

ABSTRACT

The purpose of this exploratory study was to examine the impact of age, inherent toy structure, and social perspective taking on the spontaneous pretend-play stories of 3- and 5-year-old preschool play dyads. Exploring children's storytelling activities within the natural, expressive context of their pretend play is increasingly acknowledged as a developmentally appropriate and sensitive forum for accessing critical knowledge regarding how children use toy and social information to frame and support their narrative understanding and performance. Fourteen 3-year-old and 15 5-year-old mixed-gender dyads recruited from three child-care facilities located in primarily middle-class neighborhoods in a large urban center in Western Canada were videotaped two times playing with both high-structured (i.e., kitchen center) and low-structured (i.e., Lego and Duplo basic building sets) toys at their respective child-care centers. Videotaped play stories were transcribed and scored using plot structure, inter-textual voice (i.e., stage management, dialogue, and narrator), and social perspective taking criteria. A series of two-way MANOVA's yielded significant age and toy effects for plot-level complexity, toy effects for inter-textual voices, and age and interaction (i.e., Age by Toy) effects for social perspective taking. Generally, preschoolers' play stories progress from action-driven to intention-driven plots with increasing age. As well, children produced more structurally complex stories when playing with high-structure toys. The children tended to use the character-role voice while playing with these latter toys in comparison to more directorial or observer voices in the low-structured toy condition. Lastly, the 5-year-olds engaged in higher levels of social perspective taking in comparison to the 3-year-olds despite a significant drop in their performance from the high- to the low-structured toy condition. Further analysis assessing the relationship between plot structure complexity and social perspective taking suggested that the linkage between these two dependent measures

may become increasingly stable with age. Experimental findings are discussed in terms of working memory capacity. As well, other aspects that impact group dynamics were posed as possible mediating factors in children's pretend-play storytelling. The results of this study support an integrated view of children's narrative performance with limits in preschoolers' conceptual understanding or processing capacity circumvented, to a degree, by explicit toy or social cues. Theoretical and practical implications with regard to the findings are offered and implications for future research are discussed.

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Chapter 1

INTRODUCTION

Children use various means at their disposal to make sense of the world around them. Over the past several decades there has been increasing interest, within the scientific community, in exploring the ways children at various ages perceive, interpret, and communicate their understanding of the events and relationships they observe and are a part of them. Narrative, or storytelling, has become central to elucidating the structure and function of these more subjective, sense-making modes of knowing. Narrative as an "overt manifestation of the mind in action" (Chafe, 1990, p. 79) provides an ideal way to access and assess the development of such thought.

Strong empirical evidence continues to mount supporting significant changes in narrative performance as children advance in age. In general, children's narrative productions progress from simple, loosely organized, action-event structural sequences to more mentally-driven, intricately woven verbal accounts (Bergman, 1997; Bruner, 1990a; Genereux, 1997; McKeough, 1986, 1992a; Hausendorf & Quasthoff, 1992). Although scholars concede that children's narrative framework or schema changes with age, debate continues to flourish regarding the primary nature of the interplay between internal (i.e., nature) versus external (i.e., nurture) factors.

Originally, narrative was conceived as being constructed solely within people's heads (Bruner, 1988). Although proponents of this internalized view acknowledged that external influences impacted children's narrative expression, they tended to direct much of their attention to delineating how internal processes, and the role of genetic, biological, maturational, or physiological changes, affected children's narrative understanding and growth. This view continues to retain a position of prominence

within the theoretical literature. For example, many theorists argue that children's narrative progression is dependent on age-related advances in cognition (e.g., cognitive capacity, cognitive differentiation/integration, perception, memory; Botvin & Sutton-Smith, 1977; Bamberg & Damrad-Frye, 1991; McKeough, 1986, 1992a; Graesser, Singer, & Trabasso, 1994; Shapiro & Hudson, 1991; Snitzer Reilly, 1992; Van Den Broek, Lorch, Pugzles, & Thurlow, 1996). McKeough's (1986, 1992a) empirical work, in particular, detailed how underlying growth in children's working memory capacity allowed children to integrate and combine increasingly complex narrative elements into more advanced story structures.

In recent years, advocates of this more traditional, constructivist theoretic stance have been criticized for not directing as much attention to the role of external influences on that narrative development. Slowly, predicated on the influential writings of Vygotsky (1978), there has been a shift away from examining the inner, cognitive workings of children's storytelling. Vygotsky (1978) argued the need to examine speech and language as an interrelated phenomenon reflecting the dynamic, transactional interplay between both external and internal forces. Bruner (1992), building upon this theoretical tenet, reasoned that narrative was a special, symbolic language system "not only representing but constituting reality" (p. 223). He believed that narrative was created and negotiated in the reciprocal act of meaning making between children and their surrounding milieu (Bruner, 1986a). Advocates of this contextually embedded theoretic perspective suggested that, although children were socialized into the preferred narrative form by the larger culture, they were not simply passive recipients of this knowledge. Rather, they translated, transformed, and transposed this socialized form in a way that was most meaningful to them. This more contemporary, sociocultural view of narrative development as a viable alternative to

exclusively internal theoretical conceptions is rapidly gaining momentum within the scientific literature. Indeed, researchers advocating a contextually-embedded view of storytelling have found that previous social and cultural experiences, as well as tangible objects and cues contained within the immediate environment, define and shape children's narrative form and use (Blum-Kulka, 1993; Brice Heath, 1986; Bruner, 1988; Daiute, 1989; Daiute & Griffin, 1993; Daiute, Campbell, Griffin, Reddy, & Tivnan, 1993; Haas Dyson, 1990, 1993, 1995; Miller, Wiley, Fung, & Hui Liang, 1997; Minami & McCabe 1995; Murachver, Pipe, Gordon, Owens, & Fivush, 1996; Olson, 1990; Paley, 1990; Pellegrini & Galda, 1990; Snow, 1993; Spinillo & Pinto, 1994; Wolf, 1985).

Thus, a growing appreciation of the impact of the external world on children's narrative development has prompted many researchers to explore the natural, expressive contexts that shape its form and use. Children's spontaneous pretend play has become an increasingly popular and preferred means for examining children's emerging sense of story. There are several reasons why pretend play provides an optimal context for exploring children's narrative development. First, it is "one expression of imaginative activity that draws and reflects back upon the interrelated domains of emotional, intellectual, and social life" (Nicolopoulou, 1993; p. 13). That is, examining children's storytelling within their play provides vital information about how children utilize multiple cues and sources of information to define, organize, and convey their narrative meanings. Indeed, research has found that preschoolers rely heavily upon explicit information contained within play setting to scaffold their storytelling (Badzinski, 1991; Bergman, 1997; Snitzer Reilly, 1992). More specifically, studies found that toys that contain a high degree of internal structure (defined as the extent to which toy's uses are restricted by its appearance; Christie, 1991) and represent familiar, real-life situations enhanced children's pretend-play storytelling

(French, Lucariello, Seidman, & Nelson, 1985; Sachs, Goldman, & Chaille, 1985).

Low-structured toys, on the other hand, seem less conducive to storytelling (Wanska, Bedrosian, & Pohlman, 1986), although this relationship may be moderated by age. That is, studies have found that older preschoolers rely less on environmental support in generating and planning their pretend play scenarios (Cole & LaVoie, 1985; Lyytinen, 1990; Matthews, 1977). In addition to toy information, social cues have been found to impact children's narrative performance. For example, mothers that elicited and emphasized certain narrative elements while interacting with their children had children that later produced those same features in their stories (Peterson & McCabe, 1992, 1994). Likewise, direct feedback from peers (e.g., challenging, questioning, informing, and so on) has been found to enhance preschoolers storytelling performance (Preece, 1992) although, similar to toy structure, this relationship may be stronger for older preschoolers than younger ones (Bokus, 1992). Indeed, some scholars have suggested that younger preschoolers are more limited in their ability to attend to and integrate social information because of their difficulty separating from their own perspective to consider that of another person (Flavell, 2000; Levine & Mueller, 1988; Selman, 1980). Thus, pretend play provides researchers with an unobtrusive glimpse into the ways young children use contextual information to support their storytelling attempts.

A second reason for examining children's pretend-play storytelling is that the vast majority of narrative research has tended to focus on the oral and written accounts of school-aged children. As well, a number of studies exploring preschoolers' narrative competence have tended to overlook the special way that preschool children tell their stories and, in doing so, concluded that they are incapable or incompetent storytellers (Nicolopoulou, 1997a). More recently, studies have found

that preschoolers, because they are still mastering the rules and conventions of language use, rely more heavily upon non-verbal forms of communication (e.g., gaze, intonation, actions) to tell their stories (Badzinski, 1991; Snitzer Reilly, 1992). Thus, research which focuses primarily on oral or written narrative accounts has effectively (1) restricted the age-range of children to those children that have achieved a certain level of verbal competence while overlooking those who have not, and (2) potentially underestimated young children's narrative competence. Thus, pretend play provides a developmentally-sensitive way to observe how young children use various means to convey their story meanings and intentions and, in doing so, explore the full range and depth of that storytelling competence.

This latter point highlights a third reason for examining young children's narrative performance within the natural context of their pretend play. Despite a growing awareness of preschoolers as competent and able storytellers, the vast majority of what we know and assume to be accurate about children's narrative development comes from research methodologies using more task- and product-oriented techniques and measures. Researchers using these approaches elicit stories from children using conventional story starters (i.e., "Tell me a story...") or prompts (i.e., showing the child a picture or sequence of pictures). The story products are then analyzed and judged according to specific linguistic, semantic, or grammatical criteria. Although this research has contributed enormously to our current understanding of narrative development in children, there are several drawbacks to drawing general conclusions based solely upon findings that use these research designs. Some scholars have argued that the narrative criteria in these studies are drawn from Western European notions of literacy, one that emphasizes linear structuring, temporal chronology, and use of a single, autonomous narrator voice (Bruner, 1988; Haas

Dyson, 1990; Johnson, 1995; Nicolopoulou, 1997a). Researchers have begun to acknowledge that narrative diversity exists across and within different cultural and social groupings (Haas Dyson, 1990; Preece, 1992). The use of such formal elicitation techniques and restricted story criteria may fail to reflect this narrative diversity and does not afford as rich a context as pretend play (Nicolopoulou, 1997a).

A fourth reason pretend play provides an ideal context for examining children's narrative development is a growing awareness that more formal, task-oriented techniques may underestimate children's actual level of narrative competence. Issuing a request to "tell a story" implicitly conveys a set of expectations between the storyteller and listener regarding what is an appropriate story to tell and how to tell it (Van Dongen & Westby, 1986). In addition to placing a heavy cognitive burden on young children by having them try to verbalize their stories with few external cues to serve as a guide, such expectations may lead to performance anxiety which, in turn, may depress their narrative performance (Polanyi, 1982). The spontaneous and familiar forum of pretend play provides researchers with a more natural way to access and assess young children's narrative competence.

Fifth, pretend play provides an ideal context for examining young children's narrative growth because it shares many of the same structural elements found in under more formal, task-oriented storytelling conditions (Eckler & Weininger, 1989; Sachs, Goldman, & Chaille, 1985). Indeed, some researchers have characterized pretend play as play with a story line (Guttman & Frederiksen, 1985; Nicolopoulou, 1997a; Paley, 1990; Wolf & Pusch, 1985). Similar to formal stories, pretend play stories include linked clauses referring to one or more of the following structural elements: Time, place, character, problem(s), and/or a resolution or outcome. These structural elements are believed to be fundamental to distinguishing narrative from

other forms verbal discourse (Applebee, 1978; McKeough, 1986, 1992a; Labov & Waletzky, 1967; Stein & Glenn, 1979; Sutton-Smith, Botvin, & Mahoney, 1976; Thorndyke, 1977; Umiker-Sebeok, 1977). Hence, the close structural correspondences between children's pretend play stories and those stories found in more formal, less context-dependent storytelling conditions suggests that pretend play is an appropriate and relevant context for exploring children's narrative understanding.

Briefly, to conclude, controversy exists within the scientific literature regarding the major impetus behind children's narrative competence and growth. Scholars' growing knowledge of narrative as reflecting both internal, cognitive changes as well as an essential tool for framing, organizing, and understanding one's experiences has prompted researchers to expand their focus to exploring those contexts that shape and constrain its use (Olson, 1990; Preece, 1987). Despite this expansion in focus, developmental and experiential factors contributing to or limiting storytelling have been examined more thoroughly in school-aged children than in preschoolers. Relatively few studies have explored and compared preschoolers' narrative form and use in more naturalistic storytelling contexts such as their pretend play. Pretend play offers many benefits to more formal story elicitation techniques. Observing how children utilize the various toys and social information contained within the play setting provides researchers with valued information regarding preschoolers' use of play stories to make sense of their experiences. In addition, examining storytelling within the natural, spontaneous, and familiar expressive context of pretend play is more likely to yield a better understanding of the full range and depth of preschoolers' storytelling competence. So, in keeping with this contemporary focus, the current study explores young children's pretend-play storytelling as a multi-dimensional, dynamic process reflecting the interplay between both internal (i.e., age-related changes in cognition)

and external factors (i.e., toy and social cues). In doing so, I hope to delineate how developmental and contextual variants impact their storytelling performance.

Statement of Purpose

In the study proposed herein, I attempt to broaden current conceptions of young children's narrative development by identifying how social and physical cues contained within the play setting impact preschoolers' story form and use. More specifically, I explore how developmental, environmental, and social factors combine to influence the content and process of preschoolers' pretend-play storytelling. To address these issues, the present study poses the following research questions:

- 1) Is there a general, age-related trend in preschoolers' pretend-play storytelling?
- 2) Is children's storytelling impacted by the degree of toy structure contained within the play setting?
- 3) Is there a general, developmental trend in preschoolers' ability to attend to and integrate their play partners' perspectives?
- 4) Is preschoolers' storytelling impacted by their ability to acknowledge and integrate social cues?
- 5) How do these factors interact to influence children's pretend-play storytelling?

Organization of the Thesis

To set the framework for the current study, I first review the literature highlighting two popular, developmental theories that underpin much of the empirical literature on children's narrative. As well, a brief review of the developmental literature on pretend play and social perspective taking ensues to emphasize the potentially significant role of situational and social variants on children's narrative competence. In Chapter 3, I will discuss the research methodology employed herein including subject recruitment and screening, data collection and transcription, and scoring criteria

procedures. In Chapter 4, I present experimental results and include a descriptive content analysis to highlight some aspects of children's pretend play storytelling that were not systematically addressed in the current study. Lastly, in Chapter 5, I discuss the empirical findings in greater depth and provide illustrative examples where necessary. This discussion is then followed by theoretical and practical implications, limitations and delimitations, and ideas for future research.

Chapter 2

REVIEW OF THE LITERATURE

Introduction

Children's narrative, or storytelling, has become the focus of intense theoretical and empirical interest in recent years. This burgeoning interest may stem, in part, from scholars' increasing discontent with theoretical stances and research paradigms *highlighting individualistic, rational thought as the primary impetus for human action*. A gradual shift toward viewing human behavior in more holistic terms has, in recent years, prompted researchers to begin questioning the impact of external influences and internal mental states such as desires, wishes, and intentions on behavioral outcomes. This rising interest in behavioral context and underlying motives and beliefs has influenced researchers to begin exploring children's interpretation and subsequent integration of multiple sources of contextual information, including broad-based cultural and social practices, rules, and conventions (Bruner, 1974) with internal capacities and propensities. This shift in thinking has led many to view children's development at any given point in time as complex and multifaceted, spun from the dynamic interplay between intra-personal and inter-personal factors.

The language of narrative, in particular, is thought to reflect the meeting and transposition of both external and internal realities. Bruner (1990a, 1992) wrote extensively of narratives special capacity to constitute and represent reality. He argued that the internal and external realms were combined and expressed through storytelling's dual landscapes. The landscape of action represented the internalization of the external reality by reflecting culturally valued and transmitted story rules, norms, and conventions (i.e., story form, organization, and delivery). Alternately, the landscape of consciousness represented the narrator's personalized attempt to render meaning to

or make sense of that external world. This was accomplished through active manipulation of story character mental states (e.g., beliefs, desires, needs, motives, interpretations, etc.) which serve to drive the story forward to its ultimate conclusion. Hence, Bruner believed that story provided an optimal context for examining the juxtaposition of both external and internal supports and constraints because it ultimately reflected a personalized view of a public world. In essence, it reflected the storyteller's use of a culturally valued framework or tool for making sense of and deriving meaning from their experiences (Bruner, 1986a).

Narrative Defined

It is clear from the preceding discussion that storytelling is a distinct form of speech discourse. The definitional parameters delineating narrative have, in recent years, become increasingly fuzzy (Gilbert, 1992). However, narrative has been traditionally defined within the scientific literature as a sequence of referentially-, causally-, or temporally-linked clauses referencing one or more of the following elements: A character, place, time, problem, complication, and outcome (Applebee, 1978; Botvin & Sutton-Smith, 1977; Labov & Waletzky, 1967; McKeough, 1992a; Sutton-Smith, Botvin, & Mahoney, 1976; Thorndyke, 1977; Umiker-Sebeok, 1977).

In recent years, some researchers have begun to argue the need to expand upon these more traditional definitional parameters claiming that studies' using such criteria are based upon Westernized, middle-class, mainstream definitions of what elements constitute a story (e.g., linear structuring, temporal chronology; Elbaz-Luwisch, 1997; Hicks, 1993; Johnson, 1995). Increasingly, researchers have argued the need to examine children's storytelling as an emergent, contextually-bound, transactional process reflecting the narrator's active attempt to make sense of and integrate multiple sources of information rather than as a discrete by-product characterized by specific

narrative elements (Cook-Gumperz, 1993; Daiute, 1993). Hence, in addition to using more traditional definitional parameters to distinguish children's play stories from other forms of play discourse (e.g., language play), I attempt to present a broader view by highlighting aspects within the immediate play environment that appear to support or constrain children's storytelling.

The Function of Narrative

The current study examines narrative as a developmental phenomenon. Prior to discussing the theoretical and empirical literature in this area, however, a brief introduction to evolving notions regarding the role of narrative in framing human activity and defining, for each person, cultural/social alliances and relationships is required. Contemporary conceptions of storytelling increasingly view it as a critical tool for socializing groups' newest members into culturally valued beliefs, conventions, and attitudes (Cook-Gumperz, 1993; Gilbert, 1993; Olson, 1990; Preece, 1987; Wertsch, 1994). Haas Dyson's (1990) comment on the use of storytelling to pull "together the streams of...actions and actors into cohesive events that we imbue with our own attitudes and values, our own perspectives" (p. 193) effectively captures narrative as a dynamic, sense-making activity. That is, narrative provides people with a framework for first filtering and interpreting their experiences and then communicating that view to others. Narrative, as a culturally valued and socially transmitted activity, facilitates social connections and relationships by allowing people to share and compare their understandings and experiences with those around them while simultaneously representing personal, thoughts, feelings, and meanings. It represents the transposition of personal reflections and social connections; the meeting of internal needs and external constraints (Berthoff, 1993; Bruner, 1988; Daiute, 1993; Dickinson & McCabe, 1993; Egan, 1993; Haas Dyson, 1990; Hicks, 1993; Johnson, 1995; Paley, 1990).

This more contemporary view of narrative as a valuable tool for organizing, interpreting, and conveying personal knowledge, understandings, and information for the purpose of connecting with others and smoothing social relationships has prompted many researchers to explore how different environments affect narrative development in children. Although many more studies have begun to examine how situational (Bates, 1991; Daiute, 1989; Jones & Pellegrini, 1996; Moore & Caldwell, 1993; Murachver, Pipe, Gordon, Owens, & Fivush, 1996), social (Daiute & Griffin, 1993; Galda, Shockley Bispinghoff, Pellegrini, & Stahl, 1995; Haden & Fivush, 1996; Lensmire & Beals, 1994; Peterson & McCabe, 1992; Snow, 1993), or cultural influences (Brice Heath, 1986; Haas Dyson, 1995; John-Steiner & Panofsky, 1992; Miller, 1993) impact storytelling in children, relatively fewer studies have addressed how various intra-individual (i.e., internal capacities and propensities) and inter-individual (i.e., external circumstances) factors interact to impact children's storytelling experiences and performance (Bokus, 1992; Pellegrini & Galda, 1990; Peterson & McCabe, 1994; Spinillo & Pinto, 1994). In the current study, I attempt to reduce this gap by exploring how 3- and 5-year-olds make use of the physical (i.e., toys) and social cues (i.e., peer interaction) within their immediate environment to support their pretend-play storytelling.

Overview of Literature Review

Despite a growing awareness of and sensitivity to the many ways internal and contextual influences impact narrative form and use, there continues to be considerable debate regarding the relative importance and directionality of these factors. Original theoretical conceptions highlight internal, maturational forces as the necessary requisite for advanced storytelling. Alternately, more contemporary views tend to emphasize external experience as the most critical determinant in children's developing narrative competence. Despite these differing emphases, proponents of both theoretic

perspectives acknowledge that “each sphere is a necessary part of the whole” with the isolation of one sphere from another constituting pathology (Overton, 1994; p. 16). The first section of the ensuing literature review highlights key theoretical tenets and empirical findings from the developmental literature supporting or clarifying each theoretical stance with regard to children’s narrative performance.

Recall from the introductory chapter that relatively fewer studies have examined spontaneous storytelling in young children. Studies that included preschoolers as their participants either used more formal experimental designs (e.g., laboratory-like conditions) or more directive, story elicitation techniques/prompts (e.g., “Tell me a story about...”). Although the findings gleaned from such studies provide important information, such techniques and methodologies may actually underestimate children’s developing narrative knowledge and competence (Hewitt & Duchan, 1995; Nicolopoulou, 1997a; Polanyi, 1982). These techniques are most appropriate for older children because such children are better able to encode and communicate their meanings verbally. Young preschoolers, who are still in the process of mastering language, supplement or substitute speech with actions (Bruner, 1986b; Sutton-Smith, 1986; Wolf, Rygh, & Altshuler, 1984) or use the physical and social environment to scaffold their performance (Pellegrini & Galda, 1990; Shapiro & Hudson, 1991). As well, several researchers have suggested that comfortable, familiar play contexts maximize younger children’s language and narrative performance (Pellegrini & Galda, 1990) by reducing cognitive overload (Eckler & Weininger, 1989; Kemper & Edwards, 1986). Indeed, Vygotsky (1978) noted the value of play to:

...create a zone of proximal development within the child. In play, the child always behaves above his [sic] daily behavior; in play it is as though he were a head taller than himself. As in the focus of a magnifying glass, play contains all

developmental tendencies in a condensed form and is itself a major source of development (p. 102).

Similarly, Bruner (1974) noted play's special capacity to draw "the child's attention to communication itself, and to the structure of the acts in which communication is taking place" (p. 10) by releasing children from any real-life constraints and consequences. Bruner believed that the freedom children experience while playing allows them to elaborate, explore, experiment, and combine actions and speech in novel and extravagant ways. It served as a "test frame, a hot house for trying out ways of combining thought and language and fantasy...play under the control of the player gives to the child his [sic] first and most crucial opportunity to have the courage to think, to talk, and perhaps to be himself" (Bruner, 1986b, p. 83). Bruner (1986b) proposed that the type of experimental activity children participate in within their play provides an optimal context for learning and a superb medium for exploration. Hence, the second part of the literature review discusses pretend play, its development and function, and its use as an appropriate format for exploring preschoolers' emerging narrative knowledge and *understanding*.

As stated previously, studies have found the physical and social environment may support or hinder children's narrative performance. This study attempts to explore how such external cues impact preschooler's narrative performance at two different ages. Thus, the influence of the physical cues within the play environment (i.e., degree of toy structure) is discussed in some detail in the section on pretend play. Following that, I then explore how social cues may impact children's narrative performance. In particular, I present the literature on children's developing social understanding and then detail how children's ability to respond to and integrate self-other perspectives into their ongoing play which may also serve to support or constrain their narrative performance.

Each of the three domains (i.e., narrative, pretend play, interpersonal understanding/relationships) pertinent to the study herein have amassed an extensive body of scientific literature over the years. To present findings in a coherent and logical fashion, the literature is organized and discussed according to the two theoretical stances framing a majority of the empirical findings within each of these three areas. One theoretical orientation, emerging from the rationalist tradition of Piaget, emphasizes how children progress through a series of sequential, hierarchically-ordered stages. Piaget hypothesized that this progression reflected underlying changes in cognitive *differentiation and organization* (Bringuier, 1980; Cowen, 1978; Piaget, 1962, 1976; Piaget & Inhelder, 1969). The other theoretical stance dominating the literature derives primarily from work of Vygotsky (1962, 1966; 1978; Wertsch, 1985) whose sometimes sketchy but insightful writings suggest that development is shaped and constrained by the external milieu within which children are embedded. As mentioned, this socio-culturalist perspective has gained in popularity as scholars attempt to address questions regarding developmental asymmetries and outcomes not adequately accounted for by the more traditional, Piagetian stance. Although connections between narrative, play, and social understanding will be introduced at various points throughout this literature review, the conclusion at the end of this chapter attempts to define, more systematically, potential linkages between these three conceptual domains by melding them into a more comprehensive theoretical model. This model provides the theoretical framework for the research design used herein.

Narrative Development

Originally, storytelling, like many other behavioral domains, was conceived as being constructed within people's heads (Bruner, 1988). This belief stemmed, in part, from Piaget's influential developmental stage theory highlighting internal cognitive

processes and mechanisms as the primary force behind children's increasingly sophisticated understandings of the world. More recently, there has been a shift to examining children's storytelling as a contextually embedded phenomenon reflecting the interplay between both internal and external factors. This more contemporary theoretic stance, derived primarily upon the work of Vygotsky, has helped to broaden traditional understandings by highlighting how cultural, social, and situational influences impact children's story form and use. In the following section I discuss, in greater depth, both theoretical positions and present empirical findings verifying the critical impact of both internal and external factors on children's narrative development.

Cognitive Theories of Narrative Development

Piaget's General Developmental Stage Theory

Piaget (1928, 1932, 1962, 1976) contended that children regularly progress through a series of hierarchically-ordered, age-related stages (i.e., Sensorimotor, Preoperational, Concrete Operations, and Formal Operations). Each stage was defined by the unique set of rules children apply to, explore, or reason about the world around them. Within each stage of development, children progress through a series of sub-stages as information and understandings are manipulated, combined, and consolidate into increasingly elaborated, differentiated, and flexible models of understanding. Piaget suggested that the shift from one sub-stage to the next reflected children's active attempts to reduce mental conflict and reestablish a sense of equilibrium when encountering information that did not adequately fit their current frame of understanding. Young children have not yet constructed the complex system of logical operations allowing them to view the world in a more rational and objective fashion; therefore, to *reduce the internal conflict associated with encountering this discrepant information*, they assimilate this new information by adding it on to already existing conceptual models.

As these models become increasingly differentiated and children encounter phenomena not as readily explicated using current mental frameworks, they are forced to reorganize their thinking to accommodate to that external reality. Thus, children's propensity to engage in assimilative thought declines and is gradually replaced by more accommodative thought.

As is evident in the preceding discussion, Piaget emphasized internal mental activity as the primary impetus in children's development. Although he readily acknowledged that exposure to new information and circumstances prompted children to realign their thinking, he qualified that the environment had little effect on behavior unless the "instruments for thought" had already been constructed (Bringuier, 1980; pp. 20-21). Thus, Piaget believed that external factors had less impact on younger as opposed to older children's intellectual development.

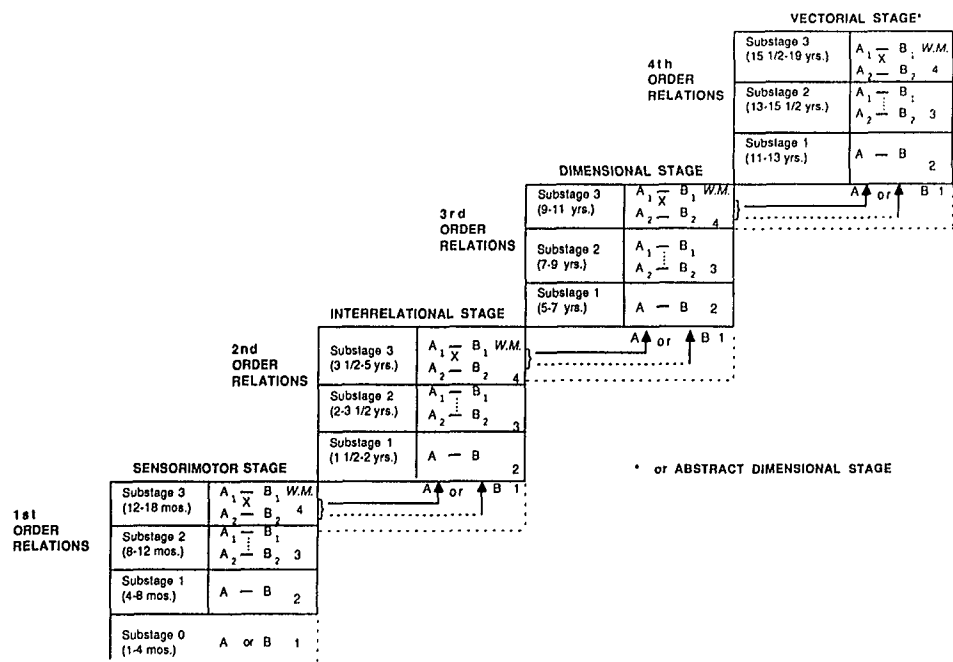
Case's Neo-Piagetian Stage Theory

Case's (1992a, 1992b) revised and expanded neo-Piagetian theory attempted to address some of concerns levied toward Piaget regarding (a) his inadequate account of cultural and task-related decalages (i.e., asynchronous patterns and rates of development across various cultures and tasks/concepts believed to be structurally equivalent, e.g., classification or seriation), and (b) his underlying assumption that logical thought processes were paramount to determining the direction and pace of children's intellectual development. Similar to Piaget, Case held that children progress sequentially through a series of stages (i.e., Sensorimotor, Interrelational, Dimensional, and Vectorial) reflecting the general manner with which they relate to objects, situations, and concepts that they encounter. However, unlike Piaget, Case proposed that children's sequential progression through the sub-stages and ability to coordinate, integrate, and consolidate information into increasingly complex conceptual

understandings depended on a system-wide growth in working memory capacity. That is, the amount of available working memory set an upper limit on the number of elements children were able to represent and manipulate at any given time. As increasing numbers of units become available, children progress from consolidating information into a new structure (i.e., Consolidation sub-stage: 1 working memory [WM] unit), to considering two such structures at any given time (i.e., Unifocal sub-stage: 2 WM units). Coordinating these two separate structures required the addition of another working memory unit (i.e., Bifocal Coordination sub-stage: 3 WM units) and integrating or consolidating these two structures to form a qualitatively new structure entails the use of another working memory unit (Integrated Bifocal Coordination sub-stage: 4 WM units). Consolidation of two discrete quantitatively distinct structures into a qualitatively new structure marked the movement from one developmental stage to the next (e.g., from the interrelational stage to the dimensional stage). That is, the highest level sub-stage of preceding developmental stages became the lowest level sub-stage in subsequent developmental stages. Case's neo-Piagetian theory is depicted in Figure 2.1.

Although Case held that neurological maturation controlled when higher-level operations were able to come on-line, he acknowledged that individual pre-dispositions (i.e., affective and motivational factors) caused variability in children's development. As well, he detailed how exposure and practice had a critical impact on children's intellectual growth. That is, he proposed that children's development varied as a result of their learning opportunities and access to educational resources within their specific social or cultural group. Indeed, Case believed that these groups defined what operations and structures are important thereby playing a vital role in promoting children's development, particularly at higher stages. In addition, Case outlined how

Figure 2.1. Cases's (1992a) Structural Theory of Cognitive Development



opportunities to practice newly acquired knowledge helped to consolidate and automate cognitive operations which, in turn, allowed children to take advantage of increases in working memory when they came on-line.

Briefly, to summarize key aspects of neo-Piagetian theory, Case retained, extended, and altered some of Piaget's core theoretical tenets. Similar to Piaget, Case held that children pass through a universal sequence of hierarchically-ordered stages and sub-stages. However, unlike Piaget's emphasis on increasingly differentiated and abstract systems of rules and logic, Case specified working memory capacity as setting an upper limit on children's ability to integrate, combine, and consolidate new information. As well, Case articulated how other internal and external factors interacted to produce variation in children's development, aspects that garnered little attention in Piaget's theoretical account.

The following section presents empirical research documenting general, age-related trends in children's narrative understanding. Although not all researchers explicate these age trends in terms of children's underlying conceptual understanding, it is interesting to note the sheer number of studies documenting age-related consistencies as children progress from simple, action-based to more complex, integrated, and mentally-driven stories. These studies' findings suggest that, regardless of the theoretical orientation, sample group, or research protocol employed, children build upon earlier, less differentiated narrative schemas which, in turn, leads to increasingly elaborated and differentiated conceptual models.

Empirical Evidence.

In general, studies have found that, as children age, they build cohesion into their stories by first linking discrete chunks of information together into a singular event. These events are then consolidated into episodes. Episodes are strung together to form

complex story unit and story units are then integrated into story forms that have depth and dimension reflecting a more global frame of reference (Bamberg & Damrad-Frye, 1991; Genereux, 1997; Snitzer Reilly, 1992; Vine, 1994). The hierarchical integration of increasingly complex story elements into a cohesive story account appears to parallel a similar, age-related shift in the development of story plot. Evidence supporting an age-related progression in children's plot structure complexity continues to mount (Applebee, 1978; Benson, 1996; Bergman, 1997; Botvin & Sutton-Smith, 1977; Genereux, 1997; Hicks & Wolf, 1988; Kemper, 1984; McKeough, 1986, 1992a; Stein & Glenn, 1979; Sutton-Smith, Botvin, & Mahoney, 1976; Trabasso & Nickels, 1992; Umiker-Sebeok, 1977; Yussen & Ozcan, 1996). Prior to 4 years of age, children introduce basic story elements and begin to link these isolated elements together. Simple event descriptions, wherein an initial state "A" proceeds to a final state "B", emerges around 4 to 5 years of age. As well, children at this age may provide more descriptive detailing around the story action. By 6 years of age, children's narratives progress from simple, event descriptions to plotted or episodic stories characterized by an intervening problem mediating the transition from initial state A to final B. The shift from action-based, event descriptions to intention-based, plotted stories appears to signal a growing awareness of story characters' as having internal mental states such as goals, motives, feelings, and needs that propel the story action. By 7 years of age children elaborate and extend their stories by linking together and coordinating two or more problem-based episodes. The inclusion of secondary episodes, or subplots, emerges by approximately 8 to 9 years of age. Embedded plots emerge by 10 to 11, and multiple embedded plots make an appearance by the age of 12. During adolescence, children are increasingly able to assume a meta-position to the story events. That is, story action is based less on immediate mental states and causes and more upon characters' past experiences,

enduring psychological traits, or broader principles of morality. In addition to the general age-related trends recounted above, older children demonstrate greater flexibility in their ability to apply and reverse these narrative structures (Hicks & Wolf, 1988; McKeough, 1992a; Sutton-Smith, Botvin & Mahoney, 1976). As well, they are able to incorporate more sophisticated narrative elements such as flashbacks and surprise endings (Genereux, 1997; Sutton-Smith et. al, 1976).

McKeough's (1986, 1992a) systematic analysis of children's storytelling was one of the few attempts to link children's narrative structure more directly to underlying changes in cognitive growth. More specifically, she was able to connect changes in children's processing capacity to their integration of increasingly complex story elements. She found that, with one working memory unit, the 4-year-old's story contains a single, action-based episode comprised of four story combined story elements: A setting, initiating event, response, and outcome. In the following illustrative example, the four discrete elements marked by the brackets are consolidated into the singular entity of story:

"Once a boy went to the circus (setting). Then he saw a tiger (initiating event).

Then he went home (response) and that's the end (outcome)."

With the growth of working memory to two units, the 6-year-old is able to coordinate two such episodes. Stories at this age typically assume a "plotted" story form wherein the first episode delineates a problem and the second episode outlines an attempt to resolve that problem. The following example highlights the shift from an action-based to intentional or problem-based stories and illustrates how characters' actions become integrally linked to underlying mental states:

" Once a boy went to the circus. Then he saw a tiger. And the tiger tried to get away [problem; implied mental state: desire to escape from the boy/circus]. The

boy caught the tiger and rode on the tiger's back. The lion carried the boy home.

The lion was happy to be with the boy [resolution; explicit mental state: happy].

That's it."

Eight-year-olds, with the introduction of yet another unit of processing capacity, are able to consider two such plotted units in unison, albeit in a somewhat tentative manner. This simultaneity is reflected in their ability to insert a complicating event that hampers the successful resolution of the problem. The following example illustrates such a scenario:

"Once a boy went to the circus. Then he saw a tiger. And the tiger tried to get away. The boy caught the tiger and rode on the tiger's back. The lion carried the boy home. The boy's mom was mad and told him to 'Get that lion out of here!' [complication] Then the leader showed up and took the lion away."

Lastly, with the addition of yet another processing unit, 10-year-olds are able to integrate, more effectively, the complicating event into the original problem-resolution plot structure to produce a more coherent and cohesive story account.

To summarize the empirical findings, the linear, hierarchical progression from simple, event-based to complex, intentional and interpretive plotted stories with age appears to lend support to Piagetian and neo-Piagetian views regarding the general underpinnings of children's developing knowledge: Age-related changes reflect underlying changes in cognitive differentiation and integration with earlier understandings becoming the foundation for increasingly sophisticated conceptual frameworks and advanced levels of competence. Despite extant evidence documenting the gradual coordination and integration of discrete story elements into increasingly complex and differentiated story units with age, only recently have researchers begun to systematically link these elements to underlying cognitive changes (i.e., working memory capacity).

Sociocultural Theories of Narrative Development

Despite empirical evidence supporting a general, age-related trend in children's narrative competence, some researchers found these age-differences to be mediated by gender. For example, Kemper's (1984) review of several studies examining story characterization found children incorporated more male character roles into their stories with age. As well, characters were often portrayed with stereotypic personality traits and in sex-typed relationships and occupations. Contrary to their nurturing, trusting, dependent, and cooperative female counterparts, male characters demonstrated adventuresome and independent qualities. Although Kemper's review was based primarily upon research from the 1960's, recent research has also found a gender bias: Male characters continue to dominate female characters in both frequency and presence in children's storytelling (Kamler, 1994; Trepanier-Street & Romatowski, 1991). These gender biases led many researchers to question how rules, roles, conventions, and practices contained in the social world affected children's narrative understanding and use (Fleming, 1995). Slowly, direction shifted away from more traditional views of narrative development as occurring solely within the mind toward examining it as a contextually embedded phenomenon (Bruner, 1988; Haas Dyson, 1990; Hicks, 1993; Johnson, 1995; Levy & Nelson, 1994; Matusov, 1998; Nicolopoulou, 1997a).

In an effort to clarify and explicate variation in the process and content of children's storytelling, researchers began looking to external factors as potential mediators in children's narrative understanding. This contextually-embedded view has garnered increasing favor within the scientific community as scholars ponder the myriad of cultural, social and situational influences, and their various interrelations, on children's developing narrative competence.

Advocates of this contemporary, transactional, culture-in-mind view (Lucariello, 1995) based their thinking, in part, from the conceptual writings of Vygotsky (1962, 1978); writings that were later championed by Bruner (1974, 1986a, 1988, 1990a, 1992) and others (Cole & Engestrom, 1995; Daiute & Dalton, 1993; Haas Dyson, 1993; Matusov, 1998; Nicolopoulou, 1997a; Peterson & McCabe, 1992, 1994) in their theoretical and empirical work. In contrast to Piaget's more interiorized view, Vygotsky believed that children's development occurred as a result of their ongoing exposure to knowledge, activities, and conventions in the external world. Caregivers and other social agents (i.e., more able peers, teachers, etc.) assisted in this process by systematically exposing and guiding these newest members into the culturally preferred meaning-making modes. Based upon this core theoretical premise, socioculturalists are as interested in examining the processes of knowledge transmission as they are in the specific developmental outcomes.

In his discussion of language acquisition, Vygotsky (1978) proposed that all learning takes place within the "zone of proximal development" (p. 86). This zone refers to the difference between children's level of competence without assistance and their potential level of competence as guided by or in collaboration with a more capable other (socioculturalists have tended to focus on adults' expertise). Within this zone, the dialectical interplay between the novice learner and expert teacher continually shifts as children's competence grows. Initially, the adult assumes a leading role, guiding and directing children's learning by emphasizing and highlighting the various rules, structures, and conventions governing their language use. With repeated exposure and experience, children gradually internalize the culturally preferred language form, using this form in an increasingly self-directed, autonomous manner. The adult, monitoring this growth, resets the level to be achieved slightly beyond the children's newly acquired

level of competence. This process continues until children achieve mastery over language use and form.

One of the ways that children use language is through their storytelling. Bruner (1986a, 1988, 1990b, 1992) applied Vygotsky's ideas about language development to the specific domain of children's narrative understanding. He argued that narrative was a culturally valued activity transmitted from one generation to the next. Bruner (1988, 1990b) contended that the systematic provision of narrative form and function by more capable others allows young children to gradually abstract out the cultural rules governing its use. Repeated exposure to specific narrative rules and conventions through more expert others during social interchange helped children internalize that knowledge in the form of a general narrative schema. Bruner argued that, although children internalize these socially and culturally valued narrative frames, they do not represent and replicate them in exact form. Rather, they transform them to suit their particular needs and circumstances. It is this co-mingling of personal and public meanings that is united and reflected in children's manipulation of the two landscapes of story (recall that the landscape of action provides the structural framework upon which the landscape of consciousness unfolds). Hence, Bruner (1986a, 1988, 1990a, 1990b, 1992) believed that storytelling represented and reflected children's active attempts to make sense of and connect with the social world around them. Indeed, he contended that children's ways of representing the world through narrative become so habitual that they became "...the recipes for structuring experience itself" (Bruner, 1988; p. 582). In other words, narrative as a specific mode of thought served as a conceptual blueprint for conveying information, interpreting life experiences, and informing future courses of action (Olson, 1990).

Researchers' burgeoning interest in children's narrative as a contextually embedded, representational, dialectical phenomenon has led to an explosion of empirical studies examining the structure and role of narrative within and across various cultural, social, and situational milieus. In general, there is a growing body of evidence supporting an inter- to intra-individual progression in children's developing narrative competence. To highlight the critical impact of external influences on that growth, broader cultural influences will be presented first. Social relationships will then be explored. Last, situation-specific cues will be addressed. While empirical findings are presented in a somewhat categorical fashion, it is important to keep in mind that children are embedded within a global ecosphere (Matusov, 1998) comprised of various subsystems whose boundaries of influence blend and shift. It is the dynamic interplay between cultural, social, and situational influences and children's changing levels of representation at different times in development, that lends narrative its richness and diversity.

Cultural Influences

As mentioned, children's narrative reflects the active transposition of personal and social meanings. A growing awareness of the potential role of culture in shaping and constraining children's storytelling has resulted in a growing body of empirical evidence documenting a significant link between the two. Narrative form and function tends to vary across cultural groups (Brice Heath, 1986); however, there does appear to be cross-cultural consistencies regarding its general function. First, all cultural groups appear to use narrative as a tool to socialize their young into preferred ideals, rules, roles, customs, and conventions (Brice Heath, 1986; Cook-Gumperz, 1993; Haas Dyson, 1995; Miller, 1993). Second, all cultural members use narrative as a means to organize, interpret, understand, and master their experiences (Bruner, 1988; Egan,

1993; Hicks, 1993, 1994; Miller, 1993; Van Dongen & Westby, 1986). Finally, because narrative is, in part, comprised of shared cultural meanings and understandings, it is an essential means through which all members of a given culture establish and maintain social connections and relationships with each other (Bruner, 1988; Haas Dyson, 1990; Johnson, 1995). Hence, children's socialization into narrative enables them to relate to, connect with, and participate in the broader cultural and social context in which they are embedded.

Recent studies have found that children's narrative understanding and use is affected by their exposure to culturally preferred narrative forms. For example, studies have discovered subtle differences in the way Asian and English speaking parents use narrative as a tool to socialize their children. Contrary to European American mothers who tended to downplay their preschoolers misdemeanors in personal stories of past events, Taiwanese mothers drew attention to such transgressions to highlight a moral code of standard (Miller, Wiley, Fung, & Hui Liang, 1997). Minami and McCabe (1995) found Japanese mothers solicited less feedback from their male children (verbosity is discouraged, particularly in males) and encouraged their children to share the floor rather than take center stage while telling their stories in comparison to English-speaking, Canadian mothers. Miller (1993) found Chinese families also used stories to invoke rules and rule violations by using their children's transgressions as the central point of their story.

In addition to instilling cultural values, differences in the way children are socialized into the preferred narrative form appear to differ both across and within cultural groups as well. Perroni (1993) found Brazilian mothers' direct and explicit guidance resulted in children independently producing well-formed, adult-like narratives by 5 years of age. In contrast, Blum-Kulka (1993) found Israeli children were socialized

into the preferred narrative form by their natural and informal participation in family storytelling. Interestingly, this same study found that, in comparison to Israeli families, Jewish American families tended to be more formal and ritualistic in their storytelling.

Although studies suggest that cultural background is a critical variable affecting narrative content and form, other studies have found socioeconomic status to be a more relevant predictor. For example, Shiro (1995) compared the stories of upper- versus lower-class, Spanish-speaking, Venezuelan children and found more explicit and elaborated stories in the high income group. Similarly, Williams (1991) highlighted how 4- and 5-year-old African American children from middle class backgrounds embedded themes of success, literacy, schooling, home and church within their stories, values that had been emphasized and passed on to them by their mothers.

Despite the preliminary and exploratory nature of the empirical findings delineating cultural similarities and differences in narrative form and use, it seems clear that overarching cultural values and socialization practices may impact the progression of children's storytelling. As discussed previously, cultures rely heavily upon various social agents to transmit the culturally preferred narrative form from one generation to the next. As the findings from Williams' (1991) study suggested, parents, teachers, and even peers may play a vital role in children's developing narrative competence. The following discussion outlines, more specifically, the role of social agents in shaping children's stories.

Social Influences

The bulk of the literature examining social influences has tended to highlight the role of more capable or competent others in guiding and supporting children's narrative development. Research findings appear to support the view that children internalize the narrative style preferred by their parents (Devescovi & Baumgartner, 1993; Harkins,

Koch, & Michel, 1994; Peterson & McCabe, 1992, 1994; Snow, 1993) and teachers (Daiute & Griffin, 1993; Daiute, Campbell, Griffin, Reddy, & Tivnan, 1993; Galda, Shockley Bispinghoff, Pellegrini, & Stahl, 1995; Haas Dyson, 1995). Some studies further qualified these adult-child, expert-learner patterns of guidance. Research has found that parents' contingent responses and ongoing interpretation of their preschoolers' intended messages tended to draw attention to narratives' underlying structure and organization and resulted in complex and elaborated stories (Bruner, 1990b; Snow, 1993). Peterson and McCabe (1992, 1994) found mothers who probed their young toddlers for explicit story information had children that independently expressed these features in their stories at a later point in time. These findings appear to suggest that parents do, indeed, play a vital role in shaping the content and direction of children's storytelling through questioning, interpreting, and embellishing upon their child's contributions (i.e., scaffolding; Devescovi & Baumgartner, 1993; Snow, 1993).

Although these findings appear to support the critical role of expert parental guidance as essential to children's growing narrative knowledge, some studies have found such guidance to vary as a function of perceived task demands or specific child characteristics. For example, research has found that parents provide more explicit guidance in formal, task-oriented situations (e.g., requests to tell a story) than in unstructured, spontaneous settings (e.g., free play; Haden & Fivush, 1996; Kertoy & Kluppel Vetter, 1995). These findings suggest that parental guidance is not necessarily an all or none phenomenon. Indeed, differing degrees of parental sensitivity and responsiveness to children's ever-changing needs within specific situations appears to lead to differences in children's narrative proficiency (Bruner, 1990b; Peterson & McCabe, 1992).

The foregoing discussion highlights how parents adjust their interaction style to meet the changing needs of the situation or the child. Relatively fewer studies have examined how teacher responsiveness affects children's developing narrative frameworks. Although one study found below average readers to produce more complex stories with teachers who employed a more directive style of teaching (Gambrell & Chasen, 1991), most of the research has tended to treat educators as a fairly homogenous group by emphasizing their more formal role in guiding their students' learning. For example, studies have found that teachers, particularly during the middle and early school years, assume a didactic, instructional style and focus upon narrative structure and organization rather than deeper themes and meanings (Daiute & Griffin, 1993; Daiute, Campbell, Griffin, Reddy, & Tivnan, 1993; Galda, Shockley Bispinghoff, Pellegrini, & Stahl, 1995; McKeough & Sanderson, 1996).

