematic importance of a concept for a story and the degree to which a representation is organized around the concept. Concept prominence may affect processing by maintaining concept activation across short intervals in which a concept is not mentioned and across minor topic shifts.

These ideas suggest that developmental differences in the processing of initial information in stories could contribute to differences in making causal inferences later in or after a story.

Developmental researchers have examined this issue. For example, Nezworski, Stein, and Trabasso (1982) examined children's structural representations of stories in the form of story grammars, and Trabasso, Secco, and Van den Broek (1989) probed children's sensitivity to the causal connectedness of story events to other events. This research, however, did not describe the processes involved in building story representations nor how initial processes affect concept use. As a result, we know little about the concepts that are used in inferences, the constraints on concept use, or if the constraints differ developmentally.

The specification of the causal dependencies in a text is the result of an inferential process in which the reader ties each event or fact to prior text or to relevant background knowledge (Van den Broek, 1990a). One type of inference involves the connections between an event or fact and the preceding or still attended text. A second type is a connection between a text and textual information that is removed from the surface structure of the text. Together, these two types of inferences allow the reader to recognize local as well as distant causal connections in a text.

Comprehension of a story appears to result in multiple mental representations. One of these is a representation of the context, that is, a representation of its words and sentences. Another may be a mental model

of what the context is about (Glenberg and Langston, 1992). The representational elements of the mental model stand for such things as ideas, objects, events and processes. It can be updated and manipulated and can serve to foreground significant aspects of a situation. In producing the mental model, various kinds of relationships may be inferred but causal dependencies have been found to be particularly significant in the process.

Comprehension of narratives is assumed to be based upon the ability to detect a character's goals, themes and plans. These inferences allow the interpretation of a sequence of actions according to a goal plan. To comprehend as well as produce goal plans, one has to be able to form a mental representation of the events in which one anticipates possible problems and solutions, and monitors whether the actions follow the plan and result in successful problem resolution (Scholnick and Friedman, 1987). Storytelling or narrating can also be understood as communicative acts that follow certain narrative conventions, namely, that one should organize the telling of events according to the rules of intentional actions and causal-temporal sequencing.

Analyzing Narratives and Metacognition

In a recent study of preschoolers' narratives, Nicolopoulou (1990) argues that children's narratives are meaningful texts that reveal how they view the world. In

constructing narratives, children incorporate individual experiences and social relationships, social interactions, and current situations into culturally available images and cognitive frameworks. At the same time, narratives provide children with a means to express and symbolically resolve emotionally important themes that preoccupy them (Nicolopoulou, 1993).

Studies on children's narratives have found gender differences in the content and construction of narratives. Overall, boys' narratives included superheroes, aggressive and violent behavior and attempts to master situations with aggression. In contrast, girls' narratives were typically concerned with families, friends, and caretakers (Farver and Frosch, 1996). In terms of narrative structure, girls' stories showed a trend toward order, while boys' stories were more inclined toward disorder (Nicolopoulou and Scales, 1990).

There is extensive theoretical literature on the importance of narrative as a fundamental means for representing and making sense of life (e.g., Bruner, 1986). Interpreted as "a meta-code, a human universal on the basis of which transcultural messages about the nature of a shared reality can be transmitted" (White, 1980, p. 6), narrative has become an anthropological descriptor of human existence. Humans are construed as *Homo narrans* and not simply as *Homo symbolicus* or *Homo sapiens* (Fisher, 1984; 1985). Human beings make sense of the world,

individually and collectively, by representing experience in narrative form. In other words, life history attains sense in and through acts of narration.

A three-dimensional model of narrative structure (Russell and Van den Broek, 1992) emphasizes (a) the structural connectedness of narratives, (b) the representation of subjectivity (i.e., the motivational and psychological relation that subjects assume toward the events being talked about) in narratives, and (c) the elaboration/complexity of narratives. These three dimensions of narrative structure have received extensive empirical and/or theoretical investigation. They also can provide important clinical information about the client's phenomenal experience.

Cognitive and developmental studies have repeatedly demonstrated that the structural properties of a series of events are central to its mental representation (Abelson, 1981). Two main classes of structural variables have received intense investigation: (a) abstract event categories (e.g., setting, initiating event, internal responses, attempt, consequence, and reaction) that are instantiated in the concrete statements that together comprise the content of the narrative (e.g., Mandler and Johnson, 1977), and (b) abstract sets of relations (e.g., temporal and causal) that exist between the events that instantiate that abstract categories (Kintsch and van Dijk, 1978).

Narratives with many causal relations between their constituent events are better recalled than those with fewer such relations. Similarly, individual events within a narrative that have many causal connections are better recalled, more often summarized, and judged more important than events with few causal connections (Trabasso, Secco, and Van den Broek, 1989). Three-year-old children can recognize causal relations between events that occur close together in space and time; however, the ability to causally relate events that happen over several days or occur as events in separate episodes develops over the elementary school years (Van den Broek and Thurlow, 1991).

For preschoolers and second graders, story recall and reconstruction are enhanced when stories strictly conform to temporal order, although this effect is less pronounced for older children and adults. Younger children do equally poorly on the recall and reconstruction of stories if the stories are made sufficiently complex (Brown, 1976). These findings point to the importance of the abstract event categories and the relations between them in the cognitive representation of events.

Metacognitive awareness is another important aspect of skilled comprehension. Metacognition is a general term referring to the ways in which people use their knowledge about mental processes to monitor and possibly to alter their performance. If we believe that text recall is better if we remember the gist, rather than the verbatim

form of the text, we will not try to memorize every word in the text. Poor comprehenders may demonstrate less metacognitive awareness than good comprehenders. This conclusion seems likely given that metacognitive skills such as comprehension monitoring make demands on working memory. Brown (1980) lists several metacognitive processes in skilled readers: clarifying the purposes of reading, identifying important aspects of the message, allocating attention to relevant information, monitoring their comprehension of the message, reviewing and self-testing, taking corrective measures when needed, and recovering from disruptions and distraction.

Pretend Play in Childhood: An Overview

Research on children's pretend play has broadened significantly in the past decade. One reason for the increasing interest has been that pretend play is assumed to reflect an emerging representational ability and thus provides valuable information about the child's cognitive and social development (Lyytinen, 1989). Piaget (1962) inspired this research and viewed the onset of symbolic play, together with language and deferred imitation, as simultaneous manifestations of semiotic functions.

In one of his major works on infancy, Piaget (1962) argued that pretend play is an extreme form of assimilation. A present object that is only vaguely comparable to an absent one can evoke a mental image of it and be

assimilated to it, resulting in the creation of a symbol. The ability to pretend depends on this capacity to represent absent objects and situations. This capacity is said to emerge during the second year of life.

For Piaget, early pretense symbolizing develops in a hierarchical fashion from familiar self-directed actions performed out of context, through the symbolic identification of one object with another, to increasingly complex symbolic combinations (Piaget, 1962). This account has been elaborated by McCune-Nicolich (1981), who suggested that late in the second year a fundamental shift in the child's symbolic play "allows games to be generated mentally," which requires "the coordination of at least two representational structures" (p. 787).

The notion that play behavior changes between birth and school age is not new. But the developmental account offered by Piaget (1962) provided a way of segmenting play behavior that implied a sequentially ordered pattern of change. First, in the Piagetian scheme, play is divided into three general forms: sensorimotor practice, pretense, and games with rules. These forms appear in an ordered sequence during the first six or seven years of life. Second, pretense develops through a sequence of stages and phases into increasingly sophisticated forms.

A baby needs to grasp both object meanings and skills in social interaction in order to pretend. When the child begins to notice and remember the differences between

objects and their uses, object meanings begin to develop. At the very earliest stages in this kind of learning, children's knowledge is quite simple - hard objects are good for banging; soft things are good for rubbing and patting. As soon as a young child can trade turns back and forth with a partner, she has at least a simple understanding of social interactions.

Pretense is a theoretical construct defined as behavior in a simulative, nonliteral, or "as if" mode. A variety of terms such as imaginative play, make-believe play, fantasy play, and dramatic play have been used to refer to this type of play behavior. Although these terms may reflect slightly different judgments of either its value or focus, they tend to be used interchangeably.

According to Fein (1981), interest in pretend play is currently in its third revival. In the first wave spanning the 1920s and early 1930s, the topic was deemed important enough to include in scholarly works on childhood and in child-care manuals for parents. It relied for sustenance largely on baby diaries, anecdotal accounts, or clinical descriptions. But remarkably little of the empirical research of this period, even when concerned with play, addressed itself specifically to pretense.

The second wave of interest was in the late 1940s and 1950s. This interest reflected the attempt of behaviorally oriented personality theorists to translate

the assumptions of psychoanalytic theory and play therapy into an empirical, rigorous study of personality formation in young children. In the doll play research of the period, pretend play was viewed as a projective test through which a sensitive observer might understand the "important experiences" of the child. Play became a tool for studying sibling rivalry, aggression, family roles, and other phenomena. It became clear that doll play performance was influenced by a host of situational factors (e.g., experimenter-child interaction, duration of the session, realism, or organization of the materials). It was assumed that the content of pretend play, especially its negative emotional content, reflected children's real experiences. However, it soon became clear that the relationship between play content and real experience was far from simple.

A third wave of interest in pretend play emerged in the early 1970s, influenced in large measure by the work of Piaget (1962). Piaget's work became the basis of research of pretend play, especially during the second

year of life. The volume edited by Herron and Sutton-Smith (1971) displayed the theoretical richness of the study of play, and Singer (1973) demonstrated the usefulness of conceptualizing play as a dimension of personality. The current revival differs from previous ones in the age range of children studied, in its structural orientation, and in its attention to variables reflecting the quality of play rather than its specific affective or thematic content.

Piaget proposed that changes in the occurrence of pretend play follow something like an inverted U-shaped curve. Pretend activities begin to emerge during the second year of life, increase over the following three or four years, and then decline. According to Piaget, play becomes more realistic as thought becomes more logical. Piaget thus predicted a rise and fall in pretend play roughly between the years of one and six. In addition, the onset of pretend play is accompanied by a decline in sensorimotor play, and its offset by the appearance of games with rules. The Piagetian scheme thereby implies that in stable environments less mature forms are deleted as more mature forms are added.

As many studies have shown, during the toddler period pretend play becomes more frequent and increasingly social (Bretherton, 1984). Initially, children's early symbolic representation is seen in behavior directed to the self and involves familiar rituals from everyday life. At

twelve months, a child may pretend to drink from a toy cup. By eighteen months pretense involves inanimate objects as recipients of pretend actions initiated by the child. Toddlers are able to pair related activities in single-scheme combinations such as feeding a doll pretend food. By the end of the second year, children can combine a series of acts around a theme such as kissing a doll, putting her in a toy bed and covering herewith a blanket. Between eighteen and twenty-four months, toddlers demonstrate the capacity to integrate symbolic play actions into larger, more complex organized sequences with other participants.

While extensive research exists to document toddler's independent symbolic play, other studies have shown that the social context in which play occurs has an important influence on toddler's emerging pretend play. Toddlers have been found to engage in more advanced forms of symbolic play when they are pretending with a more skilled partner than when they are playing alone (Beizer and Howes, 1992).

Most previous research on children's early symbolic development and play behavior has concentrated on the mother-child relationship (Farver, 1995). Werner and Kaplan (1963) claim that mothers are children's earliest play partners. According to their theory, early pretend play begins during the child's active experimentation with objects and in seeking confirmation of the developing

symbols from the mother. Previous research has shown that mothers facilitate or scaffold young children's beginning attempts at pretense. As mothers provide suggestions and communicate the rules of playing pretend, children incorporate maternal guidance into their play sequences and gradually begin to construct complex pretend play scripts and enact roles. During play, mothers and children learn to coordinate their actions and with maternal guidance, children can perform beyond their existing level of competence (Farver and Howes, 1993).

Although scholars have focused on the cognitive, creative, and affective implications of pretend play (e.g., Piaget, 1962; Singer and Singer, 1990), increasing evidence of mothers' involvement in children's early pretending (e.g., Garvey, 1990) raises questions about its possible role in social development. During open-ended interviews concerning the role of pretend play in the development of their two-year-old children (Haight, 1994), several mothers spontaneously commented on their own deliberate use of pretend play during problematic everyday activities (e.g., "We pretend during meals. It [restaurant game] helps him eat;" "We pretend a lot in the car. It gives us something to do when we are riding. It's a good way to pass time and spend time together;" and "We use [pretending] a lot when she's getting out of hand. Sometimes we use play to control her behavior."). In addition, Katz, Kramer and Gottman (1992) observed that

preschool-aged children who demonstrate competence with conflict management with peers often use pretend play during disagreements. These observations suggest that pretend play may be a useful tool for flexibly negotiating problematic situations.

The earliest suggestions of pretense are mere indications that the child is on the cusp of discovering the power of pretense. The child touches a baby bottle to the doll's mouth, puts an empty toy cup to her mouth, or holds a toy telephone receiver to her ear. These gestures indicate that the child has some understanding of how these toys can be used symbolically, but she offers no confirming evidence that she is really pretending to feed the baby, drink from the cup, or talk on the telephone.

These early gestures are important acts for the caregivers to observe and act upon (Gowen, 1995). By responding to the child's pre-pretense gestures as though the child were actually pretending, the caregiver can nudge the child gently over the line into the next period of development. When the child puts the toy bottle to the doll's mouth, the caregiver can say, "Oh, you're feeding your baby. You're such a good daddy!" This response affirms the pretense nature of the child's act. Caregivers can make similar responses to other pre-pretense acts. When a child pushes a toy car across the floor, the caregiver can say, "You're driving your car. Brumm, brumm. I'd better get out of your way!" When the child

puts the toy telephone to her ear, the caregiver can say, "You're talking on the telephone. Who are you talking to? Your mommy?" (Gowen, 1995).

Indeed, observational evidence confirms that caretakers do attempt to structure a child's pretense by supplying appropriate cues. Miller and Garvey (1984) report that, when mothers encouraged two-year-olds to engage in pretend, they "arranged the situation in which such play took place and provided props, including toy replicas of clothing, dishes, bottles and so on. This kind of maternal scaffolding means that children may complement their partner's pretense without understanding what their partner is pretending to do.

There is consistent evidence from several different laboratories that toddlers' pretend play is more sophisticated when their caretaker is available as a play partner. Although this facilitation might be interpreted as evidence that toddlers understand their mothers' pretense overtures, it is also possible that toddlers benefit chiefly from the props, demonstrations, and cues that mothers supply. Indeed, positive signs of misunderstanding have been observed.

Children also engage in more sophisticated play after watching an adult engage in pretense. However, such post-modeling effects provide an equivocal index of children's comprehension. They might copy an adult's pretend action with no understanding of its nonliteral meaning;

alternatively, they may understand that nonliteral meaning but have difficulty reenacting it.

Cognitive Development and Representation in Pretend Play

Current literature suggests that pretend play may make a major contribution to cognitive and socio-emotional development (Gordon, 1993). This information implies that pretend activity may have both socioaffective and intellectual growth. Research has suggested that short- and long-term narrative activity may help the child's ability to pretend effectively. In most theories of cognition and cognitive development, the social and the cognitive make contact only minimally as separate domains of functioning. Thus, Berk (1994) emphasized regarding what the young child knows as personally rather than socially constructed - a tradition that follows from the massive contributions of cognitive developmental theory to the field.

To review developmental consequences, existing literature regarding adaptive pretend play has addressed both cognitive and socioemotional issues. In the cognitive area, research has suggested that the development of pretend play incorporates several cognitive-developmental issues, all related to the growth of less concrete and more coordinated thinking. These include: (a) *decentration*, or the growing ability to direct pretense away from the self and incorporate other independently

active players; (b) *decontextualization*, or less reliance on prototypical play objects as the objects of pretend play, and (c) *integration*, or the capacity to combine separate actions into increasingly coordinated sequences of behaviors (Fenson, 1984).

Many researchers have shown that children of around three years of age are perfectly able to understand or make sense of pretend play acts carried out by another child. Specifically, Piaget's theory suggests that functional developmental mechanisms are practiced when the child actively participates with objects. "Developmental acquisitions such as effective symbolization (ability to differentiate signifier from signified) are therefore ultimately based on the child's abilities and opportunities to interact adaptively with objects" (Gordon, 1993). This assumption readily highlights children's interactions with pretend play objects as a potentially important context for cognitive development. However, the developmental issues of pretend play involve the construction of general cognitive structures which influence affective and interpersonal knowledge. Theorists have adapted Piagetian principles to the study of socioemotional knowledge. According to Gordon (1993), first is the idea that knowledge about affective and interpersonal issues may be modified by the functional mechanisms of assimilation and accommodation. Second is the idea that structural acquisitions such as

classification and perspective-taking abilities offer individuals advantages in resolving social and interpersonal dilemmas. Third, certain socioemotional experiences may resist integration into higher-order cognitive structures, thereby leaning encapsulated, nondeveloping cognitions around specific interpersonal structures. These principles of cognitive and social-cognitive development will be influenced by the socioemotional consequences of adaptive pretend play.

Harris and Kavanaugh's (1993) suggestions imply that the relations between pretense comprehension and the comprehension of text - particularly narrative text - may go beyond verbal fluency. The child's pretend play might provide a cognitive foundation not only for games of make-believe but also for responding to narration.

Leslie's (1987) perspective of pretend play is frequently interpreted as viewing pretend play as an activity in which children show advanced cognitive development with regard to representing others' mental representations. Leslie also described the infant initially as having only primary representations of the world: she sees the world directly, and represents it as it is. For example, a child's primary representation of a banana would be interrupted by watching someone pretend a banana was a telephone: the child would start to think of a banana as something you talk into. Subsequently, the child may develop another representation, *metarepresentation*, which

is secondary representations or representations of representations. Secondary representations occur when one object can substitute for a different object without the child confusing actual semantic relations.

Lillard (1993) noted that pretend play always entails a mental representational component, and sometimes is also accompanied by an action component. It is necessary to understand the representational component of pretense that requires a representation, i.e., one person representing a doll as a mom. It also is necessary to understand the action component that someone is acting out the doll as if it were a baby. The representational component is critical to pretend for both action and representation. For example, a doll may be a rabbit in a pretend play that it is mentally represented by the pretender as a rabbit. However, Leslie's (1993) argument strongly implies that pretense is an area in which children display early competence for understanding mental representation. However, theories of pretend play uniformly propose that fundamental cognitive changes underlie the emergence of pretense which may be indicative of a major change in cognitive development.

In sum, pretend play raises the possibility that the cognitive structure for pretend play creates a zone of proximal development in the child's acquisition of metarepresentational abilities.

Social Pretend Play Functions

Early childhood researchers emphasize that pretend play is a vital part of a child's early development. Educational researchers have emphasized the importance of incorporating pretend play into early childhood education curricula and the close monitoring of children's play behaviors in the classroom (Weinberger and Starkey, 1994). Farver (1992) notes that social pretend play presents a special communicative context within which meaning is often interpreted and expressed differently from conventional representations.

The links between pretend play and children's cognitive and social competence have been important areas for research and theory development for several decades (Youngblade and Dunn, 1995). Researchers have studied, for example, the relation of pretense to language development, perspective taking, individual differences in family interactions, and friendship formation during preschool and the kindergarten years. Recently, this area of research has grown to include theoretical interest in the links between pretense and the child's developing "theory of mind" (Harris and Kavanaugh, 1993).

Pretend play makes its appearance during the second year of life, and research studies have typically emphasized an individual child playing in the presence of an adult, usually the parent, most often the mother. During this stage of development the emphasis has been on

cognition with little attention given to social pretend play characteristics. The work of McCune, Kalmanson, Fleck, Glazewski, and Sillari (1990) is typical of research in this area in which cognition is portrayed as representational play. By contrast the research literature for the age range of three to six years is primarily with little attention to cognition.

The conceptual frame that combines cognitive, transactional and management aspects into joint elaboration emphasizes interaction and cooperative formats of different types of shared activities between children, including social pretend play. Sibling pretend play is a neglected area of research that could prove especially productive for the investigation of cooperative tasks. Pretend play is also an attractive area of research for those interested in a developmental theory of mind because it joins symbolic transformations, individual representations, desires, shared meanings and interpersonal negotiations (Verba, 1993).

Interestingly, however, pretend play skills required to engage in pretend play appear to emerge earlier than the child's understanding of false belief (Harris and Kavanaugh, 1993). Thus, a reasonable hypothesis is that children who are adept at fantasy play have experiences that help them master the relation between mental life and the real world (Taylor, Cartwright, and Carlson, 1993).

Flavell and Green (1987) suggest that pretending might facilitate a child's understanding of the distinction between internal mental representations of external stimuli and the stimuli themselves. And, in fact, studies that examine the distinction between internal mental representations and external entities have demonstrated that, upon request, children can imagine or pretend that a given entity is in a given place, and they can then talk about the products of those pretend or imagined representations (Harris and Kavanaugh, 1993). Once the distinction is practiced and mastered in pretend play, then, children might be better equipped to think about similar distinctions in other situations or contexts (Taylor, Cartwright, and Carlson, 1993). And, in fact, some data support this contention. Chandler, Fritz, and Hala (1991) and by Jenkins and Astington (1993). Conversely, however, Lillard's (1993b) experimental data suggest that children under the age of six may not understand that pretending that pretense involves representing an alternate reality may emerge later than they understand this about false belief.

In an analysis of developmental sequences in the emergence of social pretend play, Howes et al. (1989) suggested that when children first attempt to integrate nonliteral meaning and role exchanges they enact nonliteral role exchanges without engaging in

metacommunication about pretend play. These play forms may result because enactment of the nonliteral appears to precede verbal communication about the nonliteral, particularly when the partner is also a nonexpert pretend player (Howes, Unger, and Matheson, 1991). These cooperative social pretend play forms appear more complex than the role exchanges of the toddler period because nonliteral meaning has been added to the play.

The assumption that pretense is linked in some way to properties of the semiotic system is shared by Piaget, Leslie, and Ariel, even though each makes different use of this assumption. No account is parsimonious insofar as each posits special features of mind, special pretend functions, and even special pretend contents. Special features of mind appear either in the mental processes responsible for pretend representations or in the memoric sources from which the contents of these representations are drawn.

Piaget proposed that pretense marked the emergence of a generalized semiotic function ultimately responsible for the acquisition of a diverse symbol system. This function accounts for the mind's capacity to "know" three things: (a) that some entities (acts, objects, or events) operate as "signifiers" of other entities; (b) that the relationship between signifier and signified is defined by stipulation; and (c) that meaning is what is stipulated. The semiotic function permits a pattern of sounds to mean

an object or an event; a two-dimensional picture to mean a three-dimensional object; an internal image to mean an experience; or, a miniature figure to mean a person. Prior to the emergence of the semiotic function, the child is certainly able to remember experiences. What the presemiotic child can not do is appreciate the special status of a "signifier" as perceptually different from yet meaning that which is signified. The ability to pretend emerges in an ordered sequence. Although Piaget masterfully described phases in the development of the ludic symbol, he did not for the most part reference these phases to more general semiotic processes. Rather, Piaget tied the semiotic function to mechanisms of assimilation and accommodation.

This disequilibrium of mind is a temporary developmental state. Ludic symbols evolve toward a straightforward copy of reality as the child moves toward concrete operational thinking. Ludic symbols are transitional, aberrant forms. As the child's mind develops, symbols increasingly gain their meaning from sociocultural processes rather than from individual assimilative processes. Piaget thus accounts for symbolic play by positing special mental conditions, disequilibrium and distorting assimilation. The first condition permits a state of mental detachment from the immediate environment and the second permits personal, subjective interpretations of objects, actions, or events.

Social pretend play is an activity that becomes more frequent and more complex during the preschool and kindergarten years (Rubin, Fein, and Vandenberg, 1983). Although extensive research has been devoted to the relationships between the development of language and the appearance of pretend, or symbolic play (e.g., Fenson, 1984), there has been little investigation into the development of the language used in social pretending. This is somewhat surprising for three reasons. First, it is generally recognized that social pretending relies heavily on verbal communication, both in the negotiations by which roles are assigned, objects and locations transformed, and action plans developed and in the actual performance, or enactment, of pretend scenarios (Ariel, 1984; McCune-Nicolich, 1981). Not only the players themselves, but also researchers studying play must depend on verbally encoded indications of what roles, objects, settings, and actions are "on the stage" at any point during a pretend engagement. Second, it is known that language continues to develop during the preschool years. As this is the period during which social pretend play also exhibits development, (Iwanaga, 1973), one might suspect that pretend interactions are activity settings in which emerging linguistic capabilities would be reflected. Third, some evidence suggests that once social pretending appears, certain of its structural constituents that are represented primarily in verbal communication continue to

change and develop. These constituents include use of ideational (i.e., imaginary) transforms; greater diversity of role types and more complex action plans; as well as use of metacommunicative messages.

Engagement in collaborative pretend play has been linked with the development of young children's social competencies. Experimental training studies have demonstrated that participation in pretend play can enhance children's role-taking skills, group cooperation, and group participation. Observational studies in naturalistic settings have established that the frequency with which a child engages in social pretend play is positively related to peer popularity and social role-taking ability (Connolly and Doyle, 1984).

Developmental theorists have suggested that the process of pretend enactment assists the child in forming conceptual distinctions between object and action, and between self and other. It has also been argued that the enactment of pretend identities and everyday activities leads to the extraction of social rules and to the development of social role understanding (Fein, 1981). According to Kavanaugh and Harris (1994), in understanding pretend transformations, it is likely that children use a partner's gestures as a guide or scaffold with which to reconstruct a richer make-believe world in their imagination.

"The relations between children's pretend play and language rests on constructivist principles drawn from Piaget's theory of cognitive development, results of research studies and delineation of pretend play actions" (Yawkey, 1983).

Pretend play develops around age two with the onset of language and continues to ages eleven or twelve with rule-governed play increasing in importance. The core component between pretend play and language is representational thought - i.e., the cognitive capacity to construct mental elements that stand for raw perceptions and actions and the capacity to manipulate these elements according to coherent and fundamental logical principles (Fein, 1978; Piaget, 1962). Theoreticians such as Fein (1978) and Nicolich (1975) have explained the relation of mental representation to pretend play and language in a number of ways. First, youngsters identify, define, and assign roles in their pretend which require motor actions. These motor actions provide feedback in social content and link motor, cognitive and verbal elements to reality. This motor feedback becomes an integral part of learning concepts and may even symbolize them.

Second, the youngsters in pretend play are immersed in a sea of words and roles which relate their social behaviors to their activities. Through these imaginative roles youngsters imitate and create novel actions from those that they have observed in the adult world.

The third link between pretend play and language through mental representations is creative expression (Smilansky, 1968). Pretend play helps children to create novel statements and actions. Many of these novel statements and actions have no known models or direct antecedents (Piaget, 1962). Creative expression emerges from the demands of the dialogue and situation in pretend play.

The fourth link between pretend play and language is concentration (Smilansky, 1968). This link focuses on the youngster's attention to objects, situations, people, and actions used in pretend play. Pretend play strengthens concentration as youngsters communicate and demonstrate their enactments.

Related to the fourth is the fifth link, decentering. Pretend play fosters decentering. Decentering is the ability to perceive, understand and consider simultaneously the varied or multiple aspects of objects, events and situations (Fenson and Ramsay, 1980). Through pretend play, youngsters shift their conceptual schemata between symbolically transformed and immediately present stimuli. This conceptual shifting of cognitive schemata provides distance from or a break between stimuli in the environment and is the foundation for mental representation and cognitive operativity (Piaget, 1962).

From a constructivist perspective, pretend play and language growth are related through representational

thought -- i.e., the intellectual capacity to construct mental elements that stand for raw perceptions and actions and the capacity to manipulate these elements according to coherent and logical principles. Fundamental to representational thought are five connectives at the theoretical level which link together pretend play and language growth: motor actions, roles and role changes, creative expression, concentration and decentration. At the research level, results of selected studies (e.g., Smilansky, 1968) show not only that pretend play and language growth are associated but also that pretend play in dramatic and sociodramatic form can assist communication -- both oral and written. Finally the pretend play actions crucial to sociodramatic play and growth and language are: make-believe with objects, situations and actions role play, imitative role play, and interaction and verbal communication.

Consequently, pretend play may provide a context for both the exercise of existing cognitive functions and the creation of new cognitive structures. In the socio-emotional realm, play may help masters developmental conflict and resolve painful affective experience by providing an opportunity for catharsis, by enabling the child to exercise control during enacted traumatic or painful events, by symbolizing conflict consciously or unconsciously in a safe context, and by providing occasions for reciprocity and moral development.

Theoretical Models for Pretend Play

Theoretical models for pretend play that will be discussed here include Piaget's theory, Leslie's theory, and Perner's theory.

Piaget's Theory

Piaget's theory has been so influential, it is important to highlight its main features. Pretend play is identified as part of a wide-ranging semiotic function that emerges in the course of the second year. Harris and Kavanaugh (1993) argue that Piaget's tendency to view pretense as an inferior semiotic mode leads him to ignore or undervalue three distinctive features of pretend play: pretend transformations, the use of nonliteral language, and the fictional status of pretense.

In pretend transformation, it can be seen as an example that if a piece of Play-Doh signifies a sausage, handing over a piece of Play-Doh is tantamount to handing over a serving of sausage. Piaget also repeated the conceptual dichotomy between signs and symbols for non-literal language which combines certain features of ordinary linguistic signs with those of props. Further, it was interesting that Piaget acknowledged that the child used pretense to represent fictional characters, i.e., a child can pretend to be asleep on Christmas Eve, in the hope of glimpsing Santa Claus (Harris and Kavanaugh, 1993).

Leslie's Theory

Leslie (1987) presented a theoretical analysis of the representational nature of pretense that underlies the ability to pretend. He suggested that what he saw was the danger of "representational abuse." It's possible to consider a child pretending that a banana is a telephone. According to Harris and Kavanaugh (1993), one way for the child to represent this pretend link is to connect two ordinary mental concepts -- the concept for banana and the concept for telephone. The two conceptual connections between telephone and banana are dangerous.