Thus, it appears that both parents and teachers draw children's attention to narrative as a culturally preferred and valued expressive tool and, in doing so, transmit knowledge about its form and use onto its newest members. However, children are exposed to other social influences during the course of their day, influences that have, to date, garnered relatively less attention than these "experts" within the narrative literature. Noting children's tendency to produce a broad array of richly embellished narratives in their spontaneous peer interactions, several researchers began questioning the effect of other social contexts on children's storytelling (Daiute & Griffin, 1993; Devescovi & Baumgartner, 1993; Preece, 1987, 1992). These researchers suggested that interacting with peers who are perceived as fairly equal partners (i.e., in terms of power or status) enhances children's narrative competence because they experience a greater degree of freedom and control over their own learning. These feelings of freedom and control translates into greater exploration and experimentation with narrative form and use,

leads to pooling of ideas and resources, and results in stories rich in affective, thematic, and structural content (Daiute & Griffin, 1993; Devescovi & Baumgartner, 1993; Haas Dyson, 1995; Preece, 1992). Daiute and Dalton (1993) suggested that peer collaboration "encourages children to express and reflect on thinking that might otherwise remain unexamined or unelaborated" (p. 293) and that:

Knowledge from peers presented from a child's point of view, in a child's language, and from a person of relatively equal status may be easier to use... A peer's support may also provide a bridge...It may be that peers' equality in social status (relative to the status of the teacher) and their similarity of youthful perspective enable productive communication...peers may be better able to use...critique...and transform knowledge and skill with someone who shares common perspective, understanding, language, and lot in life...valuable sociocognitive conflict may not arise in situations where social status dynamics override (p. 329).

Interestingly, this explanation appears to overlap with more traditional Piagetian views regarding the role of social partners in children's mastery of concepts. Although Piaget (1928, 1932, 1962, 1976) preferred to emphasize the internal workings of the mind, he believed that specific social circumstances facilitated cognitive differentiation. He proposed that cooperative and reciprocal interaction between peers was one such circumstance. He contended that the freedom to express and explore, openly and without fear of reprisal or judgement, differing thoughts, ideas, and perspectives, optimized cognitive growth. He suggested that when children are confronted with viewpoints that differ from their own they experience cognitive dissonance. To reduce this dissonance, and reestablish a sense of "ego balance" (Golomb & Cornelius, 1977, p. 246), children are forced to either incorporate this new knowledge into their current

mental framework (i.e., assimilation), or change existing cognitive schemas to accommodate this new information (i.e., accommodation). Thus, Piaget proposed that exposure to peers who openly challenged current beliefs and assumptions, combined with the opportunity to freely confront, compare, and explore differing viewpoints, led to a reconfiguration of current understandings and resulted in increasingly differentiated and elaborated mental schemas.

Situational Influences

Although this seems a tenable hypotheses, an alternate explanation for children's broader and richer narrative production in peer contexts may relate to the degree of affective engagement children experience in such storytelling activities or the expressive medium with which they convey their stories. There is growing empirical evidence that situational cues may increase or decrease the level of emotional involvement children experience while telling their stories which, in turn, appears to impact the type of stories that are told. For example, several studies have found that emotionally provocative, problem-based, or personal event story prompts tended to elicit stories that were more complex and included more rising action (Allen, Kertoy, Sherblom, & Pettit, 1994; Hudson, Gebelt, Haviland, & Bentivegna, 1992; Shapiro & Hudson, 1991).

Other studies have found that the extent of children's involvement in their storytelling affects story-related performance measures. For instance, some research has found children's enactment of story events to improve their recall and comprehension of that story (Jagodzinska & Dudzinska-Nowell, 1999; Murachver, Pipe, Gordon, Owens, & Fivush, 1996). Others studies' findings suggest that active participation in creative thinking activities (e.g., art, drama, computer activities) prior to or during the story making process leads to more complex and elaborated written stories (Daiute, 1989; Jones & Pellegrini, 1996; Moore & Caldwell, 1993). It is possible that

such activities introduce children into a pretend world where their imaginations are allowed to soar and they are given free reign to explore, elaborate, and revise their representational ideas and images, effects which then carryover into later writing activities. This conclusion tends to be supported by one study examining the impact of role-playing on school-aged children's story writing. Daiute (1989, 1990) found that 3rd, 4th, and 5th grade children who engaged in play prior to writing stories were more likely to explore and experiment with (1) language and story elements and rules, (2) manipulating reality and fiction, (3) imagery, and (4) thematic content.

In general, the above findings suggest an important link between children's active participation through play and narrative competence. These findings appear to support Vygotsky's (1978) aforementioned comment of play as creating a zone of proximal development within children. Only recently have researchers begun to explore this play-storytelling connection, particularly in preschool children, in a more systematic fashion.

Storytelling in Pretend Play

A good deal of the research findings amassed to date on children's narrative development come from controlled studies measuring monologues produced by individual children in response to formal story elicitation techniques (e.g., pictorial prompts, story starters). Although these findings provide a solid base of knowledge, studies employing such methodologies may not capture the true range and depth of storytelling competence, particularly in young children who may have not yet mastered the linguistic means to convey those stories (Polanyi, 1982; Nicolopoulou, 1997a). Indeed, Aronson & Golomb (1999) found children have representational competencies well before they are able to verbally articulate their understanding. Acknowledging the limits of traditional approaches to examining children's narrative development, and noting the potential benefits of peer interaction and affective involvement in narrative

outcomes, researchers have begun to shift their attention to examining spontaneous storytelling within informal and naturalistic contexts. They have refocused their attention to exploring how cues within the physical and social environment interact with internal capacities and propensities to impact children's emerging sense of story. The shift in emphasis and broadening of narrative conceptual framework to include non-canonical forms of storytelling has broadened current understandings regarding narrative form and use.

One area of research that has increasingly become central to understanding the earliest roots of children's narrative competence is the exploration of the role of children's pretend play in its inception and growth. There are several reasons why children's storytelling in their pretend play provides an ideal and optimal context for exploring children's narrative knowledge and understanding. First, pretend play provides a less obtrusive glimpse into the dynamic and interrelated aspects of children's storytelling. Second, it is a familiar, relevant, and meaningful mode of self-expression. A third related point is that pretend play, which entails the ability to transform or transcend reality, is one of the first symbolic means through which children express themselves (Bruner, 1986a, 1986b; Piaget, 1962; Vygotsky, 1966, 1978). Fourth, children's use of play "to pretend life and...act as if one is gung-ho about one's prospects" (Sutton-Smith, 1995; p. 291) makes it an ideal and non-threatening forum for manipulating ideas and images and exploring current understandings. The freedom to express, explore, and combine action and thought in play allows children to construct, extend, and embellish upon story plots and character roles (Bergman, 1997; Daiute, 1990; Paley, 1990; Pellegrini & Galda, 1990) and optimizes narrative performance (Hewitt & Duchan, 1995; Nicolopoulou, 1997a; Paley, 1990; Pellegrini & Galda, 1982, 1990, 1993). Indeed, studies have found that children's interleaving of various stances

or voices in play lends a richness and dimensionality to children's pretend play storytelling (Bergman, 1997; Fox, Martin, & Evershed, 1994; Hicks & Wolf, 1988; Wolf & Hicks, 1989). For example, Hicks & Wolf (1988; Wolf & Hicks, 1989) documented children's use of three different inter-textual voices in their pretend play storytelling. These voices served very different functions in children's play. Children used the stage management voice to highlight the illusory nature of their play and to explicate or clarify pretend play transformations (e.g. "That's just pretend"). They used the dialogue voice to signal their immersion into a character role (e.g., "I'm going to make supper now"). Lastly, children used the narrator voice when they distanced themselves from direct involvement in the story action and narrated from a third person perspective (e.g., "He went down to the ocean. Then he went on a boat"). These inter-textual voices seem integral to children's pretend-play stories and, as such, are examined in conjunction with children's plot structure complexity in the current study.

A fifth advantage of exploring children's stories within the context of their pretend play is that participation in such play requires the involvement of the whole child. That is, children are physically, mentally, emotionally, and socially engaged. Although children's active participation may be an important element in children's narrative competence (Daiute, 1989; Jones & Pellegrini, 1996; Moore & Caldwell, 1993; Murachver, Pipe, Gordon, Owens, & Fivush, 1996), it may be that children's ability to modulate or control the level of that engagement is a critical mediating element. For example, one study found that children's behavioral competence declined when they had little control over unfolding events, particularly if those events were perceived as negative (Fabes, Eisenberg, Jones, Smith, Guthrie, Poulin, Shepard & Friedman, 1999).

A sixth reason pretend play provides an optimal context for examining children's developing narrative knowledge is that it shares structural similarities with elicited stories

(Bergman, 1997; Eckler & Weininger, 1989; Sachs, Goldman, & Chaille, 1985). As well, it has been consistently linked to a variety of literacy-based activities such as early writing status in children, vocabulary use and development, story comprehension, and associative fluency (Christie, 1991; Dansky, 1980; Galda, Pellegrini, & Cox, 1989; Hall, 1991). Researchers have suggested that children's seemingly effortless movement in and out of the play frame highlights the boundary between the real and representational, which, in turn, may facilitate the shift to more autonomous, language-based storytelling forms (Scarlett & Wolf, 1979; Wolf, 1985; Wolf, Rygh, & Altshuler, 1984). This movement requires the use of explicit language (e.g., "Let's pretend...") to clarify and explicate shifts in stance. The use of language and words to represent objects, ideas, and actions with minimal reliance upon contextual cues and shared assumptions is a core defining feature of literacy (Hall, 1991; Olson, 1983).

A seventh and final advantage to examining children's pretend play is its potential to provide, more explicitly, information regarding children's capacity to: (1) interpret and integrate external cues and demands, (2) utilize verbal and non-verbal means to communicate their thoughts, feelings, and intentions, and (3) negotiate and integrate differing needs and perspectives to establish a shared understanding or common goal regarding story content and direction. For these reasons, pretend play provides an optimal context for exploring the emergence of storytelling in young children. The following discussion highlights how pretend play unfolds in the course of children's development.

Pretend Play Development

Few people argue that play is a vital and natural aspect of the early childhood years. Preschool children spend much of their free time engaged in such activity. Theorists have long noted the value of play in promoting young children's growth across

the various knowledge domains. In particular, children's engagement in pretend play has been found to contribute in a fundamental way to children's cognitive, social, and emotional development (Johnson, Christie, & Yawkey, 1987; Mead, 1934; Partington & Grant, 1984; Sutton-Smith, 1979). As well, eminent scholars such as Piaget (1962) and Vygotsky (1966, 1978) noted the valuable contribution of such play in developing representational or symbolic thought in children.

Pretend play, also commonly referred to as symbolic, make-believe, dramatic, or fantasy play within the literature, represents a specific domain within this broader rubric of play. For purposes of simplicity, reference herein will be restricted to the more common, lay terminology of pretend play. Pretend play is distinguished from other forms of play (i.e., practice, sensori-motor, functional, games with rules) by its non-literal "as if" quality. Children are engaged in pretend play when they attribute identities and functions to objects and people that they do not actually possess in reality. These attributions serve to transform and transcend reality.

It is important to note that children typically include social partners in their pretend play (Fein, 1981; Rubin, 1986). Hence, most of the research conducted on children's pretence has actually examined children's social pretend play. To date, relatively little is known about children who engage in solitary pretend play although a study by Rubin (1986) suggested that they were non-normative, rated as less socially competent, and scored lower on measures of popularity and social perspective taking. The relevance of social perspective taking will be discussed in greater detail later in this document. Nevertheless, it appears that a universal feature distinguishing pretend play is its social nature (Haight, Wang, Fung, Williams, & Mintz, 1999; Nicolopoulou, 1993). Consistent with the majority of empirical work done in this area, this study examines pretend play as a social-oriented and embedded phenomenon.

There is some disagreement within the scientific literature regarding the frequency with which children engage in pretence, with proportions ranging anywhere from 10% to 50% of their total play activity (Cole & LaVoie, 1985, Matthews, 1978). Despite discrepancies in the prevalence of pretend within children's play repertoires, developmental specialists and psychologists concur that this special type of play emerges quite early in children's development and, similar to narrative, is a fundamental tool for exploring and mastering the world around them (Fein, 1981; Nicolopoulou, 1993; Piaget, 1962; Vygotsky, 1978). The majority of the literature on children's pretend-play development is still firmly rooted in Piaget's (1962) cognitive, maturational conceptual paradigm. Following a discussion of this theoretical tradition, a more contemporary perspective derived from the brief writings of Vygotsky (1966, 1978) on this topic is presented. Empirical findings delineating the impact of intra-individual (e.g., cognitive maturation, individual differences), situational (e.g., immediate play environment), and social (e.g., peer, family, culture) factors will be discussed to highlight core features of these two theoretical perspectives.

Piaget's Cognitive-Maturational Theory of Pretence

Developmental psychologists originally conceived of children's pretend play as a distortion of reality. Children's distortion of reality reflected an internal desire to achieve mastery over an external world that was beyond their control and comprehension. This mastery led to feelings of pleasure and competence, feelings which, in turn, induced children once again to engage in such distortions. The theory driving this particular view of pretend play emerged, in part, from Piaget's (1962, 1976) general theory of cognitive development. To review briefly, Piaget proposed that children come equipped with a need to organize incoming information into increasingly elaborate and differentiated models to better understand the world around them. They do this by either assimilating

this information into an already existing conceptual framework or by adjusting this internal framework to accommodate external demands. Piaget contended that these two complementary processes become more stable as the complex systems of logical operations are constructed toward the end of the early childhood years. However, until that time, children's behavior typically reflected the subjugation of accommodative, externally-oriented to assimilative, internally-oriented thought.

Piaget (1962, 1976) contended that play was an adaptive expressive forum for young children who naturally engaged in pre-logical, self-directed thought. Less advanced forms of thought (i.e., undifferentiated and unconsolidated) were inadequate to meet the broad range of children's daily needs. Included in these needs is the internal drive to engage in behavior that is "unrelated to...the point of view of effective adaptation" (Piaget, 1976; p. 558). Piaget (1976) believed that children expressed this latter need through their play. He proposed that children participated in play for no other purpose than the "evocation of pleasure" (p. 559) and that pretend play, in particular, exemplified "egocentric thought in its pure state" (p. 567).

Hence, Piaget (1962, 1976) held that pretend play was simply an outward manifestation of cognitive immaturity as a result of the predominance of internally-oriented, self-directed thought. As children age and the systems of logical operations characterizing more advanced thought become increasingly differentiated and stable, balance is gradually restored between these two internal, cognitive processes. This restoration of balance is reflected in pretend play scenarios that become increasingly reality-based and children's growing interest in rule-bound games. Thus, children's pretend play represented a temporary, transitional state that gradually progressed from a fanciful distortions of reality to more accurate depictions of reality by the end of the early

childhood years (i.e., by approximately six years of age). The following discussion details, more specifically, Piaget's conception of how play development unfolds.

Piaget (1962, 1976) hypothesized that children's play invariably progressed through several age-related stages. These stages represent the type of operations children use to learn about and construct models of their world. Prior to 18 months of age, children engage in pre-symbolic, sensorimotor play. Play at this level is characterized by sensory and motor play. That is, infants use sensory and motor manipulation to explore the world of objects around them. During the second stage of play development, Piaget (1962) proposed that children enter into symbolic play (i.e., pretend play). This play marked the onset of children's ability to engage in mental representation. The key feature distinguishing this stage of play from the latter is children's ability to assign functions and identities to objects and play partners based upon mental ideas and images. It is this stage of play development that is of primary interest to the study herein.

Piaget (1962) proposed that three events co-occur in pretend play that assist children in separating objects' intended meanings and use from their assigned identity and function. They are able to do this because, as they repeat and combine their play actions, they form increasingly differentiated mental frameworks that they are then able to extend to substitute objects "unrelated to them" (Piaget, 1976; p. 558). First, from approximately 2 to 4 years of age, children go through a process of decentration. This process entails children's movement from self-directed to other-directed and from passive-other to active-other pretend play. That is, children first direct play actions towards themselves, then towards others, then have the other person or object perform the action. The second process that unfolds within children's pretend play is a decreasing reliance on prototypical objects (e.g., actual identity of object closely

resembles its assigned identity) to generate and sustain their play. This process is known within the play literature as decontextualization. Piaget's hypothesized progression from object-oriented to idea-generated play has been detailed in Matthews' (1977) empirical study on children's transformational play modes (Appendix A). Lastly, the third process that unfolds in children's pretend play is their gradual ability to combine and coordinate discrete actions to form connected and sequenced event structures. Pretence assumes an episodic or narrative-like story structure (Lyytinen, 1990; Pellegrini & Galda, 1993) during this sequential combinations phase.

Thus, although Piaget (1962, 1976) held that pretend play reflected immature cognitive functioning (i.e., assimilation of an external reality to an internal, subjective reality), he recognized its value in aiding children's awareness of the representational aspects of reality. He proposed that pretend play was ideal for practicing the separation of an object's assigned versus real identity. The active separation of an object from its meaning laid the foundation for subsequent forms of representation thought. Indeed, Piaget believed that pretend play provided one of the earliest forums for children practice and master the separation of the external, physical realm from the internal, meaning realm (Pellegrini & Galda, 1993).

What precipitated the decline in children's pretend play? Piaget (1962, 1976) felt that age-related changes in cognitive differentiation and flexibility, combined with a progressive tendency to engage in external-oriented and driven thought hastened children's shift into the next stage of play development, that of games with rules, by 5 to 6 years of age. Rather than engage in an activity that distorts reality (i.e., pretend play), children are increasingly able to satisfy the drive for mastery and pleasure by using a broader range of more acceptable and appropriate alternatives (e.g., games with rules, handwork, drawing). Children's movement into rule-bound and regulated play reflected

the delicate balance that children had achieved between their own self-needs and their social needs (Nicolopoulou, 1993).

Although Piaget (1962, 1976) tended to emphasize the intra-individual at the expense of inter-individual, he acknowledged that social partners' helped to facilitate the shift into rule-based game play. He believed that the natural decline in solitary play and increase in social play required children to assign pretend identities and functions in a less arbitrary and subjective way. Thus, Piaget (1962) proposed that, to engage and sustain social pretend play, children had to negotiate and agree with object transformations, role assignments, and play events. If these pretend assignments were too idiosyncratic, play became riddled with conflict which, in turn, reduced the pleasure involved. The social interaction while negotiating the terms of play served to depress the distortion of reality by causing the "objectivigation of symbols...and rules" (Piaget, 1962; p. 139). Thus, children's subjugation of an internal, subjective reality to an external, more objective reality hastened pretend play forward into a "straightforward copy of reality" (p. 137).

To conclude briefly, children progress through a series of play stages due to their continual combination and coordination of mental schema into increasingly differentiated and flexible frameworks. These differentiated models, in turn, facilitate "progressive abstraction and generalization" (Piaget, 1976; p. 561). That is, as children extend their actions for "the mere pleasure of using an activity as completely as possible" (Piaget, 1976, p. 556), they gradually separate out "what is" (real identity/function of the object) from "what may be" (i.e., assigned identity; Piaget, 1962). This reflects underlying development in children's representational thought.

Empirical Evidence

Although all the play stages of Piaget's theory have been presented above, the study herein is primarily concerned with the development of children's pretend play. Therefore, only those empirical findings related to children's pretence will be presented. Again, similar to narrative development, researchers finding age effects in children's pretend play do not always explicate these effects in terms of underlying changes in cognitive processing and differentiation as Piaget proposed. Nevertheless, these studies' findings suggest that children's pretend play become increasingly flexible and adaptive and they are able to engage in more elaborate and extended pretend play with age as Piaget proposed.

There is strong empirical evidence supporting an age-related progression in children's pretend play development. For example, many studies have documented preschool children's decreasing reliance on prototypical objects and physically salient information in favor of idea generated play (i.e., decontextualization; Cole & LaVoie, 1985; Field, DeStefano, & Koewler, 1982; Forbes & Yablick, 1984; Lyytinen, 1990; Roskos, 1990; Sachs, Goldman, & Chaille, 1985). As well, children's increasing ability to differentiate between reality and pretend (Fisher DiLalla & Watson, 1988; Golomb & Galasso, 1995; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Kane & Furth, 1993; Wolf & Pusch, 1985), progressive tendency toward socially coordinated and complex play sequences (Bailey, McWilliam, Ware, & Burchinal, 1993; Field, DeStefano, & Koewler, 1982; Goncu, 1993a, 1993b; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Lyytinen, 1990), and gradual shift from self- to other-referenced and passive- to active-other play (Corrigan, 1987; Goncu, 1993b; Goncu & Kessel, 1988; Lyytinen, 1990; Pellegrini, 1985a) appears to lend support to Piaget's (1962, 1976) hypothetical constructs of decentration and sequential combinations. As well, studies tracing preschoolers'

emerging ability to take a meta-stance to their pretend play by moving from direct voicing (i.e., enacting a role) to indirect voicing (i.e., narrating from outside the play frame) appears to provide additional support for the aforementioned pretend play processes (Sawyer, 1996; Wolf & Pusch, 1985). To summarize, empirical findings support Piaget's (1962, 1976) theoretical view that pretend play progresses from a self-directed, undifferentiated, object-oriented activity to other-directed, idea-driven, and coordinated play sequences.

Recently, the Piagetian perspective on the development of pretend play has come under some scrutiny from the scientific community. Piaget's (1962, 1976) theory did not appear to adequately account for exceptions in preschoolers' pretend play developmental trajectories and outcomes (Nicolopoulou, 1993). For example, similar to children's narrative development, several studies documented gender differences in the pretend play of preschoolers. Research has found that boys, in comparison to girls, rely more heavily upon concrete objects in their play regardless of their age (Cole & LaVoie, 1985; Field, DeStefano, & Koewler, 1982; Matthews, 1977; Peisach & Hardeman, 1984). Other studies found girls' pretend play to be more socially interactive in comparison to boys (Field et. al., 1982; Peisach & Hardeman, 1984; Saracho, 1996). Sawyer (1996) found that, although children's use of indirect voicing (i.e., outside the play frame) increased during the preschool years, boys tended to use this type of voicing more frequently than girls. Piaget's cognitive-developmental play theory could not adequately explicate these gender-based differences.

Nor does it address complex interrelationships that appear to exist in children's pretend play. Research has found that (1) play partner preference and familiarity (Matthews, 1977, 1978), (2) socioeconomic, cultural, and family background (Udwin & Shmukler, 1981), (3) social status and competence (Black, 1992; Doyle & Connolly,

Mud Sand Water	Blocks	"Featureless" Dolls, Vehicles, etc.	Detailed Toys	Instructional Materials
Unstructured				Structured

Several studies have examined how degree of internal toy structure affects children's pretend play. In general, the empirical findings suggest that highly structured toys are linked to more interactive forms of pretend play (i.e., social play; McLoyd, Warren, & Thomas, 1984; Pellegrini, 1983; Pellegrini, 1985a; Pellegrini & Perlmutter, 1989; Wanska, Bedrosian, & Pohlman, 1986). As well, detailed toys may be associated with more imaginative and explicit forms of language use (Pellegrini, 1982, 1983, 1986; Wanska et al., 1986) and longer pretend play sequences (Robinson & Jackson, 1987). Low structured toys, however, seem more closely related to higher frequencies of object transformations (McLoyd, 1983; Pellegrini, 1987) and a greater variety of pretend play

themes, roles, and topics (Burroughs & Murray, 1992; McGhee, Ethridge, & Benz, 1984; McLoyd, et. al., 1984; Pellegrini & Perlmutter, 1989).

Despite empirical support for a more general play/toy structure relationship, other studies suggest that this linkage may be mediated by more specific variables. Several studies found that using familiar toys, having toys thematically grouped together, or including toys representing common experiences resulted in sustained, elaborated, and connected pretend sequences in older preschoolers (French, Lucariello, Seidman, & Nelson, 1985; Neuman & Roskos, 1991, 1992; Petrakos & Howes, 1996; Sachs, Goldman, & Chaille, 1985; Seidman, 1983).

Complicating matters further, age seems to play a role in the toy-structure/pretend play relationship but not necessarily in the direction that Piaget (1962, 1976) predicted. Recall that Piaget proposed that children progress from object-dependent to idea-driven play during the preschool years. Despite research that has found decreased reliance on physically salient information in favor of idea-generated play in older preschoolers (Cole & LaVoie, 1985; Field, DeStefano & Koewler, 1982; Forbes & Yablick, 1984) and a stronger positive effect of highly structured toys on younger preschoolers' play in comparison to older preschoolers' (McGhee, Ethridge, & Benz, 1984; Olszewski & Fuson, 1982; Robinson & Jackson, 1987; Pellegrini, 1986, 1987), a more recent study suggested that the age/toy structure relationship may not be as direct as originally proposed. Consistent with Piaget, Bergman (1997) discovered that 4-year-olds engaged in more structurally complex, narrative-like pretend play sequences in the high-structured toy condition (i.e., medical kit and props). However, contrary to Piaget, the 6-year-olds engaged in less structurally complex play in the low-structured toy condition (i.e., wooden, geometric blocks). If older children have transcended the boundaries of a referent object's physical attributes or properties as

Piaget's theory predicts, then the absence of internal structuring should have little impact on their performance. This was clearly not the case. The lack of structure appeared to detrimentally impact the older children's pretend play. To explicate these discrepant results, Bergman suggested that the older preschoolers may require a certain level of toy structure to guide their behavior. In other words, the absence of toy structure may have led to some confusion and ambivalence thereby detrimentally impacting their play. There is some empirical support for such an interpretation. For example, Aronson & Golomb (1999) found ambiguity to detrimentally impact children's pretend. As well, studies have found that toys with a moderate level of detailing elicit more advanced forms of play in children, regardless of age (Burroughs and Murray, 1992; McLoyd, 1983).

Although this explanation seems plausible, there is an equally viable explanation for Bergman's (1997) discrepant findings. The low-structured toys may not have been representative of the toys older preschoolers' typically play with. Unlike the younger children who may still play with wooden, geometric blocks, older children have progressed to more complex and detailed construction sets (e.g., Lego). It is possible that the older children interpreted the simple, wooden shapes as age-inappropriate and/or uninteresting.

In summary, although research appears to support Piaget's (1962, 1976) theory regarding a general progression toward idea-driven, external-oriented, and integrated pretence with age, some studies have found that extraneous factors may impact children's pretend play. This latter findings appear to suggest that pretend play is a dynamic activity that is continually being shaped and reshaped by the cultural, social, and ecological milieus that the children are embedded within. The following discussion

highlights theory and research related to this more socioculturalist theoretic perspective of children's pretend play development.

Vygotsky's Socioculturalist Theory of Pretend Play

The theoretical shift to a more contextually embedded view of children's pretend play emerged primarily from the work of Vygotsky (1966, 1978). Vygotsky's socioculturalist account of children's pretend play development has had a powerful impact on current research and practice, added substantively to the body of empirical literature, and enriched current knowledge and understanding of the role of pretence in children's functioning and growth. Vygotsky concurred with Piaget (1962, 1976) with regard to children's progression from contextually bound to idea-oriented pretence and its role as a socially acceptable forum for expressing "unrealizable tendencies and immediately unrealizable desires" (Vygotsky, 1966; p. 7). However, Vygotsky disagreed with Piaget's emphasis on pretend play as primarily an intra-individual process that developed in a sequential, predictable fashion. Vygotsky (1966, 1978) and his many supporters (Forbes & Yablick, 1984; Goncu & Kessel, 1988; Kane & Furth, 1993; Nicolopoulou, 1993) believed that pretend play was inherently inter-personal because within such play children (1) depended on socially defined and available play materials, (2) appropriated and integrated social rules, expectations, scripts, and conventions, (3) expressed their social knowledge and understanding, and (4) engaged in social interaction and/or communication with other social beings. Hence, pretend play was inseparable from its social context. It was the social context that defined, shaped, supported, constrained, and lent play its meaning. As a result, Vygotsky (1978) argued that children's development in play, similar to other developmental domains, was a "complex, dialectical process characterized by periodicity, unevenness" as a result of the "intertwining of external and internal factors" (p. 73). Differences between children in

terms of past and present experiences as well as the processes they used to interpret or derive meaning from these experiences led to very different pretend play outcomes.

In addition, unlike Piaget who believed that pretend play was essentially regressive in nature and a deviation from reality, Vygotsky (1966, 1978) contended that pretence was bound to reality and played a leading role in children's development (Kane & Furth, 1993; Nicolopoulou, 1993). How does pretence unfold and how does such play contribute to children's development? Vygotsky (1966, 1978) used rather broad strokes to outline his theory of pretend. In general, Vygotsky (1966) proposed that all knowledge originated in the external world, progressively moving inward from the inter-personal to the intra-personal realm. He contended that pretend play provided an ideal context for facilitating this internalization process. As children subordinated an external reality to the imaginary world of pretend, they learned to act on a conceptual rather than perceptual level. Vygotsky (1978) argued that such play released children from situational constraints and allowed them to move freely within "the field of meaning" (p. 101). This movement within the field of meaning in pretend play prompted children's active and conscious reflection on internal understandings and meanings. Vygotsky believed that this deliberate reflection inevitably led to the "development of will, the ability to make conscious choices" (p. 101) and "complex mediated form of thought and volition" (p. 104). As well, Vygotsky proposed that the ongoing separation of meaning from perception in play paved the way for later representational acts (e.g., reading and writing; Nicolopoulou, 1993). Vygotsky believed that the provision of external supports and cues helped children navigate the shift from perception-bound to meaning-bound thought and action in play. Thus, the following section details how toys and social influences function to support or constrain children's pretend-play development.

The Role of Toys

Vygotsky (1966, 1978) believed that toys serve as the pivot helping children to separate the meaning field (roughly translated from Vygotsky's term smysl' to correspond to the English meaning, sense, and purport) from the perceptual field. Vygotsky proposed that these two fields were fused together for children younger than 3 years of age. Due to this fusion, the perceptual field dominated the meaning field and objects were defined by their physical attributes. As children engage in play, these two fields begin to separate and actions are "determined by ideas and not by the objects themselves" (Vygotsky, 1966; p. 12). Initially, the separation of meaning from the object is very difficult to do; therefore, young children require relatively common toys and familiar contexts to anchor their play transformations. As children combine actions with objects they form representational schemas. As these representational schemas become more firmly established, children apply these schemas in a more deliberate and principled fashion and are able to replace these more realistic toys with less prototypical play objects. This ability reflects increasing separation between the perceptual and meaning realms. With this increased distance, children's play actions are guided more by what they think rather than by what they see. Thus, toys provided children with a conceptual bridge facilitating the shift from reality-bound to meaning- or idea-bound play.

The progression from toy-dependent to idea-oriented play closely parallels Piaget's (1962, 1976) aforementioned theoretical notion of decontextualization. However, contrary to Piaget's contention that pretend play moved from the illusory to the realistic, Vygotsky (1978) suggested that children's play progressed from real-life depictions to the "novel imaginary situation." (p. 103). He proposed that children increasingly suspend reality to move within the field of meaning.

The Role of Social Influences

Vygotsky (1966, 1978) believed that, in addition to toys, human interaction provided a necessary foundation for children's pretend play development. There is mounting evidence supporting Vygotsky's contention that children's play development is inevitably entwined with the broader cultural and social milieu. For example, studies have found that mothers support and extend play activities by modeling, providing suggestions, questioning, and interpreting their children's play actions and behaviors (Fiese, 1990; Garvey, 1982; Haight, Masiello, Dickson, Huckleby, & Black, 1994; Ladd & Hart, 1992; Meistein, Tamis-LeMonda, & Bornstein, 1996). As well, other research has shown how parental involvement in play reflects broader-based cultural values and beliefs regarding that play. Farver and Howes (1993) found that American mother-child dyads tended to engage in mutually cooperative play whereas Mexican mother-child play dyads were characterized by more directive and controlling forms of adult guidance. The authors traced these differing play styles to mothers' underlying beliefs regarding the function and value of play. American mothers viewed pretend play as a vehicle of self-expression with important developmental and educational benefits. Thus, they encouraged and supported their children to take an active, leading role in that play. Mexican mothers viewed play as having little value to their children's overall development. Rather, they used playtime to socialize their young into the more adult-like roles and activities they were expected to perform at a later point in time. This more directive teaching style has been similarly noted in the adult-child play interactions of other non-Western cultures. Indonesian and Korean mothers and teachers used "free" playtime to instruct and socialize their young into cultural values, expectations, and conventions (Farver & Wimbarti, 1995; Farver, Kwan Kim, & Lee, 1995). These preliminary results suggest that various cultures perceive pretend play very differently in

terms of its value and function in children's lives. As a result, parents may assume a more or less directive role in their children's pretend play.

In addition to parents and teachers, siblings and peers appear to impact children's pretend play. Although more research is necessary, preschoolers' pretend play has been found to be more frequent, imaginative, collaborative, and emotionally positive with older siblings than with mothers (Farver & Wimbarti, 1995; Youngblade & Dunn, 1995). These preliminary findings suggest that sibling play may be an important social context facilitating pretend play in children.

Peer pretend play has received considerably more attention than sibling play perhaps due, in part, to researchers' heavier reliance on child-care or nursery school programs to recruit adequate number of research subjects. As well, peers in these larger centers provide researchers with a more easily accessible comparison group. One particularly rich field of inquiry addressing the role of peers explores the impact of children's social understanding and competence on their pretend play. Preschool children's awareness of differing points of view and their ability to coordinate and integrate these differing views to achieve a common goal (i.e., to engage in and sustain the play) appears to be critical to the progression and outcome of their pretend play. Indeed, research has consistently documented a strong link between children's ability to negotiate with their peers and the maintenance of their pretend play (de Lorimier, Doyle, & Tessier, 1995; Doyle, Doehring, Tessier, de Lorimier, & Shapiro, 1992; Goncu, 1987, 1993a, 1993b; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Kane & Furth, 1995). Other studies have found that cooperative, collaborative, and positive peer relations are closely tied to children's engagement in pretend play (Black, 1992; Connolly, Doyle, & Reznick, 1988; de Lorimier, Doyle, & Tessier, 1995; Goncu, 1987).

Although these findings are informative, few studies have addressed if potential developmental differences in social awareness impact children's pretend play. It is reasonable to assume that age-related differences in children's ability to decenter from their own perspective to consider that of another may play a critical role in the manner with which they are able to negotiate and sustain a common play frame with their peer. The ability to establish and maintain play may, in turn, have a substantial impact on the stories that are told within that play. The social perspective taking literature offers many insights regarding how preschool children might process social information and integrate this information with their own to tell their pretend-play stories.

Children's Social Perspective Taking Development

Social perspective taking is subsumed within a broader field of study known as social cognition. The study of social cognition involves examining the processes by which people interpret their own and other's thinking in social situations. Over the past two decades, various aspects of children's social cognition have become the focus of intense theoretical and empirical scrutiny. For example, researchers have examined the development of children's theory of mind, visual/conceptual/social perspective taking, joint attention, turn-taking, communicative competence, problem solving, emotional understanding, pro-social behavior, empathy, and moral reasoning. Due, in part, to its substantial breadth of focus, tendency toward conceptual overlap, and lack of consensus regarding key features and parameters distinguishing the various social cognitive sub-domains, theory and research within the social cognitive field has tended to be somewhat fragmented and incoherent (Eisenberg & Harris, 1984). This conceptual ambiguity is further exacerbated when considering interrelationships that exist between these various social cognitive domains. Although social perspective taking is presented

herein as a somewhat discrete and contained phenomenon, it is important to note that it is inevitably entwined within other domains within the broader rubric of social cognition.

Children's social perspective taking, entailing the ability (or inability) to decenter from one's own perspective and assume an other-oriented position, has garnered a great deal of interest within the developmental literature. Social perspective taking is a complex developmental phenomenon because it requires awareness, coordination, and integration of knowledge from two different realms: mental states and processes that exist within people (intra-personal understanding), as well as an understanding of the social relations that exist between people (inter-personal understanding). It involves not only an awareness of other people's perceptions, thoughts, feelings, beliefs, and desires, but also an ability to coordinate these differing perspectives with one's own.

Theoretical and empirical work has tended to examine these social perspective taking dimensions (i.e., intra-personal and inter-personal understanding) in discrete fashion, with little attention afforded the other perspective or potential interactions between them. Advocates of the intra-personal view have emphasized internal processes at the expense of extraneous influences. Alternately, proponents of the inter-personal view have viewed social perspective taking as primarily a socially and culturally-embedded phenomenon. Although these theoretical perspectives differ in focus, proponents from both theoretical camps agree that social awareness and understanding is complex, multifaceted, and a potent mediator of children's development. The following discussion highlights key distinctions between the two theoretical orientations, orientations that underlie the vast majority of research on children's developing social perspective taking.

Cognitive Developmental Models

Based upon the pioneering and substantive work of Piaget (1928, 1932; Piaget & Inhelder, 1969), researchers initially theorized that children's social perspective taking competence reflected age-related changes in cognitive differentiation and processing. Selman's (1980) social perspective taking stage-like model, a comprehensive and frequently cited developmental model within the social cognitive literature, draws heavily upon this theoretical tradition. A brief review of some key Piagetian concepts helps set the stage for the presentation of Selman's model to follow.

Piaget's Theory of Early Childhood Egocentric Thought

Recall that Piaget (1928, 1932; Piaget & Inhelder, 1969) believed children gradually progress through a series of stable, hierarchically-ordered, age-related stages and sub-stages due to internal changes in how they process and organize cognitive content. As children progress sequentially through these stages, information is manipulated, coordinated, consolidated into increasingly logical, sophisticated, and adaptive understandings of the world. Piaget (1962) proposed that, in preschool children, the complex systems of logical operations allowing them to view the world in a more externally-directed, rational fashion has not yet been constructed. He held that the subordination of accommodative to assimilative thought and immature conceptual schemas of children less than 5 to 6 years of age effectively deterred them from engaging in other-directed thought and action (Forman, 1992; Lee, 1989). That is, he suggested preschoolers' had a natural tendency to engage in self-directed, non-rational thinking. Increasing differentiation of conceptual frameworks and restoration of balance between accommodation and assimilation thought processes precipitated children's movement from egocentric to more sociocentric thinking toward the end of the preschool years.

Although it is clear from the preceding discussion that Piaget (1928, 1932, 1962, 1976; Piaget & Inhelder, 1969) emphasized internal or intra-individual processes as the requisite foundation upon which subsequent learning and growth took place, he did note that certain circumstances may help children master social awareness. He proposed that the interaction that took place between peers provided an optimal context to expose and confront differing points of views (Cannella, 1993; Piaget, 1932). As children freely express and confront perspectives that differ from their own, they begin to realize that their views differ from their peers. Initially, children incorporate this new information into existing mental frameworks (i.e., *assimilate*). However, as children continue to be exposed to peers with perspectives and ways of relating that differ from their own, they are able to extract out general rules structures for guiding subsequent social interactions. For example, one such rule structure might be "I'll listen to you, then you listen to me" (i.e., *turn-taking*). Piaget proposed that the ability to respond to others based upon these more general rules of social conduct reflected the underlying restoration in balance between assimilative and accommodative thought and marked the progression toward external-oriented, adaptive thought.

Although Piaget (1928, 1932) recognized the value of peer contact and interaction in children's developing social knowledge, he did not suggest that such experience circumvented preschoolers' natural propensity to engage in self-directed thinking. In other words, social exposure had little effect on children who have not yet obtained the requisite level of cognitive maturity. A study by LeMarc and Rubin (1987) appears to lend credence to this theoretical contention. These researchers found that although a minimal level of peer experience was necessary for the development of children's perspective taking, beyond this minimal threshold level peer interaction did little to enhance perspective taking ability.

In summary, Piaget (1928, 1932; Piaget & Inhelder, 1969) proposed that social understanding, like other domains of knowledge, unfolded in a sequential manner in children due to general, underlying changes in internal cognition. Selman (1980), drawing heavily upon Piaget's theoretical assumptions, hypothesized an age-related, stage-like progression in children's social perspective taking from undifferentiated, self-directed to differentiated, other-directed thought and action.

Selman's Developmental Stage Model of Social Perspective Taking

Selman (1980) proposed that, as children progress from one age-related, perspective taking level to the next, they actively reorganize existing mental frameworks. This reorganization results in a qualitative change in both thought and action. Following Piagetian tradition, Selman contended that children's progression through these levels was accomplished in a sequential, hierarchical fashion: Lower level understandings provided the necessary foundation for more advanced levels.

Selman (1980) undertook an extensive and comprehensive research project to empirically validate his social perspective taking model. By examining perspective taking across four different interpersonal domains (i.e., individuals, close friendships, peer groups, and parent-child dyads) and analyzing children's verbal responses to 200 story vignettes depicting various interpersonal dilemmas, Selman identified five distinct levels of social perspective taking. These levels, along with age ranges and descriptive criteria, are presented in Table 2.1.

As indicated in Table 2.1, Selman (1980), using data derived from verbal reports to numerous story vignettes, identified five progressive levels in children's social perspective taking development. As children matured, their self-other perspectives became increasingly differentiated thereby allowing them to consider, combine, and

Table 2.1

Summary of Selman's (1980) Social Perspective Taking Developmental Stage Model

Level 0 (3 – 6 years of age): Perceive selves as physically separate entities but not psychologically separate entities. Lack of differentiation results perspective-taking that is global and self-focused.

Level 1 (5 – 9 years of age): Begin to acknowledge that others have mental states (e.g., thoughts, feelings, beliefs, desires) that may differ from their own. Mental states are singular (i.e., one mental state) and unidirectional (i.e., my actions/thoughts affect you or vice versa)

Level 2 (7 – 12 years of age): Able to consider, simultaneously, multiple perspectives; increased awareness of social interconnectedness. Immerse selves in other person's perspective while being cognizant that the other person is able to do the same.

Level 3 (11 years - adulthood): Growing awareness of people possessing stable traits, attitudes, values, and beliefs. Begin to understand that people's past and present circumstances impacts behavior.

Level 4 (12 years – adulthood): In-depth, societal view of social understanding that is not attainable by all people. Realization that human responses are not always the result of rational, reflective, and deliberate thought but may reflect a hidden, subconscious reality.

consolidate multiple sources of self-other information in more complex, flexible, and adaptive ways.

Since his original, groundbreaking work, Selman and his colleagues' have successfully documented parallel trends in children's social perspective taking understanding and children's social behaviors and strategies (Adalbjarnardottir & Selman, 1989; Brion-Meisels & Selman, 1984; Gurucharri & Selman, 1982; Lyman & Selman, 1985; Selman & Demorest, 1984; Yeates, Schultz, & Selman, 1991). These behavioral strategies are summarized below (the descriptive label accompanying each

level represents the level of social awareness and understanding). Examples are provided for illustrative purposes.

(1) Level 0: Egocentric, Undifferentiated: Children engage in forceful, impulsive acts to achieve a self-directed goal; little attention is directed to the consequences of their actions (e.g., grabbing a desired toy away from another child).

(2) Level 1: Differentiated, Unitary: Children acknowledge the other's person's perspective by unilaterally attempting to either appease (submission) or control (one-way orders; e.g., "No. Do it this way").

(3) Level 2: Self Reflective, Reciprocal: Children try to satisfy both their own and their partners' needs through trading, bartering, exchanging, or deal-making.

Example: Child 1: "How about we build a house."

Child 2: "But I'm building a zoo."

Child 1: "Okay, how about you build the zoo and I'll build the house."

Child 2: "Okay."

(4) Level 3: Mutuality, Interconnectedness: Children coordinate and integrate elements from both perspectives leading to a mutually agreed upon "new" entity.

Example: Child 1: "This is a bird in here."

Child 2: "This is where the lion sleeps...under the tree."

Child 1: "Yeh. Let's pretend that this is a zoo, okay?"

Thus, Selman et. al's research findings appear to support a significant link between age-related, self-other understandings and children's usage of specific interpersonal negotiation strategies (Adalbjarnardottir & Selman, 1989; Brion-Meisels & Selman, 1984; Gurucharri & Selman, 1982; Lyman & Selman, 1985; Selman & Demorest, 1984; Yeates, Schultz, & Selman, 1991). These findings provide a

comprehensive and practicable developmental account of the potential interrelationship between cognitive growth, social understanding, and interpersonal competence. In the following section, I present other empirical findings from the social cognitive literature supporting a general developmental progression in children's ability to differentiate the physical from the mental and the self from the other (Pellegrini, 1985b; Pillow, 1988, 1991, 1995).

Empirical evidence.

Results of several studies from other related areas within the social cognitive field lend further credence to Piaget and Selman's theoretical contention that older children (i.e., preadolescents and adolescents) seem more adept at coordinating and consolidating multiple sources of information and self/other perspectives due to progressive changes in their underlying social understanding (Coie, Dodge, & Kupersmidt, 1990; Keller & Reuss, 1984; Pillow, 1991, 1995). However, the strongest empirical evidence documenting age changes in children's ability to consider other peoples' perspectives comes from the theory-of-mind literature.

Theory of mind entails children's "ability to impute mental states (i.e., beliefs, desires) to themselves and others" (Wimmer & Perner, 1983, p. 104). This mental construct is typically measured using false or wrong belief tasks. These tasks present a hypothetical story to children and then measure their ability to anticipate story characters' awareness of specific story events occurring. For example, the story character is exposed to a certain state of affairs (x). Then, in the character's absence, a change from an original state (x) to a new state of affairs (x to y) occurs. The children are asked to predict what the character might think upon his or her return. The children's responses are hypothesized to reflect the level of socio-cognitive maturity they

have attained and their ability to decenter from their own particular perspective to consider that of another person (or character).

In general, findings from the theory of mind literature suggest that children's self-other awareness and understanding unfolds in a fairly predictable manner, although this differentiation occurs somewhat earlier than the 5 to 6 years of age originally proposed by Piaget (1928, 1932; Piaget & Inhelder, 1969). Three-year-olds have difficulty attributing a false belief to another person whereas 4- and 5-year-olds are able to represent others' internal states of mind and simultaneously link such states to external situations and circumstances (Astington, 1990; Astington & Gopnik, 1991; Flavell, 1986; Flavell, Green, & Flavell, 1995; Hogrefe, Wimmer, & Perner, 1986; Sullivan & Winner, 1991; Wimmer & Hartl, 1991; Wimmer & Perner, 1983). Indeed, a recent review of the empirical literature in this area suggests that social cognitive awareness continues to be a particularly salient developmental issue from 3 to 5 years of age (Flavell, 2000). These findings are pertinent to the study herein. It is possible that older preschoolers are better able to acknowledge and integrate other's play ideas and, in the doing so, build more elaborate play stories. Younger children, on the other hand, may be less able to utilize social information and may rely more upon toy information instead. Hence, potential age differences in social understanding, and its impact on children's storytelling complexity, are explored in the current study.

Despite the robustness of a general, age-related trend in self-other thinking, researchers have questioned whether the tasks employed in such studies might underestimate children's perspective-taking competence. For example, Wellman and Bartsch (1988; Bartsch & Wellman, 1989) proposed that false belief tasks may pit children's belief reasoning (what they know to be true) against their desire reasoning (what they wish to be true). These researchers suggested that when these two belief-

systems conflict, children tend to weigh desire over belief and this tendency obscures the actual level of socio-cognitive knowledge and understanding that they possess. Indeed, they found that 3-year-olds were better able to predict target actors' actions and mental states when such conflict was reduced in the task (Bartsch & Wellman, 1989). Other studies' findings suggest that the link between level of social perspective taking and interpersonal competence may be less direct. That is, researchers have found a stronger association exists between social perspective taking and social status/peer competency for older but not younger (i.e., less than grade 3) children (Dekovik & Gerris, 1994; LeMarc & Rubin, 1987; Pellegrini, 1985b; Johnson, Greenspan, & Brown, 1984). Other studies have discovered that preschool and early elementary school-aged children are more likely to try and understand their peers' perspective and accommodate to that point of view when that peer is a friend rather than an acquaintance (Costin & Jones, 1992; Eisenberg, Guthrie, Fabes, Reiser, Murphy, Holgren, Maszki, & Losoya, 1997). Similarly, studies have found children's social competence lags behind that of their social understanding when interacting with unfamiliar people, particularly when those people were adults (Adalbjarnardottir & Selman, 1989; Yeates, Shultz, & Selman, 1991). These latter findings suggest that children select, filter, and interpret social information and then adjust their social interactions accordingly.