Leslie achieved the decoupling model with several steps. For example, decoupled statements such as "This empty cup contains coffee" are linked to special factors adopting particular propositional attitudes. Leslie demonstrates that the child can recognize that pretending is a particular mental attitude tied to a particular agent, i.e., a young child is capable of metarepresentation: the ability to represent a mental state such as pretending.

Harris and Kavanaugh (1993) highlighted the difference between decoupling and flagging in the following way: decoupling starts from a prop such as a cup or banana; but a series of computational steps that include coping and editing the conceptual entry for that prop, it eventually arrives at a decoupled statement that specifies that pretend contents or identity of the prop.

Flagging works in the opposite direction; it starts from a pretend stipulation, and that stipulation is directed at a prop or set of props within the immediate situation.

In Leslie's approach, he is concerned with forms of play that exhibit the pretense forms of object substitution, attribution of pretend properties, and the invention of imaginary objects. Hobson (1990) described Leslie's (1987) theory as the forms of pretense that are as they are simply because pretending involved the practice of the child's awareness of the relationships that existed between human beings and the world.

Perner's Theory

Perner (1991) argues that young children proceed through three levels of 'semantic awareness.' At the initial level of semantic awareness, young children have a 'mental model' of the world. This model is determined veridically by perception, and consists of primary representations. It represents the world of "as-if" mode and makes up a non-manipulable knowledge base.

Perner differs from Leslie in that he views the child as acquiring an explicit theory of the representational nature of mental states. However, Perner's conception of metarepresentation amounts to much the same as Leslie's metarepresentation, in that it involves representing another's representational relation to the world (Jarrold, Smith, and Boucher, 1994).

Perner suggests that in pretense children create a counterfactual model of the pretend situation. Within the scope of his theory, this ability is available to children operating at the second level of semantic awareness. In other words, this can be done using hypothetical, counterfactual secondary representations and does not require metarepresentations. It might be argued that these hypothetical models, originating from the knowledge base, are representations of the primary representations in the base. Perner proposes this possible objection by pointing out that the counterfactual pretend models are still models of the external world.

Finally, Perner claimed that when young children engaged in pretend play, they mentally represented a fictional situation. Thus, there are clear parallels between Perner's and Leslie's theories of pretense. In fact, Perner's counterfactual mental models are hypothetical, they are detached from reality and are therefore 'decoupled.' Because they are separate from the knowledge base, they are 'quarantined' from it. Perner circumvents the problem of representational abuse in much the same way as Leslie: he agrees that a child can not concurrently hold two semantically conflicting primary representations. Where he differs from Leslie is in his use of secondary representations as opposed to meta-representations (Jarrold, Smith and Boucher, 1994).

The Relationships between Storytelling and Pretend Play and Educational Implications

"Storytelling is an ancient and wonderful artform capable of transforming otherwise rote reading and language development activities into simulating experiences" (Cooter, 1991). When matched to required curricula, children are able to transfer needed narrative strategies to meaningful literary genres. In fact, stories make sense and are memorable so that children become capable of comprehending and using the informational structure in stories around the time that they begin formal schooling (Varnhagen and Everall, 1994).

Language development has been linked to different narrative styles during parent-child storybook readings (Allison and Watson, 1994). Specifically, retelling includes greater elaboration and cognitive structuring of information that has been read. Newton (1994) described materials that were intended to develop reading skills such as pictures. Researchers have raised several important issues related to studies using retelling, particularly with respect to how the storytelling task is structured (Gambrell and Koskinen, 1991).

Children's pretend play can be used as a tool for assessing children's symbolic competence and narrative structure. "One reason for this relationship is that pretend play is assumed to reflect children's emerging representational abilities and thus provides valuable

information about their social and cognitive development" (Lyytinen, 1995). When children are engaging in pretend play, they are usually functioning, talking, dramatizing, storytelling, and narrating close to their optimal level, as they exhibit their existing skills and try out new undeveloped ones.

Pretend play involves the use of both actions and language to depict events (Lyytinen, 1991). Pretend play requires complex cognitive and social skills such as sharing, cooperation, self-regulation of affect, and behavioral role reciprocity (Werebe and Baudonniere, 1991). It can also express mutual comprehension of symbolic language and the capacity to coordinate partners' activities. Kane and Furth (1993) specify in detail how pretend play abounds in societal features, such as shared values and assumptions, traditions, history, rules, desire for mutual recognition, and use of pretend for inter-personal advantage.

In order to pretend with other players, children must attend in the appropriate ways to executing pretend activities. For example, "pretend play activity is free-flowing in nature, in contrast to structured laboratory problem-solving activity, in which children are expected to reach predefined solutions" (Goncu, 1993).

In some schools and kindergartens, story playing is a regular activity. Children have the option each day to dictate a "story play" to a teacher. Later it is enacted

by their friends during circle time. Story playing helps children develop the numerous forms of expression, both verbal and nonverbal, that fulfill the fundamental purpose of communicating the child's needs, interests, and desires. For the young child, these larger purposes of language provide the motivation and framework for later literacy development. Above all, "social pretend enactment is conceptually distinct from the initiation and termination of narratives of pretend play, which may include sequences of preparation for, negotiation of, and enactment of pretend" (Doyle, Doehring, and Tessier, 1992).

The essential aspect of storytelling and pretend play emerges at the same time as the ongoing activity. For instance, a doll is treated in play as if it could create imaginary objects in the absence of real toy elements. In this situation, the child shows a tendency to perform pretend actions on substitute objects and to integrate pretend play acts into coordinated behavior with story sequences. During storytelling and pretend play, children can recall and deal with unpleasant experiences by pretending the event happened to other characters such as picture-like animals or doll-like animals. "Pretend play and story narratives can also enhance children with the opportunities to reverse the roles they play in reality" (Farver and Frosch, 1996). According to Farver and Frosch (1996), during storytelling and pretend play children use

metaphors to help distance themselves from the characters and the context being portrayed, which affords a feeling of safety and allows them to enact upsetting events more easily. Thus children's pretend play and narratives are considered to be basic developmental factors for understanding children's views of the world and their experiences. Further, children tend to construct play scenarios and talk about what they learn or have experienced.

Consequently, social pretend play can be facilitated by the children's story, familiarity with each other and their prior group experience. Pretend play is also a powerful context and an excellent example of what might be called the natural exercise of skills. Therefore, children are pretending with the influence of contextual factors which relate to social and representational communication in the proportion and emergence of complex play. Furthermore, the vast literature on children's storytelling and pretend play reveals that its contributions to child development can be looked at from diverse vantage points.

CHAPTER 3

METHODOLOGY

Data Collection

The present study used storytelling and pretend play to examine the influence of encoding and inferences upon short- and long-term narrative recall in four- and five-year-old children. The data collection methods are organized below according to the phase of the research.

Phase 1: During Phase 1 the researcher spent at least two hours in each classroom becoming familiar with the children. The researcher also spent half of the time observing and taking notes. The other half of the time was spent working with the children. The latter activity served not only to establish the researcher's role but also allowed time for individual children to make-up a story from the pictures of seven animals (a rabbit, a frog, an elephant, a leopard, a rhinoceros, a bad animal, and a caterpillar).

Phase 2: During Phase 2 the researcher began the process of conducting the research. This phase lasted four to five weeks. During this period the researcher was in the classroom from Monday through Friday each week. The researcher arrived at the classroom around 9:00 AM and departed around 1:00 PM. During this period, the researcher asked to tell the stories to the children and then the researcher recorded their narrative structures

and pretend play enactments. Observations and informal dialogues based on children's behavior entries continued to take place. These dialogues were audio recorded as individual discussions for storytelling and enactment.

However, the researcher chose to audiotape and openly take notes after the actual enactment and narration, but within the setting, and then wrote the notes away from the setting. The researcher also divided the notes into more codable blocks. When describing an event and the child's narration, the researcher left some blank space before describing the next event. These data sheets and audio recordings were then used as the raw data for the quantitative analysis.

Subjects

A total of thirty-two children, thirteen girls and nineteen boys who were attending preschool and kindergarten participated in this study. The children ranged from 4.0 to 4.6 years of age for preschool children and from 5.1 to 5.6 years of age for the kindergarten children. The majority of children came from middle-class to upper-middle class homes. The mean educational level of the parents was 17.4 years. Ninety-four percent of the children were White; three percent Asian; three percent Black.

Materials

The materials for the pretend play tasks consisted of seven small doll-like animals: a rabbit, a frog, a jackal, an elephant, a leopard, a rhinoceros and a caterpillar. For the storytelling task, seven pictures of animals were used. These pictures portrayed the same as the above toys.

Design and Procedures

Each child was tested by a female researcher. This study had three different phases: (1) storytelling, pictures and dolls, (2) the research phase, and (3) long-term retention (one week later).

This research project was based on the book, "Who is in Rabbit's House?." This story is an African folktale about a rabbit. It is a sequential story which begins with the rabbit sitting outside her house. A voice from within warns the rabbit not to enter because dire things will befall the intruder. The rabbit has a sequence of encounters with a frog, a jackal, an elephant, a leopard, a rhinoceros and a caterpillar. Finally, the frog pretending to be a spitting cobra frightens the caterpillar into coming out of Rabbit's House.

Please see Figure 1, the research design. The story, Who is in Rabbit's House?, was read to all children, individually, prior to the start of the study. Immediately

after reading the story, at Time I, the children were shown the seven pictures and asked to recall the story that had been read to them. Next the children were asked eight questions to test their knowledge of the content of the story. The children in Groups 2 and 4 were presented with seven doll like figures of the animals from the story, and they were asked to pretend play the story with the dolls. These children were then asked the eight questions which tested their knowledge of the content of the story.

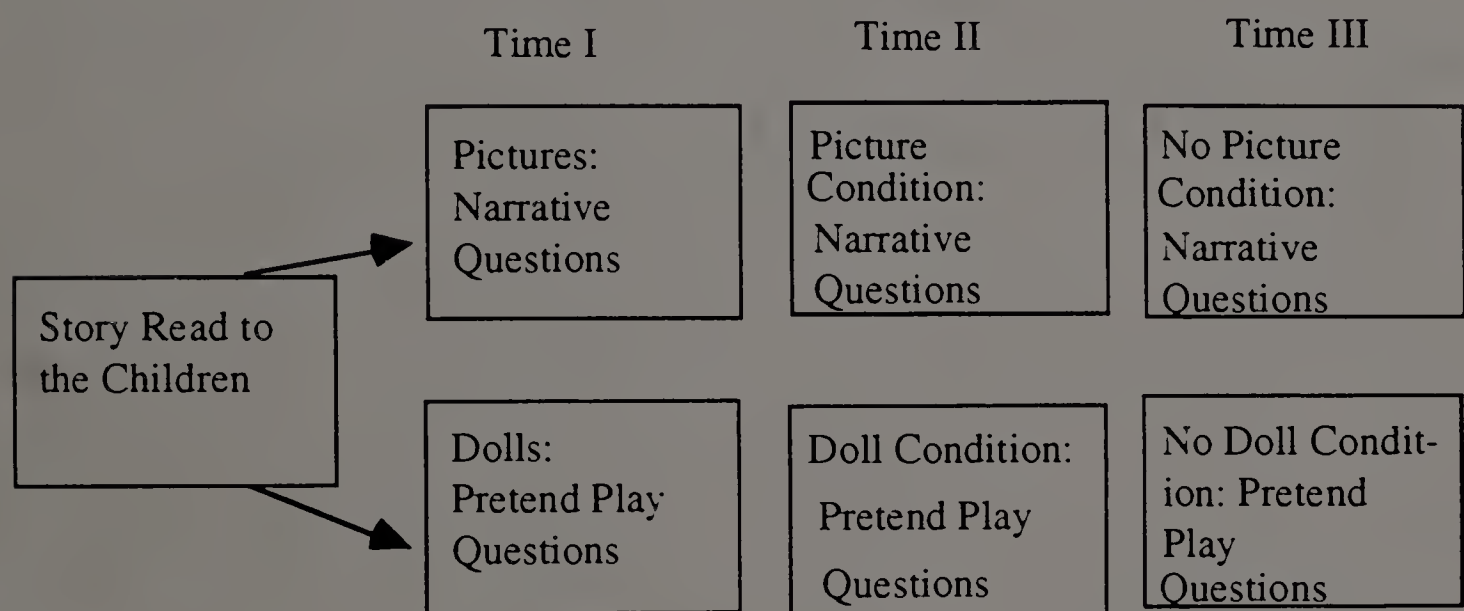


Figure 1. Research Design for Times I, II, and III

[Note: Picture Condition: Eight 4-year-old and eight 5-year-old children (groups 1 and 3), Doll Condition: Eight 4-year-old and eight 5-year-old children (groups 2 and 4.)]

One week later at Time II, the children in Groups 1 and 3 were presented with the original pictures that they had been shown previously and asked to tell the story again (Would you tell me the story about Rabbit's House again?). The eight questions were asked with the pictures placed before the child.

One week later at Time II, the children in Groups 2 and 4 who had participated in doll condition previously were presented with the dolls again. They were asked, "Would you tell me the story about 'Rabbit's House' again?" At this point the children were asked the eight questions about the content of the story.

At Time III, three days after Time II, the no picture and no doll conditions took place. The children in the no picture condition were asked to remember the story and then they were asked the eight questions. At the same time the children in the no doll condition completed a similar research condition. They, too, were asked to remember the story and then were asked the eight questions. The eight questions were asked to assess encoding and inferences. All sessions were tape-recorded and spontaneous discussions relevant to pretense was later transcribed.

Measures and Scoring

Two types of measures were used in this study. First, procedures were devised to measure narrative

complexity in both the storytelling and the pretend play conditions. Secondly, two types of memory questions were used. Four questions were intended to tap memory for detail (or encoding). Another four questions were designed to measure inferences not directly stated in the story.

The story "Who is in Rabbit's House?" lends itself to narrative analysis. This study used the narrative procedures developed by Leondar (1977) and elaborated on by Benson (1993). This set of procedures provided a means of sorting the narrative skills of young children into four different levels of complexity. This approach permitted the researcher to look for narrative competence among kindergarten and preschool children, as a result of the two procedures.

The following system, based on Leondar (1977), was used to assign storytelling to levels of structural complexity having ordinal properties.

- (1) Non-response. If the child did not produce a fictional narrative involving the characters for the task, that was designated as a non-response.
- (2) Description. If a narrative was produced that had no temporarily related sequence of events in it, this was designated a description. Descriptions often sounded like the opening orientation for a story.

- (3) Sequential Narration. Having a sequence of events was a category in and of itself.
- (4) Plotted Narrations. Narratives that had a sequence of events were examined for the presence of all four phases of Leondar's primary narrative. Only those that had all four phases were classified as being "Plotted."

In Table 1 there are examples of the different kinds of narratives children actually invented.

Subsequently, each narrative was transcribed verbatim and was coded for its narrative structure.