Along with this shift toward examining contextual influences on children's developing self-other knowledge, scholars began to question the ecological validity of many of the original studies exploring and validating the presence of a general, age-related link. That is, many of the studies examining children's self-other awareness employed research methodologies that were static and controlled, and measured children's verbal responses to hypothetical social situations removed from any genuine social interaction (Boyes, Giordano, & Pool, 1997; Pellegrini, 1985b; Pillow, 1995;

Slomkowski & Dunn, 1996). This type of design is especially problematic for younger children who rely heavily upon social and situational cues within their immediate environment to interpret their experiences and determine a course of action (Lee, 1989; Verba, 1994). Abstract, hypothetical social perspective taking tasks removed from their natural social and situational contexts result in these youngsters having to engage in "confusing mental bookkeeping" (Boyes, Giordano, & Pool, 1997; p. 193) and may lead to a decrease in performance. Several researchers argue that, regardless of age, children's verbal responses to hypothetical situations do not necessarily translate into actual behavior in real-life situations (Miller & Aloise, 1989; Stein & Albro, 1996).

Hence, a vast majority of the early studies on children's developing social knowledge have tended to view it as an individual property (Laosa, 1989), used procedures that do not tap the active application of such knowledge (Pellegrini, 1985b), relied upon tasks stripped of their social elements (Boyes, Giordano, & Pool, 1997; Lee, 1989), and employed methods ill-suited to younger children (Lee, 1989; Verba, 1994). These scholars suggest that younger children's social perspective taking competence is likely to be better reflected in ongoing, naturally occurring, social situations. This argument, arising from the theoretical and empirical literature based upon the sociocultural, transactional view of children's development, is presented in the following section.

Transactional Theoretical Models

Recall that Piaget (1928, 1932; Piaget & Inhelder, 1969) and others (Astington, 1990; Astington & Gopnik, 1991; Flavell, 1986; Selman, 1980; Sullivan & Winner, 1991) viewed internal cognitive maturation and differentiation as a necessary requisite to more advanced forms of social understanding and competence. This perspective enjoyed unparalleled status within the social cognitive literature for several years before being

called into question by the influential writings of Vygotsky (1978) who proposed a radically different view.

Vygotsky (1978) questioned the primary role assigned internal, maturational changes in children's development. Vygotsky proposed that new knowledge emerged in the process of collaboration and negotiation between the child and his or her more capable social partner within the zone of proximal development. Within this zone, participants engage in a subtle game of give-and-take, continually negotiating and integrating their partners' perspectives, needs, and goals with their own, to establish a shared and mutually acceptable frame of reference. This process, which is more commonly referred to as inter-subjectivity (Wertsch, 1985), is fairly straightforward in social contexts where there is a wide gap in knowledge. That is, experts provide more explicit support and guidance in the early stages of learning and then assume a peripheral role as novices master specific tasks and understandings (Bruner, 1986a; Garvey, 1982; Melstein, Tamis-LeMonda, & Bornstein, 1996; Pellegrini & Galda, 1990; Wertsch, 1985). By engaging in the process of intersubjectivity with expert others, children learn very early on how to acknowledge and incorporate self-other perspectives to achieve mutually acceptable goals and understandings. This knowledge serves as a framework for subsequent social interactions. Thus, Vygotsky proposed that children did not lack social awareness as a result of age-related "perceptual egocentricity" (Lee, 1989, p. 77). Rather, he believed that, as a result of ongoing, reciprocal interaction with the social world, children learn to acknowledge others' perspectives and integrate those perspectives with their own to establish a mutual frame of reference.

The following section highlights research findings with regard to the role of social others (i.e., parents, siblings, and peers) in children's social cognitive development. As

well, research documenting the special role of children's pretend play as an expressive context for facilitating self-other awareness and competence is presented.

Social Influences on Social Understanding

Several studies document a strong link between the quality of social interaction within the home and children's developing social understanding. Two longitudinal studies found that parents who openly discussed internal thoughts and feelings with their preschoolers had children that performed better on perspective-taking tasks (Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991). Similarly, Smiley and Greene (1995) documented how the quality of the parent-child interaction affected young children's self-other differentiation. Their longitudinal study, tracing children from 12 to 30 months of age, found that mothers who responded in a supportive, openly affectionate manner toward their children had children with higher levels of internal state awareness and differentiation at a later point in time. Other studies have found that contingent, collaborative, and synchronous responses by parents, coupled with moderate levels of parental support and coaching, is positively associated with children's social awareness and interpersonal competence (Black & Logan, 1995; Crockenberg, Jackson, & Langrock, 1996; Eisenberg, Fabes, & Murphy, 1996; Mize & Pettit, 1997). These studies' authors concluded that, in mutually reciprocal and collaborative contexts, children learn to the art of compromise by balancing their own goals and needs against those of their parents.

In contrast, coercive or permissive parenting styles have been negatively associated with children's social understanding and interpersonal competence (Crockenberg & Lourie, 1996; Crockenberg, Jackson, & Langrock, 1996; Eisenberg, Fabes, & Murphy, 1996; MacKinnon-Lewis, Volling, Lamb, Dechman, Rabiner, & Curtner, 1994). As well, research has found that parents that engage in negative

interactions with their children tend to have children who transfer these same relational dynamics to their peer interactions (Carson & Parke, 1996; Rudolf, Hammen, and Burge, 1995).

Despite evidence supporting the critical role of parents in children's developing social awareness and competence, other social contexts have been found to affect children's awareness of and sensitivity to others. Although not examined as extensively as child-parent interaction, sibling and peer relationships are increasingly coming under empirical scrutiny within the social perspective taking literature. For example, cooperative, responsive, and mutually reciprocal peer interactions while playing has been closely linked to young children's social perspective taking awareness (Cannella, 1993; Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991; Youngblade & Dunn, 1995; Verba, 1994). Interestingly, friendship status has been proposed to play a mediating role. Some studies have found that children show more willingness to cooperate and compromise with friends rather than acquaintances (Fonzi, Schneider, Tani, & Tomada, 1997; Farver & Branstetter, 1994; Fraysse, 1994; Goldstein, Field, & Healy, 1989; Werebe & Baudonniere, 1991). As well, the use of cooperative and reciprocal behaviors among friends has been closely linked to their social perspective taking (Ratner & Stettner, 1991; Kemple, Speranza, & Hazen, 1992; Hubbard & Coie, 1994; Anderson, Clark, & Mullin, 1994; Slomkowski & Dunn, 1996). In general, the above findings suggest that preschoolers' ability to negotiate and compromise with siblings and peers to establish a common frame of reference is inevitably tied to their ability to acknowledge and integrate the self-other perspectives (i.e., social perspective taking; Cannella, 1993; Verba, 1994). These findings have important implications for the study herein. That is, peers that are more adept at acknowledging and coordinating each others' perspectives in a mutually agreeable and reciprocal fashion may be better

able to establish and sustain a mutual story line in their play, which, in turn, may lead to more advanced forms of storytelling. This relationship is explored within the current study.

Although there is growing evidence that mutually reciprocal and supportive peer interactions may be related to enhanced social perspective taking in children, the strongest empirical support regarding this critical dimension is based within the developmental literature on children's social pretend play. This discussion now turns to this very important situational context to highlight how social factors merge with specific ecological influences (i.e., social pretend play) to shape and constrain social perspective taking competence in children.

Pretend Play's Influence on Social Understanding

As mentioned, children's social cognitive development has traditionally been examined using more controlled, task-oriented research designs. Arguing that children are more likely to display social cognitive awareness and understanding when engaged in comfortable and familiar activities, researchers have begun to explore children's social understanding within naturally occurring social situations (Boyes, Girodano, & Pool, 1997; Garvey, 1993; Verba, 1993). The previous discussion highlighted how adults shaped children's understanding of themselves and others. Although still in its infancy, researchers have begun to explore how children themselves maintain the delicate balance between their own needs and that of a sibling or peer. The empirical literature examining children's peer interaction within pretend play is beginning to provide some valuable insight regarding this process and the variables that may support or constrain it.

Children's pretend play is one context that appears to be attracting increasing interest because researchers have noticed that such play appears to be strongly associated with and precursor to enhanced social awareness (Garvey, 1993; Shugar &

Kmita, 1990; Slomkowski & Dunn, 1996; Verba, 1993; Youngblade & Dunn, 1995).

What is it about this special context that appears to elicit social perspective taking ability in children?

Pretend play involves transforming realistic objects, situations, and people into symbolic or representational objects or situations. Transformations entail the attribution of qualities, traits, or functions to referents (e.g., objects, situations, and people) that they do not actually possess in reality. Due to the non-literal nature of such play, children are unable to rely upon concrete information contained within their play environment to convey their meaning. Children must clearly and unambiguously communicate their thoughts and desires regarding the role and function of these various objects to their play partners and then negotiate a consensus regarding the content and direction of the play. While engaged in this "constant exercise of reciprocity of perspectives" (Garvey, 1993, p. 236) children learn how to decipher others' actions and comments (Youngblade & Dunn, 1995). As well, they realize that they share common knowledge, feelings, and experiences with others (Howes & Norris, 1993). The dynamic and continuous interchange of ideas and information within social pretend play in the interests of establishing a shared understanding and common goal forces children to employ a broad range of collaborative and cooperative frameworks (Verba, 1993, 1994). For these reasons, pretend play appears to be of central importance to children's social understanding and growth (Goncu, 1993a, 1993b).

Generally, the empirical literature tends to support a pretend play-social cognitive link in young children. Connolly, Doyle, and Reznick (1988) found engagement in pretence to be associated with positive, social, and reciprocal forms of communication. Alternately, Doyle, Doehring, Tessier, deLorimier, & Shapiro (1992) discovered that children that pretended less frequently seemed less able to collaborate and negotiate

with their peers. The authors suggested that pretend play provided a valuable context for exercising and developing social competence in children. Supporting this claim, Howes & Matheson (1992) found children's pretend play to be significantly related to their social competence with peers, with more complex, elaborated forms of pretence strongly associated with higher levels of social competence. Longitudinal studies suggest children's engagement in and ability to coordinate pretend play predicts later performance on social perspective-taking tasks (Slomkowski & Dunn, 1996; Youngblade & Dunn, 1995).

Another longitudinal study found preschoolers' ability to keep their play partner's attention by responding in a relevant, connected fashion, accepting ideas, and using turn-about (i.e., comments that prompt a response from the play partner) was related to later social acceptance by peers (Kemple, Speranza, & Hazen, 1992). Other researchers have noted that awareness of the social rules and conventions governing play participation and strict adherence to such rules affects children's ability to initiate and sustain peer play. These rules include: (a) introducing new ideas in a non-disruptive fashion, (b) directing ideas to the group interests, (c) sharing personal thoughts, feelings, experiences, and the floor, and (d) using explicit language (i.e., metacommunication) to clarify play topics, directions, and roles (Garvey, 1993; Goncu, 1987, 1993a, 1993b; Goncu & Kessel, 1984; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Howes & Norris, 1993; Kane & Furth, 1993).

Thus, the need to examine children's social understanding as a socially-situated, contextually-embedded and interconnected phenomenon is based upon the theoretical view that knowledge has its beginnings in the social activities in which children are a part. In other words, social awareness and understanding arises through immersing children in social contexts that make explicit, through ongoing negotiation and

collaboration, those roles, rules, routines, and behaviors valued within a particular social group. Empirical studies examining the effect of social agents, particularly that of peer interaction within pretend play, appear to highlight the critical impact of social cues and knowledge in regulating social relations and provides some valuable insight on how children process and integrate self-other thoughts and needs. Although pretend play allows children to explore, express, and interpret their experiences in a more personally relevant and meaningful way, it is also inevitably tied to social knowledge, customs, values, and conventions that frame, define, and shape its meaning.

Summary

This review highlighted key concepts and issues currently under investigation within the scientific literature in children's narrative, pretend play, and social perspective taking development. Children's development in these three areas is no longer conceived as solely a maturational, sequential process. Rather, it is increasingly viewed as a dynamic process embedded within a network of mutually reciprocal social and situational contexts (Vygotsky, 1978; Nicolopoulou, 1997a). As such, researchers have begun to explore both the processes (i.e., how children negotiate meaning and establish a common frame of reference) as well as the products of children's meaning-making activities.

This document attempted to highlight, using theoretical and empirical sources, the myriad of developmental, cultural, social, and situational influences impacting children's development. It is the view of this writer that narrative understanding begins at the micro-level of the individual child. Initially, the requisite supportive scaffolding must exist within the child at the most basic of all levels, that of cognitive maturation and differentiation. Increasingly sophisticated models of narrative understanding, combined with growth in working memory capacity, allow children to manipulate and coordinate

greater amounts of information from both internal and external sources to help build their stories (Case, 1992a, 1992b; McKeough, 1992a). To some degree, it may be possible to circumvent limits in cognitive capacity by providing explicit, situation-specific cues. In other words, children may use concrete social (e.g., peers) and physical cues (e.g., toys) within their immediate environment to determine how best to proceed and then regulate their storytelling accordingly. Beyond the immediate physical and social context, the impact of external cues from distal social and cultural systems becomes increasingly indirect and global. Although less explicit and specific, the impact of these more distal social and cultural influences on children's narrative development remains powerful. Indeed, broad-based cultural and societal values, expectations, and practices provide the general blueprint for story. They define and delineate the preferred narrative form and systematically expose their newest members to these forms. Hence, culturally derived and socially transmitted information is consolidated into a general, mental model of story. Exposure to multiple sources of information and opportunities to manipulate story form and use results in increasingly differentiated, elaborated, and flexible narrative frameworks.

Thus, narrative development is the result of multiply embedded levels of both internal and external supports and constraints. To date, rather than attempting to trace this multiplicity of influences and paths, research in this area has tended to be conducted in a fairly discrete and parsimonious manner. However, a growing awareness of storytelling as embedded within multiple layers of influence has sparked an appreciation of narrative diversity and prompted many researchers to explore potential sources behind this narrative diversity. They have begun to focus their attention on past and present situations and circumstances that shape and constrain storytelling knowledge and use.

One narrative context that appears to be attracting some attention, particularly with regard to examining preschoolers' narrative understanding, is children's pretend play. Pretend play promises to be a fruitful area of scientific exploration because it appears to share structural parallels (e.g., time, place, character, problem, resolution) with more literate (i.e., formal) forms of storytelling (Bergman, 1997; Eckler & Weininger, 1989; Lyytinen, 1990; Nicolopoulou, 1993; Pellegrini & Galda, 1993). Children's engagement in pretend play has been systematically linked to enhanced narrative performance (Hewitt & Duchan, 1995; Nicolopoulou, 1997a; Pellegrini & Galda, 1982, 1990, 1993) and other literacy-related activities (Christie, 1991; Galda, Pellegrini, & Cox, 1981). Such play requires the active separation of "what is" from "what if" thereby highlighting the distinction between the concrete, physical world of actions and objects and the more covert world of mental ideas and meanings (Vygotsky, 1966). It is this same type of separation that Bruner (1986a) discussed in his dual landscapes of narrative, landscapes that are increasingly reflected in older preschoolers' progression from action-bound to mentally-driven storytelling. In addition, as children move in and out of the play frame and they employ various inter-textual voices (i.e., stage management, dialogue, and narrator) to tell their stories (Hicks & Wolf, 1988; Scarlett & Wolf, 1979; Wolf & Hicks, 1989) they become increasingly aware of language form and use. Using language to clearly convey one's underlying meanings and intentions has traditionally been conceived as one a core element of literacy (Olson, 1983). Thus, pretend play appears to share close structural parallels with and empirical links to storytelling and other literacy-based activities thereby making it an ideal context for exploring narrative's early emergence and use in young children.

Examining narrative form and use within naturalistic context of pretend play requires a thorough understanding of various extraneous forces that may support or

constrain that play. Children do not play in a vacuum. Research has found that exposure to different toy cues and peer information has a very real impact on the direction and content of children's play. Some research suggests that degree of toy structure may impact children's pretend play, although the strength of this association may lessen with age (Cole & LaVoie, 1985; Field, DeStefano, & Koewler, 1992; Forbes & Yablick, 1984). Other research suggests that children's ability to acknowledge, negotiate, compromise, and integrate self-other perspectives into a mutually acceptable frame of reference may be critical to establishing and maintaining pretend play (Connolly, Doyle, & Reznick, 1988; Doyle, Doebling, Tessier, deLorimier, & Shapiro, 1992; Goncu, 1993a, 1993b; Howes & Matheson, 1992). Although Selman's (1980) extensive theoretical and empirical work documents a sequential, age-related progression in children's ability to separate and integrate self-other perspectives, other researchers contend that children's social awareness may emerge at an earlier age than originally thought (Boyes, Giordano, & Pool, 1997; Miller & Aloise, 1989; Slomkowski & Dunn, 1996). These authors conclude that children's social cognitive competence is best captured by observing real-life social transactions in naturally occurring situations. Pretend play provides such a situation.

Research Questions and Hypotheses

The study proposed herein sets out to explore how physical objects (i.e., degree of toy detailing) and social interaction (i.e., interpersonal negotiation strategies) impacts 3- and 5-year-olds' storytelling while engaged in spontaneous pretend play with a same-aged peer. This study attempts to explore and delineate, in greater depth, the interplay between external (i.e., toys, peer) and internal (e.g., age) supports and constraints. Thus, this study attempts to address the following research questions and hypotheses:

- (1) *Is there a developmental progression in the storytelling structure of 3- and 5-year-olds' pretend play narratives?*

Children's narrative competence progresses from event-based, descriptive sequences to intention-based, plotted stories by 5 to 6 years of age (McKeough, 1986, 1992a; Shapiro & Hudson, 1991). Therefore, it is hypothesized that:

- (a) The 5-year-olds will produce more structurally advanced stories than the 3-year-olds.

- (2) *Is there a developmental progression in inter-textual voice use in 3- and 5-year-olds' pretend play narratives?*

During the preschool years, there is a change from a preference for voicing from within a role to voicing from outside a role (i.e., progression from speaking as a character [i.e., dialogue voice] to speaking as a director [i.e., stage management voice] or as a third person spectator [i.e., narrator voice]; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Sawyer, 1996). Other research has found that older preschoolers are more adept at moving in and out of a character role (Kane & Furth, 1995) and use more language to encode their play story meanings and intentions whereas younger children tend to rely more upon paralinguistic cues and action (Goncu & Kessel, 1985; Lyytinen; 1990; Shapiro & Hudson, 1991; Snitzer Reilly, 1992). Therefore, it is hypothesized that:

- (a) The 5-year-olds will more frequently employ out-of-frame story voices (i.e., narrator voice, stage management voice) to help clarify, explicate, and describe story events than the 3-year-olds.

- (3) *Does the degree of inherent toy structure impact story complexity and inter-textual voice use?*

Research has found that children produce more structurally complex narratives while playing with highly structured toys that reflect familiar, real-life situations and

events (Bergman, 1997; French, Lucariello, Seidman, & Nelson, 1985; Sachs, Goldman, & Chaille, 1985). However, research has also found that older children are less reliant on physically salient cues to engage in and sustain their pretend play (Fein, 1981; Piaget, 1962; Vygotsky, 1966). Therefore, it is predicted that:

- (a) The 5-year-olds' story plots will be less affected by degree of inherent toy structure than the 3-year-olds'.
- (b) The 5-year-olds' inter-textual voice use will be less affected by degree of toy structure than the 3-year-olds'.

From the preceding literature review, it is clear that children's ability to generate stories and separate self- from other- is tied, in part, to general, age-related trends in cognitive processing and differentiation (Case, 1992a, McKeough, 1986, 1992a; Piaget, 1962; Pillow, 1991, 1995; Selman, 1980; Sullivan & Winner, 1991; Vygotsky, 1966, 1978). However, the nature and extent of potential interrelationships between children's narrative understanding and social perspective taking knowledge within pretend play remains far from clear. As well, relatively little is known about how toys interact with cognitive maturation to impact children's competence in these conceptual domains. Hence, the following questions are posed to explore potential links between children's age, degree of inherent toy structure, narrative competence, and social perspective taking performance:

- (4) *Are there age differences in ability to attend to and integrate play partner's comments and ideas?*
- (5) *Is the ability to attend to and integrate partner's ideas affected by the degree of inherent toy structure?*
- (6) *Do age and toy structure interact to affect the ability to attend to and integrate partners' ideas?*

- (7) *Does ability to attend to and integrate play partners' ideas and comments impact story structure complexity?*

Chapter 3

METHODOLOGY

The present study reflects current theoretical and empirical trends toward examining children's narrative competence as a multifaceted, dynamic phenomenon. That is, children's narrative understanding and use is thought to reflect the commingling of both internal (i.e., age/maturation, cognitive processing and capacity) and external (i.e., environmental, social) factors. Hence, this study set out to explore and delineate the effects of environmental and social cues on structural aspects of 3- and 5-year-olds' spontaneous pretend-play storytelling. More specifically, variation in age and degree of internal toy structure was hypothesized to impact children's story plot complexity, inter-textual voice use, and social perspective taking competence. I anticipated that the 5-year-olds' plot structures and inter-textual voice use would be less affected by the presence or absence of toy structure within their play environment in comparison to the three-year-olds. Children's level of social perspective taking competence within the context of pretend play has not been the focus of previous empirical studies; therefore, specific hypotheses with regard to this variable were not generated. Rather, general research questions addressed if age or toy structure differences existed with regard to children's ability to attend to and integrate partner's story ideas into the ongoing play frame. As well, this study explored whether differences in social perspective taking competence impacted children's plot structure complexity.

Overview of Research Methodology

Twenty-eight 3- and thirty 5-year-old children participated in this study. All the children were assigned a same-aged play partner. Each play dyad was videotaped two times in each of the two toy (high- and low-structured) conditions. Toy condition and play dyad observation order was randomly assigned to reduce potential practice or treatment order effects. Videotaped segments of the children's dyadic play narratives,

as well as accompanying play actions and non-verbal cues, were subsequently transcribed and scored using (1) plot level, (2) inter-textual voice, and (3) social perspective taking level scoring criteria. Raw scored data was then subjected to detailed quantitative and descriptive content analyses. The next section describes the participants, research sites and play setting, toy materials, and research and recording materials. Following that, details regarding the current study's research design and procedure are presented.

Method

Participants

Twenty-eight children from 3 years 0 months to 3 years 9 months ($M = 3$ years 6 months) and 30 children from 4 years 11months to 5 years 9 months ($M = 5$ years 3 months) were screened from a larger pool of thirty-one recruits for each age group. There were equal number of males and females ($n = 14$) for the 3-year-olds. The 5-year-olds had 16 females and 14 males. Within each age group there was also a pair of female twins. All the children attended daycare full-time (i.e., 35 hours per week) and were fluent in the English language.

All the children were screened with average to above average verbal abilities for their age ($M=10$, $SD=3$; WPPSI - Vocabulary sub-test; Wechsler, 1967). For the 3-year-olds, verbal scaled scores ranged anywhere from 8 to 18 with the group average falling within one standard deviation of the mean ($M=12.64$). For the 5-year-olds, scores ranged from 9 to 18 with the average falling just beyond one standard deviation above the mean ($M=13.53$). In addition to verbal scores, working memory word span tests measuring children's recall of a sequence of common animal names (Blake, Austin, Cannon, Lisus, & Vaughan, 1995) indicated that the 5-year-olds had, on average, almost one more working memory unit available to them than the 3-year-olds (5-year-olds: $M=3.88$; 3-year-olds: $M=2.92$). The older children were able to remember

three to five animal names in sequence whereas the younger children were able to recall two to four names.

Seventy-seven percent of the children's parents came from Euro-Canadian ethnic backgrounds. As well, a vast majority of the children's parents (88%) had attained at least one year of post-secondary education. Of that educational majority, 42% of the parents had completed a graduate level training program. Parent occupation titles, as measured by the 1981 Socioeconomic Index for Occupations in Canada (Blishen, Carroll, & Moore, 1987), indicated that all the children's parents fell within the middle to upper socioeconomic status range with a majority of parents' (66%) placing within the middle-upper to upper income ranges.

Research Sites and Play Settings

The study took place in a separate playroom at the children's daycare. The children attended one of three child-care facilities located in a large urban center in Western Canada. All the centers were situated in middle- to upper-middle class neighborhoods. One child-care facility was located on the University campus and the other two were located within the close geographic proximity to the University. All the facilities advocated a play-based, child-centered, and flexible approach to child-care. That is, these centers (1) included several periods of free play time during the day, (2) attempted to accommodate the children's individual needs, and (3) allowed some leeway in terms of the children's daily schedules or routines (i.e., participation in more structured activities were considered optional).

The location, size, and general use of the experimental playroom varied across the centers. Few child-care centers have the luxury of "free", unused, and readily accessible space to conduct research studies. At one center, the experimental playroom was adjacent to the office area and separate from the general child-care area. It was approximately 16' x 24' in size and was in the process of being converted into a

reading resource library. A kindergarten classroom served as the experimental playroom for another center. The size of the room, which led directly into the 5-year-old's regular playroom via a door, necessitated the use of masking tape to mark out a designated play area. Although the door adjoining the two rooms reduced any noise coming from the regular playroom, the children had to pass the classroom on their way to use the washroom. This sometimes resulted in unannounced visits. The experimental playroom in the last center was a staff coffee-room. Although its dimensions were similar to the playroom in Center 1, the amount of floor play space was reduced by large pieces of furniture. As well, it was located within the 3-year-old playroom that led to problems controlling background noise levels. Objects within the room that could distract the children from their play were shut off (e.g., telephone), closed (e.g., blinds), covered (e.g., books), moved (e.g., chairs), or removed (e.g., other toys).

Materials

Toy Materials

Toys were selected from the high- and low-structured ends of Johnson, Christie, and Yawkey's (1987) Continuum of Toy Structure (see Figure 2.2). The high-structured toys used in this study included a Fisher-Price Water Magic Kitchen, assorted play dishes, pots, baking dishes, utensils, food items (baked goods, meat items, dairy products, canned goods, drinks, condiments), an electronic, cellular play phone, a battery-run play toaster and frying pan, a dish towel, oven mitt, cooking apron, and plastic flowers. Alternately, the low-structured toys included basic Duplo and Lego construction sets. These basic sets had interlocking, primary colored pieces of various symmetrical and asymmetrical shapes ranging from ¼ inch to 6 inches in size.

Recording Materials

In addition to toy materials, a video camera (Hitachi VHS CCDII, Model No. VM-3270A), mounted on a tripod, was used to record the children's speech utterances, play actions, and non-verbal cues (e.g., eye gaze, speech intonation, gestures). Video recording was used over audio recording because both verbal and non-verbal cues were necessary for the scoring criteria used herein. Videotaped stories were transcribed verbatim using a videotape cassette recorder (National Video Services, Inc., Model SXR-U) and color monitor (Sony Trinitron, Model PVM-1390).

Research and Testing Materials

Research materials included a Letter of Information (Appendix B), Parental Consent Form (Appendix C), and Parental Information Form (Appendix D).

Parent socioeconomic status was assessed using the 1981 Socioeconomic Status Index for Occupations in Canada (Blishen, Carroll, & Moore, 1987). This index ($M = 42.72$, $SD = 13.28$) locates individuals in Canadian occupational structure and is based on 1981 Census data for the total Canadian labor force. This type of index is a unidimensional indicator and is helpful when access to data is limited to occupational titles (Blishen et. al., 1987).

Testing for verbal competence involved the use of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI, Vocabulary sub-test; Wechsler, 1967). This intelligence scale contains 11 sub-tests for use with children 3 years of age and up. The Vocabulary sub-test contains 22 words with oral responses to each word being scored a 2, 1, or 0 according to specified criteria. Raw scores are summed and assigned a scaled score based upon standardized verbal score norms ($M = 10$, $SD = 3$). The Vocabulary sub-test is a reliable sub-test ($r = .84$) with an average standard error of measurement of 1.21 (Sattler, 1992).

A Working Memory Task adapted from Blake, Austin, Cannon, Lisus, and Vaughan (1994) measured the children's working memory capacity (Appendix E). This individually administered word-span task, which has been found to predict the complexity of preschoolers' spontaneous language (Blake et. al., 1994), required the children to repeat, in exact order, a sequential list of commonly encountered one- and two-syllable animal names. The number of names correctly recalled in at least two of three trials represents the number of working memory units available to the children (i.e., three names = 3 working memory units).

Research Design and Procedure

The study herein employed a multiple-measure, within-subjects experimental design. That is, all children participated two times in each of the two experimental conditions. The reason for such a design was twofold. First, the time and resource intense nature of the narrative analysis being used limited the inclusion of more subjects. Second, using the mean of the two observations (rather than one) in each of the two toy conditions reduced the impact of "variance due to sources often irrelevant to our (experimental) purposes" (Campbell & Stanley, 1963, p. 33; this writer's wording in brackets). That is, the mean produced by averaging across multiple observations tends to be more stable thereby allowing more confident conclusions to be drawn with regard to any potential findings. Thus, the design used herein not only reduced within-group variability thereby lending more power to any statistically significant findings, it was able to achieve this end using fewer participants. The following section outlines the criteria and process involved in selecting and screening potential research sites, subjects, and toy materials.

Research Setting Selection Process

Targeting younger children necessitated approaching a number of child-care facilities. All the centers selected for use in this study verbally reported having

participated in previous research studies. As well, centers advocating and practicing child-centered, play-based programming were chosen as final research sites. To determine this, each center was informally interviewed for its care-giving philosophy and practices. This was followed by a tour of each facility and time spent observing the children and their caregivers engaged in their daily activities. Logistic constraints and the time and resource intensive nature of the narrative analysis being used in the current study necessitated having those centers located within close geographic proximity and within neighborhoods that appeared to provide service to parents within the middle- to upper-middle socioeconomic status bracket. This latter aspect reduced potential confounding by subject differences while still attaining an adequate number of children to lend power to research findings.

Subject Selection and Screening Process

Three- and 5-year-old children were chosen as the preferred age groups for this study. There is a strong theoretical and empirical base for selecting these specific ages to explore children's pretend-play storytelling. First, the literature on children's play and narrative suggests that children experience a major shift in thinking from 3 to 5 years of age as reflected in their increased capacity to mentally represent objects, ideas, and images. That is, the ability to generate, manipulate, and integrate mental ideas and images in the absence of concrete, physical cues appears to be a particularly salient developmental issue during the latter part of the preschool years as noted in studies exploring young children's narrative form (Bergman, 1997; McKeough, 1986, 1992a), social understanding (Astington & Gopnick, 1991; Pillow, 1991; Selman, 1980; LeMarc & Rubin, 1987), and pretend play (Matthews, 1977; Piaget, 1962, 1976; Vygotsky, 1966).

The setting selection was expected to yield a demographically homogeneous group of children. Nevertheless, to better describe the children's demographic

backgrounds, specific information was collected from the children's parents regarding their (1) occupational title, (2) level of education, and (3) cultural background. This information was collected via the Parental Information Form (see Appendix D).

Socioeconomic status level was assessed using parents' occupational titles as determined by the 1981 Socioeconomic Index for Occupations in Canada (Blishen, Carroll, & Moore, 1987). Table 3.1 summarizes the parental demographic information for the final pool of research participants.

In addition to the broader demographic distinctions cited above, information regarding child-care status and the primary language used within the home was collected from parents. It was reasoned that children that were Second Language learners, were new to their child-care program, or attended their program on a less frequent or regular basis may feel less comfortable, secure, and socially connected than their regularly attending, English-speaking counterparts. Thus, only those children who were full-time attendees at their child-care program, had attended their program for a minimum period of one month, and were identified by their care-givers as fluent English speakers were further included as potential research participants.

To further screen the children, individual testing of their verbal ability and working memory capacity occurred. Immediately prior to testing, the children were allowed to play with some toy miniatures to increase their comfort level and set them at ease. After testing, the children were allowed to choose a sticker as a small token for their effort.

Pretence is dependent on children's ability to verbally express and convey their pretend play plans, roles, and transformations (Garvey, 1982). To ensure the children had achieved an adequate level of linguistic competence for their age, their expressive verbal ability was assessed using the vocabulary sub-test of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI; Wechsler, 1967), a standardized, norm-

Table 3.1

Summary of Parental Demographic Information by Age and Child Care Center

	<u>Center 1</u>		<u>Center 2</u>		<u>Center 3</u>	
<i>Age Group</i>	3	5	3	5	3	5
<u>Ethnic Heritage</u> (N)	(14)	(13)	(11)	(15)	(26)	(27)
<i>European Canadian</i>	11	11	7	15	20	18
<i>Asian Canadian</i>	2	-	2	-	-	4
<i>African Canadian</i>	-	-	-	-	-	2
<i>First Nations</i>	-	-	-	-	-	-
<i>Mixed</i>	-	-	2	-	5	1
<i>Other/Unknown</i>	1	2	-	-	1	2
<u>Highest Educational Achievement</u>						
<i>High school</i>	1	1	4	-	2	-
<i>1 year post secondary</i>	1	2	2	-	-	-
<i>2-4 years post secondary</i>	9	5	4	8	10	14
<i>Graduate studies</i>	3	3	1	6	14	11
<i>Other/Unknown</i>	-	2	-	1	-	2
<u>Socioeconomic Status</u> (N) ^a	(8)	(8)	(6)	(8)	(14)	(14)
<i>Low (2 SD's below mean)</i>	-	-	-	-	-	-
<i>Lower-middle (1 SD below mean)</i>	-	-	-	-	-	-
<i>Middle</i>	1	5	4	2	5	2
<i>Middle-high (1 SD above mean)</i>	4	2	1	3	2	7
<i>High (2 SD above mean)</i>	1	0	1	3	7	5
<i>Other/Unknown</i>	2	1	-	-	-	-

Note. Numbers represent frequencies of occurrence.

^a This summary represents the status of the highest income earning parent in each family unit.

referenced test for preschoolers. Of 31 potential participants for the younger age group, two of the 3-year-old boys did not meet verbal screening criteria. One of the two boys was eliminated when he refused to cooperate during testing. The other boy, displaying a high level of nervousness and agitation during testing, was subsequently dropped from the study when he was unable to complete the task. The remaining 3-year-olds ($N=29$) achieved a scaled score falling at or above the average verbal ability range (i.e., $M=10$, $SD=3$; WPPSI, Vocabulary sub-test; Wechsler, 1967) for their age. All of the 31 potential participants in the 5-year-old age group scored at or above the average verbal ability range for their age.

In addition to expressive language use, some literature suggests that that working memory capacity may be one of the variables impacting children's competence (Blake, Austin, Cannon, Lisus, & Vaughan, 1994; Case, 1992a; McKeough, 1986, 1992a). Therefore, Blake et. al's (1994) working memory word span task for preschoolers (see Appendix E) was individually administered with each of the children immediately following the verbal screening task. All of the children were able to complete this task. A summary of subjects' verbal screening and memory task results is presented alongside verbal screening information in Table 3.2.

Table 3.2

Mean Scores of Verbal Screening and Working Memory Task Information by Age and Child Care Center

Age Group	Center 1		Center 2		Center 3	
	VSS ^a	WMS ^b	VSS	VMS	VSS	WMS
3-year-olds	12.63	3 (N=8)	12.17	2.83 (N=6)	13.14	2.93 (N=14)
Range of scores	10-14	3	8-15	2-3	9-18	2-4
5-year-olds	13.25	3.88 (N=8)	12.13	3.75 (N=8)	15.21	4 (N=14)
Range of scores	9-16	3-5	9-14	3-4	12-18	3-5

^a VSS is an acronym for Verbal Scaled Score. ^b WMS is an acronym for Working Memory Score.

As indicated in the table, the 5-year-olds were able to remember a greater number of animal names ($M=3.88$) in comparison to the 3-year-olds ($M=2.92$) suggesting that they have almost one more working memory unit available to them than the 3-year-olds. Statistical analyses of potential age differences in verbal scaled scores and working memory capacity are presented in the Results chapter.

Toy Selection Process

Both theoretical and practical considerations provided the basis for toy selection in this study. First, several studies have found that children engage in longer, more complex, and cohesive play sequences with materials that are more familiar to them or that draw from well-engrained mental scripts (i.e., domestic, housekeeping toys; French, Lucariello, Seidman, & Nelson, 1985; Neuman & Roskos, 1991, 1992; Petrakos & Howes, 1996; Sachs, Goldman & Chaille, 1985; Seidman, 1983). Based upon these findings, toys chosen for use in the current study closely paralleled those found in the children's regular playrooms. Second, in addition to familiarity, pilot observations revealed that some playroom toys were more popular with the children than other toys. The current study required the children to play with a restricted range of toys over an extended period of time. Therefore, to keep the children motivated and involved in play and minimize adult intervention (i.e., redirection), toys that appeared to be equally appealing to both genders and age groups were selected over the less popular toys. Third, the effect of toy structure on children's play continues to remain open to debate with some researchers claiming a general, underlying trend from toy-dependent to idea-driven play with age (Cole & LaVoie, 1985; Field, DeStefano, & Koewler, 1982) and others suggesting that toy structure affect plays in a more specific, localized fashion (Bergman, 1997; Burroughs & Murray, 1992; Pellegrini, 1986, 1987). Therefore, to clarify the role of toy structure in children's play stories, the toys selected for use represented the high- and low-structured extremes on Johnson, Christie, and Yawkey's

(1987) Continuum of Toy Structure (see Figure 2.1). Although some of the low-structured pieces resembled real objects, if there was a possibility that the piece may be interpreted differently (i.e., a circular object with spokes may be identified as a steering wheel, a tire, or a spider web), then it was included in the low-structured toy condition. Human and animal figures were not included because these figures contained a higher degree of explicit structure and might have obscured the boundary between the high- and low-structured toys thereby limiting the research results that are obtained, a situation that occurred in a previous study (Olszewski & Fuson, 1982). The next section details the research process from conducting the pilot study to engaging in formal data gathering.

Preliminary Research Procedures

Pilot Study.

Prior to beginning the study, approximately 6 hours were spent unobtrusively collecting some preliminary observational pilot data in the 3- and 5-year-old playrooms at the University child-care facility. The field note information taken from these initial pilot observations, supplemented by verbal information supplied by care-giving staff, helped define and refine the current study's research protocol.

Initially, videotaping was to take place within the children's regular playroom setting. However, anticipated interruptions by others and lack of control over ongoing playroom activities and routines ruled this out as a viable option. Conducting the study in another separate, yet familiar room within the center reduced the potential for such extraneous confounding thereby increasing confidence that the research findings are due to the experimental manipulations.

Another impediment to conducting the study within the playroom related to the nature of the data collection. The purpose of this study was to examine spontaneous storytelling within the context of social pretend play. The more children involved in

constructing that play, the greater difficulty correctly identifying the contributions of each of the children. As well, children move from one play center to another and change their partners frequently during their free play. Thus, control over what toys and with whom the children played was more easily achieved by conducting the study outside their regular playrooms.

In addition to clarifying the final project design and data gathering procedures, pilot data confirmed toy selection for the two toy conditions used herein and helped to identify potential scheduling conflicts. The toys replicated (i.e., Duplo, Lego) or represented (i.e., kitchen center toys) those already present within the regular play setting. Once appropriate play materials were identified, consultation with staff helped to determine when to begin the familiarization phase which entailed introducing and familiarizing the children to the researcher (i.e., myself), the experimental toys, video equipment, and experimental playroom. The following discusses this familiarization process in more detail.

Familiarization Phase.

Studies have found familiarity to significantly impact children's pretend play (Aronson & Golomb, 1999; Matthews, 1977, 1978; Pellegrini & Perlmutter, 1989); thus, familiarizing the children to all aspects of the study prior to formal data collection was necessary. The children were first exposed to the researcher and experimental toys within their regular playroom for approximately two hours a week over three consecutive weeks. Following that, the children were allowed to play with the toys in the experimental playroom. During that time, they were encouraged to explore the recording equipment and ask any questions they wished with regard to the research study. In addition to playing with the toys, verbal and working memory tasks were conducted on two separate occasions, within the experimental playroom.

Extensive field notes were gathered during the familiarization period. These field notes helped to identify a predictable and consistent research schedule entailing attending each center on the same day, at the same time, and for the same period of time until data collection was complete. Field notes also identified congruencies between the various centers regarding the children's behavior. For example, the caregivers at each center encouraged the children to "use their words" if they were frustrated rather than using more physical or non-verbal means (e.g., hitting, crying, yelling) to resolve conflict with a peer. During periods of conflict, it was also the case that the children tended to look to their primary caregivers to provide solutions to their dilemmas rather than trying to generate them on their own. In addition to encouraging the children to use explicit language and seek help from adults when needed, roughhousing and using toys as a weapon was strictly forbidden in all centers. Hence, informal observations appeared to highlight the critical role of caregivers in explicitly guiding and socializing young children to engage in actions and behaviors that are *valued by the larger social group and that helped them connect with their peers*. These observations tend to support current sociocultural views regarding the significant impact of adults in shaping the content and direction of children's play (Farver & Howes, 1993; Farver, Kwan Kim, & Lee, 1995; Nicolopoulou, 1993; Packer, 1994).

In addition to gathering information to refine and define the research design used herein, during the familiarization phase, the children were informed of the study's purpose, the data gathering process, and their role in the study in order to allay any fears or misconceptions. The children were assured that their parents and caregivers were aware of and approved of their participation. They were told, in age-appropriate language, that they would be videotaped playing with another person from their playroom using the toys that had been brought to their playroom over the past month. It was explained that grown-ups were interested in learning about what children do and

say when they play. As well, they were told that they would be videotaped because everything they said and did was important.

The final activity that took place during the familiarization phase was that of subject pairing. Dyadic play was chosen over larger group play for several reasons. In addition to greater difficulties untangling the contributions of the individual children, 3-year-olds have greater difficulty maintaining and traversing the boundary between pretend and reality (Fisher DiLalla & Watson, 1988; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995). Younger children are also more limited in using language to convey and manipulate their play meanings (Goncu & Kessel, 1984; Hicks & Wolf, 1988) and are less able to simultaneously attend to, regulate, and/or coordinate multiple sources of information (Bokus, 1992; Field, DeStefano & Koewler, 1982). Requiring the youngest participants to manage multiple play partners in light of these other developmental constraints was considered to be too overwhelming (i.e., lead to cognitive overload) and to impact negatively on their play behavior and performance. As well, another reason for choosing dyadic play over larger group play was to reduce the possibility of children pairing off and excluding one or more children from their play (Garcia Werebe & Baudonniere, 1991). Finally, larger playgroups required larger numbers of children, an untenable option considering the extensive nature of the narrative analyses used.

Studies have found that children's play may be positively or negatively affected by the presence of a preferred or non-preferred play partner (Goldstein, Field, & Healy, 1989; Wanska George & Krantz, 1981; Garcia Werebe & Baudonniere, 1991).

Therefore, to reduce any potential skewing of research results, primary caregivers in each playroom were given the task of pairing each participant with a "compatible" same-aged peer. That is, child-care providers were asked to match each child with a play partner that he or she played with on a consistent but not necessarily continual

basis. A 3-year-old male and 5-year-old female were eliminated from the study when it was not possible to assign a same-aged, compatible play partner to them.

Formal Data Gathering

Following the familiarization phase, formal data gathering began. Either the high or low support toys were set out on the playroom floor at each daycare center. Although the toys were clearly visible to the children, they were not arranged in any standard order to simulate a more casual and typical play environment. The children were escorted to and from the experimental playroom by the researcher (i.e., myself). Immediately upon their arrival in the playroom, they were instructed to "Go ahead and play. Remember to talk while you play so I know what's happening." Although I attempted to maintain an unobtrusive presence in the room, it was sometimes necessary to repeat the latter part of this phrase if the children remained silent for a period of two or more minutes while playing. In addition, the children were prompted to repeat or explain their speech or actions when they were unclear or ambiguous. Behavioral limits (e.g., "Don't throw the toys.") were also set when necessary although this was rare.

Videotaping took place at approximately the same time and on the same day each week. Detailed observational notes were gathered during the videotaping. The children were videotaped for 10 minutes playing with either the high- or low-structured toys (i.e., kitchen center toys or Duplo/Lego construction sets). Although a shorter play duration (i.e., less than 30 minutes) has been found to negatively impact preschoolers' pretend play because of the extra time needed to negotiate a mutual consensus regarding that play (Christie, Johnson, & Peckover, 1988), other research has found that children may lose interest more quickly when playing with toys that contain less internal structure (Robinson & Jackson, 1987). As well, younger preschoolers seem to become fatigued and bored more quickly than older preschoolers (O'Connell &

Bretherton, 1984). In attempting to solve this dilemma, it was reasoned that, because the toys were familiar to the children, and toy familiarity has been found to reduce the amount of time children require to negotiate the terms of their play (Sachs, Goldman, & Chaille, 1985), the participants needed less time to set up a play frame and instead would launch immediately into their pretend play. Indeed, most of the children began to play with the toys immediately upon their entry into the playroom even before play instructions had been issued confirming that 10 minutes was an adequate amount of time to get a representative sample of the children's play.

To reduce the influence of practice or carry-over effects, each play pair and child-care facility was randomly assigned to a particular treatment order. Approximately half of the children received the low-structured toy condition first and the other half received the high-structured toys first. This toy condition was exchanged with the alternate toy condition the next data gathering session, an alternating process that continued over four consecutive weeks until each dyad had been videotaped two times in each toy condition. This process yielded a total of 40 videotaped play minutes for each dyad.

Data Transcription

Identifying Narrative Segments Within Play

Children employ many types of speech discourse within their play (Daiute, 1989; Preece, 1992). However, this study was specifically interested in examining children's storytelling told within the context of their spontaneous pretend play; hence, only the stories were transcribed. To differentiate narrative accounts from other forms of play discourse, the researcher drew, in part, from the definitional parameters originally set forth by Labov & Waletzky (1967) to examine orally narrated stories. However, contrary to oral storytelling accounts, pretend play narratives are often less verbally explicit and involve children's use of actions and objects to help embellish and support their speech

(Bruner, 1990b; Lyytinen, 1990; Wolf, 1985; Wolf & Hicks, 1989). To address this issue and other concerns regarding the employment of definitional criteria that are too narrow in scope (Haas Dyson, 1990; Hicks, 1993; Johnson, 1995), Matthews's (1977; see Appendix A) material and ideational pretend play modes were incorporated as a supplemental guide in distinguishing narrative from non-narrative content. Hence, play utterances containing a sequence of clauses with at least one temporal juncture and referring to one or more of the following elements were transcribed and scored:

- (a) mention of a time (e.g., "It was morning."), location ("We're at home."), character (e.g., "I'm the mom."), or a problem (e.g., "There's a bad guy here.") that is encountered,
- (b) direct (e.g., "This is bad.") or indirect (e.g., raising or lowering of vocal pitch to indicate an impending change in story events) commentary on actions or events,
- (c) an attempt to solve the problem (e.g., "Here, put on the oven mitt so you don't burn yourself.")
- (d) ascription of an identity (e.g., "This is a car.") or function (e.g., "It goes vrrroom.") to a referent object
- (e) enactment of a character role (e.g., "It's time for me to make supper.")
- (f) *referencing non-present objects* (e.g., "This looks like my car that I have at home") or situations (e.g., "I remember when that happened to me).

The former three definitional criteria were drawn from Labov and Waletzky (1967), the latter three from Matthews (1977).

As mentioned, children use actions and other non-verbal cues (e.g., pointing) to support their play storytelling. This is particularly the case for younger preschoolers who are in the process of mastering the language practices, rules, and conventions to which they are embedded (Bruner, 1990b). Two of the scoring schemes used in this research project required using such informational cues to accurately identify, interpret,

and assess aspects of the children's storytelling. To enhance the accuracy of scoring, to promote the interpretability of the stories, and to adequately represent the rich, diverse, and dimensional nature of children's play stories, non-verbal forms of communication such as play actions, vocal cues, direction of gaze, and gesturing accompanying the children's speech were also transcribed.

Scoring Protocol

Following data transcription, the transcribed stories were subjected to three types of scoring. The first two scoring schemes attempted to explore the micro-features of children's storytelling by examining the presence or absence of specific narrative elements to identify plot structure complexity and the children's manipulation of various inter-textual voices to negotiate, navigate, and integrate various story ideas, images, and themes. Somewhat related to the latter analyses, the final scoring scheme used herein attempted to explore the social process of children's story building in play. That is, this study explored how children's ability to respond to and integrate partners' story ideas impacted the story-building process and final story products. Thus, the three scoring schemes used were carefully chosen to capture both macro- and micro-features of young children's pretend-play storytelling. To date, relatively little research has attempted to explore how the social (play partner) and physical (toys) context combine with developmental (age) competencies and limitations to reflect the rich, dynamic interplay between the inter-personal and intra-personal in the creation and maintenance of pretend-play storytelling.