A second procedure was used to analyze pretend play. For the sake of discussion below, it is necessary to

Table 1
Examples of Narrative Structure

Description

1. Rabbit was sitting in front of her house and she was waiting for someone. Because she didn't enter her house. The rabbit saw that a frog was coming.
(Boy, age 5. Storytelling)

Sequential Narratives

2. Once upon a time a rabbit wanted to get her house, but some bad animal didn't come out. And a frog came to rabbit and the frog said, "what are you doing here?" "I can help you." And then a leopard came by. He said "Why aren't you trying to get into your house? And then some other animals came by.
(Boy, age 5 1/2. Storytelling)

(Continued next page)

Table 1 (Continued)

3. The rabbit was trying to enter her house, but big animal was there. And then a frog wanted to help her, but he couldn't. The rabbit cried and said "this is my house." A rhinoceros came by and he asked "what are you doing here?" And then a jackal came by. He said "Are you making a farm here?"

(Girl, age 5 1/2. Pretend Play)

Plotted Narratives

4. Rabbit sits at his door. Then when animals come to the lake they see Rabbit sitting at his door. Then one day when Rabbit was going home he couldn't open his door. The rabbit said, "Who's in my house?" And the animal in his house said, "I'm the long one. I eat leaves from the trees and trample an elephant. And then a frog came to ask Rabbit why you were sitting on a log not in front of your house and Rabbit said because someone was in my house. So, I couldn't open my door. And then another animal came along and asked Rabbit "why you were sitting on a log," and Rabbit said because someone was in my house and I couldn't open the door. And then a leopard came along and said "Who's in the house?" and the bad animal in the house said, "Go away." And then the leopard said "I'm not scared of you" and he started to break the house. And then an elephant came and said "Rabbit, why are you smoothing your roof?" And Rabbit said, "Because the leopard wanted to break down my house because I couldn't get in because somebody is there." And the rhinoceros came by and said, "Is anyone in your house?" And Rabbit said "yes, there is someone in my house and I want him to get out of my house." Then Rabbit sat down on the log and frog came over and said, "I can get that." And Rabbit said, "how?", and frog said "I can scare him out." And frog said, "I will scare him out by blowing in a big leaf and say I am going to eat you if you don't come out." And then a caterpillar came running over and said, "I was just teasing you." And then Rabbit said, "Frog was saying that he was the big thing that was going to eat you." And then frog laughed and laughed.

(Girl, age 5 1/2. Storytelling)

indicate that children's play behavior was rated according to a scheme derived from "The Child's World of Make Believe" (Singer, 1973) which distinguished between play

in which actions and manipulations of objects are dominant and play in which high organization of activity is dominant. Table 2 describes the four levels of representation in play in detail.

It should be noted that the definition of levels of narratives in storytelling and the definition for event representation in pretend play are different.

Table 2

Levels of Event Representation in Pretend Play

- Level 1. Introduces no pretend elements into the play situation. Extremely stimulus-bound by the play materials. Child explores pretend possibilities; comes up with many ideas, but neither develops these, nor gets involved in pretend play.
- Level 2. Child occasionally introduces fleeting pretend elements into play situation, but does not stay with any pretend situation for very long. No originality or organization found in pretend situations. A few pretend elements added to otherwise very stimulus-bound play.
- Level 3. Shows a moderate amount of pretending in his play, but not very original or removed from the actual stimulus situation. Little organization or consistency of pretense or role-playing. No voice changes or stimulated vocalizations. Considerable changing from one activity to another.
- Level 4. Shows a substantial amount of pretend elements in his play, spontaneously creating make-believe situations, showing some originality in his pretending, not changing activities very often. Shows high organization of activity and role-playing.
-

The follow-up questions were of two types. The specific questions in each group - Encoding and Inferences - are listed below:

Encoding: 1. Who was sitting in the doorway? 2. Why couldn't the rabbit enter her house? 3. Who wanted to help the rabbit at first? 4. Who is in Rabbit's house? Inferences: 5. Why was the rabbit afraid to go into the house? 6. How did the frog scare the caterpillar inside the house? 7. What did the jackal, leopard, elephant, and rhinoceros do that was the same in the story?" 8. What was the difference between the frog and the other animals?

Data Analysis

The narrative structure was pre-coded for data processing purposes prior to its use in the study. There were four parts to the data analysis, corresponding to the four research questions to examine the following relationships: (1) between storytelling and pretend play, (2) between short- and long-term narrative recall, (3) between encoding and inferences, and (4) the interrelationships between storytelling, pretend play, and cognitive variables. It was anticipated that the raw scores would be a linear scale and that parametric statistics could be used to analyze these data. All data were analyzed by utilizing the Statistical Packages for the Social Sciences (SPSS) on a personal computer. The statistical analyses

that were used in this study ranged from descriptive to multivariate methods.

First, descriptive statistics (means, variance, frequency, and standard error, etc.) for the major variables of interest were calculated. Initially, the narrative data were analyzed using non-parametric statistics (Chi-Square Analysis) and cross-tabs, using SPSS. The questions were analyzed using a univariate analysis of variance and later a multivariate analysis of variance. The chi-square tests of association and multivariate analysis of variance were performed to assess the relationship among narration and pretend play, encoding and inferences, and short- and long-term retention. Bivariate associations between the dependent and independent variables were examined to identify linkages that were most likely to represent cognitive development.

For the analyses of the continuous independent variables, the analysis of variance was employed. For each variable that achieved significance at $P < 0.05$, the means of each possible pair of groups were tested for significance using the Tukey confidence interval test.

Finally, analyses using a multivariate analysis of variance were performed for each dependent variable. The researcher also took advantage of Joreskog and Sorbom's (1989) LISREL 7.20 program for maximum-likelihood (ML) estimation of linear covariance-structure models with data. The first multivariate analysis of variance focused

on children's memory between encoding and inference in order to recreate the story and pretend play that was read to them. However, as statistical inference procedures, MANOVA, were used to assess the statistical significance of differences between groups, MANOVA also solved our composite variable problem by implicitly testing the linear combination of the multiple variables that provided the strongest evidence of overall group differences.

CHAPTER 4

RESULTS AND ANALYSES

The results of the data analysis are presented in this chapter. The descriptive findings are presented first, followed by the results of the study as addressed by the research questions.

Relationships Between Storytelling and Pretend Play in the Facilitation of Short-Term and Long-Term Recall of Narrative Structure

The purpose of this section was to determine if there were significant differences between storytelling and pretend play in structuring narratives. Initially, non-parametric statistics were used to examine the contrast between storytelling and pretend play.

The first question raised in the analysis was whether the level of narrative structure was influenced by storytelling and pretend play. The obtain chi-square analysis revealed that there were significant differences between these two different methods at the Time I condition. It should be noted that in the narrative condition, there are four different levels of narrative complexity in storytelling (Benson, 1993). There are also four levels of representation in pretend play (Singer, 1973). These four different levels take slightly different forms within the storytelling and the pretend play modes.

Table 3 presents the observed and extracted frequency of response for storytelling and pretend play at Time I.

A chi-square analysis was applied to this data that compared storytelling and pretend play across the four categories: non-response, short description, sequential, and plotted (Benson, 1993). The comparable categories for pretend play were the levels of event representation (Singer, 1973). A description of these four levels is presented in Table 2 of the Methods Section.

Table 3

Cross-Classifying Mode by Narrative Structure (Time I)

Type	Narrative Structure				Total
	Non-Responses Level 1	Descriptions Level 2	Sequential Level 3	Plotted Level 4	
Storytelling	*3 #(3)	10 (5)	1 (1.5)	2 (6.5)	16
Pretend Play	*3 #(3)	0 (5)	2 (1.5)	11 (6.5)	16
Total	6	10	3	13	32

Note: * Observed Frequency
 # Expected Frequency
 $X^2=16.574$. The Critical Value: 16.266, $P=0.001$

The results of the chi-square test permitted us to reject the null hypothesis that there was no association between storytelling and pretend play because the obtained chi-square of 16.574 was significant at the .001 level. This finding indicates that the distribution of scores departed significantly from chance. Children in the pretend play condition demonstrated a higher narrative

structure than those in the storytelling condition at Time I.

At Time II, the children were asked to retell the narrative with pictures or dolls with N=16 in each condition. A chi-square analysis was applied to the data. Table 4 presents the observed and expected frequency of narrative structure for the storytelling and pretend tasks at Time II. Since the computed chi-square value (8.156) exceeds the critical value (7.815), the null hypothesis is rejected at the .05 level, and the conclusion is that the narrative structure at Time II differs for storytelling and pretend play and the influence of pictures and dolls. Again, there were significantly higher scores for pretend play condition than for the storytelling conditions.

Table 4

Cross-Classifying Mode by Narrative Structure with Pictures and Dolls Condition at Time II (N=32)

Type	Narrative Structure				Total
	Non-Responses	Descriptions	Sequential	Plotted	
	Level 1	Level 2	Level 3	Level 4	
Storytelling	*2 #(1.5)	9 (5.5)	3 (3.5)	2 (5.5)	16
Pretend Play	*1 #(1.5)	2 (5.5)	4 (3.5)	9 (5.5)	16
Total	3	11	7	11	32

Note: *Observed Frequency
#Expected Frequency
X**2=8.156. df=3 (Critical Value=7.815), P=0.05

At Time III, these same groups of children attempted recall with the no pictures and no dolls condition (see Table 5). A chi-square analysis was applied to the narrative structure data. The resulting chi-square was 7.19. This value approached but did not exceed the critical value of 7.82. Therefore it was concluded that there were no significant differences between the two conditions.

Table 5

Cross-Classifying Mode by Narrative Structure with No Pictures and No Dolls Condition at Time III

Type	<u>Narrative Structure</u>				Total
	Non-Responses	Descriptions	Sequential	Plotted	
	Level 1	Level 2	Level 3	Level 4	
Storytelling	*4 #(3)	7 (4.5)	3 (3.5)	2 (5)	16
Pretend Play	*2 #(3)	2 (4.5)	4 (3.5)	8 (5)	16

Note: *Observed Frequency
 #Expected Frequency
 $\chi^2 = 7.1858$. The Critical Value = 7.815, $P = 0.05$

In summary, there were significant differences between storytelling and pretend play at Time I and Time II, and there was not a significant difference at Time III. At Time I the children were asked to remember the story which they had just heard. At Time I and Time II the children had pictures and dolls available as cues to

facilitate remembering. At Time III there were no cues available as memory aids. At Times I and II the children in the pretend play condition did significantly better than those in the storytelling condition. The advantage for the pretend play appears to be related to the presence of representational knowledge. At Time III these cues or representational knowledge were not present.

Relationship Between Children's Short-Term and Long-Term Memory Upon Narrative Structure and Questions

In both the storytelling and the pretend play conditions there was a younger and an older group resulting in four groups. The four groups were: 5-year-old children in the storytelling condition, 5-year-old children in the pretend play condition, 4-year-old children in the storytelling condition, and 4-year-old children in the pretend play condition.

Three one-way MANOVAs were conducted to assess whether the four groups differed in the level of narrative structure, and the degree of overall cognitive processing as measured by eight questions, across three time periods (Time I, Time II, and Time III).

The dependent variable for the first MANOVA was the level of narrative structure (Benson, 1993). For the second MANOVA, the dependent variable was a cognitive variable that consisted of a combined score of encoding and inferences (Allen, 1996). In the third MANOVA, the

cognitive variables of encoding and inferences were examined as separate cognitive variables. For each of the three dependent measures, MANOVAs were examined at the three different time periods described above. That is, at Time I, II and III, three sets of dependent variables assessing short- and long-term memories were defined with appropriate contrasts to test the effects of interest.

The model appropriate for the dependent variable of this MANOVA design is $Y=XB+E$ [$Y:32 \times 3$, $X:32 \times 4$, $B:4 \times 3$, $E:32 \times 3$] where:

$$\begin{aligned}
 Y &= [ntI \quad ntII \quad ntIII] \quad 32 \times 6 \\
 X &= \begin{bmatrix} 1 & 1/21 & 1/21 & 1/41 \\ 1 & 1/21 & -1/21 & -1/21 \\ 1 & -1/21 & 1/21 & -1/21 \\ 1 & -1/21 & -1/21 & 1/41 \end{bmatrix} \quad 32 \times 4 \\
 B &= \begin{bmatrix} (u+t.)1 & (u+t.)2 & (u+t.)3 \\ (t1-t4) & (t1-t4) & (t1-t4) \\ (t2-t4) & (t2-t4) & (t2-t4) \\ (t3-t4) & (t3-t4) & (t3-t4) \end{bmatrix} \quad 4 \times 3 \\
 E &= \begin{bmatrix} e11 & e12 & e13 \\ e21 & e22 & e23 \\ e31 & e32 & e33 \\ e41 & e42 & e43 \\ e51 & e52 & e53 \\ e61 & e62 & e63 \\ . & . & . \\ e32,1 & & e32,3 \end{bmatrix}
 \end{aligned}$$

To test hypothesis, it can be shown $H_0: CBM=0$

i) Independent variable:

$$\begin{aligned}
 C &= \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} & \begin{aligned} C1 &= \text{Constant} \\ C2 &= \text{Group} \\ C3 &= \text{Time} \\ C4 &= \text{GXT} \end{aligned}
 \end{aligned}$$

ii) Dependent variables (Within Groups)

M matrices:

$$\begin{array}{l}
 M1' : [1 \quad 1 \quad 1] \\
 M2' : [1 \quad 0 \quad -1] \\
 \quad [1 \quad -1 \quad 0] \quad 3 \times 3
 \end{array}$$

Specific Hypotheses:

- HO: CBM=0
- HO: C1BM1=0; Average of average
- HO: C1BM2=0; Group main effects
- HO: C2BM1=0; Time
- HO: C2BM2=0; Group x time effects

Table 6 shows the means by group and time for the scores on the narrative scale and the questions.

Table 6

Cell Means of Narrative Structure and Questions

Dependent Variable						
Group	NTI	NTII	NTIII	QTI	QTII	QTIII
1	2.375	2.5	2.5	4.5	5.625	4.875
2	3.625	3.375	3.0	5.125	5.75	5.375
3	1.875	2.125	1.875	3.75	4.25	4.0
4	3.0	3.25	3.25	4.0	4.5	4.25
Grand Mean	2.72	2.8125	2.66	4.34	5.03	4.625

Note: NTI - Narration at Time I
 NTII - Narration at Time II
 NTIII - Narration at Time III
 QTI - Questions at Time I
 QTII - Questions at Time II
 QTIII - Questions at Time III

These same data are presented in Figure 2 for narratives and memory questions. The scoring method for the narrative scale is taken from Benson (1993) and Singer (1972), while the scores for the questions are a sum of the encoding and inferences scores.

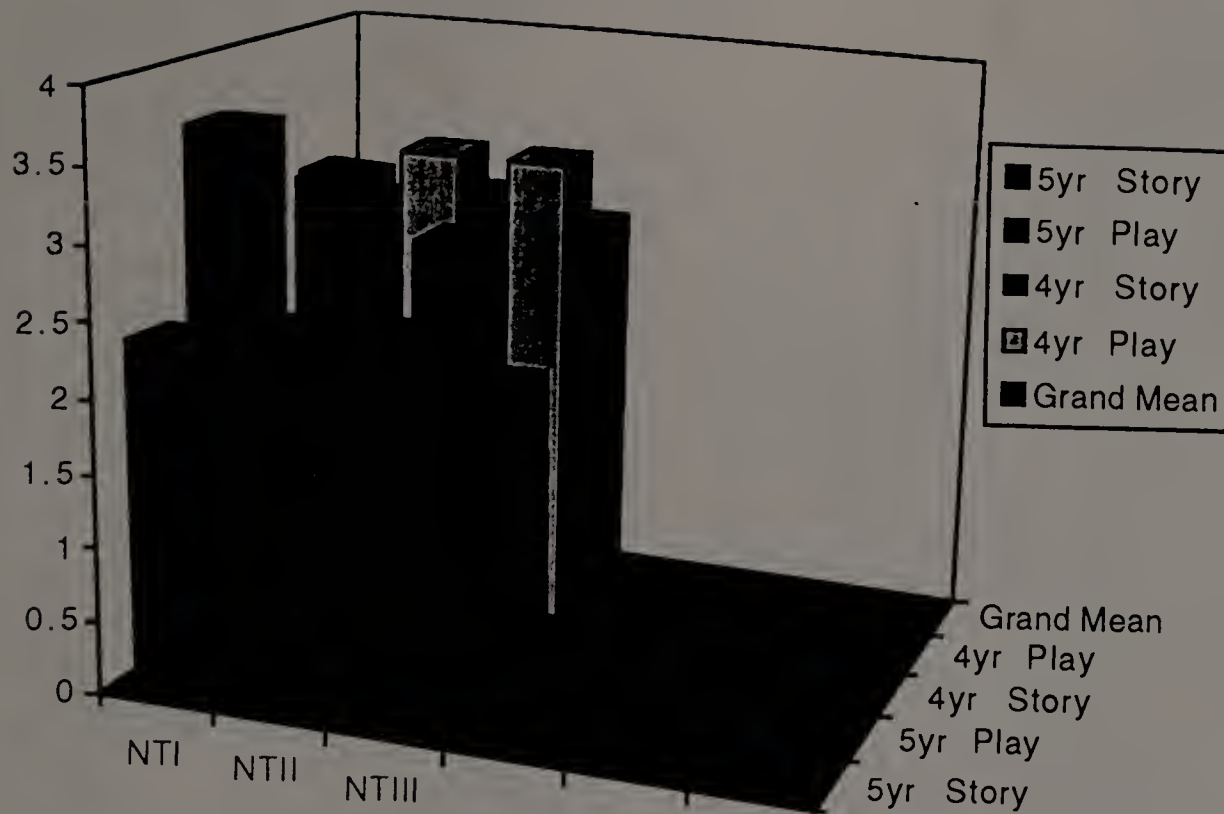
As can be seen in Table 6 and Figure 2, the scores for the pretend play groups appear to be higher than those for the storytelling groups, on both measures. This would be consistent with the findings on the X^2 test.

Secondly, the scores for Time II appear to be higher than those for Time I or Time III, for both narrative structure and for question. Finally the scores for 5-year-olds appear higher than those for 4-year-olds on both measures. These differences were analyzed with a multivariate analysis of variance.

A 4 (group) x 3 (time) repeated-measure multivariate analysis of variance (MANOVA) was performed on responses to the four categories of narrative scale. In the first analysis (MANOVA), group (1 vs 2 vs 3 vs 4) was the independent variable and level of narrative structure was the dependent variables for Time I, Time II and Time III.

As shown in Table 7, Group was the only variable to achieve a statistically significant multivariate F , $(3, 28)=5.25$, $P < .005$. The hypothesized interaction between group x time did not attain significance in the MANOVA. Univariate analyses (Table 8) of the effect revealed that statistically significant F 's for Time I, $F(3, 28)=4.23$;

A: Narration



B: Questions

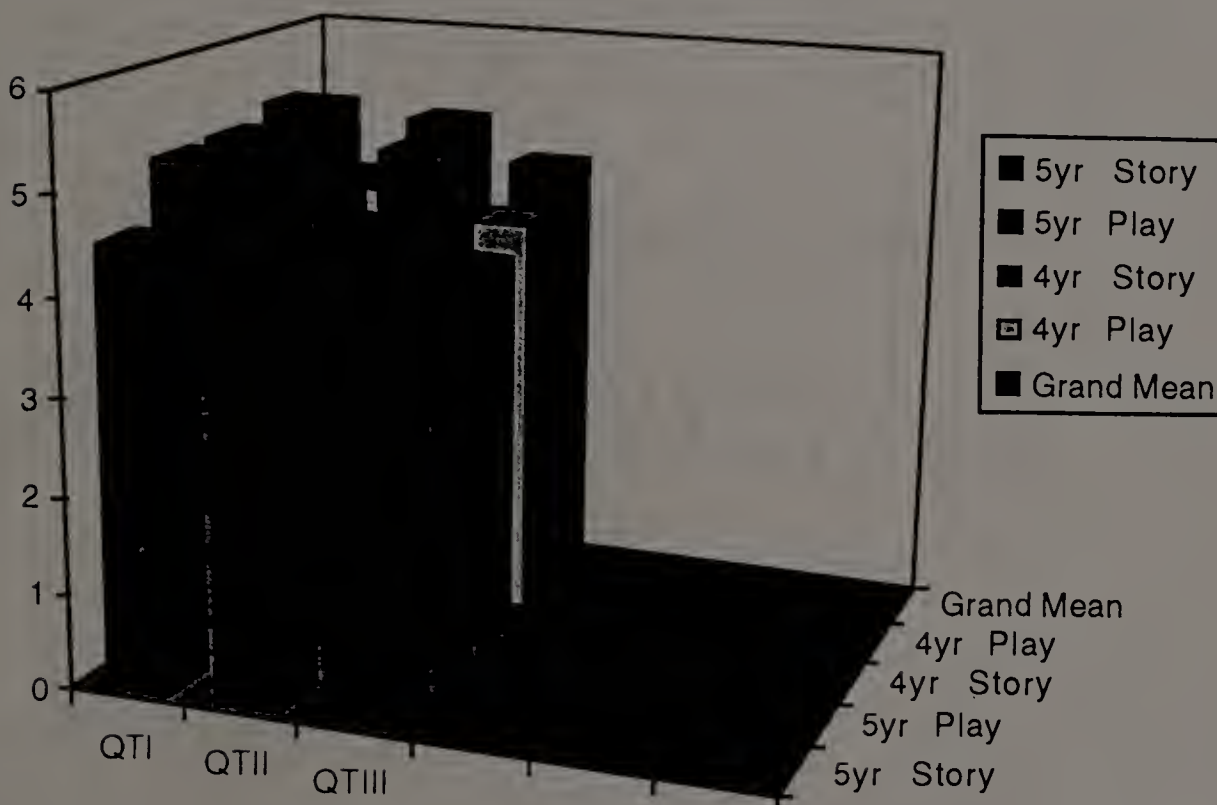


Figure 2. Sample Profiles on Cell Means of Narration and Questions

$P < .014$ and Time II, $F(3, 28) = 3.32$; $P < .034$ were obtained. The F for Time III approached significance $F(3, 28) = 2.72$; $P < .06$.

Table 7

Multivariate Analysis of Variance for Narrative Structure at Times I, II, and III

Hypothesis	C M'	S M N	F	Sig. of F
Between Subjects				
Group	[0 1] [1 1 1]	3 -1/2 12	5.25	0.005
Within Subjects				
Time	[1 0] [1 -1 0] [1 0 -1]	1 0 12.1/2	0.073	0.790
Between/Within				
Group x Time	[1 -1 0] [1 0 -1]	2 0 12.1/2	0.701	0.559

Table 8

Univariate F-tests with (3, 28) D.F. for Narration

Variable	Hypot. SS	Error SS	Hypot. MS	Error MS	F.	Sig. F
NTI	13.84	30.63	4.614	1.09	4.22	.014
NTII	8.63	24.25	2.88	.87	3.32	.034
NTIII	8.84	30.38	2.95	1.08	2.72	.064

Post hoc analysis (Tukey HSD; $P < .05$) revealed that for Time I (Table 9), the only significant contrast was

between G2 and G3 showing that the 5-year-old children in the pretend play condition displayed a significantly higher mean narrative structure score than the 4-year-old children in the storytelling condition. The Q value obtained for this contrast was $Q=4, 73, (4, 28 \text{ df})$. Confidence intervals were computed using the Q distribution for each of the possible contrasts. This table shows that only G2-G3 was different from zero. Since the confidence intervals for all other comparisons include zero; these differences are not different from zero, i.e., they are not significantly different.

Table 9

Post Hoc Tukey Confidence Intervals for Time I
(Pairwise Group Comparison)

Contrast	Estimate	Q Statistic	95% Confidence Intervals (Lower Upper)	
G1-G2	-1.25	-3.36	(-2.67	0.17)
G1-G3	0.5	1.35	(-0.92	1.92)
G1-G4	-0.625	-1.69	(-2.045	0.795)
G2-G3	1.75	4.73	(0.33	3.17)
G2-G4	0.625	1.69	(-0.795	2.045)
G3-G4	-1.125	-3.04	(-2.545	0.295)

At Time II, the post hoc analyses showed two mean significant contrasts. First, 5-year-old children in pretend play showed a significantly higher narrative structure than 4-year-old children in the storytelling condition. Also, again 4-year-old children in the pretend

play condition showed a higher level of narrative structure than 4-year-old children in the storytelling condition. This effect is displayed in Table 10.

For Time II, confidence intervals were calculated using the Q distribution for each of the possible contrasts. The post hoc analyses showed that there

Table 10
Tukey Confidence Intervals for Time II
(Pairwise Group Comparison)

Contrast	Estimate	Q Statistic	95% Confidence Intervals (Lower Upper)
G1-G2	-0.875	-2.65	(-2.145 0.395)
G1-G3	0.375	1.14	(-0.895 1.65)
G1-G4	-0.75	-2.27	(-2.02 0.52)
G2-G3	1.25	3.79	(-0.02 2.52)
G2-G4	0.125	0.38	(-1.145 1.395)
G3-G4	-1.125	-3.41	(-2.395 0.145)

was a single significant contrasts. The significant contrasts involved Groups 2 and 3. A Q statistic of 3.79 was obtained for this contrast which approaches significance. The confidence intervals obtained were (-0.02, 2.52) which barely includes zero.

Finally, because the univariate analysis of narrative scores at Time III approached significance, we conducted a Tukey, post hoc analysis of these group scores, as well. Table 11 displays those results. None of the group differences reached significance. The differences between

Table 11

Tukey Confidence Intervals for Time III
(Pairwise Group Comparison)

Contrast	Estimate	Q Statistic	95% Confidence Intervals (Lower Upper)	
G1-G2	-0.5	1.41	(-1.92	0.92)
G1-G3	0.625	1.69	(-0.795	2.045)
G1-G4	-0.75	-0.53	(-2.17	0.67)
G2-G3	1.125	0.79	(0.335	1.915)
G2-G4	-0.25	-0.17	(-1.67	1.17)
G3-G4	-1.375	-0.97	(-2.795	0.045)

group 3 and group 4 and also groups 2 and 3 contributed to that near significant trend. That is, both the 5-year-old pretend play group (G2) and the 4-year-old pretend play group (G4) did better, (although not significantly so) than the 4-year-old storytelling group (G3). The confidence intervals confirm this non-significant trend.

Table 12 presents the confidence intervals for time comparisons for each variable in each group. As expected, given the non-significant main effect for time, there were no significant differences here. These are a small sample size of eight children each. Variability is high in each group, consequently, even the seeming decline in narrative structure scores for group 2, as seen in Figure 2, is not significant.

In summary, with respect to narrative structure, there were clear and significant differences between

Table 12

Multivariate Confidence Intervals for Narrative Structure
(Variable Differences in Each Group)

Contrast	Estimate	SE	Confidence (Lower	Intervals Upper)	Decision
<u>Group 1</u>					
NTI-NTII	-0.125	1.155	-3.561	3.311	No differ
NTI-NTIII	-0.125	1.313	-4.031	3.781	No differ
NTII-NTIII	0	1.58	-4.696	4.696	No differ
<u>Group 2</u>					
NTI-NTII	0.25	1.155	-3.186	3.686	No differ
NTI-NTIII	0.625	1.313	-3.281	4.531	No differ
NTII-NTIII	0.375	1.58	-4.325	5.075	No differ
<u>Group 3</u>					
NTI-NTII	-0.25	1.155	-3.686	3.186	No differ
NTI-NTIII	0	1.313	-3.906	3.906	No differ
NTII-NTIII	0.25	1.58	-4.45	4.95	No differ
<u>Group 4</u>					
NTI-NTII	-0.25	1.155	-3.686	3.186	No differ
NTI-NTIII	-0.25	1.313	-4.156	3.656	No differ
NTII-NTIII	0	1.58	-4.7	4.7	No differ

groups. The pretend play groups consistently score higher on narrative structure than the storytelling groups. These differences were significant at Times I and II, and approached significance at Time III. This was particularly true for the contrast of the 5-year-old pretend play group with the 4-year-old storytelling group. In contrast to these group differences, there were no significant

differences in narrative structure scores between Times I, II and III. Each group's level of narrative structure appeared to remain remarkably constant over the three week test period.

In the second MANOVA (Table 13), the dependent variable was the number of correct answers to the eight questions at Time I, Time II, and Time III. In this instance, the group variable did not achieve a significant multivariate F. However, there was a significant multivariate effect in the time condition for the encoding and inference questions, $F(3, 28)=9.013, p<.001$. The univariate analysis of variance tests revealed that there

Table 13

Multivariate Analysis of Variance on Dependent Measures of Questions

Hypothesis	CM'	SMN	F	Sig. of F.
Between Subjects				
Group	[0 1] [1 1 1]	3 -1/2 12	1.13	0.353
Within Subjects				
Time	[1 0] [1 -1 0] [1 0 -1]	1 0 12.1/2	9.013	0.001
Between/Within				
G x T	[1 0] [1 -1 0] [1 0 -1]	2 0 12.1/2	0.574	0.749

Table 14

Univariate F-tests with (3, 28) D.F.

Variable	Hypoth.SS	Error SS	Hypoth.MS	Error MS	F.	Sig. of F
QTI	8.84	50.38	2.95	1.80	1.64	.203
QTII	14.09	42.88	4.70	1.53	3.07	.044
QTIII	9.25	42.25	3.08	1.51	2.04	.131

was a significant effect at Time II, $F(3, 28)=3.07$, $p<.044$ (Table 14). The univariate Fs indicated that the only significant difference occurred at the Time II with pictures and dolls. This indicates that at Time II, the children did significantly better than at Time I and III. This is understandable because the children had the benefit of the learning experience at Time I. They also had the benefit of the stimulus materials at Time II that were not available at Time III.