Scoring Story Plot Level Complexity

Within play, children often weave several story strands together. Indeed, play is, by its very nature, created in the moment and "given its meaning as play in the course of its creation" (Reifel & Yeatman, 1993, p. 353). Meanings emerge in the moment. Playmates serve as "human pivots around which playful meanings take

place.” (p. 363). In other words, children may suspend a current story as attention shifts to play actions or ideas introduced by the partner or a toy that has caught their attention. Sometimes this more immediate play focus develops into a story quite distinct from the one preceding it. The following example aptly illustrates how topic shifts occur depending upon the children's current focus of attention:¹

John: “Here's the little man. He's going into the castle.”

Randy: “I'm not making a castle. I'm making a ship. A space ship that goes up in the sky.”

John: “Here's a guy flying around in the sky. He's gonna crash. Aaah.

Where's the king. I need a king for my castle.”

Randy: “This guy looks like a king. Here, you have him. Now my rocket went to the moon.”

The above example clearly illustrates how children introduce and integrate various story themes into their play at any given time. Although each child was able to acknowledge the other child's play themes, they continued to return to their own story. Each of these distinct yet intertwined stories may be developed to a lesser or greater degree. The plot level criteria herein required that each story be assigned a particular structural level dependent upon the presence or absence of specific elements. Because the play stories were often developed to differing degrees, it was necessary to sort each dyad's narrative transcripts by thematic topic prior to scoring plot level. McKeough's (1986) narrative definitional criteria were used to help in this regard. Verbal utterances that were causally (e.g., because, so), referentially (e.g., use of a common word or phrase; e.g., Child 1: “These toys are cool.” Child 2: “Yeh, cool, man.”), or temporally (e.g., then, when) linked to a common topic or theme were grouped as a distinct and singular

¹ The examples used for illustrative purposes in the scoring section herein were drawn from this study's play transcripts as these story excerpts represented, in large part, aspects that led to changes in the scoring criteria.

story unit. Introduction of new information not formerly linked to a specific topic or theme was considered a topic shift and marked the onset of a new story.

After grouping the transcripts according to story topic, each story was scored using the first structural scoring criteria, that of Plot Structure Level. This scoring criteria was based upon McKeough's (1986) original scoring scheme and later revised forms (see Figure 3.1; Bergman, 1997; Davis, 1992; Howard, 1994). McKeough (1986, 1992a) and her students (Davis, 1992; Howard, 1994; Bergman, 1997) have consistently documented a developmental progression from action-based (e.g., linking a series of actions together to form an event sequence) to intention-based (i.e., e.g., including a problem that is resolved with implicit or explicit reference to an underlying state of mind) and episodic (e.g., linking several action-events or problem-resolution structures together to form an episode) storytelling in preschool and primary school age children. The plot structure scoring criteria used in these studies have not been subjected to the scientific rigors of systematic psychometric evaluation. However, cross-sectional replication of significant findings using diverse subject populations (i.e., school-aged children, McKeough, 1986, 1992a; gifted children, Davis, 1992; ESL children, Howard, 1994; preschool children, Bergman, 1997) and research methodologies suggested that these plot level criteria serve as a useful and appropriate starting point for scoring the current data.

Scoring entailed assigning a designated plot level to each play story based upon the presence or absence of specific narrative elements. The scoring scheme was *hierarchical in that lower-level structures preceded and were incorporated into higher-level story structures*. The play dyad received an assigned score corresponding to the highest level achieved for each story. The following 3-year-old story illustrates the scoring procedure:

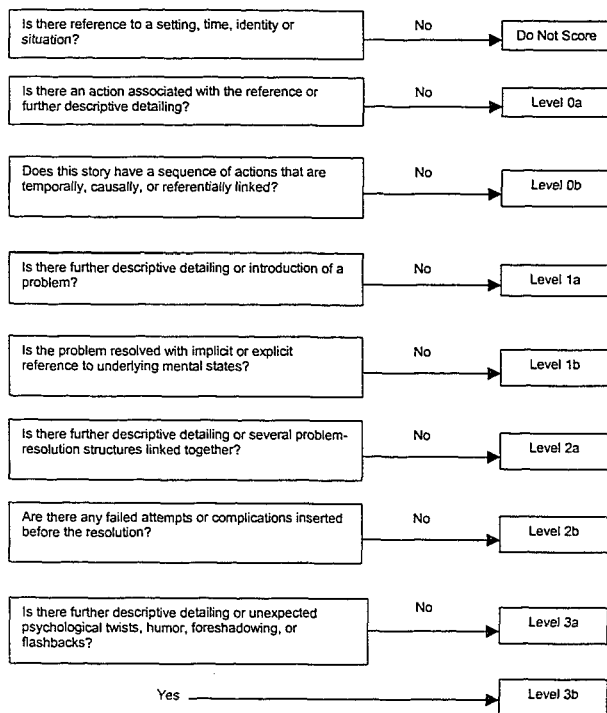


Figure 3.1. Plot Level Scoring Scheme (adapted from McKeough, 1986; Davis, 1992; & Howard, 1994)

Kody: "I...um...I...oh...my dad's here." (reaches over to take the phone from his partner but his partner holds it out of reach) "My dad's going to phone me sometime." (withdraws his hand and directs his attention back to the toys on the floor) "Jody, I better phone my dad."

Based upon the scoring criteria in Figure 3.1, the story was assigned a plot level of .5 because Kody introduces a character (i.e., his dad) and then has that character performing a single action (i.e., phoning). Hence, using the designated score associated with the plot level criteria, Kody and his play partner were assigned a score of .5.

Note that, because the stories were told within a dyadic play situation, the resultant score was assigned to the dyad rather than the individual child. Although preschoolers' may not always engage in give-and-take, mutually reciprocal play, a peer may have a vital, sometimes implicit, role in supporting or constraining how play stories unfold. In the prior example, Kody's partner refused to comply with Kody's wishes to hand over the phone. The partner's response had an impact on Kody's subsequent speech and actions by forcing Kody to withdraw his hand and verbally try to justify to his partner why he needed the phone. In addition to the immediate play context, social histories, perceptions of status, power, liking, and leadership all help to impact peer relations and indirectly impacting play behavior and actions (McCall & Simmons, 1991). For these reasons, the researcher chose the dyad over the individual as the primary unit of analysis for scoring the data.

Within the plot level scoring criteria there is a sub-level designation within each level. Stories that include the basic elements of each primary level were assigned a simple sub-level. Alternately, stories that include more descriptive detailing around the basic elements were assigned an elaborate sub-level. An initial scoring of the play transcripts revealed some problems with using these sub-level designations on

children's play stories. As several other problems arose, it became increasingly necessary to adapt certain aspects of this plot-level scoring scheme.

First, the elaborate sub-levels were either too vague or open-ended and did not clearly specify what constituted more descriptive detailing. Hence, at each elaborate sub-level within each level, more specific criteria were delineated.

Second, there were story events that occurred within the children's play that did not appear to fit the current scoring scheme. For example, some children verbally introduced a problem into their play but then enacted a solution to that problem (e.g., "Oh, the food is burning!" Child removes the food from the stove). Alternately, some children enacted a problem and then verbalized a solution to that problem (e.g., "Ow." Child shakes her hand. "Put a band aid on"). The original plot structure scoring scheme and later revisions primarily used children's speech discourse to assess their storytelling competence. Although it is necessary to rely upon explicit verbal utterances to prevent over-interpretation of children's play actions, in some instances it seemed quite clear, as illustrated in the above examples, that actions played a vital contributory role in their storytelling. These part-verbal/part-enacted problem-resolution narrative structures appeared to be a transitional point between the lower level criteria of verbally introducing a problem with no verbal resolution and the higher level criteria of verbally introducing and verbally resolving a problem. Hence, the researcher inserted an additional plot level structure representing these transitional problem-resolution structures between the two aforementioned plot level criteria.

A third change involved eliminating the highest level of plot complexity (i.e., the use of foreshadowing, flashbacks, humor, psychological twists) due its developmentally advanced nature and the low likelihood of such elements appearing in the preschoolers' stories. In its place, the researcher substituted an elaborate sub-level outlining

additional descriptive detailing to remain consistent with the lower sub-level designations preceding it.

Practical reasons prompted a final change to the plot level scoring procedure used. The inclusion of basic and elaborate sub-levels led to some confusion during scoring. As well, the use of non-whole numbers implied that the scoring scale was more precise than it was in actuality. So, to guard against such misperceptions and simplify scoring, each level and sub-level was assigned a number corresponding to its sequential order in the scoring scheme. This number translated directly into the score assigned each play dyad. For example, if the play dyad told a level 1 story, that dyad was given a score of 1.

Using the newly revised scoring criteria presented in Figure 3.2, the play transcripts were re-scored. Story segments pulled from the play transcripts highlighting key elements used to differentiate lower level plotted stories from the next highest level are presented in Appendix F. Following a second scoring using this revised plot structure criterion, the scored stories for each dyad were summed and averaged to yield a mean plot level score.

Scoring Inter-textual Voices

The second scoring criterion for assessing children's narrative structure was chosen to emphasize the subtle, inter-textual aspects of play storytelling. The various voices children use while weaving their stories in play contain important information about how they use linguistic and non-linguistic means to convey their underlying meanings and intentions. Wolf and Hicks' (1989) scoring criteria, incorporating Britton's (1982) concept of narrative stance or perspective, accentuated these subtle and dynamic aspects of children's story-building within the context of their pretend play (see Figure 3.3). As is evident in Figure 3.3, Hicks and Wolf (1988) contended that children's play stories contained three different inter-textual voices: (a) stage

Is there verbal reference to a character, setting, time, situation, or identity?	YES	Score 1
Is there a verbally described action or descriptive detailing associated with the referent?	YES	Score 2
Does the referent have a sequence of verbally reported actions that are temporally, causally, or referentially linked?	YES	Score 3
Is there further descriptive detailing of action, reference to an underlying mental state, or introduction of a problem?	YES	Score 4
Does the verbalized problem have an enacted solution or the enacted problem have a verbalized solution?	YES	Score 5
Is the verbalized problem resolved with implicit or explicit reference to underlying mental states?	YES	Score 6
Is there further descriptive detailing about the problem-resolution structure or several such structures linked together?	YES	Score 7
Are there any failed attempts or complications inserted before the resolution?	YES	Score 8
Is there further elaboration around the complication or failed event?	YES	Score 9

Figure 3.2. Revised Plot Structure Scoring Scheme

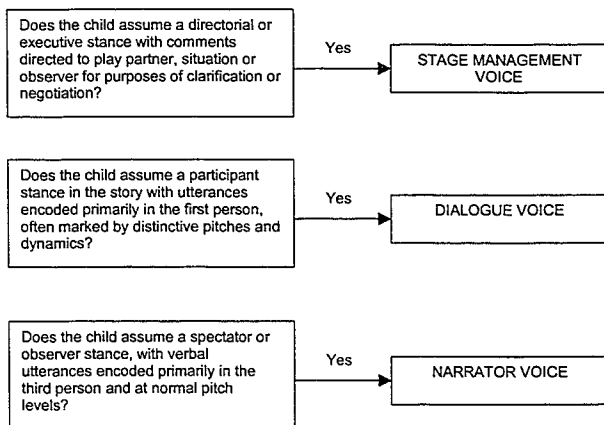


Figure 3.3. Inter-textual Voices Scoring Scheme (adapted from Wolf & Hicks, 1989; & Britton, 1982)

management, (b) dialogue, and (c) narrator. Each voice performed a unique function within the narrative. However, it was the interleaving of these various voices that lent narrative its dimensionality and texture. Thus, exploring these inter-textual voices helps to expand current understandings of the complex and dynamic process of children's story making in play.

Similar to McKeough's (1986) Plot Structure Level scoring criteria, the validity and reliability of Wolf and Hicks' scoring criteria has not been psychometrically tested. However, studies using this or similar criteria have consistently documented shifting voices or stances within children's play stories (Bergman, 1997; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Hicks & Wolf, 1988; Kane & Furth, 1995; Sawyer, 1996; Wolf & Hicks, 1989).

As mentioned previously, spontaneous storytelling within play is quite different from other oral forms of storytelling. Construction of shared meanings emerge in the moment as a result of the continuous interchange of ideas and information between players (Goncu, 1993a). However, young children are still in the process of mastering the language practices, rules, and conventions. Therefore, speech accompanying young children's spontaneous play is often riddled with sentence fragments requiring contextual information to correctly comprehend (e.g., "That is." Child points to item on floor.), structurally or grammatically incorrect wording (e.g., "It goed there."), frequent pauses and inflections (e.g., "Um.", "Uh."), repetitive words or phrases (e.g., "That is...is...is like..."), and false starts (e.g., "I think that...I think that..."). Although Wolf and Hicks (1989) used clauses, defined as a unit containing a subject and predicate, to analyze children's inter-textual voices, the use of clauses did not appear to capture the many other forms of young children's spontaneous play speech recounted above. Hence, rather than use clauses, children's verbal utterances, separated by natural pauses or breaks in speech, served as the unit of analysis for scoring inter-textual

voices herein. Non-verbal cues accompanying the children's verbal utterances (e.g., gestures, eye gaze, play actions) were also used to enhance accuracy in delineating these various voices.

Thus, disentangling the various voices within the children's play narratives first involved breaking each story down into separate speech utterances, the beginning and end of each verbal utterance marked by natural pauses or interruptions in speech. Following that, non-verbal cues helped to determine what inter-textual voice to assign to each play utterance. The following describes, in detail, the criteria used to delineate the various inter-textual voices.

Stage management voice.

An utterance was scored as occurring in the stage management voice when the child assumed a directorial stance to the play story. This stance involved stepping outside the story frame to plan, clarify, justify, and negotiate character roles, actions, and events (e.g., "You be the mom, I'll be the dad"). Key linguistic and behavioral markers signaling the use of this stance was speech characterized by the first or second person pronominal referential system (e.g., I, You, We) and a suspension of character role actions and activity. The following story segment from the play transcripts illustrates the use of this distinctive play voice:

Kody: "Look. Look, I'm ready to eat, Chris." (waits until partner looks over [stage management: suspending actions as character to clarify his intention to eat])

Dialogue voice.

An utterance was scored in the dialogue voice when the child assumed a character role in the play story. Key linguistic and behavioral markers signaling the use of this participant stance entailed speech (e.g., "I'm gonna cook breakfast") occurring concomitantly with actions consistent with a particular character role (putting a pan onto

the stove). In addition to character actions, changing speech patterns (e.g., "I'm Mr. Turtle." [sing-song voice]) and/or vocal intonations (e.g., "Vroom, vroom.") marked a player's assumption of a character role. Although, consistent with the stage management voice criteria, the dialogue voice was frequently characterized by the liberal use of first or second person pronouns, the key feature distinguishing the dialogue voice from the stage management voice was the child's meta-position to the story. If the child related story events from a first or second perspective, much like character thinking aloud, while performing actions on the toys consistent with that assumed character role, speech utterances were scored as dialogue. Alternately, if the child suspended those actions to plan, clarify, or negotiate how the story was to proceed, speech utterances were scored as stage management. The following transcript example illustrates the children's fluid movement from one play frame to another:

Vanessa: "Can I make some hot dogs, mother?" (dialogue voice: assumption of role of daughter, playing with play food)

Emily: "No. I'm not your mom. I'm a Ferby." (stage management voice: rejection of assigned role, clarifying terms of play)

Vanessa: "Okay." (stage management: agreeing with partner's terms of play, not playing with food) "Fubby, fubby." (dialogue voice: change in speech patterns and vocalizations)

Narrator voice.

Lastly, an utterance was scored in the narrator voice if the child had assumed a stance of third party spectator to the story's unfolding events. Spontaneous stories within the play context using this more distant observer perspective were typically marked by the use of the third person (e.g., she, he, they, it, someone, everyone)

pronominal referential system. The following example highlights the use of such a voice within the children's play:

Kathy: "You don't know that...you don't know that the goose?" (stage management: suspending actions on toys, looking to observer) "In Wilber? That she cheats a little? She just digs some..." (gesture to indicate digging) "...hay into her. She cheats a little. She just right near the pigpen." (narrator voice: third person pronouns)

An initial scoring of the transcripts revealed some difficulties with the inter-textual scoring criteria cited above. For example, it was often difficult to determine from the children's play actions whether they were negotiating the terms of the play from outside the play frame or simply problem solving while remaining within a character role. Many of the children seemed quite adept at clarifying, negotiating, and directing the course of their play when either inside or outside a character role, a phenomenon that has been noted elsewhere in the literature (Fisher DiLalla & Watson, 1988; Kane & Furth, 1993; Wolf & Hicks, 1988). However, the scoring scheme seemed less able to accurately identify the various play voices when children are transitioning in and out of the play frame. Hence, more explicit criteria were necessary in differentiating the stage management and dialogue voices when children transverse the reality-pretend play boundary.

Another problem that arose was the scoring scheme's heavy reliance on non-verbal speech cues in identifying the dialogue voice. Recall that changes in speech patterns and/or vocalizations signaled the onset of a character role. However, many of the children maintained their regular speech pattern even though they appeared to be clearly engaged in a character role.

In addition, a problem arose when attempting to score personal stories of past events integrated within the children's pretend-play stories. Although the children

themselves were often the main character in these personal stories, recounting real-life happenings removed in time and place were clearly different from children's play stories that were tied to the immediate here-and-now play situation. It was apparent that the inter-textual scoring criteria did not adequately take into account these personal stories.

Thus, to better differentiate the various voices and resolve some of the difficulties stated above, the Inter-textual Voice Scoring Scheme was further refined. Although the concept of narrative stance or perspective (i.e., directorial, spectator, participant; see Figure 3.3) continued to be helpful in identifying various play voices, some specific decision rules were instituted for those utterances that were ambiguous. Few changes were made to the dialogue voice criteria other than reiterating the importance of role actions and eliminating the provision requiring changes in vocal pitch and intonation. Thus, utterances were scored in the dialogue voice when the child performed actions consistent with a character role accompanied by the use of the first or second person referential system (e.g., I, you). Utterances were scored in the stage management voice when *the child stepped out of the character role, as indicated by an absence or suspension of character role action/enactment, to negotiate or clarify the content and direction of the play.* Cues signaling the suspension of character-role playing were the use of real names, explicit reference to the illusory nature of play (e.g., Let's pretend...), and comments directed toward the observer. Lastly, to accommodate personal storytelling, utterances that referred to real-life events/circumstances outside the immediate play context were scored as occurring in the narrator voice. Following a second scoring using this revised inter-textual criteria, the voices were summed and, similar to plot structure scores, the value was assigned to both of the play partners.

Scoring Social Perspective Taking

The final scoring criterion was developed to assess children's social perspective taking in play as assessed through their use of specific interpersonal responses to play

partners' ideas and contributions. This scoring scheme was derived from Selman et al.'s developmental studies examining the emergence of social awareness and understanding in late preschool to latency aged children and its connection to interpersonal relations and competence (Adalbjarnardottir & Selman, 1989; Brion-Meisels & Selman, 1984; Lyman & Selman, 1985; Selman, 1980; Selman & Demorest, 1984; Yeates, Schulz, & Selman, 1991). Note that an underlying assumption of the social perspective taking scoring criteria developed for use herein is that outward manifestations of social competence reflect underlying levels of social understanding and knowledge. There is some empirical support for this assumption. For example, Selman (1980) and LeMarc and Rubin (1987) found measures of children's social perspective taking to be directly related to their sociability. Similarly, Slomkowski and Dunn (1996) found young children's performance on false belief tasks to be significantly associated with their social interaction and communication. However, some research has found that young children may demonstrate more advanced levels of social understanding and competence when engaged in negotiating and establishing a mutual understanding with their partner regarding play content and direction (Connolly, Doyle, & Reznick, 1988) and while playing with toys representing routine, commonplace events (Lucariello, 1987). Thus, although Selman's (1980) developmental stage model was adopted as a preliminary template for assessing children's acknowledgement and integration of self-other ideas within play, it was expected that some fine-tuning of this scoring scheme would be necessary to reflect children's social understanding and competence within the expressive context of their pretend play. Hence, based upon Selman's social perspective taking model, the development of a hierarchical-based scoring scheme was undertaken. Scoring criteria were extracted from both empirical and theoretical sources (Selman, 1980; Selman & Demorest, 1984; Keller & Reuss, 1984) and then further refined in an attempt to capture the subtleties of children's social

transactions while engaged in their social pretend play. The final Social Perspective Taking Scoring Scheme is illustrated in Figure 3.4.

Each level in Figure 3.4 reflects a specific stage of social understanding or perspective taking and expected course of action. To score these levels, each narrative was first broken down into social bids. A social bid has been previously defined as “a bid for attention, a leadership attempt, or behavior specifically directed toward a peer in order to elicit an attentional or observational response” (Doyle, Doehring, Tessier, De Lorimier, & Shapiro, 1992; p. 138). Similar to Doyle et. al.’s definition, a social bid was defined herein as: A verbal utterance(s) or gesture (e.g., pointing) directed toward or interpreted as being directed toward the play partner for purposes of clarification, negotiation, or explanation. Unlike Doyle et. al., however, it was necessary to delineate the additional criterion that social bids be bound to a specific play theme or focus of attention because the children wove in and out of several different story frames in their play making it difficult to link social bids to peer responses. The following example drawn from the 3-year-old play transcripts illustrates the use of social bids and the play partner’s subsequent response:

Example:

Johnny: “I better phone my dad, Chris.” (John looks over at Chris, then down to the phone that Chris is holding).

Chris: “John.” (looks at John) “We have to phone our mom.” (Chris looks down to the phone and begins pressing the buttons).

The use of partners’ names is a fairly explicit and straightforward way to gain the each other’s attention; however, there are some social bids that are more subtle because they entail the use of indirect comments (e.g., “Where’s that piece?”) or non-

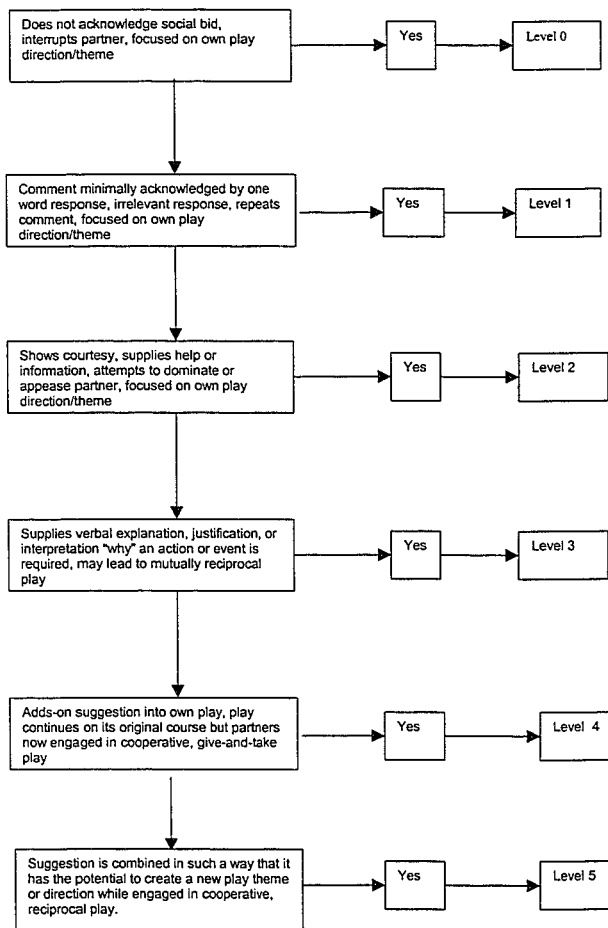


Figure 3.4. Social Perspective Taking Scoring Scheme (Adapted from Selman, 1980; Selman & Demorest, 1984; Adalbjarnardottir & Selman, 1989; Brion-Meisels & Selman, 1984; Lyman & Selman, 1985; Yeates, Schulz, & Selman, 1991).

verbal cues (e.g., eye gaze, facial expressions). The following example from the 3-year-old play transcripts aptly illustrates such a case:

Example: Mikey: "I need help." (Mikey struggles to open up the phone)

Jay: "I'll do it." (Jay hops up from the floor and helps Mikey open the phone)

Mikey did not explicitly direct his comment to his partner; yet, his partner interpreted Mikey's comment as an indirect bid for help and then responded accordingly. This type of implicit social bid and partner response pattern was characteristic of the children's natural, ongoing social interactions within their pretend play. They did not always use explicit verbal means to convey their ideas, intentions, and needs to their partners. Rather, they made use of play actions, non-verbal cues, and information contained within the play environment itself to inform play partners and enlist their cooperation in meeting specific wants and needs. Hence, these more subtle social bids, while being less verbally explicit, are no less important in understanding young children's attempts to engage social others attention and input.

Directing a comment toward a social other (i.e., social bid) took one of two forms: Peer or Observer. Comments directed toward the observer (i.e., researcher) were duly noted but not included in the scoring herein because the focus of the current study was on children's ability to attend to and integrate peer ideas into their play stories. Thus, adult-child social relations and interactions were not scored for the analysis.

Once social bids were identified, the partner's subsequent and immediately contingent response to that social bid was assigned a single score corresponding to the criteria specified at each level of the Social Perspective Taking Scoring Scheme. Similar to social bids, partner's responses could be either verbal or non-verbal (e.g., looks at peer, carries out peer's suggestion). As well, partners sometimes used turnabouts (i.e., a response that initiates a new response in the play partner; Kemple,

Speranza, & Hazen, 1992) resulting in some overlapping social exchanges. For these exchanges, the partner's initial response also served as a social bid and the first partner's response to this new social bid was scored accordingly. The following example drawn from the 5-year-old play transcripts illustrates the use of turn-about in a social exchange. Notice how Cody's response to Kenton's social bid required a response from Kenton in turn:

Kenton: "We're going on a plane to Disneyland. Then after that I'm going to Hawaii."

Cody: "And then what's after the...what are you going to do after Hawaii? Play cha cha cha or something?"

Kenton: "No way. No more cha cha cha aye aye aye."

The following section presents the response scoring protocol in greater detail and provides examples highlighting fundamental differences in social responsiveness for each sequential level of the Social Perspective Scoring Scheme used herein. At Selman's (1980) lowest developmental stage of social perspective taking, there is little separation between the perspectives of self and other. At this stage of social understanding, actions directed to self or other are egocentric and impulsive. For the current study, this stage was separated into two sub-levels of social competence. A response was scored as occurring at Level 0 when the partner ignored or interrupted the social bid while continuing on his or her initial course of play. The following example illustrates such a level by highlighting one child's lack of responsiveness to his partner's social bid communicating her distress at having her cupcakes taken against her will:

Ellen: "You gotta be nice." (looks to observer then to her play partner who had taken her muffins away and was pretending to eat them) "Those are my muffins. No!" (she screams this last word to her play partner as he throws the

muffins to the floor and turns to play with some other toys) "Don't have to break them more." (protectively gathers the broken muffins in her arms, no response from her partner)

A partner's response was scored at Level 1 if the social bid was minimally acknowledged (e.g., "yes", "no", "what", etc, brief eye-contact), repeated verbatim (e.g., Partner 1: "I like cupcakes." Partner 2: "I like cupcakes."), or responded to in an irrelevant fashion (e.g., Partner 1: "That's my dad on the phone." Partner 2: "We're making cupcakes"). Similar to Level 0 responses, Level 1 responses have little impact on the direction of both children's play. In other words, it continues on as two separate play focuses or themes.

At the next developmental stage of Selman's social perspective taking model, subjective perspectives of self and other begin to separate and differentiate. This differentiation is marked by increasing acknowledgment of the consequences of actions for self and other; however, children at this level continue to struggle with coordinating these differing perspectives. A response was scored as occurring at Level 2 when it attempted either to dominate or sublimate the ideas or needs of one partner to those of the other partner (e.g., "No. Do it this way"). Again, no attempt is made to adjust the initial flow of one's play. Although there is a tendency for one person's wishes to prevail over the other person's at this level, the partners are increasingly able to use social courtesies to smooth their social relations. Hence, interspersed in the liberal use of directives and commands is the occasional "thank-you" or "please." The following example from the 3-year-olds' play transcripts highlights a social exchange where the partner's (John) response to his partner's social bid was scored at a Level 2. Note how the responding partner resists the initiating partner's play idea and the dominating-complying response pattern characterizing Level 2 social transactions:

Carey: "There. This one's for you." (hands partner a piece of meat, partner accepts it and puts it onto a plate, Carey pretends to eat her meat)

John: "No. Put it on here." (points to plate he has placed his meat on, Carey complies)

A response to a social bid was scored as occurring at Level 3 when the receiving partner attempted to explicate or justify his or her particular position with regard to story content or direction. At this stage of social understanding there is clear differentiation between self-other perspectives, yet, as indicated in the above criteria, social responses tend to be unilateral and issued to convince the other person, through deal-making and persuasion, to align him or herself with the play partner. The following example from the 3-year-old play transcripts nicely illustrates such an attempt to justify and persuade:

Randy: "The dad will cook now." (approaches the stove)

Ellen: "No, I was here first." (puts arms protectively around the stove)

Randy: "And I'm here too." (waits for Ellen's response)

Ellen: "No. You can't be here too. I was here first...You gotta be nice."

Reflecting children's increasing ability to simultaneously consider and combine self-other perspectives, a response was scored at Level 4 when it attempted to incorporate the play partner's suggestion by adding it on to the ongoing play scenario. Responses indicating active attempts and willingness to (1) negotiate a mutually-agreeable play theme, (2) incorporate the perspectives of both partners to form a qualitatively distinct, mutually-agreeable play frame, and (3) open up the possibility of new play themes and directions, were scored as occurring at Level 5. The following example drawn from the 5-year-old play transcripts captures the distinction between these two response levels. The last response by Kenton (in italics) signals the shift from a Level 4 to a Level 5 response using the aforementioned criteria:

Kenton: "Pizza sauce."

Cody: "And now here." (extends pan full of food toward Kenton, Kenton removes some food and adds it to his pizza)

Kenton: "There, the bacon on the pizza."

Cody: "I need some bacon on my...on my...um gummy."

Kenton: *"I know. Let's cook breakfast. You cook the eggs. I'll cook the toast."*

Following scoring, frequencies of responses at each level were summed and averaged. Similar to plot structure and inter-textual voices, this value was then assigned to the appropriate play dyad.

Inter-rater reliability checks for plot level, inter-textual voices, and social negotiation were conducted on 30% of randomly selected narrative transcripts by a trained rater with limited exposure to these particular fields of study and no knowledge of the research questions and hypotheses guiding this study. Inter-reliability results are presented in the following chapter.

Data Analyses

All raw data was entered onto a spreadsheet and subjected to statistical analyses using SPSS Statistical Software. The alpha level for the inferential analyses was set at .05. This commonly used level of significance was chosen to achieve a balance between committing either a Type 1 (i.e., rejecting a true hypothesis) or Type 2 (i.e., failing to reject a false hypothesis) error.

Statistical Analyses

Demographic and subject screening information were subjected to a series of 2 x 3 two-way analysis of variance (ANOVA's; Age[3,5], Child Care Center[1,2,3]) to determine if any differences existed between the children by age or center. Significant findings, and possible connections to the dependent variables (i.e., plot level, inter-textual voices [stage management, dialogue, narrator], social perspective taking) were

explored further using Pearson Product Moment Correlation Coefficients. Cohen's Kappa was used as a more stringent test of inter-rater reliability data. Cronbach's Alpha assessed the internal consistency (i.e., reliability) of the children's performance on each of the dependent measures across toy conditions. Pearson Product Moment Correlation's were used to explore potential interrelations between the various dependent variables.

This study set out to explore how age (3, 5) and degree of toy structure (high, low) impacted children's narrative structure (i.e., plot level, inter-textual voices) and social perspective taking competence (i.e., attending and integrating social cues) in pretend play. There are several independent and dependent variables being compared and potential interdependencies may exist. Therefore, several 2 x 2 repeated-measures multivariate analysis of variance (MANOVA's) and follow-up univariate analyses were completed on the experimental data with between-subject (age [3, 5]) and within-subject (toy structure [high, low]) factors serving as the grouping variables for the two dependent variables of plot level and social perspective taking and the three inter-textual voices (stage management, dialogue, and narrator). A second statistical analysis drawn from Steiger (1980) that compared the statistical equivalence of the correlational elements, explored potential connections between social perspective taking and children's narrative competence across age and toy condition. It was anticipated that children that were more adept at attending to and integrating peers' ideas would produce narratives that differed structurally from the narratives produced by children that were less capable. However, this relationship may be impacted by the degree of toy structuring within the play setting. Hence, the latter analysis explored these potential connections.

Descriptive Content Analysis

The analyses cited above represent the most comprehensive and complete statistical analyses permitted by the data. However, while observing the children's play, it became apparent that play stories provided a rich source of information with regard to how children balance internal and external sources and resources to lend structure and meaning to those stories. The commingling and manipulation of these multiple supports and constraints were not adequately addressed by the statistical analyses employed herein. Therefore, to better reflect the dynamic and complex interplay between internal and external forces, several key aspects of children's play stories that appeared of some importance were described in depth. That is, soliciting observer (i.e., researcher) help, integrating personal stories, displaying emotion, verbally articulating one's meanings, and understanding the pretend-reality distinction were identified as potentially supportive or constraining influences on children's ability to establish and maintain a mutual story frame with their play partner. Examples for each of these areas were provided for purposes of illustration.

To conclude, an in-depth descriptive content analysis, following a comprehensive and extensive statistical analyses of demographic, inter-rater, internal consistency, and experimental data, was undertaken to explore the inherent richness and complexity of children's meaning-making activities. Although the latter analysis does not make any claims as to the representativeness of the aspects described therein, it lends a richness and dimensionality to children's play stories as well as provides ideas for future research. Chapter 4 presents the analyses used herein and subsequent results in greater detail.

Chapter 4

RESULTS

This chapter is divided into three sections. First, a brief review of research hypotheses and questions is provided outlining the independent and dependent variables under investigation. In the second section, quantitative analyses and findings are presented. In the third and final section, I present a descriptive content analysis in an attempt to capture the rich and diverse nature of children's pretend-play storytelling.

Overview of Research Questions and Hypotheses

Narrative is increasingly recognized as a fundamental, culturally valued activity allowing people to connect with the external world (Brice Heath, 1986; Haas Dyson, 1990; Howard, 1991). Children also employ narrative as a sense-making tool (Bruner, 1988; Haas Dyson, 1995; Miller, 1993). Previous studies have found children's stories become increasingly complex and progress from action-based to intention-based stories by the early school years (Bergman, 1997; McKeough, 1986, 1992a; Shapiro & Hudson, 1991). Research has also found that children's early attempts at storytelling involve supplementing speech with action and depending heavily upon concrete information contained within the external environment to help structure and convey underlying meanings and intentions (Brice Heath, 1986; Bruner, 1988; Daiute, 1989). The study herein explored one of these early forms of narrative: It examined the natural emergence of storytelling within the spontaneous context of children's social pretend play.

Pretend play is a special expressive format because it is affected by cues within the immediate environment. Concrete information contained in toys has been found to impact children's language use and storytelling in play (French, Lucariello, Seidman, & Nelson, 1985; Pellegrini, 1982, 1986), although research has also found that older preschoolers are less reliant on salient perceptual cues in comparison to younger

preschoolers (Cole & LaVoie, 1985; Pellegrini, 1987). As well, children's utilization of social cues and their ability to acknowledge, compromise, and negotiate with others in play has been found to affect the content and direction of their pretend (Connolly, Doyle, & Reznick, 1988; Goncu, 1993b; Howes & Matheson, 1992). Although research findings suggest that very young children are less able to integrate self-other perspectives in general (Coie, Dodge, & Kupersmidt, 1990; Selman, 1980), potential age-related differences in social understanding have yet to be explored within children's pretend play where integrating self-other perspectives is necessary for establishing and sustaining a common play focus. Hence, this study attempted to explore how preschool children use environmental and social cues to structure and support their storytelling. More specifically, it examined how exposure to different degrees of toy structure (high, low) impacts 3- and 5-year-olds' story complexity (i.e., plot structure), inter-textual voice use (i.e., stage management, dialogue, or narrator), and social perspective taking competence.

Consistent with the scientific literature, it was hypothesized that age would have an impact on children's storytelling. That is, 5-year-olds were expected to produce higher level story plots and use more out-of-play-frame story voices (i.e., stage management and narrator inter-textual voices) to convey their story meanings in comparison to the 3-year-olds. As well, it was expected that older children's plotted stories and inter-textual voice use will be less affected by the degree of toy structure within the play setting. In addition to these more specific directional hypotheses, general exploratory questions addressed and attempted to clarify potential relations between age, toy structure, social perspective taking competence, and narrative performance. These questions were as follows: (1) Are there age differences in children's ability to acknowledge and integrate self-other perspectives in play and is the ability to

acknowledge and integrate self-other perspectives affected by the degree of inherent toy structure? (2) Is social perspective taking competence related to plot structure complexity? and (3) Does the relationship between social perspective taking and plot structure complexity change with age or degree of toy structuring?

Statistical Analyses

In this section, details regarding analyses of demographic data are presented, followed by internal consistency and inter-rater reliability data. Empirical findings related to age differences in working memory capacity and associations between working memory and the dependent variables (i.e., plot level, inter-textual voices, and social perspective taking) are then presented. As well, correlational data exploring possible interrelations between all the dependent variables are detailed and followed by descriptive statistics and inferential analysis of experimental data using several 2 x 2 repeated-measures multivariate analysis of variance (MANOVA). More specifically, both multivariate and follow-up univariate analyses explore the impact of Age (3,5), Toy Structure (High, Low) and Age x Toy interaction effects on children's plot level, inter-textual voice usage, and social perspective taking performance. Lastly, to complete the quantitative analyses, a statistical procedure drawn from Steiger (1980) was employed. This statistical test assessed if the relationship between children's plot structure complexity and perspective taking competence was maintained across age and toy condition by evaluating the statistical equivalence of these variables' Pearson product-moment correlation coefficients. That is, although the correlation coefficients between plot structure and social perspective taking performance differed across age and toy condition, it was unclear whether these differences were large enough to be statistically significant. Hence, the statistical procedure cited above, by converting correlational data into standardized scores, is able to compare the correlational data and, in doing so,

determine with some degree of confidence that the relationship between plot structure and social perspective taking is or is not maintained across age and toy condition. Following this analysis, a brief summary of experimental findings is provided. Except for the final statistical analysis exploring potential significant links between the plot structure and perspective taking correlational data, SPSS statistical software was used to complete all data analyses.

Analyses of Subject Demographic and Screening Information

Demographic and screening information was collected on participants. Although this was collected primarily to describe the sample, it was also analyzed to determine if differences between the children confounded the outcomes or limited the results. A number of 2 x 3 two-way ANOVA's (Age[3,5], Center[1,2,3]) explored if there were any significant main or interaction effects between the children in terms of their verbal scaled scores, working memory scores, parent socioeconomic status, parent education level, and ethnic background. Two-way ANOVA's were chosen over a sequence of t-tests or one-way ANOVA's because this analysis identifies any significant interactions and reduces the error term (i.e., Type 1 error) associated with comparing multiple means within and across the various child-care centers (Hinkle, Wiersma, & Jurs, 1979). Subject demographic descriptive and inferential statistics across age and center are presented in Tables 4.1 and 4.2.¹

As indicated in Table 4.2, no significant Age, Center, or Age x Center- differences existed between the children in terms of their socioeconomic status (SES), parent education level, or ethnic background. The table also reveals that, although there were no significant Age x Center interaction effects in terms of the children's verbal scaled scores or working memory capacity, there were two statistically significant main effects for these variables. Each of these significant findings are discussed in turn.

Table 4.1

Summary of Descriptive Data Means Across Age and Center for Subject Demographic and Screening Information

Variable ^a	Age	Center ^b Means(Standard Deviations)		
		1	2	3
VSS	3	13.57(2.70)	12.16(2.48)	12.62(1.50)
	5	15.21(2.11)	12.12(1.88)	13.25(2.37)
WMS	3	2.92(0.61)	2.83(0.40)	3.00(0.00)
	5	4.00(0.67)	3.75(0.46)	3.87(0.75)
SES	3	2.28(0.91)	1.50(0.83)	2.50(1.06)
	5	2.21(0.69)	2.12(0.83)	1.62(1.06)
ED	3	3.78(0.57)	3.00(0.63)	3.12(0.64)
	5	3.64(0.63)	3.62(0.74)	3.37(1.06)
EB	3	2.21(2.00)	2.00(1.67)	1.87(1.80)
	5	2.00(1.66)	1.00(0.00)	1.62(1.76)

^aVar = Variable, VSS = Verbal Scaled Score, WMS = Working Memory Score, SES = Socioeconomic Status, ED = Education Level, EB = Ethnic Background.

^bSample sizes: Center 1 (3's [n = 14], 5's [n = 16]), Center 2 (3's [n = 6], 5's [n = 8]), Center 3 (3's [n = 8], 5's [n = 8]).

Firstly, the two-way ANOVA comparing working memory means between the 3- and 5-year-olds indicated a statistically significant age effect, $F [1, 56] = 34.33, p = .001$. Referring back to Table 4.1, the 5-year-olds had greater working memory capacity than the 3-year-olds regardless of the particular center from which they came.

Secondly, the two-way ANOVA comparing verbal scaled scores revealed a statistically significant center effect, $F [2, 55] = 5.11, p = .009$. Post hoc tests using Tukey's HSD indicated that this difference existed primarily between two of the three child-care centers (Center 1/Center 2; $p = .01$). As indicated in Table 4.1, Center 1 (i.e., the University-based center) had children with higher verbal scaled scores, on average, than one of the two community-based centers. A chi square test revealed that age

Table 4.2

Statistical Summary of Subject Demographic and Screening Data Across Age and Center

Var ^a	Effects ^b	SS	MS	df	F	p
VSS	Age x Center	7.15	3.58	2	0.70	.500
	Age	7.24	7.24	1	1.42	.239
	Center	52.42	26.21	2	5.15	.009*
	Error Term	264.87	5.09	52		
WMS	Age x Center	0.12	0.06	2	0.17	.847
	Age	11.98	11.98	1	34.33	.001**
	Center	0.28	0.14	2	0.41	.667
	Error Term	18.14	0.35	52		
SES	Age x Center	4.20	2.10	2	2.63	.081
	Age	0.15	0.15	1	0.19	.665
	Center	1.78	0.89	2	1.12	.334
	Error Term	41.46	0.80	52		
ED	Age x Center	1.41	0.71	2	1.40	.149
	Age	0.78	0.78	1	1.55	.218
	Center	2.76	1.38	2	2.74	.074
	Error Term	26.20	0.50	52		
EB	Age x Center	1.56	0.78	2	0.28	.760
	Age	3.13	3.13	1	1.11	.298
	Center	3.68	1.84	2	0.65	.526
	Error Term	147.11	2.83	52		

^aVar = Variable, VSS = Verbal Scaled Score, WMS = Working Memory Score, SES = Socioeconomic Status, ED = Education Level, EB = Ethnic Background.

^bSample sizes: 3's (n = 28), 5's (n = 30)

group and center are statistically independent ($\chi^2(2) = 0.217$, $p = 0.897$); therefore, these center differences should not have had an impact on age differences to confound results.

Briefly, to summarize the analyses of subject demographic and screening data, a series of two-way ANOVA's indicated age differences in working memory capacity and center-related differences in verbal performance; however, there were no significant Age, Center, or Age x Center differences with regard to parental SES, educational level, or ethnic background.

Analyses of Experimental Associations

A summary of the statistical procedures undertaken to assess the reliability of the scoring criteria and the consistency of children's performance across experimental tasks is presented in the current section. As well, age-related differences in working memory capacity are explored further in terms of potential associations with children's story plot complexity, inter-textual voice use, and social perspective taking competence. Lastly, correlation data is presented detailing the direction and strength of association between the independent and dependent variables.

Inter-rater Reliability: Cohen's Kappa

This study employed two trained raters in evaluating the scoring criteria. One of these raters was blind to the true nature or purpose of the study. Cohen's Kappa(κ) was used as a more stringent test of inter-rater agreement than simple percent agreement because it includes instances of inter-rater agreement on non-occurrences of the variables of interest (i.e., plot level, inter-textual voices, and social perspective taking) as well as corrects for the amount of agreement expected by chance.

If there is perfect association in observed agreement then Kappa = 1. No association puts the observed agreement equal to chance agreement and Kappa = 0

(Norman & Streiner, 1986). Using the same rule of thumb used to interpret the size of a correlation coefficient with ranges from .3 to .5 indicating low agreement, .5 to .7 moderate agreement, .7 to .9 high agreement, and .9 to 1.00 very high agreement (Hinkle, Wiersma & Jurs, 1979), the Kappa values obtained herein indicated high agreement between the two raters on plot level ($\kappa = .86$), inter-textual voices ($\kappa = .86$), and social perspective taking level ($\kappa = .83$) ratings. The obtained kappa index is interpreted similarly to the proportions obtained from raw rates of agreement (Streiner, 1995). That is, the chance-corrected agreement between the two raters was 86% for plot level and inter-textual voices and 83% for perspective taking.

Subject Internal Reliability: Cronbach's Alpha

Cronbach's Co-efficient Alpha was used to assess the internal consistency of children's mean level of performance for plot level, inter-textual voices, and perspective taking across the two toy conditions (i.e., high/low structure). It is one of the most commonly used reliability coefficients and is used when dealing with ranked rather than dichotomous data (Yaremkov, Harari, Harrison, & Lynn, 1982). This procedure determines whether the rank ordering of each dyad's average performance on each of the dependent measures remained consistent across the two toy conditions. Obtained alpha values are interpreted much like a correlation coefficient. The closer the alpha value is to 1, the more confident the researcher is that there is a consistent, reliable trend or association between the performance on one measure and the performance on another (i.e., from Toy 1 to Toy 2). Alternately, an alpha value close to 0 suggests no reliable trend in performance from Toy 1 to Toy 2. An acceptable Cronbach's alpha is typically set at .75 although this value will fluctuate depending on the number of items being used in the analysis (Cortina, 1993). When fewer items are used to assess internal consistency, lower alpha values may result and there is no real metric for

judging the adequacy of this statistic other than to consider the fineness of the distinctions needed to be made. This exploratory study is using broader-based scoring criteria. As well, the current analysis used only 2 items (i.e., assessing consistency across the high- and low-structured toy conditions); therefore, it was expected that the alpha values for each of the dependent variables would likely be less than ideal (i.e., .75) even though it may still be considered an acceptable indicator of internal consistency.

Reliability data is presented in Table 4.3. Overall, the children obtained moderate, positive alpha values across the two toy conditions for the plot level (Alpha = .652), stage management voice (Alpha = .505), and perspective taking dependent measures (Alpha = .697). There was little if any correlation from one toy condition to the next in the children's use of the dialogue (Alpha = -.173) or narrator voices (Alpha = .105). Scrutiny of means in the table suggests that these low values may be attributed to children's infrequent use of the dialogue voice in the low-structured toy condition as compared to the high-structured toy condition and the narrator voice in the high-structured toy condition as compared to the low-structured toy condition. As indicated in Table 4.3, this alpha pattern was maintained for both the 3- and 5-year-olds within their respective age groups.

Working Memory Associations

Previous analyses revealed that the 5-year-olds had, on average, one more working memory unit available to them than the 3-year-olds. Age-related differences in working memory have previously been related to children's storytelling competence. That is, McKeough (1986, 1992a) found a growth in working memory capacity was linked to a parallel progression in plot complexity in children's storytelling. Perhaps children with greater working memory are better able to access, manipulate, and

Table 4.3

Cronbach's Alpha Summary of Dyad Performance Consistency Across Toy Conditions

Variable ^a	Group ^b	M ^c	SD	Alpha	St. Alpha ^d
PL	Whole (n=29)	4.77	1.34	.6520	.6715
		3.54	1.00		
	3's (n = 14)	4.30	1.30	.6666	.7011
		3.21	0.88		
	5's (n=15)	5.20	1.27	.5365	.5446
		3.84	1.04		
PT	Whole	1.85	0.47	.6975	.7038
		1.79	0.40		
	3's	1.51	0.27	.6806	.6907
		1.64	0.34		
	5's	2.18	0.39	.5166	.5169
		1.95	0.41		
SM	Whole	21.08	14.37	.5057	.5152
		44.70	17.98		
	3's	19.60	11.69	.5222	.5461
		40.32	16.64		
	5's	22.46	16.79	.4755	.4778
		48.80	18.77		
DI	Whole	69.12	37.77	.1738	.2657
		6.48	13.15		
	3's	58.21	35.53	.3281	.5999
		4.39	8.61		
	5's	79.30	38.09	-.0322	-.0447
		8.43	16.38		
NA	Whole	3.79	5.85	.1051	.1595
		22.32	16.17		
	3's	4.42	4.89	.1645	.3310
		26.28	20.46		
	5's	3.20	6.74	-.2028	-.2223
		18.63	10.20		

^aPL = Plot Level Score, PT = Perspective Taking Score, SM = Stage Management Voice, DI = Dialogue Voice, NA = Narrator Voice.

^bSample size based on number of dyads rather than individual subjects: Whole group sample size (n=29), 3-year-old sample size (n=14), 5-year-old sample size (n=15).

^cFirst Mean represents high structured toy task, second mean represents low structured toy task.

^dSt. Alpha = Standardized Item Alpha which represents the value that would be obtained if all the items were standardized to have a variance of 1. Less variance between scaled items translates into a Standardized Alpha value close to the obtained Alpha.

integrate various sources of information thereby leading to more advanced (i.e., higher level) plotted stories.

Some research has also found that children's ability to represent two states or realities simultaneously becomes firmly established between 5 and 6 years of age (Flavell, 1986; Hogrefe, Wimmer, & Perner, 1986), although one study found this ability to emerge at an earlier age (i.e., 4-year-olds; Bruchkowsky, 1992). Although it remains unclear the extent to which developmental differences are due to memory limitations or learning experiences (Pillow, 1995), it is plausible that the age differences in working memory found herein are one important factor involved in children's ability to engage in more advanced levels of social perspective taking. In other words, children with greater amounts of working memory may be better able to divide their attention between their own needs and that of a play partner's. In doing so, they may be more sensitive and responsive to that partner's contributions and thereby engage in higher levels of social perspective taking. Therefore, in addition to plot structure complexity, potential working memory and perspective taking connections were explored further herein.

Working memory, and its potential link to children's employment of specific inter-textual voices in play, remains a relatively unexplored area within the empirical literature. Hence, in addition to plot structure and social perspective taking, correlations were generated between working memory capacity and each of the three inter-textual voices (i.e., stage management, dialogue, and narrator) to explore any possible connections between these variables.

Plot level, social perspective taking, and each of the inter-textual voices were measured on an ordinal scale and working memory was measured on an interval scale. There is no optimally appropriate correlation test for this combination of variables (Hinkle, Wiersma, & Jurs, 1979), so the Spearman Rho (r_s) procedure, which assesses

variables based on an ordinal measurement scale, was first employed to assess any significant relationships. Following that, the more widely used Pearson's product-moment correlation coefficient (r) formula, which assesses variables based on an interval or ratio scale, was computed. Both procedures yielded similar findings; therefore, only Pearson r coefficients are presented in Table 4.4.

Table 4.4

Summary of Pearson Product Moment Correlation Coefficients Between Working Memory and Dependent Variables (N = 29)

Dependent Variable	Condition	
	High-Structured Toys	Low-Structured Toys
Plot Level	.385*	.317
Perspective Taking Level	.627**	.448*
Stage Management Voice	.011	.217
Narrator Voice	-.192	-.209
Dialogue Voice	.455*	.075

Note. Working Memory ($M = 3.43$, $SD = 0.60$)

* $p < 0.05$; ** $p < 0.001$

As indicated in the table, there was a significant low, positive correlation between working memory and plot level in the high-structured toy condition ($r = +.385$, $p < .05$). This suggests that the children with additional working memory capacity were better able to incorporate increasingly complex story elements into their play while playing with the high-structured toys. This relationship was not maintained in the low-structured toy condition ($r = .317$, $p = .094$). That is, additional working memory did not seem to be related to children's production of higher-level story plots while playing with the low-structured toys.

Table 4.4 also indicates significant low to moderate, positive correlations between working memory and social perspective taking in both the high- ($r = +.627$, $p = .001$) and low-structured toy conditions ($r = +.448$, $p = .015$). That is, children with more working memory seemed better able to acknowledge and integrate play partners' ideas and perspectives. These findings suggest that not only are greater amounts of working memory fundamentally linked to children's ability to engage in higher levels of social perspective taking, they also suggest that this positive relationship is quite stable and less affected by changes in the degree of salient toy information contained within the external play environment.

Unlike plot level and perspective-taking, Table 4.4 reveals few associations between children's inter-textual voice usage and working memory capacity. Indeed, the only significant association found was the low, positive correlation related to the children's use of the dialogue voice in the high-structured toy condition ($r = +.455$, $p = .013$). Perhaps engaging in a character role requires children to utilize more working memory to maintain and manage the boundary between their play and non-play. This explanation aligns with research findings documenting younger preschoolers' (i.e., the 3-year-olds) greater difficulty distinguishing between reality and pretend (Field, DeStefano, & Koewler, 1982; Fisher DiLalla & Watson, 1988; Scarlett & Wolf, 1979).

In summary, follow-up correlation analyses of the significant age differences in working memory capacity suggest that working memory is significantly associated with plot level performance and dialogue voice in the high-structured toy condition. As well, working memory seems to be associated with social perspective taking in both toy conditions. Caution is necessary when interpreting these results, however. Although age-related differences in working memory capacity appear to have a positive association with plot structure level and perspective taking under the aforementioned

conditions, these associations accounted for a relatively small portion of the total shared variance in the children's performance as measured by the coefficient of determination (R^2). That is, squaring the correlation coefficients between working memory capacity and plot structure and social perspective taking, which reveals the total amount of shared variance between the variables of interest, yielded R^2 values ranging from 9% to 36%.

Correlation Analysis of Experimental Data

A correlation analysis measuring potential associations between children's plot level, inter-textual voice, and social perspective taking performance was completed to determine the appropriateness of using a two-way multivariate analysis of variance, or MANOVA (Age [3, 5], Toy [high, low]), in assessing the experimental data.² The MANOVA factorial design is preferable to using a series of ANOVA's because it maintains an alpha level unaffected by the number of dependent variables and thereby avoids artificially inflating group differences when taking into account the total number of inter-relationships being explored. The correlational data in Table 4.5 revealed several significant low to moderate, positive associations between the dependent variables for the group as a whole ($N = 29$). These significant inter-relationships confirmed the appropriateness of using MANOVA's for analyzing the experimental data.

Unlike the plot level and perspective taking correlations which were, for the most part, maintained across both toy conditions, scrutiny of the correlation data for the group in Table 4.5 revealed a weakening in the relationship between some of the inter-textual voices and some of the other dependent variables from one toy condition to the next. For example, in the low-structured toy condition, the stage management voice was significantly associated with plot level and perspective taking. These associations were

Table 4.5

Pearson Correlation Coefficients Across Age and Toy Condition

Variables ^a											
All (n=29)	PLT1	PLT2	PTT1	PTT2	SMT1	SMT2	NAT1	NAT2	DIT1	DIT2	
PLT1	1.0	.505** (.005)	.546** (.003)	.147	-.050	.294	-.179	.186	.740** (.000)	.026	
PLT2		1.0	.423* (.025)	.381* (.041)	.018	.521** (.004)	.075	.116	.404* (.030)	.317	
PTT1			1.0	.543** (.003)	.163	.532** (.004)	-.278	-.075	.444* (.018)	.146	
PTT2				1.0	.000	.458* (.013)	-.434* (.019)	.190	.227	.330	
SMT1					1.0	.347	.029	-.201	.014	-.013	
SMT2						1.0	-.335	-.126	.453* (.013)	-.160	
NAT1							1.0	.087	-.267	-.021	
NAT2								1.0	.194	.012	
DIT1									1.0	.153	
DIT2										1.0	
3's (n=14)											
PLT1	1.0	.540* (.046)	.429	.191	.063	.249	-.067	.340	.722** (.004)	.046	
PLT2		1.0	.291	.041	.336	.584* (.028)	.351	.091	.710** (.004)	.370	
PTT1			1.0	.528	.467	.182	.230	.094	.398	.180	
PTT2				1.0	-.132	.149	-.265	.411	.308	-.025	
SMT1					1.0	.376	.668** (.009)	-.142	.289	.565** (.035)	
SMT2						1.0	-.056	-.287	.617* (.019)	.074	
NAT1							1.0	.198	-.008	.411	
NAT2								1.0	.347	.230	
DIT1									1.0	.428	
DIT2										1.0	
5's (n=15)											
PLT1	1.0	.374	.435	-.128	-.195	.220	-.215	.246	.708** (.003)	-.070	
PLT2		1.0	.308	.466	-.207	.415	-.018	.442	.079	.261	
PTT1			1.0	.349	-.040	.779** (.001)	-.478	.254	.283	-.007	
PTT2				1.0	.006	.589* (.021)	-.525* (.045)	.244	.000	.441	
SMT1					1.0	.314	-.254	-.296	-.200	-.231	
SMT2						1.0	-.481	.266	.258	.157	
NAT1							1.0	-.100	-.402	-.151	
NAT2								1.0	.222	-.099	
DIT1									1.0	-.022	
DIT2										1.0	

Note. *Correlation is significant at the 0.05 level; **Correlation is significant at the 0.01 level. Bracketed number under correlation coefficient is actual p value.

^aVar=Dependent Variables, T1 = High-Structured Toy Task, T2 = Low-Structured Toy Task, PL = Plot Level, PT =

Perspective Taking, SM = Stage Management Voice, NA = Narrator Voice, DI = Dialogue Voice

not evident in the high-structured toy condition. As well, in the high-structured toy condition, the dialogue voice was significantly linked to plot level and perspective taking. However, these associations were not evident in the low-structured toy condition. Except for the negative association between the children's use of the narrator voice in the high-structured toy condition and their perspective-taking competence in the low-structured toy condition ($r = -.434$, $p = .019$), there seemed to be an absence of associations between this particular voice and the other dependent variables regardless of the toy condition. The lack of linkages suggests that the narrator voice may be less related to the other variables than that of the stage management or dialogue voices.

Correlational data for the 3- and 5-year-olds is provided separately in Table 4.5. This data was necessary for the statistical procedure drawn from Steiger (1980) comparing correlation elements that will be discussed shortly. Perusal of these two correlation matrices indicated some convergence and divergence between the two groups of children. Significant differences emerged primarily with regard to the children's use of the various inter-textual voices across the two toy conditions. Only within the high-structured toy condition did the children seem to perform similarly with both groups' greater use of the dialogue voice being significantly tied to higher levels of plot structure complexity (3's [$r = +.722$, $p = .004$], 5's [$r = +.708$, $p = .003$]).

Other than this sole correlation, Table 4.5 indicates that the two groups of children seemed to utilize the inter-textual voices for very different purposes in their play and that the use of such voices appear to be strongly affected by the degree of inherent toy detailing. For example, within the high-structured toy condition, the stage management voice is positively associated with the use of the narrator voice for the 3-year-olds ($r = +.668$, $p = .009$) but not for the 5-year-olds ($r = -.254$). Alternately, while playing with the low-structured toys, the 3-year-olds use of the stage management voice

is positively associated with their plot structure complexity ($r = +.584$, $p = .028$). Again, this was not the case for the 5-year-olds ($r = .415$). However, unlike the 3-year-olds ($r = .149$), in the low-structured toy condition the older children did have a moderate, positive correlation between stage management voice usage and social perspective taking competence ($r = +.589$, $p = .021$).

In addition to the above differences within each toy condition, there were a number of toy condition crossovers. That is, there were a number of age-related divergences in the relationships between several of the dependent variables from the high- to low-structured toy conditions, particularly for the 3-year-olds. For example, plot structure complexity in the high-structured toy condition was positively related to plot structure complexity in the low-structured condition for the 3-year-olds ($r = .540$, $p = .046$). As well, use of the dialogue voice in the high-structured toy condition was related to plot level complexity in the low-structured toy tasks for the younger children ($r = +.710$, $p = .004$). Likewise, the 3-year-olds' employment of stage management voice in the high-structured toy condition was positively associated to their use of the dialogue voice in the low-structured toy condition ($r = +.565$, $p = .035$). The reverse was also true: The 3-year-olds' dialogue voice use in the high-structured toy condition had a positive association to their stage management use voice in the low-structured toy condition ($r = +.617$, $p = .019$).

Unlike the younger preschoolers, there were fewer toy condition crossovers for the older preschoolers. The ones that did occur were specifically tied to their social perspective taking. For example, the 5-year-olds perspective taking in the high-structured toy condition was positively linked to their use of the stage management voice in the low-structured toy condition ($r = +.779$, $p = .001$). As well, their perspective taking

in the low-structured toy condition was negatively associated with their use of the narrative voice while playing with the high-structured toys ($r = -.525$, $p = .045$).

The greater number of positive, within- and across-toy condition associations for the 3-year-olds in comparison to the 5-year-olds in relation to inter-textual voice use may suggest two things. Firstly, it suggests that greater heterogeneity may exist within the younger age group in the use of such voices in comparison to the older age group. Secondly, it suggests that the younger children may use these voices in a very different manner and for very different purposes than the older children. That is, it is possible that the older children are more selective in how they choose to employ these voices to convey their story meanings in play. Children's use of various story voices across age and toy condition is presented in the following section detailing the experimental findings of the current study.

Analyses of Experimental Manipulations and Effects

This section contains a summary of findings related to the statistical analyses of the experimental data. More specifically, potential Age (3,5), Toy Structure (high, low), and interaction (Age x Toy) effects are explored in relation to children's plot level, inter-textual voice (i.e., stage management, dialogue, and narrator), and social perspective taking performance. Following the presentation of multivariate findings, associations between children's social perspective taking and their plotted stories are compared and assessed using a statistical formulation drawn from Steiger (1980). More specifically, this latter analysis statistically compared whether the correlations between the plot level and perspective taking changed with age or toy condition.

Multivariate Analysis of Variance (MANOVA)

All statistical analyses were completed using 2 x 2 two-way MANOVA factorial designs (Age [3, 5], Toy [high, low]). Multivariate tests of significance using Hotelling's T^2

revealed a significant age effect across all the dependent measures, $\eta^2 = .89$, $F(5, 23) = 4.08$, $p = .008$. As well, there was a significant multivariate effect of toy structure on the three dependent variables, $\eta^2 = 3.94$, $F(5, 23) = 18.12$, $p = .001$. There were, however, no significant multivariate Age x Toy interaction effects between all the dependent variables, $\eta^2 = .25$, $F(5, 23) = 1.19$, $p = .343$. The next section details follow-up univariate analyses examining where these effects occurred.

To keep focused on those factors that were hypothesized to occur or not occur, each of the univariate effects is discussed in relation to the previously stated research hypotheses and questions. Plot level findings are discussed prior to inter-textual voice findings, which are followed up by social perspective taking results. The descriptive data is presented in Table 4.6³ and inferential findings are presented in Table 4.7.

Table 4.6

Descriptive Data for Dependent Variables by Age and Toy Condition

Variable	Means (and Standard Deviations)			
	High-Structured Toys		Low-Structured Toys	
	Age in Years			
	3	5	3	5
Plot Level	4.30(1.31)	5.20(1.27)	3.21(0.88)	3.84(1.04)
Stage Manage Voice	19.60(11.69)	22.46(16.79)	40.32(16.64)	48.48(17.98)
Dialogue Voice	58.21(35.53)	79.30(38.09)	4.39(8.61)	3.20(6.74)
Narrator Voice	4.42(4.89)	3.20(6.74)	26.28(20.46)	18.63(10.20)
Perspective Taking	1.52(0.27)	2.15(0.40)	1.64(0.34)	1.95(0.40)

Table 4.7

Summary of MANOVA Main and Interaction Effects for the Dependent Variables

Variable ^a	Effect	MSError	F	p
Plot Level DF(1,27)	Age	1.86	4.52	.043*
	Toy Task	0.74	29.27	.001**
	Age x Toy	0.74	0.38	.540
Stage Management Voice DF(1,27)	Age	350.59	1.32	.259
	Toy Task	177.58	45.12	.001**
	Age x Toy	177.58	0.64	.429
Dialogue DF(1,27)	Age	823.74	2.77	.107
	Toy Task	711.58	79.10	.001**
	Age x Toy	711.58	1.47	.235
Narrator Voice DF(1,27)	Age	151.39	1.88	.181
	Toy Task	139.41	36.11	.001**
	Age x Toy	139.41	1.07	.310
Perspective taking DF(1,27)	Age	0.18	17.77	.001**
	Toy Task	0.07	0.30	.585
	Age x Toy	0.07	5.01	.034*

^aDF = Degrees of Freedom, MS Error = Mean Squared Error

*p < .05, **p < .001

Univariate effects on children's plot-level performance.

Univariate analysis revealed a significant age effect for plot level, $F(1, 27) = 4.53$, $p = .043$. Consistent with the hypothesized direction, scrutiny of the group means in Table 4.6 revealed that the 5-year-olds told higher-level plotted stories than the 3-year-olds in both toy conditions. Univariate analyses also revealed significant toy effects for plot level ($F(1, 27) = 29.27$, $p < .001$). Table 4.6 indicates that both groups of children produced higher level stories in the high-structured toy condition in comparison to the low-structured toy condition. That is, both groups of children experienced a substantial drop in storytelling performance when exposed to the low-structured toys. This finding runs contrary to the hypothesis that the 5-year-olds' plotted stories would be

less affected by changes in toy structure than the 3-year-olds. As indicated in Table 4.7, there was no significant Age x Toy interaction effect for plot structure.

Hence, univariate analyses provided support for a developmental progression in children's plot level complexity; however, contrary to the expectations, plot complexity was impacted by the presence or absence of toy structure within each age group.

Univariate effects on children's inter-textual story voices.

Univariate follow-up tests exploring the effect of toy structure on children's inter-textual voice use indicated a significant toy effect for the stage management ($F [1, 27] = 45.12, p < .001$), dialogue ($F [1, 27] = 79.10, p < .001$), and narrator voices ($F [1, 27] = 36.11, p < .001$). However, contrary to the prediction that the 5-year-olds' story voices would be less affected by toy structure than the 3-year-olds', there were no significant age differences in the use of the stage management, dialogue, or narrator inter-textual voices. As well, there were no significant Age x Toy interactions for each of the inter-textual voices. Scrutiny of the means in Table 4.6 show a parallel trend in children's story voice use across toy conditions. There was a substantial rise in the children's use of both the stage management and narrator voice and a dramatic drop in their use of the dialogue voice in the low-structured toy condition. That is, both groups of children integrated more out-of-play-frame (i.e., not as a character) inter-textual voices in the absence of more explicit toy structure. Conversely, both groups of children employed the in-character inter-textual story voice (i.e., dialogue voice) when playing with the high-structured toys.

Although these results appear to offer important insight on how children adjust their inter-textual voice use to accommodate to the presence or absence of concrete cues contained within the physical environment, it is important to remain somewhat cautious in drawing any firm conclusions in this regard. As indicated in Table 4.6, there

was a large amount of within-group variance in performance on these dependent variables. Indeed, some of the standard deviations actually exceeded the group means as indicated by the 5-year-olds' dialogue voice use in the low-structured toy condition ($M = 8.43$, $SD = 16.38$) and both the 3- and 5-year-olds narrator voice use in the high-structured toy condition (5-year-olds: $M = 3.20$, $SD = 6.74$; 3-year-olds: $M = 4.42$, $SD = 4.89$). Hence, the large amount of within-group variance may be partially responsible for the lack of significant age-related findings with regard to children's inter-textual voice use. Possible reasons for this variability will be discussed later on in this document.

Univariate effects on children's social perspective taking.

The following analyses explored how age and toy structure were related to children's perspective taking performance. Univariate analysis revealed a significant age effect for perspective taking, $F(1, 27) = 17.77$, $p < .001$. Five-year-olds performed, on average, at higher levels of perspective taking than the 3-year-olds as indicated in Table 4.6. However, there was no significant toy effect for social perspective taking suggesting that toy structure alone had little impact on children's perspective taking performance. Qualifying this latter finding was a significant Age x Toy interaction effect, $F(1, 27) = 5.016$, $p = 0.034$. To clarify the nature of this interaction (i.e., whether the age effect changed from toy to toy or the toy effect changed from age to age) simple effects analyses were conducted. Results are presented in Table 4.8. Simple effects findings indicated no significant toy effect on social perspective taking for the 3-year-olds, $F(1, 27) = 1.37$, $p = .251$, and a trend toward a significant toy effect for the 5-year-olds, $F(1, 27) = 4.04$, $p = .055$. Referring back to the means in Table 4.6, it appears that the 5-year-olds, on average, experienced a decrease in social perspective-taking performance in the low-structured toy condition. Simple effects also revealed significant age effects within both the high- ($F(1, 27) = 668.55$, $p = .001$) and low-structured ($F(1,$

27] = 4.93, $p = .035$) toy tasks. Again, referring back to Table 4.6, the 5-year-olds performed, on average, at a significantly higher level of social perspective taking than the 3-year-olds within both toy conditions. So, although the 5-year-olds experienced a significant drop in their perspective-taking performance from the high- to low-structured toy condition (hence the interaction effect), they remained, on average, at a higher level than the 3-year-olds across and within both toy conditions.

Table 4.8

Simple Effects of Interaction Effects for Social Perspective Taking

Design ^a	Variable	SS/MS ^b	F	p
Toy Tasks within Age	Age 3	0.11	1.37	.251
	Age 5	0.32	4.04	.055
Age within Toy Tasks	High-Str. Toys	93.68	668.55	.001**
	Low-Str. Toys	0.69	4.93	.035*

* $p < .05$, ** $p \leq .001$

^aDegrees of freedom were 1,27 for both designs.

^bSS/MS = Sums of Square/ Mean Squares

In summary, children's plot structures were significantly impacted by both age and toy structure. Children's inter-textual voices were significantly impacted by toy structure. These findings provided partial support for the research hypotheses predicting directional effects. Exploring the research questions related to age and toy effects on social perspective taking competence resulted in findings highlighting complex interaction effects. Even though the older children's perspective taking dropped substantially from the high- to the low-structured toy task, they still engaged in significantly higher levels of perspective taking than the younger children.

Statistical Tests Comparing Plot Level/Perspective Taking Correlation Data

The final analysis of this study explored potential associations between perspective taking and plot structure complexity as follows: Is there a relationship between these two variables? Does this relationship change across toy conditions (high/low structure). Is this relationship similar for 3- and 5-year-olds?

The literature suggested that, although each child brings certain knowledge frameworks and behavioral competencies to the play setting, his or her behavior is also shaped and transformed by the ongoing relations and interactions taking place between play partners as they attempt to establish and sustain a common play theme and direction (Garvey, 1993; Goncu, 1987, 1993a, 1993b). Recall that Selman and his colleagues attempted to tie together levels of social understanding and awareness (i.e., social perspective-taking) to children's increasing ability to respond to and integrate other people's ideas and responses (Adalbjarnardottir & Selman, 1989; Brion-Meisels & Selman, 1984; Gurucharri & Selman, 1982; Lyman & Selman, 1985; Selman & Demorest, 1984; Yeates, Schultz, & Selman, 1991). Based upon this previous empirical work, this study attempted to assess preschoolers underlying social awareness and understanding by examining their peer interactions while engaged in play.

Potential developmental differences in children's ability to respond to and integrate play partners ideas (i.e., social perspective taking) has not, to date, been explored with regard to children's storytelling competence in play. On a commonsense level, it seems reasonable that dyads that successfully acknowledge and integrate each other's play ideas would produce more complex and elaborated stories than dyads that are less able to do so. Hence, to explore and compare the relationship between children's plot level and social perspective taking performance across age and toy tasks without artificially manipulating the data, a statistical procedure comparing the

equivalence between plot level and perspective taking correlation elements in the context of other associated correlations was employed (Steiger, 1980). This procedure allowed for statistical comparisons between the plot level and social perspective taking correlational data drawn from the previously cited Pearson product-moment correlation matrix (see Table 4.5). Although the correlation coefficients between plot level and social perspective taking across the various age groups and toy conditions appear to differ, inferences with regard to these differences cannot be made because the correlations are drawn from the same individuals and are not, in general, independent of each other (Steiger, 1980). Hence, to alleviate the problem of two correlations having an index in common, the procedure drawn from Steiger transformed the plot structure and social perspective taking correlations into standardized z scores thereby allowing one to compare the statistical equivalence of any potential interrelationships across age and toy condition. This procedure is presented in greater detail in the following section. However, prior to presenting this experimental technique and findings, correlational data between plot level and perspective taking drawn from Table 4.5 and summarized in Table 4.9 are further explored.

As indicated in Table 4.9, significant moderate-positive relationships appeared to exist between plot level and perspective taking for the whole sample ($N = 29$) within each of the two toy conditions, High-structured toys: $r = +.546$, $p = .003$; Low-structured toys: $r = +.381$, $p = .041$. This association was maintained for 5-year-olds although it did not reach statistical significance likely due, in part, to the small sample size ($n = 15$), High-structured toys: $r = +.435$, $p = .120$; Low-structured toys: $r = +.466$, $p = .080$. Again, this relationship appeared to be replicated for the 3-year-olds in the high-structured toy condition although, similar to the 5-year-olds, it did not reach statistical significance due, in part, to a small sample size ($n = 14$), $r = +.429$, $p = .126$. However,

unlike the 5-year-olds, there appeared to be little relationship between the 3-year-old's plot level and perspective-taking performance in the low structured toy condition, $r = +.041$, $p = .888$.

Table 4.9

Correlation Data and Coefficient Of Determination for Plot Level and Perspective Taking

Var ^a	Corr. Index	Whole r (r^2)	3-year-olds r (r^2)	5-year-olds r (r^2)
PLT1/PLT2	r_{13}	$+.505^{**}(25.50\%)$	$+.540^{*}(29.19\%)$	$+.374(13.98\%)$
PLT1/PTT1	r_{12}	$+.546^{**}(29.81\%)$	$+.429(18.40)$	$+.435(18.92\%)$
PLT1/PTT2	r_{14}	$+.147(2.16\%)$	$+.191(3.64\%)$	$-.128(1.63\%)$
PLT2/PTT1	r_{23}	$+.423^{*}(17.89\%)$	$+.291(8.46\%)$	$+.308(9.48\%)$
PLT2/PTT2	r_{34}	$+.381^{*}(14.51\%)$	$+.041(0.16\%)$	$+.466(21.71\%)$
PTT1/PTT2	r_{24}	$+.543^{**}(29.48\%)$	$+.528(27.87\%)$	$+.349(12.18\%)$

^aVar = Variable, T1 = High-Structured Toy Condition, T2 = Low-Structured Toy Condition, PL = Plot Level, PT = Perspective Taking, Corr. Index = Bivariate correlations used in Steiger's (1980) statistical formula, whole sample ($n=29$), 3-year-olds ($n=14$), 5-year-olds ($n=15$).

* $p < .05$, ** $p < .01$

Thus, the correlational data presented in Table 4.9 suggests that, on average, higher-level plotted stories tend to correspond with higher levels of social perspective taking for the whole group and for the 5-year-olds for both toy conditions. As well, the data appears to suggest that this relationship may weaken for the 3-year-olds from one toy condition to the next. Although the correlation data strongly suggests that age and toy structure may impact the relationship between plot level and perspective taking, it has yet to be determined whether these observed differences are statistically significant. That is, a more stringent test is necessary to assess the statistical equivalence or comparability of this correlation data. Hence, to assess whether the relationship between plot level and perspective taking was equivalent across the various ages and

toy conditions, the following 3-part statistical formula (Steiger, 1980) was used to convert the raw correlational data into a standardized measure (i.e., z):

$$\Psi_{jk,hm} = N\sigma_{jk,hm} = \frac{1}{2} \{[(\sigma_{jh} - \sigma_{kh}) \times (\sigma_{km} - \sigma_{kh}\sigma_{hm})] + [(\sigma_{jm} - \sigma_{jh}\sigma_{hm}) \times (\sigma_{kh} - \sigma_{kh}\sigma_{jh})] + [(\sigma_{jm} - \sigma_{jm}\sigma_{mh}) \times (\sigma_{km} - \sigma_{kh}\sigma_{jm})] + [(\sigma_{jm} - \sigma_{jk}\sigma_{km}) \times (\sigma_{kh} - \sigma_{km}\sigma_{mh})]\},$$

and

$$s_{jk,hm} = (N-3)\sigma_{zjk,zjh} = \Psi_{jk,hm}\Psi_{jk}^{-1}\Psi_{hm}^{-1} = \Psi_{jk,hm} / (1 - \sigma_{jk}^2)(1 - \sigma_{hm}^2),$$

followed by

$$Z_2^* = (N-3)^{1/2} (z_{jk} - z_{hm}) (2 - 2s_{jk,hm})^{-1/2}.$$

The above formula yielded small sample statistics that then allowed for testing the equality of two correlation coefficients. That is, it transformed each of the two sample correlations being compared (i.e., correlation indexes presented in Table 4.9) to a standard measure (i.e., z_{jk} , z_{hm}). These standard measures were then used to assess the equivalence of the correlation coefficients between the groups.

The first analysis compared the whole group correlation coefficients for plot level and perspective taking for the high-structured toy task ($r_{12\text{whole}} = +.546$) with the plot level and perspective taking for the low-structured toy task ($r_{34\text{whole}} = +.381$). As indicated by the correlation coefficient of determinations in Table 4.9, the variance in performance accounted for by both plot level and perspective taking in the high-structured toy condition was almost double that of the variance accounted for the same relationship in the low-structured toy condition, $r_{12\text{whole}}^2 = 29.80\%$; $r_{34\text{whole}}^2 = 14.50\%$. Therefore, it was expected that the relationship between plot structure and social perspective taking would be different across the toy conditions. However, statistical comparison of the aforementioned correlation elements using Steiger's (1980) formulation revealed that there was no significant difference, $z = 0.867$, $p = 0.386$. This non-significant finding

suggested that the relationship between plot level and perspective taking was similar across toy conditions and not differentially affected by the degree of toy structure for the children as a whole.

Although this null effect was contrary to expectation, the relatively small sample size ($N = 29$) may have contributed to this null effect. That is, it is possible there is a difference but that the sample sizes were simply too small to detect that difference. To test this possibility, a procedure known as the power of a statistical test was employed. The power of a statistical test helps to determine at what point a test is able to lead to a decision to reject the null hypothesis when it is indeed false (McCall & Kagan, 1994). To test the power of the statistical test used herein, a hypothetical sample size of 100 was inserted into the formula in place of the actual sample size. The addition of more subjects yielded significant findings. Hence, significant findings based on a larger hypothetical sample size appeared to suggest that samples were too small to detect a significant toy effect on the relationship between plot level and perspective taking. In other words, the null effect did not necessarily preclude a toy effect. Rather, the small number of cases, coupled with the modest association between plot level and perspective taking, was not of sufficient power to detect a significant difference.

Similar to the null effect for the whole sample, the relationship between plot level and perspective taking across the high ($r_{12-5\text{years}} = +.435$) and low ($r_{34-5\text{years}} = +.466$) toy tasks for the 5-year-olds was found to be equivalent, $z = -0.101$, $p = 0.919$. Scrutiny of the coefficients of determination indicates similar proportions of variance accounted for by the plot level/perspective taking relationship across the two toy tasks, $r_{12-5\text{years}}^2 = 18.92\%$; $r_{34-5\text{years}}^2 = 21.72\%$; therefore, this null effect was not surprising. Nevertheless, to further test the comparability and homogeneity of the 5-year-olds performance across the toys tasks, the power of the statistical test procedure was employed as several

hypothetical samples sizes exceeding the actual sample size ($n = 15$) were inserted into the statistical equation. Even with a sample size of 1,000, this null effect was maintained. This additional testing appeared to suggest that the moderate, positive relationship that existed between the 5-year-olds' plot level and perspective taking performance was quite stable and less affected by external manipulations in toy structure.

However, this stability did not, at first glance, appear to be the case for the 3-year-olds. As indicated in Table 4.9, the correlation coefficients measuring the relationship between the 3-year-olds' plot level and perspective taking in the high-structured toy condition indicated a low, positive association similar to that of the 5-year-olds', $r_{12-3years} = +.429$. However, unlike the 5-year-olds, this relationship virtually disappeared in the low-structured toy condition for the 3-year-olds, $r_{34-3years} = +.041$. Scrutiny of the coefficients of determination appeared to support a differential toy effect on the plot level/perspective taking association for the younger children, $r^2_{12-3years} = 18.40\%$, $r^2_{34-3years} = 0.17\%$. Despite this, statistical testing assessing equivalence in the plot level/perspective-taking relationship across both toy conditions once again failed to yield a significant result, $z = 1.759$, $p = 0.078$. Again, to test the possibility that small sample size was partly at the root of this null finding, the power of the statistical test procedure was employed as several hypothetical sample sizes exceeding the actual sample size ($n = 14$) were inserted into the statistical formula. A sample size of 29 was found to yield significant results. This latter finding is in startling contrast to a failure to reject the null hypothesis for the 5-year-olds even with 1,000 hypothetical subjects inserted into the formula. Hence, although there was a null effect for the 3-year-olds, further testing using different hypothetical sample sizes suggested that, unlike the older

preschoolers, there is less stability and greater heterogeneity in the relationship between plot level and perspective taking for the younger children across the two toy conditions.

Summary of Experimental Findings

Briefly, to summarize, MANOVA's revealed a significant age effect for plot level and perspective taking with 5-year-olds consistently outperforming the 3-year-olds. As well, there was a significant toy-structure effect for plot level and inter-textual voices. Plot structure levels dropped from the high- to the low-structured toy conditions for both age groups. Unlike the stage management and narrator voices' significant rise in frequency from the high to the low-structured toy condition, children's use of the dialogue voice dropped dramatically in the latter task. Lastly, an Age x Toy Structure effect was found in children's social perspective taking. Despite the 5-year-olds' significant drop in perspective taking performance from the high- to the low-structured toy condition in comparison to the 3-year-olds', the older children's performance still remained significantly above that of the younger children in both conditions. Statistical analyses assessing the significance of observed differences between the plot level/social perspective taking correlation coefficients for the whole sample, 5-year-olds, and 3-year-olds across toy tasks revealed null findings. Subsequent testing using the power of a statistical test with hypothetical sample sizes being inserted into Steiger's (1980) statistical formula in lieu of actual sample numbers suggested greater stability in the linkage between plot level and social perspective taking for the 5-year-olds in comparison to the 3-year-olds across both high- and low-structured toy conditions.

The aforementioned quantitative analysis appeared to support the presence of important age-related trends in preschoolers' pretend-play storytelling. More specifically, the children's play stories appear to progress in structural complexity with age. However, this developmental trend was significantly impacted by the degree of toy

structure present within the play environment and by the children's ability to respond to and integrate social cues into their ongoing play. As well, inferential analysis of children's inter-textual voice use in their play stories suggested that children as young as three years of age adjust these voices (i.e., stage management, dialogue, narrator) in response to changes in the degree of toy structure contained within the play setting. That is, both 5- and 3-year-olds use the dialogue voice (i.e., character role) more frequently when playing with the high-structured toys. Alternately, they are more inclined to use out-of-play frame voices (i.e., stage management, narrator) when playing with the low-structured toys.

Descriptive Content Analysis

The primary purpose of this last section is to describe some emergent aspects of children's pretend play, and provide illustrative examples, that seemed of importance to their storytelling which were not adequately addressed by the quantitative analysis. Following this descriptive content analysis, a brief summary of these potentially important aspects of children's continually shifting story meanings and frames in play is provided.

The quantitative analysis reported above attempted to capture, in a fairly parsimonious and systematic fashion, possible connections between developmental, environmental, and social aspects of children's storytelling within play. Yet, there were some aspects that emerged in the children's moment-to-moment play transactions that seemed to be of equal importance to their storytelling activities in play. These aspects are important contextual motivators (Matusov, 1998) because they seemed to alter the content and course of the children's stories. A thorough review of field notes taken during the formal data-gathering and story-transcription procedure appeared to suggest that other factors, in addition to those presented above, may be critical to some

children's success in engaging and sustaining a mutual story focus with their partner. In the current section, some of the more salient aspects of children's play stories are introduced and explored. That is, children's use of personal storytelling, observer input, positive affect, reality-pretend boundary markers, and verbally explicit language, all of which appeared to impact play relations, are presented in turn. Obviously, this latter section does not make any claims as to the overall generality of the various play elements. Rather, this section attempts to highlight select aspects of preschoolers' play transactions that may be of some importance to their storytelling and to plant the seeds for future research.

Personal Storytelling Accounts

Although the current study was primarily interested in exploring children's pretend-play storytelling, I was struck by the children's occasional reference to real-life happenings that took place outside the immediate play context. While exploring the children's use of such personal storytelling in play, it became apparent that they often used such stories to 1) establish a common ground or focus with their play partner, 2) supplement, extend, or explain their play actions, 3) smooth their social relations, 4) diffuse or reduce negative affective states, or 5) lend additional structure and coherence to ambiguous play situations (especially in the low-structured toy condition). The following examples from the low-structured toy condition accentuates how one 3-year-old dyad's skillful integration of personal storytelling into their play met many of the functions stated above. Note that no attempt is made to judge the accuracy of the children's personal stories, especially since such accuracy may be impaired given the retrospective (perhaps even elaborated) nature of such storytelling. Rather, what seemed of most relevance was the children's use of information contained in these

personal accounts to help frame, support, and inform subsequent play speech and action:

Example 1:

Theo: "This...this looks like a sword." (picks up a long narrow piece of lego block material and looks at it) "I have a sword with...with my costume." (gaze shifts to the observer, then over to his partner, Alison) "I can't bring it." (shakes his head back and forth)

Observer: "Ah. No swords at the daycare, heh?" (Theo shakes his head again)

Alison: "I gotta...I gotta scary thing." (gaze on toys)

Observer: "You've got a scary thing."

Theo: "Well...what's that?" (gaze to Alison)

Alison: "It's...it's a witch." (looks over to Theo, smiles, then looks back to her toys)

Theo: "Yeh. Right I'm not scared of witch. When I was two I...I'm scared of witch."

Alison: "Are you scared of witches?" (looks over at Theo, then back to toys)

Theo: "Yeh...when I was two...when I know I was a baby I did." (looks at Alison)

"Yeh. From...from the scary trees." (holds arms out by his side and sways, tone of voice becomes spooky) "This was what I was scared as a baby." (picks up tree structure he had assembled, Alison looks over to it and watches him) "This one."

Alison: "Scary." (looks back down to her toys)

Theo: "Yeh. When I was a baby I was scared of these ones." (gaze to tree he's holding)

Alison: "When I was a baby I was...I was crying." (gaze to Theo then down to her toys)

Theo: "Aahhh." (sound effect like an engine) "This tree flies...flying around." (twirling in circles and holding the tree/plane high in the air) "And it crashed." (throws the structure onto the floor, it breaks apart, Alison looks over at Theo, then over to the observer)

Observer: "And it crashed."

Theo: "There was somebody in the plane and some crashes." (gestures with arms in the air, gaze to observer)

Alison: "Mommy was in the plane." (gaze on own toys)

Example 2:

Greg: "My mommy's sick." (gaze directed to observer)

Observer: "Is she?"

Vicky: "And my mommy's sick not any more. My mommy's sick not any more." (gaze to observer)

Observer: "No?"

Vicky: "Even burn even is better." (gaze to observer)

Greg: "She hurt her eye." (gaze to toys as he builds his structure)

Vicky: "My mommy hurt because she hurt her arm." (touches her forearm)

Observer: "She hurt her arm."

Vicky: "And she hurt it right...she burn her thing right here." (points to her elbow)

"But she not sad now because it feels better because we put bandaids on her."

As is evident in the preceding examples, sharing personal stories in play seemed to help the children establish a mutual frame of reference in the absence of concrete toy cues. By using each other's personal experiences as a springboard for subsequent play

speech and action, they were able to share their thoughts and ideas and, in doing so, discuss their thoughts and feelings regarding potentially disturbing and provocative events and topics.

The previous illustration highlights how personal storytelling served as a supportive framework for the children's play speech and action. As mentioned previously, personal storytelling seemed to occur most frequently in the low-structured toy condition where the play was more open-ended and there were fewer explicit cues for the children to use as a guide for their play. Table 4.10 presents children's rate of personal storytelling across both the high- and low-structured toy conditions.

Table 4.10

Frequency of Personal Storytelling Across Age and Toy Condition

	High-Structured Toys	Low-Structured Toys
3-year-olds	6	32
5-year-olds	0	19

Although the table suggests that 3-year-olds' tend to rely more heavily upon personal storytelling to support their play, the frequency of personal stories rose dramatically for both the 3- and 5-year-olds' in the low-structured toy condition. The increased use of personal stories in the relative absence of contextual cues may reflect children's subordination of concrete, external perceptions to internal reflections (Daiute, 1993). That is, in the absence of external cues, they may be forced to rely more heavily upon internal knowledge, understandings, and frameworks (i.e., scripts) in making sense of and connecting with the external realm (Bruner, 1988; Egan, 1993; Hicks, 1993). Although studies have found that children use mental scripts as a guide for their play transformations and transactions (French, Lucariello, Seidman, & Nelson, 1985; Garvey, 1982; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Nelson, 1998), their interweaving of

personal stories based upon real-life past experiences into pretend play remains a relatively unexplored area. To date, many of the empirical studies examining children's storytelling have tended to focus upon fictional accounts despite some evidence that personal storytelling is one of the more prevalent forms of storytelling in young children (Kamler, 1994; Preece, 1987).

To summarize, briefly, personal stories typically emerged when there were fewer toy cues to guide the children's play actions. In some instances, these stories appeared to provide a concrete foundation upon which the children were able to share thoughts and feelings and establish a mutual story frame and focus with each other.

Social Bids to Observer

Recall from the literature review that negotiating and establishing a common play frame may have a critical impact on children's ability to engage in and maintain their pretend play. The quantitative analysis cited earlier explored how children were able to respond to and integrate each other's ideas into a mutually agreeable story frame in their play. However, as demonstrated in the previous example, the children also relied upon "expert" adult guidance and input in helping to define and structure a frame for their storytelling to unfold. That is, comments and questions were frequently directed toward the observer (i.e., the researcher) rather than peers. As is evident in Table 4.11, it appeared that the 3-year-olds relied more heavily upon this adult guidance than the 5-year-olds.

Table 4.11 .

Frequency of Social Bids Directed to Observer Across Age and Toy Condition

	High-Structured Toys	Low-Structured Toys
3-year-olds	117	209
5-year-olds	87	93

Moreover, Table 4.11 indicates that the frequency of the 3-year-olds' social bids directed to the observer almost doubled in the low-structured toy condition while the 5-year-olds' social bids remained relatively constant.

In addition to the younger children tending to seek more adult involvement in structuring their play, the frequency of social bids directed to the observer seemed to increase when the children experienced difficulty establishing a mutual play focus with their partner due to differences in agreement or non-responsive play partners. The following excerpts drawn from the 3- and 5-year-olds' transcripts illustrates players' frustration at their play partner's lack of cooperation and non-responsiveness and the gradual shift in focus to the observer as an alternate play partner, negotiator, or problem-soolver:

Example 1 (3-year-olds, high-structure toy condition):

Katey: "These are ice-creams." (holds up cupcakes to show observer)

Evan: "No, those are cupcakes." (glances at cupcakes that Katey is holding, then refocuses back to the phone he is holding)

Katey: "They're ice-creams."

Evan: "No, cupcakes." (louder tone of voice)

Katey: "No, ice creams." (shifts gaze to Evan and holds eye contact with him)

Evan: "Ice...cupcakes." (face twists into a frown)

Katey: "No, ice cream."

Evan: "Cupcaake." (shouts, gaze shifts to observer) "It's a cupcake." (matter-of-fact tone of voice, Katey's gaze also shifts to observer, both wait for a response from the observer)

Observer: "You're pretending that it's ice-cream are you?"

Katey: "Yeh." (both children refocus their attention back to the toys they are playing with)

Example 2 (5-year-olds, high-structure toy condition):

Cody: "I made a high sandwich. So it would be easier to eat. There. All done my sandwich." (drops pieces to the floor)

Lynn: (no response, crawls over and picks up pizza bag off the floor, turns it upside down and shakes out its contents)

Cody: "'Kay, I have to polish the muffins." (picks up duster and sweeps it over the top of the muffins he's picked up)

Lynn: (glances over briefly, then refocuses on own toys)

Cody: (watches what Lynn is doing) "Oh." (picks up hot dogs) "I have to get some hot dogs ready." (glances over at observer, then down to his hot dogs) "I had some hot dogs ready." (sets the hot dogs beside him, Lynn glances over to observer, then down to toys she's playing with, very quiet, no response to Cody comment)

Cody: "Who comes next to play?" (directs comments to observer)

As is clear in the above examples, comments directed to the observer tended to occur as a result of play partners' inability or unwillingness to establish a mutual frame of reference or understanding which was necessary for the pretend play and storytelling to unfold. Some of the observer's suggestions and comments seemed to facilitate children's transition into play and each other by helping to frame story ideas and smooth social transactions. Indeed, the latter example suggests that the mere presence of a supportive and responsive adult, even though not directly involved in the play, may provide children with an alternative, receptive audience to direct their stories. Of course, too much adult involvement may have a detrimental affect on children's play stories.

That is, these comments and suggestions may have diverted the children's attention away from the immediate play situation and each other thereby resulting in story products emphasizing one child's effort, ability, or interests at the expense of the other.

In addition to external adult involvement, there appeared to be other factors that may have impacted children's play and storytelling. In the following section (1) the role of expressed emotion between play partners, (2) individual differences in the use of explicit language to convey meaning, and (3) understanding the reality-pretend distinction and pretend play boundary marking are presented and explored in greater detail.

Expressed Emotion and Responsiveness

One striking feature that appeared to impact the children's play and storytelling was the degree of positive affect expressed between the players. Play interactions characterized by overt expressions of pleasure (e.g., "This is fun.") and positive, contingent, and supportive comments or responses (e.g., "You always have the great ideas.") seemed to lead to more elaborate, imaginative, and extended play scenarios. On the other hand, low levels of positive expressed emotion between play partners tended to impede the ability to establish a common play frame. As well, a mismatch in expressed pleasure, whereby one play partner expressed feelings of pleasure while the other did not, seemed to result in abbreviated social exchanges and increasingly solitary play.

In general, it appeared that the children expressed more positive affect in the high-structured storytelling condition. Perhaps the presence of these play materials provided a structure for agreement on play roles and situations and reduced the potential for conflict because what and how they were going to play was more clearly defined. Alternately, the children may have expressed more pleasure in the high-

structured play task because the toys represented roles, relationships, and experiences that were familiar and comfortable. This familiarity and comfort may have helped the children establish an immediate emotional connection with both the toys and each other.

The following play excerpts illustrate how differences in partners' level of emotional involvement seemed to impact the content and direction of children's play and storytelling. The first example highlights how a mismatch in emotional expressiveness between partners had a dampening effect and eventually led to a decline in the play. This is contrasted to the second example where both partners appear to express and derive a great deal of pleasure while engaged in mutually reciprocal and supportive play.

Example 1:

Cody: "I know." (excited tone) "I need some eggs. Ooh. Ah. Four eggs." (looks into container with eggs)

Lara: (looks briefly at what Cody is doing, face impassive)

Cody: "Everyone will get an egg." (puts eggs on plates, Lara's gaze goes back to toys she's playing with) "Crack. Oh yeh. I forgot. Need to polish the eggs first." (picks up duster and brushes them off, Lara watches but makes no response, she then refocuses on her own toys)

Observer: "What are you doing, Lara?"

Cody: "I'm making some juice."

Lara: "Or some waffles." (speaking in undertone, keeps gaze on toys, play continues with little response from Lara, Cody becomes increasingly quiet, observer reminds the children several times to tell her what they are thinking and doing, little verbal interaction between children)

Cody: "I'm pretty quiet when I do this." (quiet tone of voice, comment directed to observer to explain why he is no longer talking, no response from Lara)

Example 2:

Kelly: "But where are my stores?" (looks down at pile of blocks)

Terry: "It's on the left lane of housey." (Kelly laughs)

Kelly: "You're my friendly."

Terry: "No. I'm not your friend yet. I'm an alien." (tone becomes threatening, gaze on toys)

Kelly: "Aahhh." (screams, looks over to his partner) "You scared me." (smiles at his partner)

Terry: "I scared you buddy? I don't think so."