Post hoc analyses at Time II using Tukey's $HSD<.05$ revealed that there was a near significant contrast between Group 1 and Group 3. The comparison of Group 1 and Group 3 indicated that five-year-old children in the storytelling condition did significantly better than the four-year-old storytelling group.

Confidence intervals were computed using the Q distribution for each of the possible contrasts (Table 15). This table shows that all contrasts included zero, i.e., the contrasts were not significantly different from zero.

Table 15

Tukey Confidence Intervals for Time II of Questions
(Pairwise Group Comparison)

Contrast	Estimate	Q Statistic	95% Confidence Intervals	
G1-G2	-0.125	-0.28	(-1.815	1.57)
G1-G3	1.375	3.125	(-0.32	3.07)
G1-G4	1.125	2.56	(-0.57	2.82)
G2-G3	1.5	3.41	(-0.19	3.19)
G2-G4	1.25	2.84	(-0.44	2.94)
G3-G4	-0.25	-0.57	(-1.94	1.44)

Given the significant main effect of time, multivariate confidence intervals were calculated to compare variable (time) differences for each group, but all contrasts included zero so that the contrasts were not different from zero, i.e., the contrasts were not significant from each other (Table 16). This finding may be due to the small sample size of each group, $N=8$.

Comparison of Encoding and Inference Questions in
Storytelling and Pretend Play

The third MANOVA examined the effects of encoding and inferences (two types of questions) on storytelling and pretend play at each of three times.

Four contrasts were defined for the 3 df associated with this nominal variable. The contrasts tested for average among six variables; (1) the main effects of Time; (2) the main effects of encoding and inference; (3) the interaction - time x type of question; (4) group x time;

Table 16

Confidence Intervals for Questions
(Variable Differences in Each Group)

Contrast	Estimate	SE	Confidence Intervals (Lower Upper)	Decision
Group 1				
QTI-QTII	-1.125	1.048	-4.245 1.995	No differ
QTI-QTIII	-0.375	1.01	-3.375 2.625	No differ
QTII-QTIII	0.75	0.665	-1.23 2.73	No differ
Group 2				
QTI-QTII	-0.625	1.048	-3.745 2.495	No differ
QTI-QTIII	-0.25	1.01	-3.25 2.75	No differ
QTII-QTIII	0.375	0.665	-1.605 2.355	No differ
Group 3				
QTI-QTII	-0.5	1.048	-3.62 2.62	No differ
QTI-QTIII	-0.25	1.01	-3.25 2.75	No differ
QTII-QTIII	0.25	0.665	-1.73 2.23	No differ
Group 4				
QTI-QTII	-0.5	1.048	-3.62 2.62	No differ
QTI-QTIII	-0.25	1.01	-3.25 2.75	No differ
QTII-QTIII	0.25	0.665	-1.73 2.23	No differ

(5) group x type of question; (6) group x time x type of question.

The model appropriate for the dependent variable of this MANOVA design is $Y=XB+E$ [$Y:32 \times 6$, $X:32 \times 4$, $B:4 \times 6$, $E:32 \times 6$] where:

$Y=[tIenc \ tIinf \ tIipen \ tIiping \ tIIIInpen \ tIIIInif] \ 32 \times 6$

$$X = \begin{bmatrix} 1 & 1/2,1 & 1/2,1 & 1/4,1 \\ 1 & 1/2,1 & -1/2,1 & -1/2,1 \\ 1 & -1/2,1 & 1/2,1 & -1/2,1 \\ 1 & -1/2,1 & -1/2,1 & 1/4,1 \end{bmatrix}$$

$$B = \begin{bmatrix} (u+t.)1 & (u+t.)2 & (u+t.)3 & (u+t.)4 & (u+t.)5 & (u+t.)6 \\ (t1-t4) & (t1-t4) & (t1-t4) & (t1-t4) & (t1-t4) & (t1-t4) \\ (t2-t4) & (t2-t4) & (t1-t4) & (t2-t4) & (t2-t4) & (t2-t4) \\ (t3-t4) & (t3-t4) & (t3-t4) & (t3-t4) & (t3-t4) & (t3-t4) \end{bmatrix} \quad 4 \times 6$$

$$E = \begin{bmatrix} e11 & e12 & e13 & e14 & e15 & e16 \\ e21 & e22 & e23 & e24 & e25 & e26 \\ e31 & e32 & e33 & e34 & e35 & e36 \\ e41 & e42 & e43 & e44 & e45 & e46 \\ e51 & e52 & e53 & e54 & e55 & e56 \\ e61 & e62 & e63 & e64 & e65 & e66 \end{bmatrix} \quad 32 \times 6$$

To test hypothesis, it can be shown $H_0: CBM=0$

i) Independent variable:

$$C = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \quad 4 \times 4$$

C1=Constant
C2=Difference between groups

ii) Dependent variables (Within Groups)

M matrices:

$$\begin{aligned} M1' &: [1 & 1 & 1 & 1 & 1 & 1] \\ M2' &: [1 & -1 & 0 & 1 & -1 & 0] \\ & [1 & 0 & -1 & 1 & 0 & -1] \\ M3' &: [1 & 1 & 1 & -1 & -1 & -1] \\ M4' &: [1 & -1 & 0 & -1 & 1 & 0] \\ & [1 & 0 & -1 & -1 & 0 & 1] \end{aligned}$$

$H_0: CBM=0$

$H_0: C1BM1=0$; Average of average

$H_0: C1BM2=0$; Time main effects

$H_0: C1BM3=0$; Encoding and Inference effects

$H_0: C1BM4=0$; Interaction; time x encoding x inference

$H_0: C2BM1=0$; Group

$H_0: C2BM2=0$; Group x time effects

$H_0: C2BM3=0$; Group x encoding x inference

$H_0: C2BM4=0$; Group x time x encoding x inference

Table 17 presents the group means for the encoding and the inference questions at Time I, Time II, and Time III. There appear to be consistent differences between the two types of questions, which persist across research condition and time. In each group at each time, there is

a higher mean score for encoding than for inference questions.

Table 17
Cell Means of Encoding and Inferences

Group	<u>Dependent Variable</u>					
	Tlenc	Tlinf	TIIpen	TIIpinf	TIInpen	TIInif
1	3.0	1.5	3.75	1.875	3.375	1.5
2	3.125	2.0	3.5	2.125	3.375	2.0
3	2.0	1.75	2.75	1.5	2.625	1.375
4	2.62	1.375	3.125	1.375	3.0	1.25
(Grand Mean)	2.69	1.66	3.28	1.72	3.094	1.53

Note: Tlenc: Encoding at Time I
 Tlinf: Inference at Time I
 TIIpen: Encoding with pictures and dolls at Time II
 TIIpinf: Inference with pictures and dolls at Time II
 TIInpen: Encoding with no pictures and no dolls at Time III
 TIInif: Inference with no pictures and no dolls at Time III

Among four groups, group 2 (older children in pretend play group) resulted in higher means than the other three groups. However, the means of encoding and inferences were significantly different from each other.

Further, an examination of Table 17 and Figure 3 seems to indicate that older children scored better (more

right answers and fewer errors) than younger children on the total scores, that is, proportion of the questions correctly answered. Also, among the four groups of the children, the groups in the pretend play condition appear to be better than groups in the storytelling condition on encoding and inference questions.

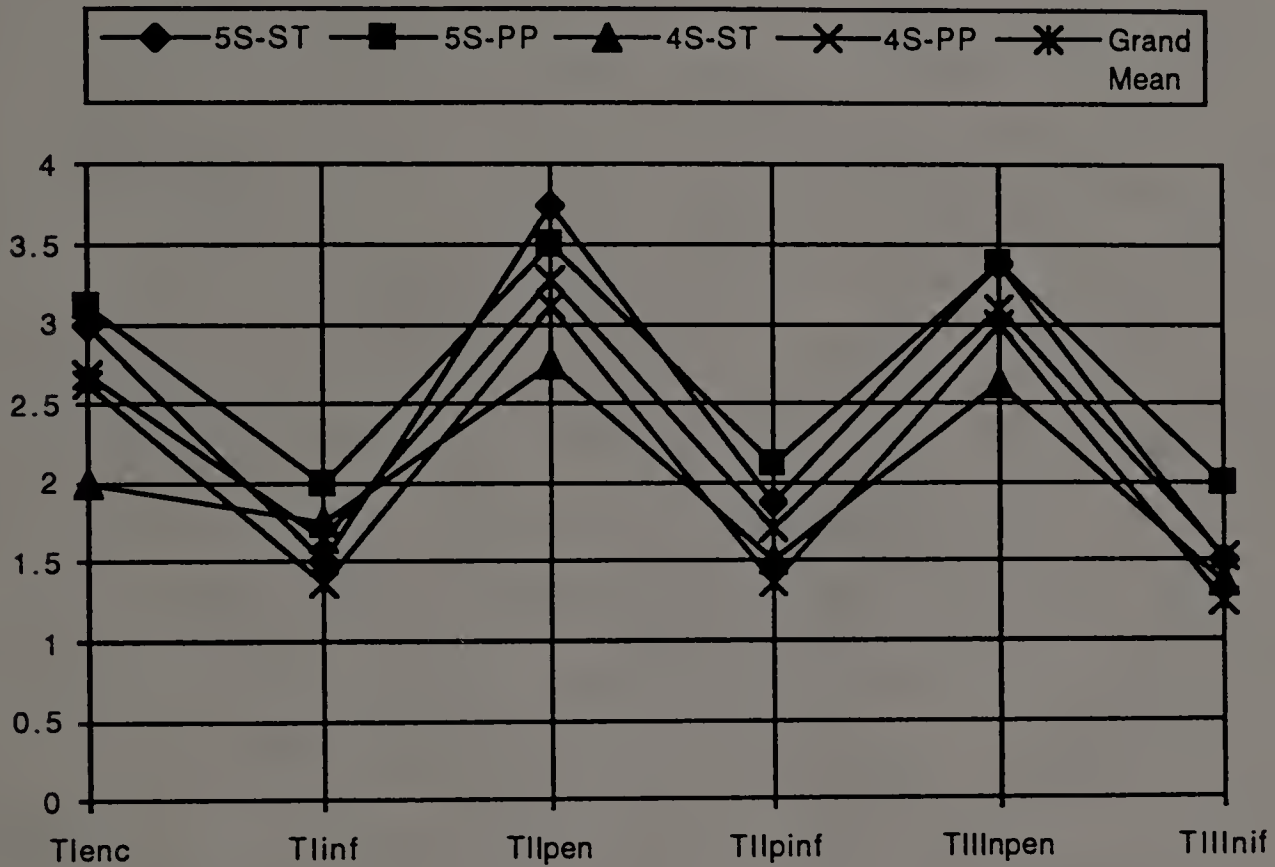


Figure 3. Sample Profiles between Time I and Long-Term Retention for Encoding and Inferences

Note: 5S-ST: Storytelling of 5-year-old children
 5S-PP: Pretend Play of 5-year-old children
 4S-ST: Storytelling of 4-year-old children
 TIenc: Encoding at Time I
 TIinf: Inference at Time I
 TIIpen: Encoding with pictures and dolls at Time II
 TIIpinf: Inference with pictures and dolls at Time II
 TIIIpen: Encoding without pictures & dolls at Time III
 TIIIinif: Inference without pictures & dolls at Time III

A third MANOVA (Table 18) was conducted to assess whether the four groups differed with respect to encoding versus inference questions across three different time

periods. As expected, (Figure 4) there was a clear significant difference for the two types of questions - encoding and inferences ($F= 65.76, p<.001$). There were no main effect for groups, or for time, nor were there any significant interactions.

Table 18

Multivariate Analysis of Variance on Six Sets of Dependent Measures of Encoding and Inferences

Hypothesis	C	M'	SMN	F	Sig. of F
Between Subjects					
Group	[0 1]	[111111]	3 1 10,1/2	2.49	0.081
Within Subjects					
Time	[1 0]	[1 -1 0 1 -1 0]			
		[1 0 -1 1 0 -1]	1 0 12,1/2	2.49	0.125
Enc. and Inf.	[1 0]	[1 1 1 -1 -1 -1]		65.76	0.000
Time x Enc. and Inf.	[1 0]	[1 -1 0 -1 1 0]			
		[1 0 -1 -1 0 1]	1 0 12,1/2	5.83	0.075
Between/Within					
Group x Time		[1 -1 0 1 -1 0]			
		[1 0 -1 1 0 -1]	2 0 12,1/2	0.31	0.993
Group x Enc. and Inf.		[1 1 1 -1 -1 -1]		1.22	0.32
Group x Time x Enc. and Inf.		[1 -1 0 -1 1 0]			
		[1 0 -1 -1 0 1]	2 0 12,1/2	0.56	0.647

The youngsters in this study always did better at encoding than inferences. Table 18 and Figure 4 also show

that the differences due to encoding and inferences were extremely large, $F(3, 28)=65.76, p<.000$. When this F value is compared to the other findings, it is evident that the effects of the cognitive variables of encoding/inferences are large and imposing. It is interesting that there were no main effects due to group and time.