Kelly: "You're funny." (laughing tone)

The latter example clearly illustrates how emotional attunement between players resulted in more give-and-take play speech and action. These observations seem consistent with studies examining the role of emotion in children's play. Previous research has found that higher levels of expressed affect seem to be associated with children's continued engagement in pretend play (deLorimier, Doyle, & Tessier, 1995; Dunn, 1986; Fein, 1981, 1987; Goncu & Gaskins, 1998; Kagan, 1990; Seja & Russ, 1999). Alternately, negative emotional reactions and responses between partners led to a disintegration in play (Kane & Furth, 1993), interfered with children's ability to engage in sustained and elaborate pretend play (Golomb & Galasso, 1995), and resulted in less competent and effective players (Fabes, Eisenberg, Jones, Smith, Guthrie, Poulin, Shepard, & Friedman, 1999).

Reality-Pretend Boundary Awareness and Marking

In addition to expressed affect, clearly signaling one's movement in and out of the play frame and correctly interpreting when one was immersed in reality or pretend seemed a relevant factor in the children's play stories. Although most of the children in

this study seemed to move in and out of the play frame with ease, some of the younger play dyads had difficulty making the transition from reality to pretend and vice versa leading to some confusion and ambivalence. This is consistent with some studies that have found younger preschoolers (i.e., less than 4 years of age) to struggle more with differentiating between what is real and non-real (Field, DeStefano, & Koewler, 1982; Fisher DiLalla & Watson, 1988; Scarlett & Wolf, 1979). Studies have also found that older preschoolers mark the distinction between what is real and what is pretend by combining their play actions with metacommunication (Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Lyytinen, 1990). Metacommunication is the term used to describe explicit messages revealing the “as if” nature of pretend (e.g., “Let’s pretend that...”). These messages signal how actions and speech should be interpreted and help to clarify and disambiguate pretend play from real-life speech and actions. The following examples illustrate how two play dyads marked the boundary between play and reality. As is clearly evident in the first example, the 3-year-old dyad’s intermingling of reality and fantasy in play and ambiguous use of verbal and non-verbal cues seemed to result in confusion, strained social interactions, and parallel play. Alternately, the second example highlights how one 5-year-old dyad’s combined use of both explicit verbal (i.e., “Pretend...”) and non-verbal messages (e.g., pointing, questioning tone, eye contact) helped to mark the boundary between reality and pretend and, in doing so, appeared to lead to mutually reciprocal and extended play interactions.

Example 1 (3-year-olds):

Ken: “I get...I’m gonna have a real magic wand that’ll wreck the whole place.”

(gaze to observer, menacing tone of voice, waves arms in circles)

Observer: “Mmm.”

Ken: "I'm the bad guy and knock people's heads down." (shifts his gaze to his toys, Jenny [his play partner] glances at the observer, frown appears on her face, gaze shifts back down to the toys she's playing with) "What I call 911 and the police will try to get you." (strong emphasis on "you", gaze on toys) "And you guys will be locked in jail ha ha ha." (menacing laugh again, gaze remains on toys)

Jenny: "That's not funny." (distressed look on face, gives Ken's knee a small slap, shifts her gaze back to her toys, Ken ignores Jenny as he continues to play with his toys, both children's attention remain on their own toys)

Example 2 (5-year-olds):

Jan: "This...this is a picnic." (puts dishes onto a cloth on the floor) "Picnic. Pretend we were going on a picnic."

Carl: "Yeh. But then we're hurt." (looks over at Jan)

Jan: "And we were in the backyard." (eye contact with Carl) "Pretend in our backyard?" (gaze back to toys, voice has questioning tone) "We're doing a picnic?" (questioning tone) "So I went outside and put all this stuff on the plate."

Carl: "And I was bringing some stuff." (puts food onto plate that Jan has placed on the cloth)

Jan: "Yeh. Pretend I put these outside here, right? Somewhere on the side." (puts eggs onto cloth as Carl looks on) "So we can make more hot dogs, right?"

Carl: "Right."

As is evident in the latter example, understanding the need to mark the boundary between reality and pretend by providing explicit markers (e.g., "We", "Pretend", "Right? Okay?") to guide partners' interpretations seemed to support each child's ongoing attempts to establish and maintain a mutual play frame for storytelling to unfold.

Variation in Verbal Communication

The aforementioned discussion suggests that a lack of awareness and understanding of the boundary between reality and pretend may be partially responsible for the younger preschoolers' tendency to use implicit rather than explicit communication in supporting their play transformations and traversing the reality-pretend play boundary. However, recent studies have found that children's ability to articulate their understandings and intentions may also be linked to their ability to engage in and sustain their pretend play (Aronson & Golomb, 1999; Seja & Russ, 1999). Indeed, earlier studies found that individual differences in how children use language to support each other's play transformations may substantially impact young children's continued involvement in that play (Garvey, 1982; Olszewski, 1987). As is evident in the following play exchange, some of the children from both age groups were able to employ some rather supportive verbal techniques (e.g., repeating, questioning) to help clarify and extend their play partner's ideas when that partner seemed less able to do so:

Example 1 (5-year-olds):

Mike: "Oh yeh. I'm gonna smack you." (speech unclear, picks up structure and makes downward cutting motion) "Phheww. Aaahhh." (sound effects)

Observer: "What are you doing, Mike?"

Mike: "I'm smacking." (unclear word, holds up piece to observer) "Yaahhh."
(repeats downward slicing motion)

Ted: "He said smacking." (interprets his partners' speech)

Observer: "Oh, You're smacking."

Ted: "He didn't say whacking, he said smacking. Why are you smacking everything you see?" (turns attention to Mike)

Mike: "I love doing that."

Ted: (laughs quietly) "He loves to. Did you hear that?" (gaze to observer)

Observer: "Uh huh."

Example 2 (3-year-olds):

Observer: "What are you doing there, Jenny?" (Jenny looks at the observer but does not respond)

Ken: "Jenny's making a hot dog." (gaze to observer)

Observer: "Are you making a hot dog?" (Jenny makes a small shrug, gaze remains on her toys)

Ken: "A hot dog? You know a hot dog?" (body oriented toward Jenny) "What is that? What is that? A Star Wars ship?" (squatting down beside Jenny)

Jenny: "Yep."

Ken: "Oh. Can I have it?"

Jenny: "Yep. Vrrmm." (sound effects as Jenny flies her ship to Ken and Ken takes it)

The latter example aptly illustrates how one 3-year-old child was able to use supportive comments to help structure, interpret, clarify, and facilitate his more reticent partner's play. However, relations between the two play partners were not always so conciliatory. The following exchange highlights some of the frustration this young boy experienced when failing to correctly interpret his play partner's story meanings when she tried to articulate them to him:

Jenny: "Ken, Ken." (interrupts Ken's play to hand him a structure she had built)

Ken: "What is that?" (looks down at structure)

Jenny: "It's a ideal."

Ken: "Is it a bad guy ship?"

Jenny: "A eye dear."

Ken: "A eye digger?"

Jenny: "A eye deal." (emphasis)

Ken: "I don't know...I don't know what you're talking about." (throws up his arms in the air in a gesture of confusion, diverts gaze from Jenny back to toys he was playing with, Jenny returns gaze to her own toys, both play side-by-side)

It is interesting to note that the frustration expressed by Ken toward Jenny seemed to occur more frequently when they played with the low-structured toys. Indeed, Jenny's tendency to keep her responses very brief while playing with these toys seemed to suggest that she seemed less sure of her ability to clearly articulate her play meanings and intentions in the absence of more concrete toy structure. However, as is evident in the following example, she seemed much more willing and able to verbalize her play ideas to her play partner while playing with the high-structured toys. Indeed, she even assumed a more directive, leading role in determining the content and direction of their play.

Jenny: "You know we have to wait. Wait." (urgent tone as she unwraps a plate from a large towel) "We have to eat this." (Ken crawls over and sits beside Jenny) "I'll cut a piece. Sh...sh...sh...sh." (makes cutting motion back and forth with her hand over the plate and then extends the plate to Ken) "There's a piece to you." (Ken tries to grab the whole plate out of Jenny's hand) "No." (forceful tone, holds onto plate firmly then pretends to take a piece of food off the plate and pretends to eat it)

Ken: "Okay. Now we have to make supper now." (looks at Jenny for confirmation) "Now can you put the plates on the table?"

Jenny: "Oh, yeh." (complies)

This last example seems to suggest that employing verbal means to signal one's underlying meanings and intentions in play may not necessarily reflect set, individual differences in language competence. Rather, children's confidence and willingness to employ language to convey internal understandings and knowledge may be impacted by degree of concrete information (i.e., toy structure) present within the immediate play setting.

In summary, the preceding descriptive content analysis was provided as a supplement to the inferential analysis to help flesh out children's storytelling within the context of their pretend play. Indeed, providing more detailed descriptive analyses highlights the range and depth of young children's pretend-play story activities. It seems fairly obvious, from the examples used herein, that storytelling within the context of children's pretend play is susceptible to many supports and constraints. Shifting interpersonal dynamics, intra-personal propensities and competencies, and the presence or absence of concrete toy cues all coalesce to effect the rich process of story making within the natural, expressive context of children's pretend play. Hence, the current section provided a brief glimpse into the various ways young children go about making sense of their experiences and each other by combining "as is" (i.e., reality) and "as if" (i.e., pretend) story worlds.

Summary of Data Analyses

The preceding quantitative and descriptive content analyses highlight the complex, multifaceted nature of children's pretend-play storytelling. Quantitative analyses revealed that older preschoolers tell higher level plotted stories and engage in higher levels of perspective taking within their play. Moreover, statistical comparisons of correlational elements and subsequent power of a statistical test sample size testing suggested that the linkage between plot structure complexity and social perspective

taking competence becomes increasingly stable with age regardless of the degree of inherent toy structure. The results also suggested that preschoolers' employ different *inter-textual* voices to tell their stories depending on the amount of toy structure contained within the play setting. That is, they were more likely to use out-of-play-frame voices (i.e., stage management, narrator) when playing with the low-structured toys and within-play-frame voices (i.e., dialogue) when playing with the high-structured toys. This finding implies that even the younger children, who may not have yet mastered the strategies and conventions necessary for more elaborate and extended play, are aware of the need to make their internal ideas and meanings explicit to others in the absence of more concrete cues. Despite the support for these more general age and toy trends, the latter descriptive content analysis highlights how individual variation in children's use of adult guidance, personal stories from their past, emotional expression, verbal language, and pretend-play boundary understanding and markers inevitably combine to shape and define children's storytelling within their pretend play.

Chapter 5

DISCUSSION

Research has consistently documented a structural progression in young children's narrative form from action-based to more mentally-driven story event sequences (Benson, 1996; McKeough, 1986, 1992a; Snitzer Reilly, 1992; Trabasso & Nickels, 1992) and has substantially advanced our understanding how children utilize storytelling to lend meaning to their experiences. In recent years, growing consensus regarding narrative's role as a fundamental tool for packaging and communicating experiences and understandings (Blum-Kulka, 1993) has led many researchers to expand their focus to consider the broader context of ecological, social, and cultural influences (Brice Heath, 1986; Haas Dyson, 1995).

In keeping with this more contemporary, expanded conception of narrative as a fundamental sense-making tool embedded within a broader context of influences, the current study explored the process and products of children's story building within the natural and spontaneous context of their pretend play. The empirical findings herein provided full support for some of the hypotheses, qualified others, and further clarified research questions exploring the impact of social and environmental contexts on children's play stories. To maximize clarity, empirical findings are discussed in the order in which they were assessed: Plot structure, Inter-textual Voices, and Social Perspective Taking. Examples are provided for purposes of illustration. In the second section, linkages between children's plot level and perspective taking are discussed. In the third section, research findings are integrated and presented in conjunction with theoretical implications. Practical implications related to the research findings are then presented prior to methodological limitations and delimitations. Finally, directions for

future research are presented and then followed by a summary statement reiterating the major findings of this study.

Trends in Children's Plotted Stories

First, supporting the original stated hypotheses, the results of this study indicated that 5-year-olds told more structurally advanced plotted stories in comparison to the 3-year-olds within both toy conditions. The age-related findings with regard to the high-structured toys are presented first and then followed by that of the low-structured toys.

While playing with the high-structured toys the older children incorporated more structurally advanced narrative elements into their play stories in comparison to the younger children. This finding appears consistent with age trends found within the narrative literature (Benson, 1996; McKeough, 1986a; Shapiro & Hudson, 1991; Trabasso & Nickels, 1992). That is, 4-year-olds are able to string together events to form a basic story episode. Six-year-olds, on the other hand, are able to coordinate two different story episodes whereby the first episode centers around a problem that is perceived and the second episode details an attempt to resolve that problem. The 5-year-olds' inclusion of a partially verbalized and enacted problem-resolution structure while playing with the kitchen toys seems to be an early precursor to the more verbally explicit problem-resolution plotted structures typical of 6-year-olds' storytelling and highlights their movement from action-based to intention-based storytelling. In other words, the 5-year-olds' attempts to incorporate partially verbalized and enacted structures into their pretend-play stories suggests that they have begun to shift from an exclusive focus on story actions and events (i.e., 4-year-olds' storytelling) to considering characters' underlying motivational states and intentions driving the story action. It

marks their emerging ability to coordinate the landscape of action with the landscape of consciousness (Bruner, 1986a).

In contrast to the older preschoolers, the younger preschoolers tended to function one structural level lower while playing with the high-structured toys. Interestingly, however, the younger children's storytelling was at a level slightly more advanced than that predicted for their age. As mentioned, the literature tends to cite 4 years of age as the typical age at which children link together story actions to form a basic story episode (Benson, 1996; Botvin & Sutton-Smith, 1977; McKeough, 1986; Shapiro & Hudson, 1991; Umiker-Sebeok, 1977). However, the 3-year-olds in this study were not only able to string together actions events into a linked sequence, they also incorporated more descriptive detailing around the action, introduced a problem, and/or referenced (either implicitly or explicitly) an underlying mental state driving the story action. These finding replicate a previous study that found precocious levels of storytelling for 4-year-olds while playing with high-structured toys, that is toys that contained a high degree of explicit, concrete detailing (Bergman, 1997). Despite these advanced levels of storytelling in the current study, the younger preschoolers' stories, unlike their older peers, tended to be left "hanging" as no additional attempt was made to resolve any problems the story characters encountered. The following examples excerpted from the high-structured play transcripts illustrate these two differing levels of storytelling (the non-italicized words represent non-verbal behaviors while narrative structural criteria and accompanying explanations are in italicized print):

Example 1 (3's, high-structured toys)

Caryn: "This is hot." (briefly touches pan of food)

Zena: "This is wrong..." (*implied mental state - dissatisfaction, disapproval*),
picks up a pan with food in it and examines its contents) "It's some big food in

here." (*verbalized problem [that food is too big for the pan or that the pan is too full]*) "I'm going to cook these bacons so they're going to be spotelly and toasty, toasty." (*descriptive detailing of action, places pan onto stove to cook*)

Example 2 (5's, high-structured toys)

Helen: "Let's put it on to boil." (puts pans onto the stove and turns the knob; *descriptive detailing around action*) "Let's put the boiled..." (opens a container and looks at its contents, moves back to stove) "Let's put this on the pizza." (pours contents of container onto the pizza sitting on one of the burners of the stove) "Okay. I'm gonna put this thing on the pizza." (Helen's play partner looks over at what Helen is doing) "I'm putting this on the pizza but it's on the wrong way." (*problem + implied mental state – dissatisfaction*) Helen rearranges items on the pizza so that they fit properly. (*enacted resolution*).

While playing with the low-structured toys (i.e., the Lego blocks), the 5-year-olds once again outperformed the younger children in plot level complexity. Although the older children performed at one structural level above the 3-year-olds, both groups of children experienced a parallel drop in narrative performance while playing with the Lego blocks. Indeed, in the low-structured toy condition, the 5-year-olds told stories at the same level as that of their 3-year-olds counterparts in the high-structured toy condition. So, although the 5-year-olds continued to include a problem, mental state, and descriptive detailing around the action, less attention was given to solving story dilemmas. The drop in story performance in the low-structured toy condition disconfirmed the second stated hypothesis that, in comparison to the younger preschoolers, the 5-year-olds' storytelling would be less effected by the degree of toy structure contained within the play setting. The following example highlights a typical 5-

year-old's story while playing with the low-structured toys. Note the conspicuous absence of a resolution to the story problem of the goose's cheating:

Kelly: "You don't know that...you don't know that the goose in Wilber. That she cheats a little?" (*verbalized problem*) "She just digs some..." (makes digging motion with her arms) "She just digs some hay into her" (*descriptive detailing around action*) "She cheats a little. Well, that's okay." (*mental state – approval/forgiveness*) "She never..."

Researcher: "Who cheats a little?"

Kelly: "The goose in Wilber. The goose in Wilber. She's just near the pigpen."

Researcher: "Is that a story?"

Kelly: "Nope. It's a movie."

Researcher: "A movie. Oh, okay." (Kelly resumes play with the toys)

The 3-year-olds' storytelling, on the other hand, dropped in the low-structured toy condition to a developmental level more typical for their age. That is, their stories were characterized by a stringing together of actions into an event-sequence; however, these story actions were often linked together in a disorganized fashion resulting in stories that lacked a sense of cohesion and direction. This finding is supported by some studies that have found 3-year-old children's personal event and fantasy stories were often left dangling (Umiker-Sebeok, 1977) and were more fragmented and uncoordinated (Botvin & Sutton-Smith, 1977). Hence, in the low-structured toy condition, the younger children not only were unable to provide elaborate detailing around the story action, they also seemed to experience more difficulty coordinating story events to clearly convey their story meanings. The following example extracted from the play transcripts illustrates such a 3-year-old story:

Zena: "I'm making a sun on top of this." (gaze directed to block structure she's building). "And this guy's going on top of this guy." (adds another block) "And these guys on top of those guys. This fly. The people are waiting."

Briefly, to summarize the findings on preschooler's plot-structure trends, important differences emerged in their storytelling performance in play depending upon the children's age and degree of toy structure present within the play environment. Supporting the first hypothesis, the 5-year-olds integrated and combined more complex plot story elements than the 3-year-olds within each toy condition. However, the second hypothesis stating that the 5-year-olds' storytelling complexity would be less affected by changes in toy structure in comparison to the 3-year-olds was not upheld. Similar to the 3-year-olds, the 5-year-olds experienced a parallel drop in narrative performance while playing with the low-structured toys. In the absence of explicit toy detailing, the older preschoolers seemed less able to integrate the action and intention realms of their stories. As well, an absence of toy detailing seemed to inhibit the younger preschoolers' capacity to string together story events in a cohesive fashion and incorporate more elaborate detailing around that story action. In essence, the high-structured toys seemed to facilitate narrative performance. Alternately, the low-structured toys tended to depress it. The following discussion provides some possible explanations for the strong age and toy condition effects on children's storytelling.

Clearly, the results of this study suggest that preschoolers experience growth in *their knowledge of narrative structure with age and that this growth enables them to integrate and manipulate increasingly complex narrative elements thereby lending additional structure and meaning to their play stories.* However, the results of this study also suggest that storytelling competence may be compromised under certain toy conditions. Unlike the high-structured toy condition, in the absence of more explicit toy

structure, both groups of children seemed less able to integrate and coordinate more advanced story elements into their play. What might be some of the factors that lie at the root of these age and toy structure performance differences?

Recall that significant working memory (i.e., processing capacity) differences were found between the 3- and 5-year-olds. Essentially, the 5-year-olds had one more working memory unit available to them than the 3-year-olds. Higher processing capacity correlated positively with higher levels of narrative. One interpretation of this finding is that this additional working memory unit possibly allowed the older children to combine more narrative elements in their play stories; hence, their advanced performance in comparison to the younger children while playing with either the high- or low-structured toys.

However, it is possible that the manner in which working memory is utilized may depend upon the degree of information already contained within the external environment. That is, in the high-structured toy condition, the children are able to rely upon the concrete cues contained within the toys as the basic structural foundation for their play stories. This enables them to (1) divert any mental reserves toward coordinating story events into a complete and connected episode or providing elaborate, descriptive detailing around the story action (i.e., 3-year-olds) or (2) combine two story episodes together to form a problem-resolution narrative structure (i.e., 5-year-olds). Alternately, in the low-structure toy condition, the children must devote the full extent of *their mental resources to building the basic foundation for their storytelling to unfold*. They must transform and define play objects, generate play ideas, communicate these play ideas to others, and try to negotiate a mutually agreeable play theme and direction with their play partner. That is, mental resources are consumed in the act of establishing a basic structural framework for the play and storytelling to unfold. So, the detail

inherent within the high-structure toys may actually have served as a scaffold (Vygotsky, 1978) by providing additional processing support and bridging the children's narrative performance up to a higher structural level. This explanation has some support within the literature. For example, the provision of more explicit story prompts has been found to advance children's storytelling competence (Cameron, Lee, Webster, Munro, Hunt, & Linton, 1995; Shapiro & Hudson, 1991). As well, another study found 4-year-old children were able to tell stories at a developmentally advanced level when provided with visual mnemonics (i.e., pictorial story icons) that reduced processing load (McKeough & Sanderson, 1996).

Another explanation for higher level stories being told in the high-structured toy condition may be related to the implied thematic content contained within these toys. Unlike the low-structured toys that were open-ended in terms of their use, the high-structured toys represented familiar, domestic routines and experiences. Even very young children have well-organized, integrated, and differentiated mental models of events (i.e., scripts) that take regularly take place within the home due to their continued exposure to such events (Nelson, 1998). Previous research has documented more elaborate and extended play with toys that help children access these well-engrained, reality-based mental scripts (French, Lucariello, Seidman, & Nelson, 1985; Sachs, Goldman, & Chaille, 1985). This more elaborate and extended play may have translated into more structurally complex story plots; hence, the higher level storytelling in the high-structured toy condition.

In conclusion, the results of the first analysis exploring the impact of age and toy structure differences on children's plot-level complexity appear to support a general, age-related progression in children's narrative competence whereby stories become increasingly elaborated and coordinated with age. Older preschoolers are more likely to

incorporate higher level structural elements in comparison to the younger preschoolers suggesting a more differentiated representation of story and an emerging awareness of story as having both action and mental state (i.e., character intention) dimensions. The results of the first analysis also suggested that specific toy contexts facilitate or impede children's ability to include and manipulate various story elements in their play regardless of age. Contrary to the high-structured toy condition, children's ability to integrate and combine story elements seemed compromised while playing with the low-structured toys. It is possible that the lack of explicit cues contained within the low-structured toys required the children to utilize the full extent of their working memory capacity for organizing, defining, and communicating play content and direction effectively truncating their attempts at storytelling. On the other hand, the high-structured toys may have prompted the children to access and utilize well-integrated and differentiated representations of familiar, real-life experiences and routines as the base foundation for the storytelling along with a ready vocabulary for expressing story ideas. Additionally, the extra detailing within the high-structured toys may have allowed the children to redirect any working memory resources to integrating more complex story elements. The following section discusses the various inter-textual voices children use to integrate and manipulate various story elements.

Trends in Children's Inter-textual Story Voices

The second variable of interest in the current study was the type of voices children used while engaged in their pretend-play storytelling. Hicks and Wolf (1988) found that children typically employed three different inter-textual story voices in their play. Briefly, to review, verbal utterances simultaneously accompanying play actions consistent with enacting a character role were scored as occurring in the dialogue voice. The stage management voice entailed that the children assume a more directorial

stance to the play events. That is, this type of voice required that they temporarily step out of a character role to clarify and negotiate pretend play transformations and intentions with their play partner. Verbal utterances scored in this voice were often characterized by the use of the play partner's real name (e.g., "Jenna, let's build a castle."), included comments directed to the researcher, and/or incorporated explicit verbal messages defining or accentuating the illusory or pretend nature of play transformations or events (e.g., "Let's pretend that...", "That means...", and "This is a castle."). The children's use of the narrator voice also required the assumption of a more distant or indirect stance to the play action as indicated by verbal utterances using the third-person pronominal referential system (i.e., he, she, they). As well, utterances referring to real-life situations and events outside the immediate play context were scored as occurring in the narrator voice.

Previous research has found that older preschoolers use more out-of-play-frame and explicit verbal means to convey their play meanings and intentions (Garvey, 1982; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Pellegrini, 1983, 1986; Wolf & Pusch, 1985) and are more adept at differentiating and defining what is real and non-real in their play and navigating the boundary between their pretend and reality (Fisher DiLalla & Watson, 1988; Scarlett & Wolf, 1979; Wolf & Pusch, 1985). Based on this previous literature, it was anticipated that the 5-year-olds would employ more out-of-play-frame narrative voices to convey their story meanings in play. That is, it was expected that the older children would use the stage management voice and narrator voices more often than the 3-year-olds. Secondly, it was predicted that the 5-year-olds' inter-textual voices would be less affected by changes in toy structure due to their decreasing reliance on physically salient information to generate and communicate their

play ideas (Cole & LaVoie, 1985; Field, DeStefano & Koewler, 1982; Lyytinen, 1990; Matthews, 1977; McCune-Nicolich, 1981; Olszewski & Fuson, 1982).

The age-related hypotheses were not supported by the research data. There were no age-related main effects or interaction effects in inter-textual voice use for the two groups of children. In other words, both the 3- and 5-year-olds appeared to utilize the three voices in a similar manner while playing with either the high- or low-structured toys. The large amount of within-group variation, as indicated by standard deviations approaching and sometimes exceeding the mean, may partially account for the age-related null effect. What might account for such variation in inter-textual story voice performance? Prior to discussing possible reasons for such variation, the findings with regard to the impact of toy structure on children's inter-textual voice usage are first presented. Excerpts from the children's play stories are provided to highlight aspects distinguishing these various story voices.

The impact of differing degrees of toy structure on children's inter-textual voices remains an unexplored area within the empirical literature. Thus, to examine potential interrelationships between toy structure and children's use of inter-textual voices, the following research question was addressed: Do children use different voices when playing with toys containing differing degrees of toy structure? The results of this study yielded an unequivocal yes. In the high-structured toy condition, both age groups of children used the dialogue voice more often than the stage management or narrator voice signaling their full immersion in the play as a story character. When immersed in this role, the children tended to rely upon play actions and toys to help structure and convey their play meanings and intentions as illustrated in the following example drawn from the 5-year-old's play transcripts (*italicized print in square brackets indicates inter-textual voice and accompanying criteria*):

Cody: "I'm eating these." (pretends to eat utensils [*dialogue voice; character actions*], his partner, Ken, looks over briefly, then goes back to eating his own food)

Ken: "Done." (puts down the fork he was eating with [*dialogue voice; character actions*]) "I have a phone call to make. I'm not talking to pussyman." (begins to press buttons on the phone, Ken puts the phone to his ear briefly, then removes it [*dialogue voice; character actions*])

Cody: "Did you talk to pussyman?" (continues to pretend to eat [*dialogue voice; character actions*])

Ken: "No way." (attention directed to phone in hand as he dials [*dialogue voice; character actions*]) "We're having pizza for lunch." (speaking into the phone [*dialogue voice, character actions*])

Notice in the preceding example how it was necessary to rely upon the children's actions and vocalizations to correctly infer the children's underlying story meaning. Typically, when playing with the high-structured toys, the children were immersed in a character role and their use of dialogue voice alone was insufficient to accurately interpret story events and meanings. In other words, while playing with the high-structured toys, children seem to rely upon story meanings implied within the play setting and assume that their play partner (and the observer) will look to that play setting to comprehend those story meanings.

Alternately, both groups of children tended to use the stage management and narrator voices while playing with the low-structured toys. In other words, while playing with the blocks they more often removed themselves from the play action and used more explicit verbal messages to explicate, negotiate, and narrate story events and meanings. The following examples show how two 5-year-old children verbally encoded their

meanings in the low-structured play setting to ensure a more accurate understanding of play actions and meanings:

Ken: "Cody's doing part of the garden." (addressing researcher) "I'm just making a castle. We're making a castle, right Cody?" (looks over at play partner
[*stage management voice; use of first name, comment directed to researcher*])

Cody: "I have to make this castle higher." (adds some pieces to his structure,
[*stage management; defining pretend object identity*]).

Ken: "No, there is a tree inside the castle, Cody." (when Cody tries to put the tree on the side of the castle, Cody places the tree inside the castle instead
[*stage management voice; use of first name*])

Cody: "Now, I'm going to make something to go around the tree." ([*stage management; defining pretend object identity*])

Unlike the dialogue voice, both children's liberal use of the stage management voice to announce and clarify play actions, coupled with continual reference to their play partners' real-life identity, helped to reduce ambiguity and enhance interpretability. As well, children's removal of themselves from the character role signaled increased distance from the ongoing play action. While playing with the low-structured toys, play actions seem secondary to verbally clarifying and explicating story meanings. That is, the liberal use of the stage management voice in the low-structured toy condition seemed to reflect children's increased tendency to assume a metaposition to the story happenings and, in doing so, employ verbal means to communicate and delineate their story meanings and play transformations.

Likewise, a more indirect story stance was observed in the children's more frequent use of the narrator voice while playing with the low-structured toys. Use of third person pronouns and referring to real-life events removed in place and time (i.e.,

personal storytelling) clearly helped one 3-year-old girl, Amy, convey her story meanings to the researcher in the absence of more explicit toy structure:

Amy: "This is a fan." (gaze directed to toys, points to a block) "I got a fan at home." (gaze directed to observer [*narrator voice; referring to events outside of the playroom*]) "And it's really big. You can't lift him up." (*narrator voice, third person pronominal referential system [i.e., him/he]*) "He is so big and he can't fall down. He is so big."

Researcher: "Your fan is so big."

Amy: "And it's way too big of this daycare. I even get hot. Fan is when you hot in the night. He is almost quiet in the night. I love him lots."

Thus, the more verbally explicit stage-management and narrator voices occurred more frequently in the low-structured toy condition while the more implicit dialogue voice occurred more often in the high-structured toy condition. These significant toy effects suggest that, on average, children are aware of and sensitive to changes in their play environments and readily adjust their storytelling voices and stances to compensate for those changes. Thus, the information gleaned from the toy setting may serve as a preliminary and fundamental guide to how children choose to communicate their stories through play.

However, not all children appeared equally proficient at employing the various story strands in conveying their story meanings. Recall that a large amount of within-group variation existed in the use such voices (see Table 4.6). What might be at the root of this variation? Perhaps the knowledge, propensities, and competencies each child brought with him or her to the play situation affects and is affected by that of his or her play partner. Indeed, scholars have noted that pretend play is an emergent, dynamic, and transactional process (Goncu & Kessel, 1988; Kelly-Byrne, 1984). Play partners

must continually negotiate and communicate their play ideas and transformations during the course of that play. Although they bring personal understandings, resources, goals, and motivations to the play situation (Garvey, 1977), the new rules, plans, goals, and themes established during play also substantially impact subsequent play patterns and relations (Ariel, 1992). Thus, the large amount of within-group variation in inter-textual voice usage may reflect the meeting of internal competencies, motivations, and understandings with external situations and constraints.

To further explicate specific sources of conflict between the internal and external realm, I re-address some of those factors described earlier in the descriptive content analysis that seemed to have an impact on children's pretend play storytelling. More specifically, differences in emotional expressiveness may have contributed to more or less variance in the children's inter-textual voice use. Emotionally intense play exceeding a certain threshold level has been found to impede children's ability to distinguish reality from pretend and affect their movement in and out of pretend play (Golomb & Galasso, 1995). Thus, play dyads that had difficulty expressing or regulating their emotional responses may have used inter-textual voice patterns quite different from dyads that were able to achieve a sort of emotional and cognitive synchrony (i.e., a balance between fun and reason; Goncu, 1987). As discussed and illustrated in the previous chapter, informal observations also suggested that partners who displayed feelings of pleasure and excitement while playing seemed better able to engage in mutually reciprocal and extended play. Alternately, these observations revealed that play relations were disrupted when children displayed little emotion or responded to their partner's needs and ideas in a negative fashion. The following example, drawn from the 3-year-olds play transcripts, illustrates how text and context interact (Kelly-Byrne, 1984) to affect children's storytelling in play. Essentially, the negative response pattern

established and maintained by the children resulted in a suspension of character role-playing. As well, an inability to resolve the conflict to each child's mutual satisfaction eventually led to fractured play relations and solitary play. Notice how the children shift from using the dialogue to stage management voice as they attempt to communicate their own particular needs and understandings to their play partner (*italicized print indicates inter-textual voice followed by scoring criteria*):

Randy: "The dad's waking now." (sits up from the floor that he had been laying on) "The dad stretches." (lifts his arms above his head) "The dad will cook now." (approaches the stove and puts on an oven mitt [*dialogue voice, performing actions consistent with a character role*], Eva, his partner is at the stove already cooking)

Eva: (stops cooking and grabs the phone by the stove, looks over at Randy)

"No, Randy. I was here first." (*stage management voice, use of partner's real name*)

Randy: "And I'm here too." (stops playing and looks over at Eva [*stage management voice, clarification with no accompanying character role actions*])

Eva: "No, you can't be here too." (Randy turns from Eva and begins playing with stove) "No, don't do that." (pushes Randy away from the stove [*stage management voice, clarifying with no character actions*])

Randy: "Stop that!" (yells, stops playing and looks at Eva [*stage management voice, clarifying with no character actions*])

Eva: "I was here." (looks over at the researcher) "I was here first." (Randy leaves the stove and goes to play with the toaster. Both children playing with their backs to each other)

The above example aptly illustrates how negative speech and actions suppressed children's engagement in character role and social pretend play and, in doing so, affected the types of inter-textual voices being used.

The preceding example also suggests that individual differences in children's use of language to communicate their play meanings and intentions may also have impacted the types of voices being used in their play. The inter-textual voice patterns of play dyads comprised of one or more verbally competent players may be quite different from the pattern used by dyads where one or more partner is less articulate. Clearly, in the preceding example, Eva seemed the more verbal of the two children as reflected in her attempt to explain why she felt Randy should wait his turn to play at the stove (i.e., "I was here first"). Thus, it is possible that more competent talkers are not only better able to direct and sustain the play, they may also provide additional information or detailing around the action to clarify their play ideas and stance with regard to the play action. That is, it is reasonable to assume that verbal facility affected the children's deployment of the various inter-textual voices to share and compare their play ideas which, in turn, may have impacted their ability to establish and maintain a coherent and connected story frame. However, it is also possible that toy structure may have interacted with verbal facility to affect inter-textual voice use. For example, recall the previous illustration in the descriptive content analysis where one 3-year-old girl had great difficulty articulating her ideas in the absence of concrete toy structure while seeming much more confident and able to use verbal means to convey her ideas in the high-structured toy condition. This latter point suggests that the relationship between verbal competence and inter-textual voice usage is a complex one reflecting the interplay not only between the external social and physical (i.e., toy) milieu, but also between these contexts and the individual child. Unfortunately, within-group variation in children's play

has not been explored to the same degree as between-group differences. However, a few studies have documented individual differences in children's use of language (Hampson & Nelson, 1993; Lyytinen, 1990; Saracho, 1996), emotional arousal and regulation (Wachs, 1985), motivation (Gottfried, 1986; Wachs, 1985), attentiveness and sustained attention (Hock, Kroll, Frantz, Janson, & Widaman, 1984; Rusher, Cross, & Ware, 1995), and dependency on external information contained within objects or social others (Saracho, 1996; Wachs, 1985). In general, the research findings suggest that those children that are able to focus, achieve and sustain an intermediate state of emotional arousal (i.e., quiet alert), attend to cues within the external environment, and verbalize their underlying meanings and intentions tend to engage in more frequent and higher levels of play (Allen, Kertoy, Sherblom, & Pettit, 1994; Fischer & Hogan, 1989; Rusher, Cross, & Ware, 1995; Saracho, 1996). Hence, individual differences in children's play may be responsible, in part, for the observed variation in their inter-textual voice. Such differences promise to be a potentially fruitful area for future research.

However, the wide variation in the children's inter-textual voice use may also reflect different levels of awareness and adherence to the implicit rules and conventions governing participation in pretend play (Garvey, 1993; Goncu, 1987). For example, researchers have found that children who respond in a contingent and related manner to their play partner's play ideas, are non-directive rather than directive, and provide encouraging comments are better able to establish a common play (i.e., story) theme and direction (Black, 1992; Fein, 1981; Kane & Furth, 1993). Hence, children who exhibited a greater awareness of and adherence to the underlying rules and conventions of pretend play may have shown a pattern of inter-textual voice use quite distinct from those dyads less adept at the give-and-take relations necessary for sustained storytelling within pretend play.

Briefly, to summarize the findings on children's inter-textual voice use, the current study revealed differential trends while playing with either the high- or low-structured toys. Children tended to use the dialogue voice and rely more heavily upon play actions and information contained within the toys themselves to convey their story meanings while playing with the high-structured toys. Alternatively, in the low-structure toy condition, the children seemed to distance themselves from being directly involved (i.e., as a character) in the story action. Rather, in the absence of more concrete toy structure, the children's tendency to use language to clarify, explicate, narrate, and integrate events from their past to convey their story meanings suggests that they were cognizant of the need to provide more explicit verbal information to help guide the interpretation of those story meanings. Contrary to significant toy structure effects and originally stated hypotheses, however, there were no age differences in children's use of inter-textual voices. This null finding may have its origins in the large amount of within-group variation in performance; variance that may stem from factors (e.g., emotional arousal, verbal competence, etc.) not formally assessed in the current study. That is, informal observations suggested that differences in play partners' emotional expression and regulation, awareness of and adherence to play rules and conventions, and ability to clearly articulate play ideas and wishes may have intertwined to impact children's inter-textual voice use in their play.

Trends in Children's Social Perspective Taking

A third variable of interest within the current study explored possible links between children's social perspective taking competence and their storytelling competence. General questions guiding this exploration were: (1) Are there age differences in children's ability to acknowledge and coordinate each other's perspectives to establish a common story frame with their partner? (2) Is competence at

acknowledging and coordinating perspectives with a play partner affected by the degree of inherent toy structure? (3) Do age and toy structure interact to affect children's acknowledgement and coordination of differing perspectives? (4) Is ability to engage in social perspective taking associated with plot level complexity? (5) Does the relationship between social perspective taking and plot structure complexity change with age? and (6) Does the relationship between social perspective taking and plot level complexity change with the degree of inherent toy detailing?

The previous discussion highlighted non-significant age findings in inter-textual voice use suggesting that both groups of children used these voices similarly within each toy condition when telling their pretend-play stories. However, it is possible that the frequency of inter-textual voice use is a less critical factor in distinguishing children's narrative performance in play as is the underlying message conveyed within these various voices. That is, perhaps age differences exist in the children's ability to use the voices to acknowledge and encourage mutually reciprocal, give-and-take play interactions with their play partner. Previous research has linked children's increased capacity to respond to others in a supportive and relevant fashion to an age-related growth in children's social perspective taking competence (Adalbjarnardottir & Selman, 1989; Brion-Meisels & Selman, 1984; Gurucharri & Selman, 1982; Lyman & Selman, 1985; Selman & Demorest, 1984; Yeates, Schultz, & Selman, 1991). Consistent with the previous theoretical and empirical literature in this area, a theoretical assumption underlying the present study is that children's verbal responses to others while playing reflect a developmental trend in their underlying social awareness and understanding.

The following discussion highlights the finding that, in comparison to the younger children, the older children do indeed respond to social cues within their play environment in a more relevant and connected fashion and, in doing so, are able to

establish and maintain an ongoing, reciprocal relationship with their peers. As well, the following discussion details how social cues may provide a unique source of information *for children to use when telling their play stories*, a finding that has important implications in delineating the role of different contextual influences on children's play storytelling. More specifically, the findings of the current study suggest that children that are better able to attend to, process, and integrate both toy and social cues while playing tend to produce more structurally complex stories. Indeed, the final section of the discussion on experimental findings outlines how higher levels of perspective taking seem to be fundamentally linked to children's plot structure complexity, a relationship that appears to become increasingly stable with age.

First, in relation to the first three research questions stated above there was no significant toy structure effect on the level of children's social perspective taking in play although there were significant age and interaction (i.e., Age x Toy) effects. In comparison to the younger children, the 5-year-olds were more likely to provide information, help, or show courtesy in response to a comment(s) issued by their play partner. Responding in this way tended to result in a type of reciprocal, turn-taking *pattern of social interaction*. Contrary to the younger children who maintained the same level of social perspective taking across both toy conditions, the older children experienced a significant drop in social perspective taking performance from the high- to the low-structured toy condition, hence the interaction effect. However, this decrease was not large enough to place them at a lower level of social perspective taking. In other words, the 5-year-olds continued to respond in a supportive way to their peers regardless of the degree of toy structure present within the play setting. That is, although they were affected by the change in the degree of toy structure, they continued to be aware of their social partners' perspectives and were able to maintain a delicate

balance between processing both sources of information (i.e., toy and peer) when playing. The following example highlights the give-and-take verbal response pattern typical of the older preschoolers:

Kerry: "How about I was in the kitchen making some stuff."

Jenny: "Okay. And I was making some food."

Kerry: "Making this stuff on the stove." (puts pan onto stove)

Jenny: "Pretend I was making breakfast and food. Need a waffle. Where's the toaster?" (looks around floor for toaster) "Oh." (finds it and inserts the waffle)

"Kerry, watch this." (tries to press down lever)

Kerry: "I know how to do that." (gets up and comes over to the toaster)

Jenny: "I know but I wanted to toast. 'Kay, I'll put it on the breakfast plate."

(puts waffle onto plate)

Kerry: "Yeh. Cause that's for breakfast, right? Here you go." (hands food to

Jenny)

Jenny: "Thank-you." (adds piece of food to the plate)

In contrast to the 5-year-old response pattern, as illustrated in the following examples, the 3-year-olds seemed less capable of coordinating and integrating their peers' perspectives as indicated by an increased tendency to issue minimal (i.e., "yes", "no"), non-responsive/irrelevant, or repetitious responses to their partner's verbal comments:

Example 1 (repetitious response pattern)

Emma: "My dad lives in downtown."

Ted: "My dad lives in downtown too."

Emma: "Me too."

Ted: "Me too."

Example 2 (non-responsive/irrelevant response pattern)

Jane: "Ken, I'm almost finished." (Ken glances briefly at Jane)

Ken: "Bumbumbumbumbumbum." (flies his structure through the air)

"Yahoo. Luke. Luke. You know what Hans say." (high tone of voice)

Example 3 (minimal response pattern)

Ken: "What is that? What is that? A Star Wars ship?" (gaze to Jane)

Jane: "Yep." (gaze remains on toy in hand)

Ken: "Oh." (pauses, waits expectantly as though expecting Jane to elaborate, gaze remains on Jane, no other response forthcoming from Jane) "Can I have it?"

Jane: "Yep." (hands structure to Ken, refocuses back on toys, Ken takes the toy and begins to play with it, no further interaction)

Unlike the older children who experienced a significant decrease in performance from the high- to the low-structured toy condition, the relative stability of the 3-year-olds' social perspective taking competence across the two toy tasks may suggest an upper threshold in their ability to process and utilize social information. One interpretation of this is that the limitations in younger children's working memory capacity may have constrained their ability to separate from their own particular perspective to process incoming information from social others. Processing multiple sources of information simultaneously is an extremely arduous mental task for children younger than 5 years of age (Flavell, 1986, 2000) and may have impeded their ability to consider social others as providing a valued source of information and support. While playing in a context that does not contain an implied social script (i.e., as with the high-structured toys), the younger children must employ their limited mental resources to (1) access and employ their knowledge of story (and play) structure, (2) establish a structural frame for

their storytelling to unfold, (3) transform play objects, (4) define story content and direction, (5) communicate their play meanings and intentions, and (6) process social information. In dividing their attention thus, it is possible that the younger children missed valuable social cues and information that might be useful in bridging their narrative performance. Although the 5-year-olds were also faced with the same mental demands in the low-structured toy condition, the addition of one more working memory unit may have enabled them to juggle these multiple cues. Hence, they were able to engage in a higher level of social perspective taking in comparison to the 3-year-olds in this latter toy condition.

In addition to possible age-related differences in children's employment of their working memory resources in processing social information, it is possible that working memory may serve a different function with respect to social perspective taking depending on the degree of toy structure contained within the play setting. The lower magnitude and strength of the correlation found between working memory and social perspective taking in the low-structured toy condition ($r = +.448$, $p = .015$) as compared to the high-structured toy condition ($r = +.627$, $p = .001$) suggests that this may be the case. As mentioned, some of the children's working memory capacity must be deployed in the act of defining and delineating the structural foundation for play storytelling in the low-structured toy condition. However, this process of establishing a story framework is not necessary (at least not to the same extent) in the high-structured toy condition because the theme is already implied within the toys. How, then, might the children utilize this extra processing capacity in the high-structured toy condition?

Engagement in a character role within the high-structured toy condition may have required the children to use their additional working memory in managing the boundary between their real-pretend identities and events while assuming a character

role. Indeed, the low-moderate correlation found between dialogue voice use and working memory capacity in the high-structured toy condition ($r = +.455$, $p = .013$) suggests that immersion in a character role does indeed require a greater amount of working memory. However, the connection between working memory and managing the real-pretend boundary may be mediated by age. That is, the younger children may need to divert more mental energy to managing this boundary because their understanding of pretend is less differentiated (Hickling, Wellman, & Gottfried, 1997; Joseph, 1998; Lillard, 1993a, 1993b, 1996). Thus, in the high-structured toy condition, it is plausible that the younger children's processing capacity is consumed in the process of keeping what is believed to be real separate from what is being pretended. The older preschoolers, on the other hand, have a better understanding of pretend as a representational state and are better able to navigate the boundary between reality and pretend (Field, DeStefano, & Koewler, 1982; Fisher DiLalla & Watson, 1988; Scarlett & Wolf, 1979). Hence, the 5-year-olds may have diverted additional working memory toward attending to, processing, and integrating additional social cues and information. This may explain their enhanced social perspective taking in the high-structured toy condition and may account, in part, for the higher correlation between social perspective taking and working memory in this toy condition as opposed to the low-structured toy condition.

It is important to keep in mind that that the correlation between working memory and social perspective taking in both toy conditions was moderate at best. This moderate correlation suggests that other elements besides working memory distinguish the younger and older children's social perspective taking performance. For example, it is plausible that the younger children's social perspective taking behavior reflects a less differentiated understanding of the norms, rules, and conventions governing their successful entry into and maintenance of social pretend play. There is some support in

the empirical literature for this explanation. Curran (1999) found that 3- and 4-year-olds have more difficulty following play rules in comparison to 5- and 6-year-olds. This lack of knowledge has been found to disrupt play relations and lead to the disintegration of play (Doyle, Doehring, Tessier, deLorimier, & Shapiro, 1992; Garvey, 1993). In addition to a less differentiated awareness and understanding of play rules and norms, age-related differences in social perspective taking may also reflect limits in younger children's ability to use clear and unambiguous language to communicate their play meanings and intentions. Younger children typically have not mastered verbal language to the same extent as older children (Goncu, 1993a). Studies have found that pretend play not only involves relatively sophisticated verbal ability (Asher & Gazelle, 1999) but that this verbal facility is also integrally linked to social competence (Asher & Gazelle, 1999; Brinton & Fujiki, 1999; Gallagher, 1999). Hence, the age-related differences in social perspective taking in the current study may reflect, in part, inadequate mastery of spoken language to help supplement and support play actions.

Briefly, to conclude, the results of the social perspective taking analyses suggested that, in comparison to the younger children, older preschoolers' display higher levels of social understanding as indicated by social responses that were mutually reciprocal and supportive. Even though they experienced a significant decrease in perspective taking performance in the low-structured toy condition, they were still able to maintain a delicate balance between considering both self- and other-perspectives. The younger children, on the other hand, seemed less able to acknowledge and support their play partner's ideas, often responding using one-word, irrelevant, or repetitive responses. Although these findings appear to suggest fundamental differences in older and younger preschoolers' social understanding of social others, it is possible that these age-related differences reflect working memory capacity constraints, differences in

awareness of and adherence to play rules, and mastery of spoken language to explicate play meanings and intentions.

Links Between Plot Structure and Perspective Taking

The findings discussed thus far appear to indicate higher levels of plot structure complexity and social perspective taking competence for the 5-year-olds in comparison to the 3-year-olds. However, separate analyses for each of these dependent variables does not indicate if these dependent variables are in some way related to each other or whether this relationship is impacted by age or degree of toy structure. The ability to attend to and process sources of external cues (i.e., toy and social) has implications for storytelling because it may result in higher level stories being told. That is, being more attentive to play partners' responses and contributions may increase children's exposure to new story ideas and, in doing so, lead to more structurally advanced story plots. Does the level of social perspective taking affect the structural complexity of the stories that are told? Is this relationship maintained across age and toy task? A discussion of the final experimental analyses addressing these research questions is presented in the following section.

The results of the final analyses revealed that social perspective taking competence was positively linked to children's story plot level for the group as a whole (i.e., 3- and 5-year-olds combined). The low to moderate, positive correlations found between these two variables in both the high- and the low-structured toy conditions (high-structured toys: $r = +.546$, $p = .003$; low-structured toys: $r = +.381$, $p = .041$) suggested that children who engaged in higher levels of perspective taking also told more structurally advanced stories. Statistical analyses of correlation elements revealed that the relationship between social perspective taking and plot structure complexity remained invariant across the two toy conditions for the two groups of children.

However, power of the statistical test analysis using larger, hypothetical sample sizes than the ones used in the current study revealed that the relationship between plot structure and social perspective taking may become increasingly stable with age. That is, self-other understanding may become an integral component of older preschoolers' narrative competence. These findings appear to support previous theoretical and empirical literature tying children's use of narrative in both more formal (i.e., less context dependent) and informal (i.e., pretend play) storytelling contexts to their underlying social knowledge (Astington, 1990; Johnson, 1990; McKeough, 1996; Yussen & Ozcan, 1996). Thus, pretend play stories may be one means through which older preschoolers are able to structure, consolidate, and share their social knowledge and understandings with others. Despite these promising findings, it is important to keep in mind that the magnitude of the correlation coefficient between plot structure complexity and social perspective taking was moderate at best, accounting for a relatively small amount of shared variance (i.e., approximately 9 to 25%) in the children's narrative performance. This suggests that other factors impact children's play stories. The following section discusses some of these potential factors, factors that were outlined in the correlation and descriptive content analyses of the previous chapter.

Other Aspects Affecting Children's Play Stories

Previous correlation and descriptive content analyses highlighted the richly textured nature of young children's pretend-play storytelling. Although not formally manipulated in the current study, some factors emerged during data collection and analyses that seemed pertinent to children's ability to negotiate and establish a common story frame within their play. These factors appeared to represent a commingling of internal competencies, interests, and motivations as well as external supports and constraints.

In terms of the children's performance, internal consistency measures indicated moderate levels of stability in the children's storytelling competence, stage management voice use, and social perspective taking from one toy condition to the next. In other words, the dyads that demonstrated higher (or lower) levels of competence in one toy condition relative to the other dyads also tended to engage in higher (or lower) levels of performance in the other toy condition. This study did not attempt to untangle the underlying source of this (in)consistency across toy contexts because this would entail in-depth discourse analysis. It is highly likely that the root source of this consistency varied for each dyad. That is, the children in some of the dyads may have been operating at a similar level of competence whereas in another play pair one child may have been more competent than their peer and therefore assumed more responsibility in guiding their less-competent peers' performance. Some studies have found cognitive, emotional, and behavioral synchrony between players facilitates play (Goldstein, Field, & Healy, 1989; Goncu, 1987). Indeed, the current study's descriptive analysis highlighted how a close match between play partners in terms of their emotional involvement, verbal facility, and representational understanding (i.e., distinction between reality and pretend) seemed to facilitate and support ongoing social relations. This, in turn, allowed the children to establish and maintain a common frame of understanding regarding story content and direction. However, other studies have found that one child may assume more of a leadership role (Black, 1992; Elgas, Klein, Kantor, & Fernie, 1988; Ladd & Hart, 1992) and, in doing so, set the trend for the play. Again, this was also observed in the children as described in the previous content analysis. Recall the previous examples in the verbal communication section where one 3-year-old and one 5-year-old child verbally interpreted their play partners' speech and actions when that partner seemed

less able to do so. Thus, individual differences between partners in verbal expressiveness may impact children's ability to establish and sustain play relations.

Complicating matters further, observed levels of consistency in dyadic performance may be due to individual differences between the two children in terms of their attentiveness, mastery motivation/risk-taking, perceptions, and attributions, all of which have been found to impact young children's behavior and performance (Gottfried, 1986; Hoch, Kroll, Franz, Janson, & Widaman, 1984; Rusher, Cross, & Ware, 1995; Wachs, 1985). Thus, playmates do indeed appear to serve as "human pivots around which playful meanings take shape" (Reifel & Yeatman, 1993, p. 363).

In addition to individual differences as a potential source of variation in children's play storytelling, the descriptive content analysis highlighted how toy context elicited models, resources, and strategies apparently shared by a broader group of children. For example, although the younger children sought adult (i.e., observer) guidance for structuring their play more frequently than the older children, both groups of children turned more often to that adult when there was less toy structure to anchor their play transformations and stories. Previous studies have found parents and caregivers structure and support children's play from an early age (Fiese, 1990; Garvey, 1982; Lucariello, 1987; Melstein, Tamis-LeMonda, & Bornstein, 1996; Miller & Garvey, 1984; Rome-Flanders, Cronk, & Gourde, 1995). Research had also found that this involvement increases (i.e., becomes more directive) in unfamiliar play contexts (Lucariello, 1987) and in order to prompt children up to a higher level of play (Fiese, 1990). Thus, adults serve as a support system, helping to maintain children's interest in play (Levenstein, 1986) and providing them with a potential framework for engaging in more advanced forms of play (Budwig, Strage, & Bamberg, 1986). With this early

involvement, children begin to learn that adults serve as a valuable resource in guiding and structuring their play, particularly in more ambiguous play situations.

As well as reliance on adult guidance, the descriptive content analysis revealed how children rely on personal storytelling in the low-structured toy condition. This finding accentuates how narratives are told in different ways and for different purposes (Crais & Lorch, 1994) and how narratives are dynamic and changing depending on the situational context (Gutierrez-Ciellen, Pena, & Quinn, 1995). The lack of inherent toy structure prompted the children to rely upon other mental models to help frame their play speech and action. Interestingly, the children did not call upon just any mode of thought (e.g., problem solving, logical) to guide their play. Rather, they seemed to have an implicit understanding of play as an appropriate context for sharing their personal experiences. As well, they seemed to know that these stories provided a way to establish a connection with the play situation and each other. Although preschoolers have been found to produce a rich variety of narrative forms (Preece, 1992), research needs to continue to explore its "multifarious manifestations" (Hicks, 1993, p. 135) and those contexts that prompt children to access the full range of their narrative knowledge (i.e., personal stories, children's literature, and movies/videos) to lend structure and meaning to their experiences.

To conclude, internal consistency and descriptive content analyses emphasized individual and contextual factors not formally addressed within the current study but appeared to be of some importance to the children's storytelling in play. These factors capture the emergent, dynamic, and multifaceted nature of children's pretend-play stories. Future research promises to provide a more complete picture of preschoolers' response to ever-changing play conditions and their deployment of various strategies

and communication formats to assist them in the process of bridging the gap between their own needs and understandings and those of the external world.

Integrated Discussion and Theoretical Implications

The current study represents a contemporary shift within the scientific community toward examining children's development as a dynamic and interrelated phenomenon. Today's researchers not only examine the products of development (e.g., examining discrete aspects of development), they also explore the process of development by detailing how children's growth is embedded within and affected by cultural, social, and environmental influences. More generally, researchers are suggesting that it is not possible to separate the behavior from the context in which it is executed (Bruner, 1982; Rogoff, 1982). Hence, this study attempted to merge both traditional and more contemporary perspectives by exploring the products of young children's development (i.e., level of social perspective taking, plot level, inter-textual voices) within the emergent and dynamic context of their social pretend play. In doing so, this study was able to reflect the breadth and depth of young children's play stories, stories that helped them to convey their experiences and understandings to others.

In addition, this study makes a valued contribution to the current scientific literature in its use of more naturalistic means for attaining critical information on how very young children use story words and actions to make sense of the physical and social world around them. This approach to studying children's development is becoming increasingly favored by some researchers because it is believed to reduce the potential for subject reactivity and be a more accurate reflection of children's behavioral competence (Crais & Lorch, 1994; Gutierrez-Clellen, Pena, & Quinn, 1995). As is evident in the current study, examining children's spontaneous play stories seemed to be a valuable, developmentally-appropriate, and less-intrusive way to access information

regarding how children's use toy and social information in communicating their beliefs, needs, and understandings to the external world.

As well, the experimental results herein have several important theoretical implications with regard to the role of age and context (i.e., toy and social) on children's pretend-play storytelling. First, the strong age differences in children's story structure complexity and social perspective taking ability appear to confirm those theories that recognize the role of internal, maturational changes in children's development (Case, 1992a, 1992b; Selman, 1980; Piaget, 1962). Consistent with the literature in this area (Astington & Gopnik, 1991; Benson, 1996; Bergman, 1997; Hogrefe, Wimmer, & Perner, 1986; McKeough, 1992a; Trabasso & Nickels, 1992; Wimmer & Hartl, 1991; Wimmer & Perner, 1983), the general, age-related progression in preschoolers' plot structure and perspective taking competence found in the current study appears to support a developmental trend toward increasingly differentiated and elaborated conceptual understandings and frameworks in these two knowledge domains. That is, unlike the 3-year-olds who seemed to be firmly embedded within the story-action realm, the 5-year-olds were increasingly able to acknowledge others' (i.e., character, peer) underlying mental thoughts, needs, feelings, and intentions as critical aspects to framing and supporting their story actions and interactions.

A second theoretical implication from the experimental results is related to children's manipulation of various inter-textual voices to convey their intended story meanings with regard to the external story action. Contrary to studies documenting developmental changes in preschool children's use of language to support and clarify their play meanings and intentions (Garvey, 1982; Halliday-Sher, Urberg, & Kaplan-Estrin, 1995; Pellegrini, 1983, 1986; Wolf & Pusch, 1985), both age-groups in this study used a similar pattern of inter-textual voices across the two toy conditions. That is, the

children utilized a dialogue (i.e., character role) voice while playing with the high-structured toys and the stage manager (i.e., directorial) and narrator (i.e., observer) voices when playing with the low-structured toys. These findings appear to support theoretical perspectives that have their roots in Vygotskian soil. Such theories highlight the role of the external context in shaping and defining behavior. The children, in this case, appeared to take their cues from the external environment and then adjust their play behavior accordingly.

Hence, the inter-textual voice findings herein appear to support the theoretical view that children's behavioral competence is integrally embedded in and affected by the external milieu (Bruner, 1982; Rogoff, 1982, 1990). Additional support for the critical role of the external context in shaping behavior comes from the scaffolding effect the high degree of toy structure appeared to have on the children's storytelling, a third theoretical implication stemming from the experimental results. Both groups of children produced higher level stories in the high-structured toy condition in comparison to the low-structured condition. These results replicate other studies' findings documenting the facilitative effects of toys and other play materials representing familiar roles, routines, objects, and events that they encounter in the real world (French, Lucariello, Seidman, & Nelson, 1985; Neuman & Roskos, 1991, 1992; Sachs, Goldman, & Chaille, 1985).

A fourth theoretical implication with regard to the experimental results obtained herein relates to children's social perspective taking competence. That is, unlike plot structure complexity, the results of the current study suggested that supportive benefits of a high degree of toy structure may be more limited in terms of children's social perspective taking. Neo-Piagetian theory (Case, 1992a, 1992b) proposes that children experience a "ceiling effect" (Case, 1992b; p. 70) due to biological factors, one of which is presumed to be their attentional or processing capacity. Hence, the relative stability

observed in the 3-year-olds social perspective taking performance across toy conditions may reflect their inability to attend to and process social information due to biological limitations in working memory capacity. The moderate, positive associations found between the children's working memory capacity and social perspective taking suggests that working memory is one of the factors that plays an important role in allowing children to process social cues. The younger children's more limited processing capacity in comparison to the older children may have impeded their ability to process social cues, although how that working memory is utilized may vary depending on the specific toy condition. For example, working memory resources may have been consumed in the cognitive process of trying to keep what is really believed to be real separate from what is being pretended (Nichols & Stich, 2000) while engaged in a character role in the high-structured toy condition. It is also possible that, as Vygotsky (1966) contended, children use the detailing within the high-structured toys as a pivot to help them separate from the real world and move into and remain within the world of meaning (i.e., in the story world as a character). While moving within this fantasy world, additional working memory is used to embellish upon character roles and actions. This latter explanation may explain why working memory capacity shared a moderate, positive correlation with both plot structure complexity and use of the character role (i.e., dialogue) voice in the high-structured toy condition. Alternatively, working memory in the low-structured toy task may have been consumed in the process of generating play ideas and manually constructing objects/settings/people to fulfil those ideas. As well, because there is minimal information contained within the toys themselves to convey their play intentions and goals, the children must divert some of their mental resources to communicating their story plans to their play partner and others (i.e., observer). In addition, in the low-structured toy condition, working memory may have also been used

to solicit adult guidance as indicated by an increase in the number of comments and questions directed to the researcher. That is, when children were unsure of their direction, they turned to the adult for assistance. With the increased cognitive demands placed upon the children in the low-structured toy task, it is not too surprising that there is little left in the way of mental resources to elaborate upon the basic story line, particularly for the younger children who had less processing capacity in comparison to the older children. This explanation might account for the low correlation between working memory and plot structure complexity in this toy condition.

A fifth theoretical implication of the experimental findings details significant linkages between children's plot level complexity and social perspective taking competence, a connection that appears to become more stable with age. Children's growing awareness of story characters as having internal mental states driving story action appeared to coincide with their increasing awareness of peers as having internal thoughts and feelings that require attention. This finding joins a growing body of scientific literature connecting children's narrative competence to their social experiences and understandings (Daiute & Griffin, 1993; Fox, 1991; Galda, Shockley Bispinghoff, Pellegrini, & Stahl, 1995; Graesser, Singer, & Trabasso, 1994; Haas Dyson, 1993; Kemper & Edwards, 1986; Miller, 1993; Preece, 1987; Trabasso & Nickels, 1992; Yussen & Ozcan, 1996).

A final theoretical implication of the current study relates to those factors outlined in descriptive content analysis but not formally assessed within the current study. Reliance on adult guidance, use of personal story accounts, ability to express and regulate emotion, understanding and maintaining the distinction between reality and pretend, and verbally encoding one's story meanings and intentions seemed to affect children's ability to establish and maintain a common focus with their peer which, in turn,

may have affected their storytelling. Indeed, these factors may have contributed, in part, to the null age effect and large amount of within-group variation in children's inter-textual voice use, although future research is necessary to determine if these factors combine with age or toy condition to influence children's plot structure complexity. Nevertheless, introducing these factors as potentially shaping and constraining children's play storytelling helps to broaden and deepen current conceptions regarding the inherent multiplicity and complexity of children's narrative development and use.

Practical Implications of Children's Pretend-Play Storytelling

Understanding how children make sense of the world and how certain contexts may support these meaning-making activities is critical for practitioners who translate theory into practice. The results of this study suggest that the natural and spontaneous context of children's pretend play stories is a rich carrier of information with regard to how children explore, practice, and extend their current knowledge and understandings. Mental health professionals, developmental psychologists, and early childhood educators have traditionally had great difficulty accurately assessing preschoolers' level of competence in various developmental domains because such youngsters are easily distracted by external sources of influence (Sattler, 1992). This study explored children's storytelling and social perspective competence within the natural and spontaneous forum of their pretend play. Exploring children's play behavior and patterns is advantageous because it (1) is believed to reflect their developmental level of functioning and competence (Fenson, 1986; O'Connor & Ammen, 1997, O'Connor, 1991), and (2) is a familiar and less stressful arena for children to demonstrate their strengths and weaknesses (Gitlin-Weiner, Sandgrund, & Schaefer, 2000). Identifying consistent age norms and delineating how specific contexts impact those norms (e.g., toys, peers) in play provides practitioners with a comprehensive framework for

interpreting children's play behavior and provides a broader glimpse into the range of children's strengths and weaknesses (Fenson, 1986; Gitlin-Weiner et. al, 2000).

To accurately assess children's storytelling and social perspective behavior in play, identify potential problems, and intervene to arrest or reverse these problems, the practitioner needs to be cognizant of the role of toys and peers on children's behavior and how the impact of these variables is moderated by age. With regard to age norms, the age differences observed herein in terms of children's story structure seem consistent with other studies findings' using more formal, less context-dependent storytelling contexts (McKeough, 1992a; Trabasso & Nickels, 1992). That is, 5-year-olds have a more advanced narrative understanding in comparison to the 3-year-olds and, as such, are able to manipulate both the story-action realm and the character mental-state realm. They are able to shift from an exclusive focus on story action and events to being able to incorporate characters' internal thoughts, feelings, intentions, and motivations. Three-year-olds, on the other hand, seem to have a firm grasp of story as being composed of basic story elements (e.g., characters, settings) and a series of linked actions. The findings herein, consistent with a recent review of the literature postulating advancements in children's self-other understanding from 3- to 5-years-old (Flavell, 2000), suggest that practitioners may also expect the 5-year-olds to demonstrate increased ability to acknowledge peers' perspectives in play by providing helpful, informative, or courteous comments. Alternately, they might expect the younger children's peer interactions to be characterized by one-word, irrelevant, or repetitive responses. As well, the moderate correlation and increased stability between social perspective taking and narrative performance with age in the current study suggests that practitioners be cognizant that younger children tend to lag behind older children in their ability to use peer cues to scaffold their narrative performance in play. As well, the

moderate links between narrative complexity and social perspective taking suggests that training in one area may transfer to gains in the other area (i.e., training in storytelling may positively affect social knowledge or vice versa).

Although practitioners may find age norms helpful in identifying potential developmental problems in these areas, being aware of preschool children's use of physical cues within their play setting is critically important to designing and arranging play settings to optimize children's development and learning. Clearly, consistent with other studies outlining the beneficial effects of high-structured toys on children's narrative performance (French, Lucariello, Seidman, & Nelson, 1985; Sachs, Goldman, & Chaille, 1985), using toys that represent familiar, real-life routines and experiences appear to optimize preschoolers' narrative competence. It is incumbent upon those providing care and services to young children to provide the proper tools (i.e., high-structured toys) for them to tell their play stories because narrative is increasingly viewed as a:

“...crucial activity...a mode not only of representing but of constituting reality and of conferring meaning on experience...a symbolic activity – spanning the range from enactment of narratives in...pretend play to their discursive exposition in storytelling – not only provides us with an invaluable window into young children's mental life and their images of the world; it also serves as a crucial context for learning and development, within which fantasy can become a tool for grappling with reality.” (Nicolopoulou, 1997b, p. 157)

Although a higher degree of toy structure had less effect on children's social perspective taking in the current study, it is possible that the high-structured toys facilitated self-other understanding because the children must suspend their real identities and assume the speech and actions of another person. This proposed link comes from the literature

documenting a connection between play enactment, identity formation, and social cognitive awareness and competence (Berg, 1999; Connolly, Doyle, & Reznick, 1988; Oliveira, 1997; Youngblade & Dunn, 1995). Therefore, practitioners that expose children to toys that encourage role enactment in play may encourage increasingly differentiated self-other understanding. Hence, providing preschool children with play environments stocked with toys representing familiar, everyday routines and experiences that allow them to access well-engrained mental scripts and encourage them to assume different roles and personas may provide an informal, instructional context facilitating young children's narrative and social understanding. Indeed, this has already begun in the work of some researchers who have explored the facilitative benefits of such play settings on children's play (Christie, 1991; Neuman & Roskos, 1991, 1992; Vukelich, 1993).

Unlike the high-structured toys, the results of this study suggested that low-structured toys do not advance children's story structure or social perspective taking performance. The practitioner, however, may expect the low-structured toys to have a different function in young children's development and learning. For example, providing children with opportunities to play with low-structured toys may prompt children to use a broader range of linguistic channels to clearly convey their play transformations and story meanings and reduce ambiguity with regard to their play actions. Some researchers have noted that using verbal means to make play transformations and actions more explicit leads to greater awareness of language function and use which, in turn, is characteristic of and precursor to literacy-related knowledge (Galda, Pellegrini, & Cox, 1989; Pellegrini & Galda, 1993). In other words, children's use of inter-textual voices to explicate and inform while playing with low-structured toys may serve as an indirect way to enhance children's awareness of verbal language as essential to

communicating internal ideas, images, and understandings. As well, informal observations herein suggested that low-structured toys may require children to access other mental models (e.g., personal stories of past events) and rely upon a broader range of internal competencies (e.g., verbal facility) and behavioral strategies (e.g., seeking guidance from adults) to construct a basic foundation for their storytelling. Thus, observing preschoolers' play with low-structured toys may provide the practitioner with a broader view of internal mechanisms and resources children use to define, organize, and express their story meanings and understandings.

A final practical implication of the current study relates to potential individual differences in children's pretend-play storytelling. Although there were clear age trends in the children's performance, there was also a substantial amount of within-group variation particularly with regard to the children's inter-textual voice use. In addition, as outlined in the previous descriptive content analysis, other factors (e.g., emotional and verbal expressiveness) seemed pertinent to young children's storytelling. Practitioners need to be sensitive to individual differences in the manner with which children go about making sense of their experiences. Within group variation in children's sense-making activities represents a blending of the individual's internal cognitive structures/processes and external supports and constraints (e.g., learning histories, sociocultural activities; Case, 1992a, 1992b; Nicolopoulou, 1997b). By being sensitive to individual competencies, interests, and propensities, practitioners can better structure their play settings and interactions to encourage mastery and competence. For instance, providing more verbal praise and encouragement, pairing individual children with peers that have advanced competence in target areas, or exposing them to specific toy contexts may provide the additional support for these children, support that may be gradually weaned off as their competence and confidence grows.

In sum, the results of this study suggest that the natural and spontaneous context of children's pretend play stories provides practitioners with a valuable tool for assessing preschoolers narrative knowledge, social perspective taking competence, and inter-textual voice use. By identifying general, age-related narrative and social perspective taking trends, inter-textual voice patterns, and the role of environmental factors on children's play stories, practitioners may be better able to structure play environments to support and extend these meaning-making activities as well as assess, identify, and arrest potential developmental delays.

Limitations and Delimitations

Research studies, no matter how carefully planned and executed, have inherent limitations and delimitations that need to be addressed and discussed. These caveats are necessary to specify the populations to which generalizations can be safely made (i.e., delimitations) and highlight potential weaknesses within the study methodology (i.e., limitations) that constrain its findings (Locke, Spirduso, & Silverman, 1993). This study attempted to blend more traditional experimental techniques with a more naturalistic, observational research design. Some experimental control was sacrificed in order to attain a more complete understanding of children's behavior in more natural, real-life settings. Alternately, some of the naturalism was sacrificed in order to retain control over those features believed to be critical to children's behavior and competence. The following section details some of the current study's methodological weaknesses.

The first limitation of the current study relates to its ecological validity. Although the children were systematically exposed to the experimental playroom, play materials, recording materials, and the observer (i.e., researcher) prior to data collection, there were aspects of the experimental playroom setting that were not typical of the children's regular playrooms. Unlike their regular playrooms, the children played with a restricted

range of toys within a confined play space for a pre-determined period of time. These factors may have introduced some extraneous confounding into the experimental data. For example, Lyytinen, Poikkeus, and Laakso (1997) detailed how a restricted selection of toys and confined play space may force children to interact with and acknowledge each other's presence more so than in a free play situation. Other researchers have found longer play periods to support children's engagement in pretend play (Christie, Johnson, & Peckover, 1988; Christie, 1991). Naturalistic free play observations may enhance external validity; however, there are a couple of inherent problems with using such an approach. First, there is the logistical problem of separating out the contribution of each participant (Lyytinen et. al., 1997). Second, the variables affecting naturalistic play observations tend to be "formidably complex to stabilize and quantify" (Gitlin-Weiner, Sandgrund, & Schaefer, 2000, p. 8). Not only are observations that take place in a structured play setting less time consuming, they also tend to be more reliable because such settings are more orderly and controlled, less fast-paced and less uncertain (i.e., more predictable), and increase the likelihood of developing normative comparisons (Gitlin-Weiner et.al., 2000). Thus, the current study may have been more limited in terms of its ecological validity. Nevertheless, exerting some control over the play situation (i.e., length of time playing, play partner, type of toys) within the experimental playroom enhanced the accuracy of identifying individual children's play contributions as well as potential trends and patterns in the children's pretend-play storytelling performance.

In addition to the aforementioned limitation with regard to the more restrictive play conditions, there were some limitations with regard to experimental control that may have inadvertently confounded the results. Recall from the previous section that preschool children are notoriously susceptible to external sources of distraction (Sattler,

1992). The children in this study were no exception. The younger children seemed particularly affected by a number of extraneous distractions. For example, they seemed to be easily distracted by noises emanating from outside the playroom (e.g., phones ringing, staff talking) and by irrelevant details contained within the playroom (e.g., window coverings, wall hangings). In addition, they seemed to be more distracted by the video camera and the observer's presence, particularly when that presence was made more conspicuous by comments being issued by the observer to clarify their play speech, actions, and transformations. That interference may have disrupted the natural flow of the play and potentially changed its meaning (Reifel & Yeatman, 1993). Hence, lack of control over various extraneous distractions from a multitude of sources may have diverted the children's attention from the toys, play situation, or each other and, in doing so, reduced the internal validity of the results obtained herein.

As well, small sample size and sample demographics used herein restrict generalization of the findings to the broader population of preschool children, a third limitation of the current study. The majority of children in this study were assessed as having average to above-average verbal scaled scores, were of European Canadian descent, came from middle- to upper-socioeconomic status families, and had college-educated parents. Researchers have recently begun to acknowledge the impact of linguistic competence (Allen, Kertoy, Sherblom, & Pettit, 1994; Lyytinen, Poikkeus, & Laakso, 1997) and cultural influences on children's storytelling (Brice Heath, 1986; John-Steiner & Panofsky, 1992; Miller, Wiley, Fung, & Hui Liang, 1997; Minami, 1996) and play (Farver & Howes, 1993; Farver & Wimbarti, 1993; Farver, Kwan Kim, & Lee, 1995; Fishbein & Imai, 1993). As well, Peterson (1994) documented the positive impact of socioeconomic and parent-education status on children's narrative competence. Therefore, caution must be exercised in extending these findings to groups of children

not sharing similar competencies and demographics. Research needs to continue to broaden its focus to compare the play and stories of children with different competencies and experiential backgrounds in order to enhance current understandings of the many ways children use narrative to make sense of their experiences (Haas Dyson, 1990; Johnson, 1995).

A fourth limitation of the current study relates to the construct validity of the dependent measures used herein. The scoring criteria used to assess the children's narrative structure, language, and perspective taking competence were based upon developmental theory and designed to capture select aspects of children's play behavior. Scrutiny of the narrative, play, and perspective taking research indicates a litany of such non-standardized, theory-driven scoring schemes. Few, if any, of these scoring schemes have been examined to determine their psychometric properties. Without this work, there is a greater risk that the scoring tool is not actually measuring what it purports to (i.e., its construct validity). This concern may be somewhat alleviated if results are replicated in other studies using similar measurement criteria, as was the case for the plot structure and inter-textual scoring schemes used in the current study. However, unlike story structure and story voice usage, the perspective taking scoring criteria used in the present analysis was drawn primarily from Selman and his colleague's work with school-aged children and troubled youth (Adalbjarnardottir & Selman, 1989; Brion-Meisels & Selman, 1984; Gurucharri & Selman, 1982; Lyman & Selman, 1985; Selman, 1980; Selman & Demorest, 1984; Yeates, Schulz, & Selman, 1991). The study herein is the first of its kind to extend Selman's (1980) developmental stage model of social perspective taking to younger preschoolers. Because of its untested nature, future research replicating this study's findings using the same operational criteria and research protocol are necessary before being able to confidently

conclude that the social cognitive criteria used within this study is measuring children's social perspective taking development (Elmes, Kantowitz, & Roediger III, 1995).

The experimental design of this study may pose a fifth limitation to this study's findings. The within-group design that was used helped to control for any individual differences that may confound the data; however, such designs may introduce carry-over effects as the subjects progress from one treatment task to the next (Campbell & Stanley, 1963). To guard against such carry-over effects, treatment order was randomized and counterbalanced. However, the multiple observations in this study's design extended the length of the study and events that occurred over the period of time that it took to complete the data collection process may have confounded the effect of the experimental manipulations (Stanley & Campbell, 1963). For example, special events such as going swimming, Halloween, and performing in Christmas concerts occurred during data collection. Complicating matters further, the timing and type of special events that occurred differed across different age groups and play centers. By including control groups and then comparing the control groups performance to the experimental group, the effects of such special events could have been assessed and teased out. Including such control groups is recommended for future research studies.

Thus, to reduce concern regarding the aforementioned limitations, replication of the current study's results is necessary. Elmes, Kantowitz, & Roediger III (1995) identified three forms of replication. Direct replication involves repeating an experiment as closely as possible to the original. This may be one route to assessing this study's experimental reliability; however, a more stringent test of the phenomena under investigation may involve systematic replication. Systematic replication entails changing factors considered to be irrelevant to see if the phenomena still exist and are not illusory. Likewise, a further test of this study's findings might involve conceptual replication.

Conceptual replication involves replicating the phenomenon under investigation using different variables to demonstrate generality. Obtaining similar findings using different types of high-structured toys (i.e., role-play versus replica-play toys [e.g., miniature toy figures, vehicles, etc.]) is an example of conceptual replication. Hence, replicating the results of the current study using different toys, play materials, play settings (e.g., natural, experimental, home, child-care), and peers should help to eliminate alternative explanations and validate the constructs (i.e., preschoolers' storytelling, inter-textual voice use, and social perspective taking) under investigation.

Hence, methodological and measurement limitations, small sample sizes, and the restricted sample demographics suggests that the results of this study be interpreted as exploratory rather than conclusive. Further replication is required before these results can be generalized to the broader population of preschool children and across different play contexts.

Directions for Future Research

As mentioned, replication of the current study and its findings is necessary to conclude, with confidence, that the age and toy affects discovered herein are representative of preschool children's behavior in different play settings. As well, areas for future exploration have been mentioned at several points throughout this document. As was evident in the descriptive content analysis, there are clearly many other factors that may be implicated in young children's pretend-play storytelling. The role of emotional and verbal expressiveness, reliance on expert guidance, and pretend-reality boundary understanding and marking are all aspects that may need to be explored in greater depth to extend current conceptions regarding the many ways children define, structure, and convey their narrative understanding in play. As well, "goodness of fit" between play partners with regard to interests, understandings, propensities,

experiences, and competencies promises to be a potentially fruitful area for future research.

Although these certainly seem worthwhile areas to pursue, there is another aspect of children's narrative and play that has not been adequately addressed in the scientific literature but may critically impact how children go about making sense of their experiences. Increasingly, children from Western cultures are being exposed to the tools of a technological-information age. That is, children, like their adult counterparts, are currently in the midst of a computer and video revolution (Bransford, Sherwood, & Hasselbring, 1988). In school, at home, and in the community children are inundated by *technological gadgetry of all sorts: interactive video games, computer software programs, electronic books and toys*. These tools of technology have inevitably become part of the fabric of our children's lives. Yet, relatively little is known about the effects of these tools and activities on children's learning and development. Some scholars argue that technology helps to create alternate pathways to developing competencies in children (Bransford et. al, 1988). Supporting this claim, studies have found children's use of computers to enhance story writing (Heller & McLellan, 1993; Jones & Pellegrini, 1996). Wolf (1988) argued a second important quality of computer systems is its capacity to provoke complex social interaction or "draw attention to issues of collaboration and interpretation" (p. 214). Indeed, one study found social collaboration around a computer task to advance children's problem solving abilities (Teasley, 1995). However, Nicolopoulou (1993) noted that technology use is shaped by the broader sociocultural context. That is, the broader social milieu determines the patterns of interaction, commitment to, and involvement in computer activities which, in turn, helps to define its meaning and impact on learning. Although the use of computers as an informal instructional tool and collaborative social context for has been explored in some

detail for school-aged children, little if any information exists with regard to the impact of such technology on preschool children. More specifically, how might electronic toys and games impact children's pretend-play stories? Such games and toys are "interactively self-contained." That is, children do not necessarily require input from other people to discover, explore, and experience its various features. Rather, the toys' reactions help to guide and scaffold subsequent play actions. It may be that such toys may actually serve as a replacement to social interaction. Alternately, similar to the high-structured toys used herein, such electronic toys may help to anchor the children's play by providing more explicit cues to serve as a guide thereby allowing them to extend and elaborate upon their play stories. Future research is needed to clarify these potentially important aspects of children's play. Other questions to consider relate to whether age of individual differences mediate or moderate the impact of such toys and what potential long-term effects might be. This information seems pertinent and necessary in light of children's increasing exposure, at younger ages, to the fall-out of the current technological revolution.

Conclusion

Examining children's pretend play provided some valuable insight regarding children's use of physical and social cues in building their stories. The results of the current study suggested that older children produce more complex story structures and utilize more social cues in constructing their stories in comparison to the younger children. Younger children, on the other hand, seemed to focus more on the toy cues contained within their environment in supporting their storytelling. Indeed, toys that contained a high degree of toy detailing bridged storytelling up to a level not typical for their age.

It may be that the highly detailed toys served as a conceptual mnemonic thereby releasing mental reserves and allowing children to redirect processing capacity resources to elaborating and extending upon more basic story lines. Both groups of children told less structurally complex stories while playing with the low-structured toys, unlike their performance in the high-structured toy condition. This observed decrease in performance suggests that, in the absence of toy structure, children are required to divert whatever processing memory they have to establishing the basic structural building blocks for their storytelling to unfold. For the older children, the addition of one more processing capacity unit may allow them to divert some of this processing capacity to processing and integrating social information. However, for the younger children, processing capacity is fully consumed in the act of transforming objects to establish a basic story framework, which is not readily available to them in the form of an established script.

The results of the current study also suggested that, in the low-structured toy condition, children divert some of their mental energy toward clarifying or reflecting upon past or present story actions and events as evidenced by their increased use of the stage management and narrator inter-textual voices. Alternately, in the high-structured toy condition, the children seemed to rely more heavily upon play actions and the concrete information contained within the toys to help convey their story meanings and intentions. That is, they more readily immersed themselves in a pretend role as demonstrated by their increased use of the dialogue voice.

Although both groups of children seemed cognizant of the need to verbally explicate their story meanings in response to a decrease in toy structure, the younger children may have conserved additional working memory by issuing peer responses that did not appear to require a lot of cognitive effort (i.e., one-word, irrelevant, or repetitive

verbal responses). This was in marked contrast to the older children who responded in a way that was supportive and helpful and maintained ongoing, reciprocal dialogue with their peer. Older preschoolers' increased ability to attend to and integrate social information suggested an underlying growth in social perspective taking. That is, these latter findings suggested that the older children were cognizant of others as having needs and ideas that differed from their own, viewpoints that served as a valued source of information for structuring subsequent responses and behavior. In general, the results of the current study suggested that the older children are more adept at utilizing, balancing, and integrating multiple sources of information as they go about story-building in play. Moreover, their ability to do so may be integrally linked to their ability to construct increasingly complex and sophisticated stories as suggested by the increasingly stable association between social perspective taking and plot structure complexity with age.

The results of the descriptive content analysis also highlighted the inherently rich, complex, and dynamic nature of children's pretend-play stories. Play ideas, meanings, and interactions were shaped and constrained by the moment-to-moment transactions between players as they combined public resources (i.e., adult guidance, toy and peer cues) with personal understandings (i.e., personal story narrative schema, pretend-reality distinction), competencies, and propensities (i.e., verbal facility, emotional expressiveness). The current study illustrated how children's play stories reflect the commingling of internal and external supports and constraints. These stories defy more simplistic and parsimonious explanations but offer rich prospects and possibilities for future research.

To conclude, the present study explored young children's storytelling within the natural and spontaneous context of their dyadic pretend play. The analyses attempted

to capture and highlight the rich and diverse nature of these meaning-making activities while reflecting the complex interplay of developmental, environmental, and social supports and constraints. The results of this study suggest that play provides a valuable context for accessing and assessing children's developing narrative knowledge, knowledge that has become increasingly central to understanding how they interpret, organize, and share their experiences with others. By clarifying how children respond to changes within their social and physical environment, this study contributed to a growing body of literature exploring the unique way preschoolers go about making sense of and connecting with the world around them. Keeping in mind the aforementioned limitations, this study's attempt to clarify and delineate how children coordinate internal tendencies with external realities has helped expand current conceptions regarding how young children create stories within their play.

End Notes

¹Sequential numerical values were assigned each demographic variable:

Socioeconomic status: Middle income = 1, middle-high income = 2, high income = 3, unknown/other = 4; Education level: High school = 1, < 2 years post-secondary = 2, 2 to 4 years post secondary = 3, graduate training = 4, unknown/other = 5; Ethnic Background: European Canadian = 1, African Canadian = 2, Asian Canadian = 3, First Nations = 4, Mixed Ethnic Background = 5; Other/Unknown = 6.

² As was the case in assessing demographic information, both Pearson product moment (r) and Spearman Rho (r_s) correlation coefficients were computed on the data. However, because both correlation procedures yielded similar results and Pearson's r was required for subsequent experimental analyses, only Pearson correlation data is provided in Table 4.5.

³These tables include and represent analysis using weighted mean averages. Statistical analyses was done on the experimental data using Highest Achieved Means for Plot Level and Social Perspective Taking as well. This entailed taking the highest plot level and perspective-taking score achieved for each dyad and then averaging these values across the group. Because inferential analyses using both averages yielded similar results, for the purposes of parsimony, only weighted average data are discussed in the results.

REFERENCES

- Adalbjarnardottir, S., & Selman, R.L. (1989). How children propose to deal with the criticism of their teachers and classmates: Developmental and stylistic variations. Child Development, 60, 539-550.
- Allen, M., Kertoy, M.K., Sherblom, J.C., & Pettit, J.M. (1994). Children's narrative productions: A comparison of personal event and fictional stories. Applied Psycholinguistics, 15, 149-176.
- Anderson, A.H., Clark, A., & Mullin, J. (1994). Interactive communication between children: Learning how to make language work in dialogue. Journal of Child Language, 21, 439-463.
- Applebee, A.N. (1978). The child's concept of story. Chicago, IL: The University of Chicago Press.
- Ariel, S. (1992). Semiotic analysis of children's play: A method for investigating social development. Merrill-Palmer Quarterly, 38, 119-138.
- Aronson, J.N., & Golomb, C. (1999). Preschoolers' understanding of pretense and presumption of congruity between action and representation. Developmental Psychology, 35, 1414-1425.
- Asher, S.R., & Gazelle, H. (1999). Loneliness, Peer relations, and language disorder in children. Topics in Language Disorders, 19, 16-33.
- Astington, J.W. (1990). Narrative and the child's theory of mind. In B.K. Britton & A.D. Pellegrini (Eds.), Narrative thought and language (pp. 151-171). Hillsdale, NJ: Lawrence Erlbaum.
- Astington, J. & Gopnik, A. (1991). Theoretical explanations of children's understanding of the mind. British Journal of Developmental Psychology, 9, 7-31.

- Badzinski, D.M. (1991). Vocal cues and children's mental representations of narratives: Effects of incongruent cues on story comprehension. Western Journal of Speech Communication, 55, 198-214.
- Bailey, D.B. Jr., McWilliam, R.A., Ware, W.B., & Burchinal, M.A. (1993). Social interactions of toddlers and preschoolers in same-age and mixed-age play groups. Journal of Applied Developmental Psychology, 14, 261-276.
- Bamberg, M., & Damrad-Frye, R. (1991). On the ability to provide evaluative comments: Further explorations of children's narrative competencies. Journal of Applied Language, 18, 689-710.
- Bartsch, K., & Wellman, H. (1989). Young children's attribution of action to beliefs and desires. Child Development, 60, 946-964.
- Bates, L. (1991). The effects on the structure of young children's written narrative of using a sequence of pictures or a single picture as a stimulus. Reading, 25, 2-10.
- Benson, M.S. (1996). Structure, conflict, and psychological causation in the fictional narratives of 4- and 5-year-olds. Merrill-Palmer Quarterly, 42, 228-247.
- Berg, L. (1999). Developmental play stages in child identity construction: An interactionist theoretical contribution. International Journal of Early Childhood, 31, 11-24.
- Bergman, S.E. (1997). A developmental analysis of 4- and 6-year-olds' narratives: A comparison of formal storytelling to fantasy play. Unpublished master's thesis, University of Calgary, Calgary, Alberta, Canada.
- Berthoff, A.E. (1993). The semiotics of narrative. Linguistics and Education, 5, 175-179.
- Black, B. (1992). Negotiating social pretend play: Communication differences related to social status and sex. Merrill-Palmer Quarterly, 38, 212-232.

- Black, B. & Logan, A. (1995). Links between communication patterns in mother-child, father-child, and child-peer interactions and children's social status. Child Development, 66, 255-271.
- Blake, J., Austin, W., Cannon, M. Lisus, A., & Vaughan, A. (1994). The relationship between memory span and measures of imitative and spontaneous language complexity in preschool children. International Journal of Behavioral Development, 17, 91-107.
- Blishen, B.R., Carroll, W.K., & Moore, K. (1987). The 1981 socioeconomic index for occupations in Canada. Canadian Review of Sociology and Anthropology, 24, 465-488.
- Blum-Kulka, S. (1993). "You gotta know how to tell a story": Telling, tales, and tellers in American and Israeli narrative events at dinner. Language in Society, 22, 361-402.
- Bokus, B. (1992). Peer co-narration: Changes in structure of preschoolers' participation. Journal of Narrative and Life History, 2, 253-275.
- Botvin, G.J., & Sutton-Smith, B. (1977). The development of structural complexity in children's fantasy narratives. Developmental Psychology, 13, 377-388.
- Boyes, M., Giordano, R., & Pool, M. (1997). Internalization of social discourse: A Vygotskian account of the development of young children's theories of mind. In B.D. Cox & C. Lightfoot (Eds.), Sociogenetic Perspectives on Internalization (pp.189-202). Mahwah, NJ: Lawrence Erlbaum.
- Bransford, J., Sherwood, R., & Hasselbring, T. (1988). The video revolution and its affects on development: Some initial thoughts. In G. Forman & P.B. Pufall (Eds.), Constructivism in the computer age (pp. 173-201). Hillsdale, NJ: Lawrence Erlbaum.

- Brice Heath, S. (1986). Taking a cross-cultural look at narrative. Topics in Language Disorders, 7, 84-94.
- Bringuier, J. (1980). Conversations with Jean Piaget. Chicago: University of Chicago Press.
- Brinton, B., & Fujiki, M. (1999). Social interactional behaviors of children with specific language disorders. Topics in Language Disorders, 19, 49-69.
- Brion-Meisels, S., & Selman, R.L. (1984). Early adolescent development of new interpersonal strategies: Understanding and intervention. School Psychology Review, 13, 278-291.
- Britton, J. (1982). Spectator role and the beginnings of writing. In M. Nystrand (Ed.), What writers know. New York: Academic.
- Bruchkowsky, M. (1992). The development of empathic cognition in middle and early childhood. In R. Case (Ed), The mind's staircase: Exploring the conceptual underpinnings of children's thought and language (pp. 153-170). Hillsdale, NJ: Lawrence Erlbaum.
- Bruner, J.S. (1974). The ontogenesis of speech acts. Journal of Child Language, 2, 1-19.
- Bruner, J.S. (1982). The organization of action and the nature of the adult-infant transaction. In E.Z. Tronick (Ed.), Social interchange in infancy (pp. 23-35). Baltimore: University Park Press.
- Bruner, J.S. (1986a). Actual minds, possible worlds. Cambridge: Harvard University Press.
- Bruner, J. (1986b). Play, thought and language. Prospects, 16, 77-83.
- Bruner, J. (1988). Research currents: Life as narrative. Language Arts, 65, 574-583.

Bruner, J.S. (1990a). Acts of meaning. Cambridge: Harvard University Press.

Bruner, J. (1990b). Culture and human development: A new look. Human Development, 33, 344-355.

Bruner, J.S. (1992). The narrative construction of reality. In H. Beilin & B. Pufall (Eds.), Piaget's theory: Prospects and possibilities (pp. 229-248). Hillsdale, NJ: Lawrence Erlbaum.

Budwig, N., Strage, A., & Bamberg, M. (1986). The construction of joint activities with an age-mate: The transition from caregiver-child to peer play. In J. Cook-Gumperz, W.A. Corsaro, & J. Streeck (Eds.), Children's worlds and children's language (pp. 83-108). Berlin: Mouton de Gruyter.

Burroughs, E., & Murray, S. (1992). The influence of play material on discourse during play. Journal of Childhood Communication Disorders, 14, 119-128.

Campbell, D.T. & Stanley, J.C. (1963). Experimental and quasi-experimental designs for research. Boston: Houghton Mifflin Company.

Cameron, C.A., Lee, K., Webster, S., Munro, K., Hunt, A.K., & Linton, M.J. (1995). Text cohesion in children's narrative writing. Applied Psycholinguistics, 16, 257-269.

Camras, L.A. (1984). Children's verbal and nonverbal communication in a conflict situation. Ethology and Sociobiology, 5, 257-268.

Cannella, G.S. (1993). Learning through social interaction: Shared cognitive experience, negotiation strategies, and joint concept construction for young children. Early Childhood Research Quarterly, 8, 427-444.

Carson, J.L., & Parke, R.D. (1996). Reciprocal negative affect in parent-child interactions and children's peer competency. Child Development, 67, 2217-2226.

Case, R. (1992a). The mind's staircase: Exploring the conceptual underpinnings of children's thought and knowledge. Hillsdale, NJ: Lawrence Erlbaum.

Case, R. (1992b). Neo-Piagetian theories of intellectual development. In H. Beilin & T.B. Pufall (Eds.), Piaget's theory - Prospects and possibilities (pp. 61-104). Hillsdale, NJ: Lawrence Erlbaum.

Chafe, W. (1990). Some things that narrative tells us about the mind. In B.K. Britton & A.D. Pellegrini (Eds.), Narrative thought and narrative language (pp.79-98). Hillsdale, NJ: Lawrence Erlbaum.

Christie, J.F. (1991). Psychological Research on play: Connection with early literacy development. In J. F. Christie (Ed.), Play and early literacy development (pp. 27-43). Albany, NY: State University of New York Press.

Christie, J.F., Johnsen, E.P., & Peckover, R.B. (1988). The effects of play period duration on children's play patterns. Journal of Research in Childhood Education, 3, 123-131.

Coie, J.D., Dodge, K.A., & Kupersmidt (1990). Peer group behavior and social status. In J.R. Asher & J.D. Coie (Eds.), Peer rejection in childhood (pp. 17-59). New York: Cambridge University Press.

Cole, D., & LaVoie, J. (1985). Fantasy play and related cognitive development in 2- and 6-year-olds. Developmental Psychology, 21, 233-240.

Cole, M., & Engstrom, Y. (1995). Commentary. Human Development, 38, 19-24.

Connolly, J.A., Doyle, A.B., & Reznick, E. (1988). Social pretend play and social interaction in preschoolers. Journal of Applied Developmental Psychology, 9, 301-313.

Cook-Gumperz, J. (1993). The relevant text: Narrative, storytelling, and children's understanding of genre: Response to Egan. Linguistics and Education, 5, 149-156.

Corrigan, R. (1987). A developmental sequence of actor-object pretend play in young children. Merrill-Palmer Quarterly, 33, 87-106.

- Cortina, J.M. (1993). What is coefficient alpha? An examination of theory and applications. Journal of Applied Psychology, 78, 98-104.
- Costin, S.E., & Jones, D. (1992). Friendship as a facilitator of emotional responsiveness and prosocial interventions among young children. Developmental Psychology, 28, 941-947.
- Cowan, P.A. (1978). Piaget: With feeling. Cognitive, social, and emotional dimensions. New York: Holt, Rinehart and Winston.
- Crais, E.R., & Lorch, N. (1994). Oral narratives in school-age children. Topics in Language Disorders, 14, 13-28.
- Crockenberg, S., & Lourie, A. (1996). Parents' conflict strategies with children and children's conflict strategies with peers. Merrill-Palmer Quarterly, 42, 495-518.
- Crockenberg, S., Jackson, S., & Langrock, A.M. (1996). Autonomy and goal attainment: Parenting, gender, and children's social competence. New Directions for Child Development, No.73. Jossey-Bass Publishers.
- Curran, J.M. (1999). Constraints of pretend play: Explicit and implicit rules. Journal of Research in Childhood Education, 14, 47-55.
- Daiute, C. (1989). Play as thought: Thinking strategies of young writers. Harvard Educational Review, 59, 1-23.
- Daiute, C. (1990). The role of play in writing development. Research in the Teaching of English, 24, 4-47.
- Daiute, C. (1993). Focus on Research-Youth Genres and literacy: Links between sociocultural and developmental theories. Language Arts, 70, 402-416.
- Daiute, C., & Dalton, B. (1993). Collaboration between children learning to write: Can novices be masters? Cognition and Instruction, 10, 281-333.