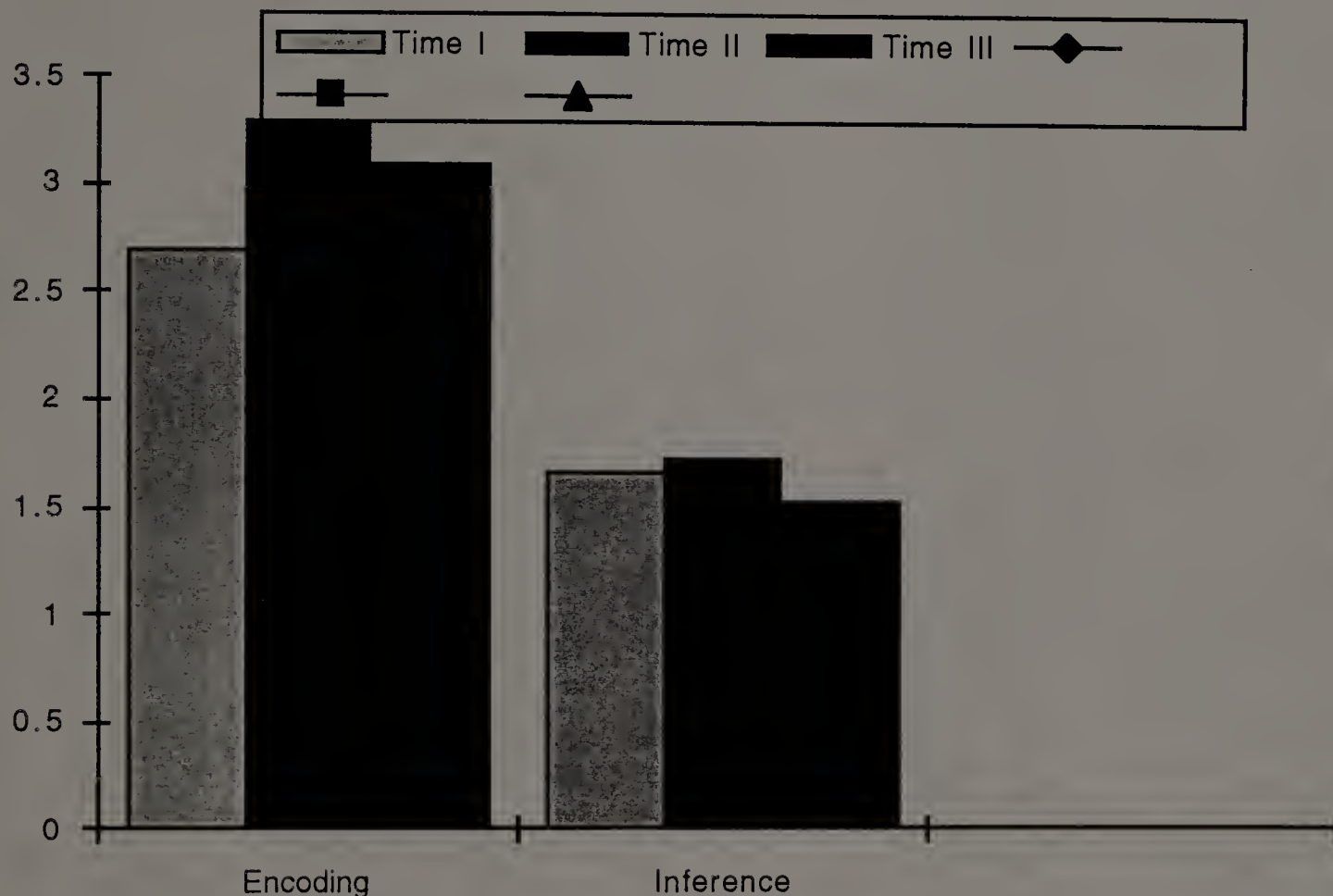


Figure 4. Sample Profiles for Encoding and Inferences

An inspection of the univariate Fs indicated that there was a significant group effect on the encoding questions at Time I, $F(3, 29)=3.88, p<.02$ (Table 19). This finding indicates that the group differences observed in Figure 3 were significant at Time I. This finding is not surprising because older children are often better than younger ones at the identification of content in the story.

Table 19

Univariate F-tests with (3, 28) D.F.
for Encoding and Inference

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F.	Sig. of F.
TIenc	6.125	14.75	2.04167	0.53	3.88	0.02
TIinf	1.84375	27.38	0.61458	0.98	0.63	0.603
TIipenc	4.59375	19.88	1.53125	0.71	2.16	0.115
TIipinf	2.84375	23.63	0.95	0.84	1.12	0.356
TIInpenc	3.09375	23.625	1.03	0.84	1.22	0.320
TIInpinf	2.59375	15.375	0.86	0.55	1.57	0.218

Post hoc analyses (Tukey HSAD; $P < .05$) indicated that the following contrasts were significantly different from zero: Group 1 and Group 3 as well as Group 2 and Group 3. The significant difference between Group 1 and Group 3 indicates that the 5-year-old storytelling group was significantly better at encoding than the 4-year-old storytelling group. The significant differences between Groups 2 and 3 indicates that the 5-year-old pretend play group did significantly better than the 4-year-old storytelling group on the encoding questions. In fact, confidence intervals (Tukey HSD; $p < .05$) indicated that there were two contrasts that had an obtained value that exceeded $Q = 3.85$, $d.f. = 4, 28$. Confidence intervals were also computed using the studentized (Q) distribution. This table (20) shows that at G2-G3 is different from zero. Since the confidence intervals for all other comparisons include zero, these differences are not different from zero. Table 20 shows this result.

Table 20

Tukey Confidence Intervals for Encoding at Time I
(Pairwise Group Comparison)

Contrast	Estimate	Q Statistic	95% Confidence Intervals	
			(Lower	Upper)
G1-G2	-0.125	-0.48	(-1.126	0.876)
G1-G3	1	3.85	(-0.001	2.001)
G1-G4	0.38	1.46	(-0.621	1.381)
G2-G3	1.125	4.81	(0.124	2.126)
G2-G4	0.505	1.94	(-0.496	1.506)
G3-G4	-0.62	-2.38	(-1.621	0.381)

Finally, there were no significant differences between Time I, II or III on either the encoding or the inference questions. The means for encoding were always significantly larger than the means for inference questions. The apparent improvement in Figure 3, from Time I to Time II followed by a decrement from Time II to Time III was not significant.

The Effects of Storytelling and Pretend Play on
the Cognitive Processing of Narrative Recall

The Linear Structural Relations (LISREL VII) Program (Joreskog and Sorbom, 1989) was used to examine the causal interdependency between the variables of interest in this analysis. Structural equation modeling is a comprehensive statistical approach for testing hypotheses about relationships among observed and latent variables. The fit of the model can be determined by examining the chi-square fit statistic. If this statistic is significant,

the model does not fit the data. For maximum likelihood, the X^2 (Square)-measure is $(N-1)$ times the minimum value of the fit function for the specified model. The X^2 -measure is distributed asymptotically as a chi-square distribution under certain conditions. The degrees of freedom for chi-square statistic are $df = 1/2(p+q)(p+q+1) - t$, where $p+q$ is the number of observed variables analyzed and t is the total number of independent parameters estimated. "The X^2 -measure is sensitive to sample size and very sensitive to departures from multivariate normality tend to increase X^2 over and above what can be expected due to specification error in the model" (Joreskog and Sorbom, 1989).

The covariance matrix was used to analyze this model in which the two variables were used simultaneously to predict measures of internalized point and externalized point.

The structural equation models showing narration and pretend play with the questions of encoding and inferences effects for the analysis are depicted in Figure 5. The researcher estimated the hypothesized nature of the relationships among narrative structure, pretend play and cognitive processing questions. The likelihood ratio test statistic, chi-square with 7 degrees of freedom was 17.69. The level of significance is $P=.013$, we can conclude that $\alpha=.01$ level, the model does not fit the data.

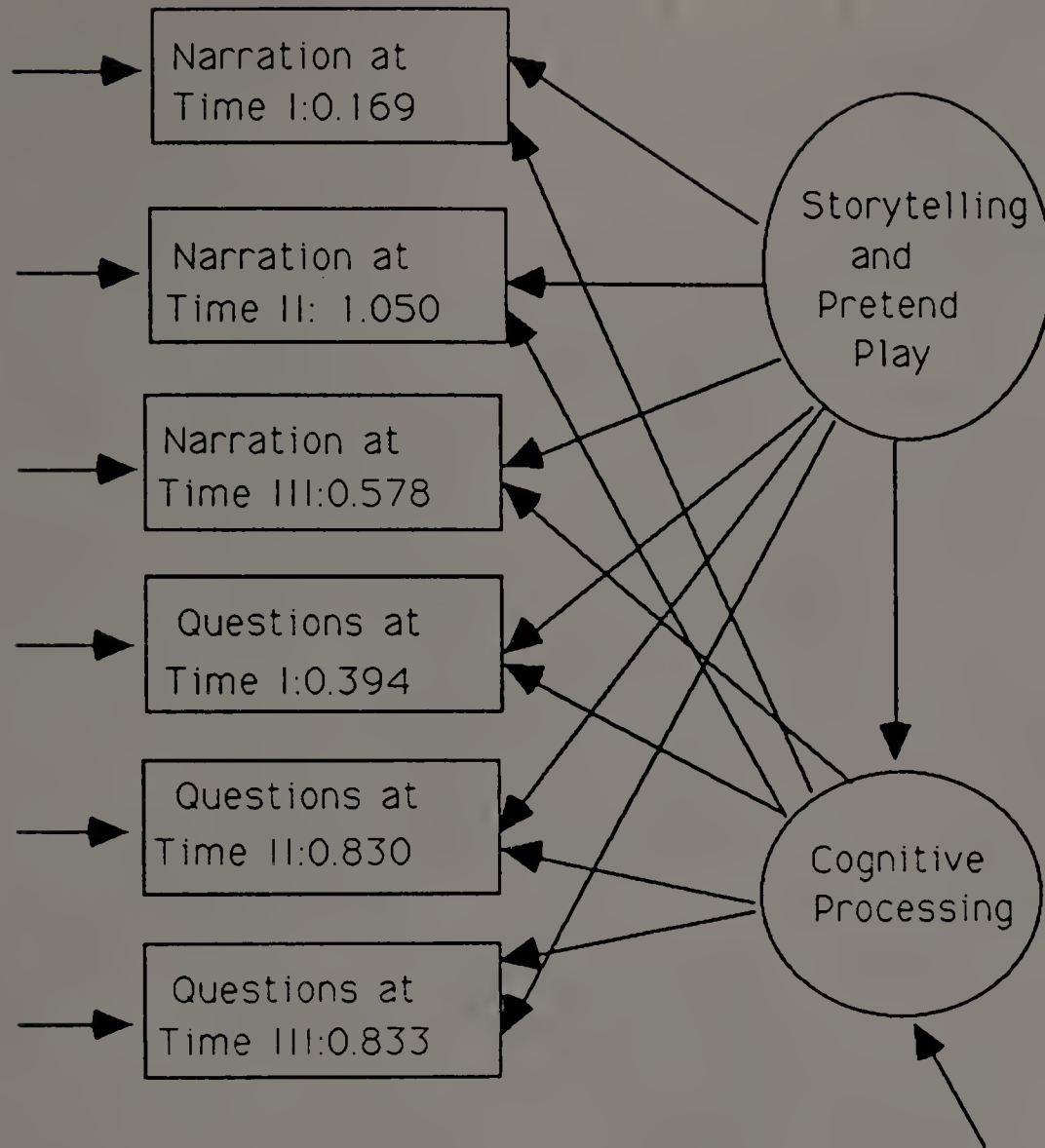


Figure 5. A Structural Equation Modelling for the Relationship among Storytelling, Pretend Play and Cognitive Variables.

Note: N= 32, Chi-Square with 7 df= 17.69, p=.013

Goodness of Fit Index = .860

Adjusted Goodness of Fit Index = .580

Figure 5 presents the hypothetical model. In the model, storytelling and pretend play influenced the cognitive processing questions. Also, storytelling and pretend play were connected to the narrative structure and the questions. The theory was not supported with regard

to the effect of the storytelling and pretend play variables in discriminating between narrative recall and questions. It should also be noted that this analysis allowed the error terms for the narration and questions to control for informant variance.

To summarize, storytelling and pretend play differentially affected two measures. Children in the pretend play condition performed significantly better than those in the storytelling condition on narrative structure of their retelling at Time I and II and better on encoding questions at Time I.

CHAPTER 5

DISCUSSIONS AND CONCLUSIONS

Storytelling today is increasingly recognized as important with theoretical and practical implications. Storytelling is part of the emerging fields of discourse and narrative analysis. The fields of literature, comparative literature, literacy criticism, anthropology, psychology and education are turning to discourse and narrative analyses as important approaches to inquiry. In education, storytelling is increasingly being recognized as important. Storytelling reflects moral standards, life-styles, fantasy, humor, emotions and different ways of knowing. Early childhood educators are recognizing that storytelling and pretend play enable children to think about their futures as well as their present roles.

Children's engagement in and understanding of pretense is a classic topic in developmental research (e.g., Piaget, 1962), and for good reason. Pretend play emerges regularly in normally developing children; it emerges early, typically around eighteen months of age, and then grows rapidly in complexity and frequency. A child is atypical indeed who does not spend many preschool hours engaged in pretense, sometimes alone, but most often with others. Like language acquisition, pretend play may be a universal, rapidly acquired human competence. But it is a peculiar and intriguing competence. In pretense, the

child treats nothing as something (an empty pot as full of water), treats one thing as something else (a block as a car or a house), and purposely uses misleading actions and events (an empty cup raised to the face of an inanimate doll as a baby being fed). Much of the story of early cognitive development concerns, appropriately enough, the child's increasing competence at understanding the world "correctly," for example, coming to understand what physical objects are really like, what words conventionally refer to, how other people actually behave. In pretense, the child gets the story wrong, not by mistake, but by meaningfully construing things otherwise. Intriguingly, "this ability is not the sober culmination of intellectual development but instead makes its appearance playfully and precociously at the very beginning of childhood" (Leslie, 1987, pg. 412).

Vygotsky (1967) placed great emphasis on the affective aspects of pretense. Imaginative play "originally arises from action" and from generalized "unsatisfied desires." Play teaches the child "to sever thought from object" and provides a means for developing abstract thought.

Leslie (1987) argues that during an act of pretense the primary representation, this is a banana, is copied into another context, 'this is a banana.' This secondary representation is 'decoupled' from reality, and its reference, truth and existence relations are suspended; so

representational abuse is avoided. The opacity afforded by the decoupling of the secondary representation's input-output relations is supposed to allow the decoupled expression to be transformed without abusing the primary representation, as in 'this banana is a telephone.'

Leslie also suggests that the decoupled expression will be a second-order, metarepresentational one, maintaining that it will be a representation of the primary representation.

The most distinctive feature of pretend play is that it is a representational activity. When children pretend, they use physical or psychological means to represent the meaning of another entity. For instance, when a child announces herself to be a mother, she uses words and actions to represent the mother role.

In order to pretend with other players, children must agree on the reference of pretense and the appropriate ways of executing such pretend reference (Wolf, 1984). For example, when two children in their joint play pretend to be mothers, they try to reach a consensus about what constitutes motherness and possibly also change their initial understanding of motherness to produce closer agreement.

All these views have influenced recent empirical research on the early development of pretend play. Several excellent reviews of this work have appeared recently (Fein, 1981). Because of a general consensus on basic theoretical questions, effort has concentrated on

documenting certain sorts of behavior change. Researchers also have focused on the "cognitive, creative, and affective implications of pretend play" (Haight, 1994). In social pretend play, children create the Vygotskian zone of proximal development for the acquisition of different perspectives of knowledge (Verba, 1993).

Narration is, by its very nature, a story-based activity that engages children in a personal reconstruction of the text. Storytelling is also an opportunity for the children to engage in the verbal repetition of rehearsal of the text information. Story retelling should affect how much is learned and what is learned, that is, retelling positively affects both the quantity and quality of what is learned from context.

The basic evolutionary and ecological point of internal representational must be to represent aspects of the world in an accurate, faithful, and literal way, insofar as this is possible for a given organism. Such a basic capacity for representation can be called a capacity for primary representation. Primary representation is thus defined in terms of its direct semantic relation with the world. Its being literal and "sober" in representing the world determines its usefulness relative to the needs of the organism.

Perception of the world and the things in it are a major source of the infant's stored knowledge. Such encyclopedic knowledge also forms structures of primary

representation. Again, the design principle for these representations is that they represent situations seriously and literally.

The emergence of pretense is not seen as a development in the understanding of objects and events as such, but rather as the beginnings of a capacity to understand cognition itself. It is an early symptom of the human mind's ability to characterize and manipulate its own attitudes to information. Pretending to oneself is thus a special case of the ability to understand pretense in others (someone else's attitude to information).

A child may read a story, understand the words and sentences yet fail to grasp the situation and development of it. Story comprehension often calls for more than understanding statements in isolation; it usually involves a process of making connections between statements and sustaining that process as the story progresses. The need for this connection-making process arises because children do not make explicit everything they want to tell the story.

Storytelling and pretend play provide a motivating context for literate behavior, as children communicate through narration to themselves in solitary play and to their peers in social play. Also, linguistic behaviors allow children to create and share imaginary worlds and participate in the beginning of narratives. Further, storytelling makes collaboration in play and with others

possible and facilitates the development of friendship so that narration in collaborative activities with others enhances the complexity of play by deepening, lengthening, and diversifying play forms.

Thus, this study attempted to explore that the children who reenact stories (especially pretend play) over some time period increase their ability to play skillfully and their ability to comprehend; that is, involvement in the general construct of play facilitates story comprehension relative to other conditions such as storytelling and enactment.

This study had four central purposes: first, to measure significant differences between storytelling and pretend play; second, to measure significant differences between short-term and long-term memory; third, to measure significant differences between encoding and inferences; fourth, to validate inter-relationships among storytelling, pretend play, cognitive variables (encoding and inferences) and short- and long-term narrative recall. In general, it was theorized that storytelling and pretend play interact with the cognitive variables of encoding and inferences that posed particular dimension for child development.

In this study, with respect to storytelling and pretend play, the results supported the empirical findings that storytelling and pretend play facilitated narrative recall. This finding provides encouraging evidence for

the usefulness of greater specification in the study of narration and pretend play development. In particular, it is evident that patterns of narrative structure and pretense need to be studied not only in terms of basic cognitive development and social development, but also in terms of different types of perspective. In so doing, it is critical to consider carefully the specific domains of child development likely to be affected by the distinct varieties of developmental categories. It is apparent from these findings that pretend play facilitates social-cognitive development.

There is increasing agreement among both researchers and educators that literate behaviors, particularly in pretend play and storytelling, are seen as precursors to a grasp of the concept of "story" or "narrative" and the necessary perspective taking this implies. Such understanding emerges through play as together children talk and share their early attempts to cognitive behavior.

Compatible with current theory, as predicted, the researcher found that narrative structure and cognitive aspects explained much of the variability in children's responses. Storytelling or narrating can also be understood as communicative acts that follow certain narrative conventions, namely, that one should organize the telling of events according to the rules of intentional action and causal-temporal sequencing.

As expected, our findings indicate that there are significant differences in the ways in which storytelling and pretend play influence the complexity of narrative structure. The significant chi-square at the Time I condition, $X = 16.574$ which was significant at the .001 level (Table 3) indicated that pretend play was significantly more influential than storytelling in facilitating the recall of complex narrative structure. At Time II, there was also a significant difference between storytelling and pretend play with regard to recall of complex narrative structure. In this condition, the pictures and dolls were available to the youngsters to support recall. The children in the pretend play condition who had dolls available did significantly better than the children in the storytelling condition who had only pictures to facilitate recall. In addition, the children in the pretend play group had stronger associations than those in the storytelling group. It is likely that doll condition was more effective than picture condition.

It is important to recognize that pretend play seems to have a decisive effect in facilitating narrative recall. This finding has implications for education and the cognitive development of young children.

The second MANOVA analysis was based on adding together the encoding and inferences. A MANOVA analysis was applied to this combined variables and indicated that

there were significant differences due to age. This finding is expected and not surprising. Older children are more skilled in remembering than younger children. This same analysis of questions indicated that there were also significant differences due to time. These significant differences were consistent over time and across conditions.

An interesting relationship was found between narration at Time I and long-term retention. The children remembered their narratives better at Time II than at Time I, and their performance at Time III was approximately the same as at Time II. These data are consistent with the view that children have the abilities to represent narrative in long-term memory. The relative poor performance of the children on the inference questions indicate that the ability to narrate is not related to the ability to process inferences, in this brief experience.

Of the other independent variables, cognitive development is probably accountable for an important portion of the variance. Our findings indicate that there are no differences between the storytelling group and the pretend play group for encoding and inference. However, there was a significant effect due to task. This significant difference indicated that there were significant differences across groups on encoding and inference (Figure 4). This difference can be easily seen by simply glancing at the means for the groups (Table 17). It was

also found that there were significant differences between groups at Time I on the encoding task. Also, the findings of this study demonstrated that children across the four- and five-year-old age groups integrated play events and story enactment to structure storytelling. All children were able to create shared meaning spontaneously during pretense and story representation.

Finally, this study supports the hypothesis that both storytelling and pretend play can influence cognitive variables. Some evidence of the complex role of storytelling and pretend play as estimates of cognitive development awaits further investigation, particularly as linked to children's emergent social and symbolic competence.

In addition, the educational implications of this research are multifaceted. Narrative structure, pretend play and learning have a complex relationship. Social pretend play contexts provide unique opportunities for young children to become adept at communicating their ideas. In pretend play, young children acquire new words to convey meaning that is often beyond their existing repertoires (Clarke, 1983). Furthermore, because pretend play is representational, children learn how to use gestures and words to designate real events and/or persons (Pelligrini, 1991). For example, Wolf and Grollman (1982) suggested that children's ability to integrate play events into coherent shared themes is related to narrative

competence. The linguistic and cognitive skills involved in storytelling, story enactment, and comprehension are important predictors of children's later mastery of reading and writing (Galda and Pelligrini, 1985).

Further research is required to understand the hostile bias found in children's narrative competence with storytelling and pretend play. As the research here suggests, varied social pretend play experiences and narrative recall may enhance young children's developing linguistic, social, and cognitive skills. Future studies need to progress beyond examination of single independent variables as models for the effects of storytelling and pretend play on short-term and long-term narrative recall.

CHAPTER 6

IMPLICATIONS OF THE STUDY

This study began as an effort to examine the influence between storytelling and pretend play upon narrative recall, encoding and inferences, short- and long-term memory.

The data from this study show that pretend play is superior to storytelling in the recall of the narrative. Narrative recall lends itself more easily to pretend play than to storytelling. As the child acts out the various parts in pretend play, she becomes more fully immersed in the narrative. The development of narrative through pretend play brings together the physical and the mental activities of the child, and provides a more complex set of aids to the process of recall. The storytelling condition which relied upon pictures only did not provide the set of physical stimuli that could act as aids in the process of recall. These differences suggest that the process of acting in pretend play may be a critical dimension in the process of the development of narrative recall.

Children's storytelling and pretend play emerge at the same time because children are immersed in an ongoing stream of symbolization. Storytelling and pretend play are vehicles that are central to the development of imagination, role playing, thinking and feeling. The

exact relationship of storytelling and pretend play are yet to be fully explicated. It is possible that pretend play may be a prerequisite to the development of storytelling, and necessary for the invention of stories.

The term pretend play is used to denote activities that involve the representation of other objects or characters. To pretend to be another person - or to pretend that a doll is some specific person - seems to involve representing the internal life of that person as well as the person's social circumstances. To play another character well, one must represent the world as that person represents it. The research literature has found significant positive correlations between frequency of dramatic play and such skills as perspective-taking, cooperativeness, and social competence (Connolly and Doyle, 1984).

Representation of the actions and mental states of others is at the core of perspective-taking. It may also be a component of cooperativeness and social competence as well. The ability to see the world through the eyes of another is a requisite skill in the development of cooperation.

It is interesting to note that one might take the position that storytelling and pretend play serve as the training grounds for the development of other social skills. As noted previously, pretense always entails a mental representational component, and sometimes it is

also accompanied by an action component, and sometimes it is also accompanied by an action component. Imitating the actions of another is an earlier stage in the development of pretending. It is the acting component of imitation that is the foundation for the later development of pretense. Another way to think about this is to recognize the fact that mental representation arises out of the act of imitating. Acting seems to be at the foundation of mental development.

One of the interesting outcomes of this study is the finding that the memories of the children were remarkably stable and consistent. Storytelling and pretend play were remarkably similar in being able to sustain and support the memories of children. The acts of pretending and storytelling, i.e., pictures and dolls were able to attract attention, stimulate interest, aid memory recognition and served as vehicles in the process of recall. The pictures and dolls could facilitate the construction of a functional mental model between short- and long-term memory. This mental model was more related to encoding of events than to the ability of the children to make inferences.

With time and experience, children become aware of the mental activities of others. Children are immersed in a world that revolves around mental activities such as sadness, happiness, jealousy and fear. They see those around them acting out these mental states. They slowly

learn to construct these activities as they engage in pretend play. Mental representations emerge in children as they master the intricacies of pretend play.

To summarize, a mature understanding of storytelling and pretend play reveal an initial sense of sequential organization in their mental representations of narratives. Sequencing is a necessary requisite to the formation of narratives. Both storytelling and pretending facilitate the learning of sequencing. Pretend play appears to be more effective in facilitating the recall of the narrative, i.e., facilitating the ability to draw conclusions from the sequence of events.

The children's performance in the dolls and pictures condition provided evidence of representational skills in stimulating cognitive activities. It may be that the capacity to participate in as-if worlds is the important cognitive development in pretense and narration. This capacity is exercised early in pretend play, and in children's love of stories. Further, pretend play may be a zone of proximal development in the same sense as enjoying stories, it may free children to participate in other realities.

APPENDIX A
PERMISSION LETTER

Sook-Yi, Kim
Early Childhood Education
Furcolo Hall
University of Massachusetts Amherst
Amherst, MA 01003

June 30, 1995

Dear Parents:

I would like your permission for your son/daughter _____
to participate in the research for my doctoral dissertation. My
research project is entitled, "The Effects of Storytelling and
Pretend Play on Cognitive Processes, Short- and Long-Term Narrative
Recall."

My research involves children who are read a story. After reading
the story, one half of the children are asked to repeat the story.
One half of the children will be asked to act out the sequence of
events in the story using dolls. One week later both groups of
children are asked to remember the story. It is my hypothesis that
those who enact the story will remember the story better than those
who simply had to repeat (remember) the story.

This research is not going to put your son/daughter at risk in any
way. I would like to assure you that your son/daughter will have the
right to withdraw from part or all of the study at any time. Your
son's/daughter's name and involvement in this research will be held
in strict confidentiality. The data will be coded and names will not
be used in the analysis and reporting of the data. Once the data re
coded and the analysis has been completed, the names of the children
will be deleted from the records completely. Each of the research
sessions will be audiotaped. The results of the research will be
included in my dissertation, and hopefully, published at a later
date.

Please be assured that your son/daughter will be free to withdraw
from this study without prejudice. If you have any questions at any
time you may reach me at 546-0285.

Thank you for considering the possibility of permitting your son/
daughter to participate in this study.

Researcher's Signature _____

Parent's Signature _____

APPENDIX B

STORYTELLING TASK: "WHO'S IN RABBIT'S HOUSE?"
(BY VERNA AARDEMA)

Long long ago a rabbit lived on a bluff overlooking a lake. A path went by her door and down the bank to the water. The animals of the forest used that path when they went to the lake to drink.

Every day, at dusk, Rabbit sat in her doorway and watched them. But one evening she came to her house and she could not get in.

And a big, bad voice from inside the house roared, "I am The Long One. I eat trees and trample on elephants. Go away! Or I will trample on you!" "That's my house!" cried Rabbit. "Come out at once!" She banged on the door, *ban, ban, ban!*

But the bad animal said more crossly than before, "Go away! Or I will trample you." And the rabbit sat down on a nearby log to think.

Now a frog happened to see this. She hopped up to the rabbit and said rather timidly, "I think I could get him out." "Nuh!" sniffed the rabbit. "You are so small. You think you could do what I can not? You annoy me! Go away!" Frog would have left that rude rabbit if a jackal had not come along just then.

Instead she crouched behind a nearby tree to see what would happen.

The jackal said, "Ho, Rabbit, why aren't you sitting in your doorway?" "Someone's in my house," said the rabbit. "He won't come out. And I can't get in."

A leopard came by. "What are you doing, Rabbit?" he asked. "Are you putting sticks there to hide your house?" Leopard watched as Rabbit removed the sticks. Then he asked, "Who's in Rabbit's house?"

An elephant came by. "What happened, Rabbit?" she asked. "Does your roof leak?" "No, not that!" cried the rabbit. "Someone's in my house. Leopard wanted to tear it to bits and eat him. So I had to fix my roof."

A rhinoceros came by. He asked, "What are you doing, Rabbit? Are you making a farm here by your house?" "Who's in Rabbit's house?" asked the rhinoceros.

The frog came up from the lake. "Don't cry, Rabbit," she said. "I think I could get that bad animal out of your house - if you would let me try." "how?" asked the rabbit. Frog whispered, "Scare him out." Rabbit whispered back, "But how?"

Frog said, "I am the spitting cobra! I can blind you with my poison! Now come out of that house, or I'll squeeze under the door and spit poison SSIH into your eyes!" Then *hirrr* the door opened.

Out came a long green caterpillar. He was so scared, his legs were jumping vityo, vityo, vityo. He was looking everywhere - rim, rim, rim. "Where's the spitting cobra?" he cried.

"It's only a caterpillar!" cried Rabbit. "Only a caterpillar," echoed Frog. She called the other animals. How they laughed when they saw that the bad animal was only a caterpillar.

APPENDIX C

SCALES AND QUESTIONS FOR STORYTELLING AND PRETEND PLAY
IN DATA COLLECTION

Kindergarten Group (Groups 1 and 2)
Preschool Group (Groups 3 and 4)

Date:
Age:
Name:
Institution:

Storytelling (Narrative Structure):

1. Non-Response
2. A short description
3. A sequential narrative
4. Plotted (all phases)

Encoding: 1. Who was sitting in front of the house?
 2. Why couldn't the rabbit enter her house?
 3. Who wanted to help the rabbit at first?
 4. Who is in rabbit's house?

Inference: 5. Why was the rabbit afraid to go into the house?
 6. How did the frog scare the caterpillar inside the
 house?
 7. What was the difference between the frog and the
 other animals?
 8. What did the jackal, leopard, elephant, and
 rhinoceros do that was the same in the story?

Kindergarten Group (Groups 1 and 2)
Preschool Group (Groups 3 and 4)

Date:
Age:
Name:
Institution:

Narrative Structure:

Scale for Pretend Play:

1. Introduces no pretend elements into the play situation.
2. Is slightly pretend in his play? Occasionally introduce pretend elements into play situation.
3. Shows a moderate amount of pretending in his play, but not original. Little organization of pretense or role-playing.
4. Shows a substantial amount of pretend elements in his play, showing some originality in his pretending. Some organization and consistency in pretense or role-playing, including some stimulated vocalizations.
5. A very high number of pretend elements in his play. High organization of activity and role-playing.

Questions:

- Encoding:
1. Who was sitting in front of the house?
 2. Why couldn't the rabbit enter her house?
 3. Who wanted to help the rabbit at first?
 4. Who is in rabbit's house?

- Inference:
5. Why was the rabbit afraid to go into the house?
 6. How did the frog scare the caterpillar inside the house?
 7. What was the difference between the frog and the other animals?
 8. What did the jackal, leopard, elephant, and rhinoceros do that was the same in the story?

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