- Daiute, C., & Griffin, T.M. (1993). The social construction of written narratives. New Directions for Child Development, 61, 97-120.
- Daiute, C., Campbell, C.H., Griffin, T.M., Reddy, M., & Tivnan, T. (1993). Young authors' interactions with peers and a teacher: Toward a developmentally sensitive sociocultural literacy theory. New Directions for Child Development, 61, 41-63.
- Dansky, J.L. (1980). Make-believe: A mediator of the relationship between play and associative fluency. Child Development, 51, 576-579.
- Davis, L. (1992). A developmental analysis of the narrative of verbally talented children. Unpublished master's thesis, University of Calgary, Calgary, Alberta, Canada.
- Dekovic, M., & Gerris, J.R.M. (1994). Developmental analysis of social cognitive and behavioral differences between popular and rejected children. Journal of Applied Developmental Psychology, 15, 367-386.
- de Lorimier, S., Doyle, A., & Tessier, O. (1995). Social coordination during pretend play: Comparisons with nonpretend play and effects on expressive context. Merrill-Palmer Quarterly, 41, 497-516.
- Devescovi, A., & Baumgartner, E. (1993). Joint-reading a picture book: Verbal interaction and narrative skills, Cognition and Instruction, 11(3 & 4), 299-323.
- Dickinson, D.K., & McCabe, A. (1993). Beyond two-handed reasoning: Commentary on Egan's work. Linguistics and Education, 5, 187-194.
- Doyle, A., & Connolly, J. (1989). Negotiation and enactment in social pretend play: Relations to social acceptance and social cognition. Early Childhood Research Quarterly, 4, 289-302.
- Doyle, A.B., Doehring, P., Tessier, O., de Lorimier, S., & Shapiro, S. (1992). Transitions in children's play: A sequential analysis of states preceding and following social pretense. Developmental Psychology, 28, 137-144.

- Dunn, J. (1986). Pretend play in the family. In A.W. Gottfried & C. Caldwell Brown (Eds.), Play interactions: The contribution of play materials and parental involvement to children's development. Proceedings of the eleventh Johnson and Johnson pediatric round table (pp. 293-304). Lexington, MA: Lexington Books.
- Dunn, J., Brown, J., Slomkowski, C., Tesla, C., & Youngblade, L. (1991). Young children's understanding of other people's feelings and beliefs: Individual differences and their antecedents. Child Development, *62*, 1352-1366.
- Eckler, J., & Weininger, O. (1989). Structural parallels between pretend play and narratives. Developmental Psychology, *25*, 736-743.
- Egan, K. (1993). Narrative and learning: A voyage of implications. Linguistics and Education, *5*, 119-126.
- Eisenberg, N., & Harris, J. (1984). Social competence: A developmental perspective. School Psychology Review, *13*, 267-277.
- Eisenberg, N., Fabes, R.A., & Murphy, B.C. (1996). Parent's reactions to children's negative emotions: Relations to children's social competence and comforting behavior. Child Development, *67*, 2227-2247.
- Eisenberg, N., Guthrie, I.K., Fabes, R.A., Reiser, M., Murphy, B.C., Holgren, R., Maszki, P., & Losoya, S. (1997). The relations of regulation and emotionality to resiliency and competent social functioning in elementary school children. Child Development, *68*, 295-311.
- Elbaz-Luwisch, F. (1997). Narrative research: Political issues and implications. Teaching and Teacher Education, *13*, 75-83.
- Elgas, P.M., Klein, E., Kantor, R., & Fernie, D.E. (1988). Play and the peer culture: Play styles and object use. Journal of Research in Childhood Education, *3*, 142-154.

- Elmes, D.G., Kantowitz, G.H., & Roediger III, H.L. (1995). Research methods in psychology. St. Paul, MN: West Publishing Company.
- Fabes, R.A., Eisenberg, N., Jones, S., Smith, M., Guthrie, I., Poulin, R., Shepard, S., & Friedman, J. (1999). Regulation, emotionality, and preschoolers' socially competent peer interactions. Child Development, 70, 432-442.
- Farver, J.M., & Branstetter, W. Husby (1994). Preschoolers' prosocial responses to their peers' distress. Developmental Psychology, 30, 334-341.
- Farver, J.M., & Howes, C. (1993). Cultural differences in American and Mexican mother-child pretend play. Merrill-Palmer Quarterly, 39, 344-358.
- Farver, J.M. & Wimbarti, S. (1995). Indonesian children's play with their mothers and older siblings. Child Development, 66, 1493-1503.
- Farver, J.M., Kwan Kim, Y., & Lee, Y. (1995). Cultural differences in Korean- and Anglo-American preschoolers' social interaction and play behaviors. Child Development, 66, 1088-1099.
- Fein, G.G. (1981). Pretend play in childhood: An integrative review. Child Development, 52, 1095-1118.
- Fein, G.G. (1987). Pretend play. In D. Gorlitz & J.F. Wohlwill (Eds.), Curiosity, imagination, and play: On the development of spontaneous cognitive and motivational processes (pp. 282-305). Hillsdale, NJ: Lawrence Erlbaum.
- Fenson, L. (1986). The developmental progression of play. In A. W. Gottfried, & C. Caldwell Brown (Eds.), Play interactions: The contribution of play materials and parental involvement to children's development. Proceedings of the eleventh Johnson & Johnson pediatric round table (pp. 53-65). Lexington, MA: Lexington Books.
- Field, T., DeStefano, L., & Koewler, J.H. III (1982). Fantasy play of toddlers and preschoolers. Developmental Psychology, 18, 503-508.

Fiese, B.H. (1990). Playful relationships: A contextual analysis of mother-toddler interaction and symbolic play. Child Development, *61*, 1648-1656.

Fischer, K. W. & Hogan, A. E. (1989). The big picture for infant development: Levels and variations. In J. J. Lockman & N. L. Hazen (Eds.), Action in Social Context: Perspectives on Early Development (pp. 275-305). New York: Plenum Press.

Fishbein, H.D., & Imai, S. (1993). Preschoolers select playmates on the basis of gender and race. Journal of Applied Developmental Psychology, *14*, 303-316.

Fisher DiLalla, L. & Watson, M.W. (1988). Differentiation of fantasy and reality: Preschoolers' reactions to interruptions in their play. Developmental Psychology, *24*, 286-291.

Flavell, J.H. (1986). The development of children's knowledge about the appearance-reality distinction. American Psychologist, *41*, 418-425.

Flavell, J.H. (2000). Development of children's knowledge about the mental world. International Journal of Behavioral Development, *24*, 15-23.

Flavell, J.H., Green, F.L., & Flavell, E.R. (1995). Young children's knowledge about thinking. Monographs of the Society for Research in Child Development, *60* (1, Serial No. 243).

Fleming, S. (1995). Whose stories are validated? Language Arts, *72*, 590-596.

Fonzi, A., & Smorti, A. (1994). Narrative and logical strategies in socio-cognitive interaction between children. International Journal of Behavioral Development, *17*, 383-395.

Fonzi, A., Schneider, B.H., Tani, F., & Tomada, G. (1997). Predicting children's friendship status from their dyadic interaction in a structured situation of potential conflict. Child Development, *68*, 496-506.

- Forbes, D., & Yablick, G. (1984). The organization of dramatic content in children's fantasy play. In F. Kessel & A. Goncu (Eds.), New Directions for Child Development: Analyzing Children's Play Dialogues (pp. 23-36). San Francisco: Jossey-Bass.
- Forman, E.A. (1992). Discourse, intersubjectivity, and the development of peer collaboration: A Vygotskian approach. In L.T. Winegar & J. Valsiner (Eds.), Children's development in social context, Volume 1: Metatheory and theory (pp. 143-159). Hillsdale, NJ: Erlbaum.
- Fox, R. (1991). Developing awareness of mind reflected in children's narrative writing. British Journal of Developmental Psychology, 9, 281-298.
- Fox, C., Martin, W., & Evershed, J. (1994). Genres, anti-genres, and the art of subversion in children's stories and play. English in Education, 28, 15-22.
- Fraysse, J.C. (1994). Combined effects of friendship and stage of cognitive development on interactive dynamics. Journal of Genetic Psychology, 155, 161-177.
- French, L.A., Lucariello, J., Seidman, S., & Nelson, K. (1985). The influence of discourse content and context on preschoolers' use of language. In L. Galda & A.D. Pellegrini (Eds.), Play, language and stories: The development of children's literate behavior (pp.1-27). Norwood, NJ: Ablex.
- Galda, L., Pellegrini, A.D., & Cox, S. (1989). A short-term longitudinal study of preschoolers' emergent literacy. Research in the Teaching of English, 23, 292-309.
- Galda, L., Shockley Bispinghoff, B., Pellegrini, A.D., & Stahl, S. (1995). Sharing lives: Reading, writing, talking, and living in a first-grade classroom. Language Arts, 72, 334-339.
- Gallagher, T.M. (1999). Interrelationships among children's language, behavior, and emotional problems. Topics in Language Disorders, 19, 1-15.

Gambrell, L.B., & Chasen, S.P. (1991). Explicit story structure instruction and the narrative writing of fourth- and fifth-grade below-average readers. Research and Instruction, 31, 54-62.

Garcia-Werebe, M.J. & Baudonniere, P.M. (1991). Social pretend play among friends and familiar preschoolers. International Journal of Behavioral Development, 14, 411-428.

Garvey, C. (1977). Play with language and speech. In S. Ervin-Tripp & C. Mitchell-Kernan (Eds.), Language, thought and culture: Advances in the study of cognition (pp. 27-47). New York: Academic Press

Garvey, C. (1982). Communication and the development of social role play. In D. Forbes & M.T. Greenberg (Eds.), New directions for child development: Children's planning strategies, No. 18 (pp. 81-101). San Francisco, CA: Jossey-Bass.

Garvey, C. (1993). Commentary. Human Development, 36, 235-240.

Genereux, R.L. (1997). Transformations in narrative thought during late childhood and adolescence. Unpublished doctoral dissertation, University of Calgary, Calgary, Alberta, Canada.

Gilbert, P. (1993). Narrative as a gendered social practice: In search of different story lines for language research. Linguistics and Education, 5, 211-218.

Gitlin-Weiner, K., Sandgrund, A., & Schaefer, C. (Eds.). (2000). Play diagnosis and assessment. NY: John Wiley & Sons, Inc.

Goldstein, S., Field, T., & Healy, B. (1989). Concordance of play behavior and physiology in preschool friends. Journal of Applied Developmental Psychology, 10, 337-351.

Golomb, C., & Cornelius, C. (1977). Symbolic play and its cognitive significance. Developmental Psychology, 13, 246-252.

- Golomb, C., & Galasso, L. (1995). Make believe and reality: Explorations of the imaginary realm. Developmental Psychology, 31, 800-810.
- Goncu, A. (1987). Toward an interactional model of developmental changes in social pretend play. In L.G. Katz, & K. Steiner (Eds.), Current Topics in Early Childhood Education, Volume 7 (pp.108- 125). Norwood, NJ: Ablex Publishing.
- Goncu, A. (1993a). Development of intersubjectivity in social pretend play. Human Development, 36, 185-198.
- Goncu, A. (1993b). Development of intersubjectivity in dyadic play of preschoolers. Early Childhood Research Quarterly, 8, 99-116.
- Goncu, A., & Gaskins, S. (1998). The role of pretense and language in the development of self. Human Development, 41, 200-204.
- Goncu, A., & Kessel, F. (1984). Children's play: A contextual-functional perspective. In F. Kessel & A. Goncu (Eds.), New Directions for Child Development: Analyzing Children's Play Dialogues (pp. 5-22). San Francisco: Jossey-Bass.
- Goncu, A., & Kessel, F. (1988). Preschoolers' collaborative construction in planning and maintaining imaginative play. International Journal of Behavioral Development, 11(3), 327-344.
- Gottfried, A. E. (1986). Intrinsic motivational aspects of play experiences and materials. In A.W. Gottfried, & C. Caldwell Brown (Eds.), Play interactions: The contribution of play materials and parental involvement to children's development. Proceedings of the eleventh Johnson & Johnson pediatric round table (pp. 81-99). Lexington, MA: Lexington Books.
- Graesser, A.C., Singer, M., & Trabasso, T. (1994). Constructing inferences during narrative text comprehension. Psychological Review, 101, 371-395.

Gurucharri, C., & Selman, R.L., (1982). The development of interpersonal understanding during childhood, preadolescence, and adolescence: A longitudinal follow-up study. Child Development, *53*, 924-927.

Gutierrez-Clellen, V., Pena, E., & Quinn, R. (1995). Accommodation cultural differences in narrative style: A multicultural perspective. Topics in Language Disorders, *15*, 54-67.

Guttman, M., & Frederiksen, C.H. (1985). Preschool children's narratives: Linking story comprehension, production, and play discourse. In L. Galda & A.D. Pellegrini (Eds.), Play, language and stories: The development of children's literate behavior (pp. 99-128). Norwood, NJ: Ablex.

Haas Dyson, A. (1990). Research currents: Diversity, social responsibility, and the story of literacy development. Language Arts, *67*, 192-205.

Haas Dyson, A. (1993). A sociocultural perspective on symbolic development in primary grade classrooms. New Directions for Child Development, *61*, 25-39.

Haas Dyson, A. (1995). The courage to write: Child meaning making in a contested world. Language Arts, *72*, 324-333.

Haden, C.A., & Fivush, R. (1996). Contextual variation in maternal conversational styles. Merrill-Palmer Quarterly, *42*, 200-227.

Haight, W.L., Masiello, T., Dickson, K.L., Huckleby, E., & Black, J.E. (1994). The everyday contexts and social functions of spontaneous mother-child pretend play in the home. Merrill-Palmer Quarterly, *40*, 509-522.

Haight, W.L., Wang, X., Fung, H., Williams, K., & Mintz, J. (1999). Universal, developmental, and variables aspects of young children's play: A cross-cultural comparison of pretending at home. Child Development, *70*, 1477-1488.

Hall, N. (1991). Play and the emergence of literacy. In J.F. Christie (Ed.), Play and early literacy development (pp. 3-25). Albany, NY: State University of New York Press.

Halliday-Scher, K., Urberg, K.A., Kaplan-Estrin, M. (1995). Learning to pretend: Preschoolers' use of metacommunication in sociodramatic play. International Journal of Behavioral Development, 18, 451-461.

Hampson, J., & Nelson, K. (1993). The relation of maternal language to variation in rate and style of language acquisition. Journal of Child Language, 20, 313-342.

Harkins, D.S., Koch, P.E., & Michel, G.F. (1994). Listening to maternal story telling affects narrative skill of 5-year-old children. The Journal of Genetic Psychology, 155, 247-257.

Hausendorf, H., & Quasthoff, U.M. (1992). Children's storytelling in adult-child interaction: Three dimensions in narrative development. Journal of Narrative and Life History, 2, 293-310.

Heller, M.F., & McLellan, H. (1993). Dancing with the wind: Understanding narrative text structure through response to multicultural children's literature (with an assist from HyperCard). Reading Psychology: An International Quarterly, 14, 285-310.

Hewitt, L.E., & Duchan, J. (1995). Subjectivity in children's fictional narrative. Topics in Language Disorders, 15, 1-15.

Hicks, D. (1993). Narrative discourse and classroom learning: An essay response to Egan's "Narrative and learning: A voyage of implications." Linguistics and Education, 5, 127-158.

Hicks, D.A. (1994). Individual and social meanings in the classroom: Narrative discourse as a boundary phenomenon. Journal of Narrative and Life History, 4, 215-240.

- Hicks, D., & Wolf, D., (1988). Texts within texts: A developmental study of children's play narratives. Papers and Reports on Child Language Development, 27, 55-62.
- Hinkle, D.E., Wiersma, W., & Jurs, S.G. (1979). Applied statistics for the behavioral sciences. Boston: Houghton Mifflin Company.
- Hickling, A.K., Wellman, H.W., & Gottfried, G.M. (1997). Preschoolers' understanding of others' mental attitudes towards pretend happenings. British Journal of Developmental Psychology, 15, 339-354.
- Hock, E., Kroll, B. C., Frantz, J., Janson, K. A., & Widaman, K. (1984). Infants in play groups: Time related changes in behavior toward mothers, peers, and toys. The Journal of Genetic Psychology, 146, 357-365.
- Hogrefe, G. –Juergen, Wimmer, H., & Perner, J. (1986). Ignorance versus false belief: A developmental lag in attribution of epistemic states. Child Development, 57, 567-582.
- Howard, G.S. (1991). Culture Tales: A narrative approach to thinking, cross-cultural psychology, and psychotherapy. American Psychologist, 46, 187-197.
- Howard, N.M. (1994). Conceptual knowledge of ESL students. Unpublished master's thesis, University of Calgary, Calgary, Alberta, Canada.
- Howes, C. & Matheson, C.C. (1992). Sequences in the development of competent play with peers: Social and social pretend play. Developmental Psychology, 28, 961-974.
- Howes, C., & Norris, D. (1993). Commentary. Human Development, 36, 241-246.
- Hubbard, J., & Coie, J.D. (1994). Emotional correlates of social competence in children's peer relationships. Merrill-Palmer Quarterly, 40, 1-20.

- Hudson, J.A., Gebelt, J., Haviland, J., & Bentivegna, C. (1992). Emotion and narrative structure in young children's personal accounts. Journal of Narrative and Life History, 2, 129-150.
- Johnson, C.J. (1995). Expanding norms for narration. Language, Speech, and Hearing Services in Schools, 26, 326-341.
- Johnson, J., Christie, J., & Yawkey, T. (1987). Play and early childhood development. Glenview, IL: Scott, Foresman and Company.
- Johnson, R.R., Greenspan, S., and Brown, G.M. (1984). Children's ability to recognize and improve upon socially inept communications. The Journal of Genetic Psychology, 144, 255-264.
- John-Steiner, V., & Panofsky, C. (1992). Narrative competence: Cross-cultural comparisons. Journal of Narrative and Life History, 2, 219-233.
- Jones, I., & Pellegrini, A.D. (1996). The effects of social relationships, writing, media, and microgenetic development on first-grade students' written narratives. American Research Journal, 33, 691-718.
- Joseph, R.M. (1998). Intention and knowledge in preschoolers' conception of pretend. Child Development, 69, 966-980.
- Kagan, S. (1990). Children's play: The journey from theory to practice. In E. Klugman & S. Smilansky (Eds.), Children's play and learning (pp. 173-187). New York: Teachers College Press.
- Kamler, B. (1994). Gender and genre in early writing. Linguistics and Education, 6, 153-182.
- Kane, S.R., & Furth, H.G. (1993). Children constructing social reality: A frame analysis of social pretend play. Human Development, 36, 199-214.

- Keller, M., & Reuss, S. (1984). An action-theoretical reconstruction of the development of social-cognitive competence. Human Development, 27, 211-220.
- Kelly-Byrne, D. (1984). Text and context: Fabling in a relationship. In F. Kessel & A. Goncu (Eds.), New directions for child development: Analyzing children's play dialogues, No.25 (pp. 27-51). San Francisco, CA: Jossey-Bass.
- Kemper, S. (1984). The development of narrative skills: Explanations and Entertainments. In S. Kuczaj (II) (Ed.), Discourse development: Progress in cognitive development research (pp. 99-124). New York: Springer-Verlag.
- Kemper, S., & Edwards, L. (1986). Children's expression of causality and their construction of narratives. Topics in Language Disorders, 7, 11-20.
- Kemple, K., Speranza, H., & Hazen, N. (1992). Cohesive dialogue and peer acceptance: Longitudinal relations in the preschool years. Merrill-Palmer Quarterly, 38, 364-381.
- Kertoy, M.K., & Kluppel Vetter, D. (1995). The effect of conversational setting on topic continuation in mother-child dyads. Journal of Child Language, 22, 73-88.
- Labov, W., & Waletzky, J. (1967). Narrative analysis: Oral versions of personal experience. In J. Helm (Ed.), Essays on the verbal and visual arts (pp. 12-44). Seattle, WA: University of Washington Press.
- Ladd, G.W., & Hart, G.H. (1992). Creating informal play opportunities: Are parents' and preschoolers' initiations related to children's competence with peers? Developmental Psychology, 28, 1179-1187.
- Laosa, L.M. (1989). Social competence in childhood: Toward a developmental, socioculturally relativistic paradigm. Journal of Applied Developmental Psychology, 10, 447-468.

Lee, P.C. (1989). Is the young child egocentric or sociocentric? Teachers College Record, 90, 375-391.

LeMarc, L.J., & Rubin, K.H. (1987). Perspective taking and peer interaction: Structural and developmental analyses. Child Development, 58, 306-315.

Lensmire, T.J., & Beals, D.E. (1994). Appropriating others' words: Traces of literature and peer culture in a third-graders' writing. Language in Society, 23, 411-426.

Levenstein, P. (1986). Mother-child play interaction and children's educational achievements. In H. W. Gottfried & C. Caldwell Brown (Eds.), Play interactions: The contribution of play materials and parental involvement to children's development. Proceeding of the eleventh Johnson & Johnson pediatric round table (pp. 293-304). Lexington, MA: Lexington Books.

Levine, K. & Mueller, E. (1988). Communication. In T.D. Yawkey & J.E. Johnson (Eds.), Integrative processes and socialization: Early to middle childhood (pp. 207-223). Hillsdale, NJ: Lawrence Erlbaum.

Levy, E., & Nelson, K. (1994). Words in discourse: A dialectical approach to the acquisition of meaning and use. Journal of Child Language, 21, 376-389.

Lillard, A.S. (1993a). Young children's conceptualization of pretence: Action or mental representational state? Child Development, 64, 372-386.

Lillard, A.S. (1993b). Pretend play skills and the child's theory of mind. Child Development, 64, 348-371.

Lillard, A.S. (1996). Body or mind: Children's categorizing of pretense. Child Development, 67, 1717-1734.

Locke, L.F., Spirduso, W., & Silverman, S.J. (1993). Proposals that work. A guide for planning dissertations and grant proposals. Newbury Park, CA: Sage Publications

- Lucariello, J. (1987). Spinning fantasy: Themes, structure, and the knowledge base. Child Development, 58, 434-442.
- Lucariello, J. (1995). Mind, culture, person: Elements in cultural psychology. Human Development, 38, 2-18.
- Lyman, D.R., & Selman, R.L (1985). Peer conflict in pair therapy: Clinical and developmental analyses. In M.W. Berkowitz (Ed.), Peer Conflict and Psychological Growth. New Directions for Child Development, n.29 (pp. 85-102). San Francisco: Jossey-Bass.
- Lyytinen, P. (1990). Developmental trends in children's pretend play. Child: Care, Health and Development, 17, 9-25.
- Lyytinen, P., Poikkeus, A. -M., & Laakso, M. -L., (1997). Language and symbolic play in toddlers. International Journal of Behavioral Development, 21, 289-302.
- MacKinnon-Lewis, C., Volling, B.L, Lamb, M.E., Dechman, K., Rabiner, D., & Curtner, M.E. (1994). A cross-contextual analysis of boys' social competence: From family to school. Developmental Psychology, 30, 325-333.
- Matthews, W. (1977). Modes of transformation in the initiation of fantasy play. Developmental Psychology, 13, 212-216.
- Matthews, W. (1978). Sex and familiarity effects upon the proportion of time young children spend in spontaneous fantasy play. The Journal of Genetic Psychology, 133, 9-12.
- Matusov, E. (1998). When solo activity is not privileged: Participation and internalization models of development. Human Development, 41, 326-349.
- McCall, G.L., & Simmons, J.L. (1991). Levels of analysis: The individual, the dyad, and the larger social group. In B.M. Montgomery & S. Duck (Eds.), Studying interpersonal interaction (pp. 56-81). New York: The Guilford Press.

McCall, R.G., & Kagan, J. (1994). Fundamental statistics for behavioral sciences.

Orlando, FL: Harcourt Brace College Publishers.

McCune-Nicolich, L. (1981). Toward symbolic functioning: Structure of early pretend games and potential parallels with language. Child Development, 52, 785-797.

McGhee, P.E., Ethridge, L., & Benz, N.A. (1984). Effect of level of toy structure on preschool children's pretend play. The Journal of Genetic Psychology, 144, 209-217.

McKeough, A. (1986). Developmental stages in the narrative compositions of school aged children. Unpublished doctoral dissertation, University of Toronto, (OISE).

McKeough, A. (1992a). A neo-structural analysis of children's narrative and its development. In R. Case (Ed), The mind's staircase: Exploring the conceptual underpinnings of children's thought and language (pp. 171-188). Hillsdale, NJ: Lawrence Erlbaum.

McKeough, A. (1992b). Testing for the presence of a central social structure: Use of the transfer paradigm. In R. Case (Ed), The mind's staircase: Exploring the conceptual underpinnings of children's thought and language (pp. 207-225). Hillsdale, NJ: Lawrence Erlbaum.

McKeough, A. (1996). Narrative knowledge and its development: Toward an integrative review framework. Issues in Education: Contributions from Educational Psychology, 2, 73-81.

McKeough, A., & Sanderson, A. (1996). Teaching storytelling: A microgenetic analysis of developing narrative competency. Journal of Narrative and Life History, 6, 157-192.

McLoyd, V.C. (1983). The effects of the structure of play objects on the pretend play of low-income preschool children. Child Development, 54, 626-635.

McLoyd, V.C., Warren, D., & Thomas, E.A. (1984). Anticipatory and fantastic role enactment in preschool triads. Developmental Psychology, 20, 807-814.

Mead, G.H. (1934). Mind, self, and society. Chicago: University of Chicago Press.

Meislin, A., Tamis-LeMonda, C.S., & Bornstein, M.H. (1996). Mother-child play: Sequential interactions and the relation between maternal beliefs and behavior. Child Development, 67, 1752-1766.

Miller, P.J. (March, 1993). Confessions of an interpretist: Promise and peril in the comparative study of children's narratives. Paper presented at the biennial meeting of the Society for Research in Child Development, New Orleans.

Miller, P. & Garvey, C. (1984). Mother-baby role play: Its origins in social support. In I. Bretherton (Ed.), Symbolic play – The development of social understanding (pp. 101-130). Orlando, FL: Academic Press.

Miller, P., Wiley, A., Fung, H., & Hui Liang, C (1997). Personal storytelling as a medium of socialization in Chinese and American families. Child Development, 68, 557-568.

Minami, M. (1996). Japanese preschool children's narrative development. First Language, 16, 339-363.

Minami, M., & McCabe, A. (1995). Rice balls and bear hunts: Japanese and North American family narrative patterns. Journal of Child Language, 22, 423-445.

Mize, J. & Pettit, G.S. (1997). Mothers' social coaching, mother-child relationship style, and children's peer competence: Is the medium the message? Child Development, 68, 312-332.

Moore, B., & Caldwell, H. (1993). Drama and drawing for narrative writing in primary grades. Journal of Educational Research, 87, 100-110.

Murachver, T., Pipe, M., Gordon, R., Owens, J.L., & Fivush, R. (1996). Do, show, and tell: Children's event memories acquired through direct experience, observation, and stories. Child Development, 67, 3029-3044.

Nelson, K. (1998). Language in cognitive development: The emergence of the mediated mind. New York: Cambridge University Press.

Neuman, S.B., & Roskos, K. (1991). The influence of literacy-enriched play centers on preschoolers' conceptions of the functions of print. In J. F. Christie (Ed.), Play and early literacy development (pp. 167-187). Albany, NY: State University of New York Press.

Neuman, S.B., & Roskos, K. (1992). Literacy objects as cultural tools: Effects on children's literacy behaviors in play. Reading Research Quarterly, 27, 203-225.

Nichols, S., & Stich, S. (2000). A cognitive theory of pretense. Cognition, 74, 115-147.

Nicolopoulou, A. (1993). Play, cognitive development, and the social world: Piaget, Vygotsky, and Beyond. Human Development, 36, 1-23.

Nicolopoulou, A. (1997a). Children and narratives: Toward an interpretive and sociocultural approach. In M. Bamberg (Ed.), Narrative development: Six approaches (pp. 179-215). Mahwah, NJ: Lawrence Erlbaum.

Nicolopoulou, A. (1997b). World making and identity formation in children's narrative play-acting. In B.D. Cox & C. Lightfoot (Eds.), Sociogenetic perspectives on internalization (pp. 157-187). Mahwah, NJ: Lawrence Erlbaum.

Norman, G.R., & Streiner, D.L. (1986). PDQ Statistics. Hamilton, Ont.: B.C. Decker Inc.

- O'Connell, B., & Bretherton, I. (1984). Toddler's play, alone and with mother: The role of maternal guidance. In I. Bretherton (Ed.), Symbolic play – The development of social understanding (pp. 337-368). Orlando, FL: Academic Press.
- O'Connor, K. (1991). The play therapy primer: An integration of theories and techniques. New York: Wiley.
- O'Connor, K., & Ammen, S. (1997). Play therapy treatment planning and interventions: The ecosystemic model and workbook. San Diego, CA: Academic Press.
- Oliveira, Z. (1997). The concept of role and the discussion of the internalization process. In B.D. Cox & C. Lightfoot (Eds.), Sociogenetic perspectives on internalization (pp. 105-118). Mahwah, NJ: Lawrence Erlbaum.
- Olson, D. (1983). "See! Jumping!" Some oral language antecedents of literacy. In H. Goelman, A. Oberg, & F. Smith (Eds.), Awakening to literacy (pp. 185-192). Exeter, NH: Heinemann.
- Olson, D.R. (1990). Thinking about narrative. In B.K. Britton & A.D. Pellegrini (Eds.), Narrative thought and narrative language (pp. 99-111). Hillsdale, NJ: Lawrence Erlbaum.
- Olszewski, P. (1987). Individual differences in preschool children's production of verbal fantasy play. Merrill-Palmer Quarterly, 33, 69-86.
- Olszewski, P., & Fuson, K.C. (1982). Verbally expressed fantasy play of preschoolers as a function of toy structure. Developmental Psychology, 18, 57-61.
- Overton, W.F. (1994). Contexts of meaning: The computational and the embodied mind. In W.F. Overton & D.S. Polermo (Eds.), The nature and ontogenesis of meaning (pp. 1-18). Hillsdale, NJ: Lawrence Erlbaum.
- Paley, V (1990). The boy who would be a helicopter: The uses of storytelling in the classroom. Cambridge: Harvard University Press.

- Pappas, C.C. (1993). Questioning our ideologies about narrative and learning: Response to Egan. Linguistics and Education, 5, 157-164.
- Partington, J., & Grant, C. (1984). Imaginary playmates and other useful fantasies. In P. Smith (Ed.), Play in animals and humans (pp. 217-239). New York: Basil Blackwell.
- Peisach, E., & Hardeman, M. (1984). Imaginative play and logical thinking in young children. The Journal of Genetic Psychology, 146, 233-249.
- Pellegrini, A.D. (1982). The construction of cohesive text by preschoolers in two play contexts. Discourse Processes, 5, 101-108.
- Pellegrini, A.D. (1983). Sociolinguistic contexts of the preschool. Journal of Applied Developmental Psychology, 4, 389-397.
- Pellegrini, A.D. (1985a). The relations between symbolic play and literate behavior: A review and critique of the empirical literature. Review of Educational Research, 55, 107-121.
- Pellegrini, A.D. (1986). *Play centers and the production of imaginative language*. Discourse Processes, 9, 115-125.
- Pellegrini, A.D. (1987). The effects of play contexts on the development of preschool children's verbalized fantasy. Semiotica, 65(3/4), 285-293.
- Pellegrini, D.S. (1985b). Social cognition and competence in middle childhood. Child Development, 56, 253-264.
- Pellegrini, A.D., & Galda, L. (1982). The effects of thematic-fantasy play training on the development of children's story comprehension. American Educational Research Journal, 19, 443-442.
- Pellegrini, A.D., & Galda, L. (1990). Children's play, language, and early literacy. Topics in Language Disorders, 10, 76-88.

Pellegrini, A.D., & Galda, L. (1993). Ten years after: A reexamination of symbolic play and literacy research. Reading Research Quarterly, 28, 163-175.

Pellegrini, A.D., & Perlmutter, J.C. (1989). Classroom contextual effects on children's play. Developmental Psychology, 25, 289-296.

Perroni, M.C. (1993). On the acquisition of narrative discourse: A study in Portuguese. Journal of Pragmatics, 20, 559-577.

Peterson, C. (1994). Narrative skills and social class. Canadian Journal of Education, 19, 251-269.

Peterson, C., & McCabe, A. (1992). Parental styles of narrative elicitation: Effect on children's narrative structure and content. First Language, 12, 299-321.

Peterson, C., & McCabe, A. (1994). A social interactionist account of developing decontextualized narrative skill. Developmental Psychology, 30, 937-948.

Petrakos, H., & Howes, N. (1996). The influence of the physical design of the dramatic play center on children's play. Early Childhood Research Quarterly, 11, 63-77.

Piaget, J. (1928). Judgment and reasoning in the child. London: Routledge & Kegan Paul.

Piaget, J. (1932). The moral judgment of the child. Glencoe, IL: The Free Press.

Piaget, J. (1962). Play, dreams, and imitation in childhood. New York: Norton.

Piaget, J. (1976). Symbolic play. In J.S. Bruner, A. Jolly, & K. Sylva (Eds.). Play: Its role in development and evolution (pp. 555-569). Middlesex, England: Hazell, Watson & Viney.

Piaget, J., & Inhelder, B. (1969). The psychology of the child. New York: Basic Books.

Pillow, B.H. (1991). Children's understanding of biased social cognition. Developmental Psychology, 27, 539-551.

- Piillow, B.H., (1995). Two trends in the development of conceptual perspective-taking: An elaboration of the passive-active hypothesis. International Journal of Behavioral Development, 18, 649-676.
- Polanyi, L. (1982). Linguistic and social constraints on storytelling. Journal of Pragmatics, 6, 509-524.
- Preece, A. (1987). The range of narrative forms conversationally produced by young children. Journal of Child Language, 14, 353-373.
- Preece, A. (1992). Collaborators and critics: The nature and effects of peer interaction on children's conversational narratives. Journal of Narrative and Life History, 2, 277-292.
- Ratner, H. & Stettner, L.J. (1991). Thinking and feeling: Putting Humpty Dumpty together again. Merrill-Palmer Quarterly, 37, 1-26.
- Reifel, S. & Yeatman, J. (1993). From category to context: Reconsidering classroom play. Early Childhood Research Quarterly, 8, 347-367.
- Robinson, C.C., & Jackson, R. (1987). The effects of varying toy detail within a prototypical play object on the solitary pretend play of preschool children. Journal of Applied Developmental Psychology, 8, 209-220.
- Rogoff, B. (1982). Integrating context and cognitive development. In M.F. Lamb & A.L. Brown (Eds.), Advances in developmental psychology (Vol. 2, pp. 125-170). Hillsdale, NJ: Lawrence Erlbaum.
- Rogoff, B. (1990). Apprenticeship in thinking: Cognitive development in social context. New York: Oxford University Press.
- Rome-Flanders, T., Cronk, C., & Gourde, C. (1995). Maternal scaffolding in mother-infant games and its relationship to language development: a longitudinal study. First Language, 15, 339-355.

Roskos, K. (1990). A taxonomic view of pretend play activity among 4- and 5-year-old children. Early Childhood Research Quarterly, 5, 495-512.

Rubin, K.H. (1986). Play, peer interaction, and social development. In H. W. Gottfried & C. Caldwell Brown (Eds.), Play interactions: The contribution of play materials and parental involvement to children's development. Proceeding of the eleventh Johnson & Johnson pediatric round table (pp. 163-174). Lexington, MA: Lexington Books.

Rudolph, K.D., Hammen, C., & Burge, D. (1995). Cognitive representations of self, family, and peers in school-age children: Links with social competence and sociometric status. Child Development, 66, 1385-1402.

Rusher, A. S., Cross, D. R., & Ware, A. M. (1995). Infant and toddler play: Assessment of exploratory style and development level. Early Childhood Research Quarterly, 10, 297-315.

Sachs, J., Goldman, J., & Chaille, C. (1985). Narratives in preschoolers' sociodramatic play: The role of knowledge and communicative competence. In L. Galda & A.D. Pellegrini (Eds.), Play, language and stories: The development of children's literate behavior (pp. 45-61). Norwood, NJ: Ablex.

Saracho, O.N. (1996). The relationship between the cognitive style and play behaviors of 3- and 5-year-old children. Personality and Individual Differences, 21, 863-876.

Sattler, J.M. (1992). Assessment of children: Revised and updated third edition. San Diego, CA: Jerome M. Sattler, Publisher Inc.

Sawyer, R. K. (1996). Role voicing, gender, and age in preschool play discourse. Discourse Processes, 22, 289-307.

Scarlett, W.G., & Wolf, D. (1979). When it's only make-believe: The construction of a boundary between fantasy and reality in storytelling. New Directions for Child Development, 6, 29-40.

Schwebel, D.C., Rosen, C.S., & Singer, J.L. (1999). Preschoolers' pretend play and theory of mind: The role of jointly constructed pretence. British Journal of Developmental Psychology, 17, 333-348.

Seidman, S. (1983). Eventful play: Preschooler's scripts for pretense. Paper presented at the biennial meeting of the Society for Research in Child Development, Detroit, MI. (ERIC Document Reproduction Service No. ED 299 173).

Selman, R.L. (1980). The growth of interpersonal understanding: Developmental and clinical analyses. New York: Academic Press.

Selman, R.L., & Demorest, A.P. (1984). Observing troubled children's interpersonal negotiation strategies: Implications of and for a developmental model. Child Development, 55, 288-304.

Seja, A.L., & Russ, S.W. (1999). Children's fantasy play and emotional understanding. Journal of Clinical Child Psychology, 28, 269-277.

Shapiro, L.R., & Hudson, J.A. (1991). Tell me a make-believe story: Coherence and cohesion in young children's picture-elicited narratives. Developmental Psychology, 27, 960-974.

Shiro, M. (1995). Venezuelan researchers' oral narrative abilities. Language Arts, 72, 528-537.

Shugar, G.W., & Kmita, G. (1990). The pragmatics of collaboration: Participation structure and the structures of participation. In G. Conti-Ramsden & C.E. Snow (Eds.) Children's Language, Volume 7 (pp. 273-303). Hillsdale, NJ: Lawrence Erlbaum.

Slomkowski, C., & Dunn, J. (1996). Young children's understanding of other people's beliefs and feelings and their connected communication with friends. Developmental Psychology, 32, 442-447.

Smiley, P.A., & Greene, J.K., (1995). Learning about self and other during requests. New Directions for Child Development, 69, 7-19.

Snitzer Reilly, J. (1992). How to tell a good story: The intersection of language and affect in children's narratives. Journal of Narrative and Life History, 2, 355-377.

Snow, C.E. (1993). Families as social contexts for literacy development. New Directions for Child Development, 61, 11-24.

Spinillo, A.G., & Pinto, G. (1994). Children's narratives under different conditions: A comparative study. Journal of Developmental Psychology, 12, 177-193.

Steiger, J.H. (1980). Tests for comparing elements of a correlation matrix. Psychological Bulletin, 87, 245-251.

Stein, N.L., & Albro, E.R. (1996). The emergence on narrative understanding: Evidence for rapid learning in personally relevant contexts. Issues in Education: Contributions from Educational Psychology, 2, 83-98.

Stein, N.L., & Glenn, C.G. (1979). An analysis of story comprehension in elementary school children. In R.O. Freedle (Ed.), New directions in discourse processing. Vol. 2 (pp. 53-120). Norwood, NJ: Ablex Publishing.

Streiner, D.L., (1995). Learning how to differ: Agreement and reliability statistics in psychiatry. Canadian Journal of Psychiatry, 40, 60-66.

Sullivan, K., & Winner, E. (1991). When 3-year-olds understand ignorance, false belief and representational change. British Journal of Developmental Psychology, 9, 159-171.

Sutton-Smith, B. (1979). Play and learning. New York: Teacher's College Press.

Sutton-Smith, B. (1986). The development of fictional narrative performances.

Topics in Language Disorders, 7, 1-10.

Sutton-Smith, B. (1995). Conclusion: The persuasive rhetorics of play. In A.D. Pellegrini (Ed.), The future of play theory: A multidisciplinary inquiry into the contributions of Brian Sutton-Smith (pp. 275-296). Albany: State University of New York Press.

Sutton-Smith, B., Botvin, G., & Mahoney, D. (1976). Developmental structures in fantasy narratives. Human Development, 19, 1-13.

Teasley, S.D. (1995). The role of talk in children's peer collaborations. Developmental Psychology, 31, 207-220.

Thorndyke, P. (1977). Cognitive structures in comprehension and memory of narrative discourse. Cognitive Psychology, 9, 77-110.

Trabasso, T., & Nickels, M. (1992). The development of goal plans of action in the narration of a picture story. Discourse Processes, 15, 249-275.

Trepanier-Street, M., & Romatowski, J.A. (1991). Achieving sex equity goals: Implications from creative writing research. Educational Horizons, 70, 34-40.

Trousdale, A.M. (1990). Interactive storytelling: Scaffolding children's early narratives. Language Arts, 67, 164-173.

Udwin, O., & Shmukler, D. (1981). The influence of sociocultural, economic and home background factors of children's ability to engage in imaginative play. Developmental Psychology, 17, 66-72.

Umiker-Sebeok, D.J. (1977). Preschool children's intraconversational narratives. Journal of Child Language, 6, 91-109.

Van Dongen, R., & Westby, C.E. (1986). Building the narrative mode of thought through children's literature. Topics in Language Disorders, 7, 70-83.

- Verba, M. (1993). Cooperative formats in pretend play among young children. Cognition and Instruction, 11(3 & 4), 265-280.
- Verba, M. (1994). The beginnings of peer collaboration in peer interaction. Human Development, 37, 125-139.
- Vine, E.W. (1994). The plot unit approach to story structure: An exploratory study of its application to stories written by four children from kindergarten to fifth grade. Linguistics and Education, 6, 183-216.
- Vukelich, C. (1993). Play: A context for exploring the functions, features, and meaning of writing with peers. Language Arts, 70, 386-392.
- Vygotsky, L.S. (1962). Thought and language. Cambridge, MA: MIT Press.
- Vygotsky, L.S. (1966). Play and its role in the mental development of the child. Soviet Psychology, 5, 6-18.
- Vygotsky, L.S. (1978). Mind in society. Cambridge: Harvard University Press.
- Wachs, T. D. (1985). Toys as an aspect of the physical environment: Constraints and nature of relationship to development. Topics in Early Childhood Special Education, 5, 31-46.
- Wanska George, S., & Krantz, M. (1981). The effects of preferred play partnership on communication adequacy. Journal of Psychology, 109, 245-253.
- Wanska, S.K., Bedrosian, J.L., & Pohlman, J.C. (1986). Effects of play materials on the topic performance of preschool children. Language, Speech, and Hearing Services in Schools, 17, 152-159.
- Wechsler, D. (1967). Manual for the Wechsler Preschool and Primary Scale of Intelligence. San Antonio, TX: The Psychological Corporation.
- Wellman, H.M., & Bartsch, K. (1988). Young children's reasoning about beliefs. Cognition, 30, 239-277.

- Wertsch, J. (1985). Culture, communication and cognition: Vygotskian perspectives. New York: Cambridge University Press.
- Wertsch, J.V. (1994). Introduction: Historical representation. Journal of Narrative and Life History, 4, 247-255.
- Williams, K.P. (1991). Storytelling as a bridge to literacy: An examination of personal storytelling among black middle-class children. Journal of Negro Education, 60, 399-410.
- Wimmer, H., & Hartl, M. (1991). Against the Cartesian view of mind: Young children's difficulty with own false beliefs. British Journal of Developmental Psychology, 9, 125-138.
- Wimmer, H., & Perner, J. (1983). Beliefs about beliefs: Representation and constraining function of wrong beliefs in young children's understanding of deception. Cognition, 13, 103-128.
- Wolf, D. (1985). Ways of telling: Text repertoires in elementary school children. Journal of Education, 167, 71-87.
- Wolf, D. (1988). The quality of interaction: Domain knowledge, social interchange, and computer learning. In G. Forman & P.B. Pufall (Eds.), Constructivism in the computer age (pp. 203-215). Hillsdale, NJ: Lawrence Erlbaum.
- Wolf, D., & Hicks, D. (1989). The voices within narratives: The development of intertextuality in young children's stories. Discourse Processes, 12, 329-351.
- Wolf, D.P., & Pusch, J. (1985). The origins of autonomous texts in play boundaries. In L. Galda & A.D. Pellegrini (Eds.), Play, language, and stories: The development of children's literate behavior (pp. 64-77). Norwood, NJ: Ablex.

Wolf, D.P., Rygh, J., & Altshuler, J. (1984). Agency and experience: Actions and states in play narratives. In I. Bretherton (Ed.), Symbolic play: The development of social understanding (pp. 195-217). Orlando: Academic Press.

Yaremko, R.M., Harari, H., Harrison, R.C., & Lynn, E. (1982). Reference handbook of research and statistical methods in psychology: For students and professionals. New York: Harper & Row Publishers.

Yeates, K. O., Schulz, L. H., & Selman, R.L. (1991). The development of interpersonal negotiation strategies in thought and action: A social-cognitive link to behavioral adjustment and social status. Merrill-Palmer Quarterly, 37, 369-406.

Youngblade, L.M., & Dunn, J. (1995). Individual differences in young children's pretend play with mother and sibling: Links to relationships and understanding of other people's feelings and beliefs. Child Development, 66, 1472-1492.

Yussen, S.R., & Ozcan, N.M. (1996). The development of knowledge about narratives. Issues In Education: Contributions from Educational Psychology, 2, 1-68.

Appendix A

Matthews' (1977) Transformational Pretend Play Modes

Material Modes:

- 1) Substitution. (cf. Piaget, 1962, Type IIA). The attribution of an entirely new identity to a referent. For example, a box takes on the new identity of an oven.
- 2) Attribution of Function. The ascription of a functional property to a referent that does not actually possess that property. For example, pretending to take a picture with a toy camera.
- 3) Animation. (cf. Fein, 1975). The attribution of human or living characteristics or functions to an inanimate object. For example, addressing a play block as "Charlie Brown".

Ideational Modes:

- 4) Insubstantial material attribution. Reference to materials that do not actually exist at least not in the present playroom situation. For example, referring to magic food.
- 5) Insubstantial situation attribution. Reference to situational factors not actually existing in the context of the playroom and play session. For example, announcing that fireworks will occur.
- 6) Character attribution. (cf. Piaget, 1962, Type IIB). Portrayal of the qualities of a character by active representation. For example, telling another "Let's pretend I'm a doctor" and then enacting that role.

Appendix B
Letter of Information

Dear Parent/Guardian,

I am a doctoral student in the Department of Educational Psychology at the University of Calgary. Under the supervision of Dr. McKeough and as a requirement of the Ph.D. program I will be conducting a research study entitled "The Effects of Toy Structure, Age, and Peer Interaction on Preschooler's Pretend-play Storytelling." Your childcare program has agreed to participate in this study.

Children perceive the world differently as they grow. These perceptions are expressed through various ways. Some of the more common ways children express themselves are through their storytelling and pretend play. The purpose of my study is to examine how children use these two means to understand themselves and others. As well, I am interested in how they use information in toys and from others to help in this process. I am requesting permission for your child to participate in this study. This participation entails videotaping your child at the childcare center playing with another child over four separate occasions for a period of 10 minutes each time. Your child will be under adult supervision at all times.

Initially, I will require from you some occupation, education, cultural background, and childcare status information. As well, I will be completing a brief verbal assessment and working memory task with your child. To assure you and your child's anonymity, he or she will be assigned an identification number and this number will be used to identify all testing materials, videotapes, transcripts, and parental information. The master list of corresponding names and identification numbers will be available only to myself or my immediate supervisor. Along with the master list, all records will be stored in a locked filing cabinet within my home. Segments of these video-tapes may be used to present these findings to professional and academic groups. Group results will be reported in any published studies. If individual examples are needed for illustrative purposes in these publications, pseudonyms will be used to ensure the privacy of your child. Although the children may address each other on a first name basis during videotaping, all other identifying information will be kept in strictest confidence and will not be released without your prior knowledge and written consent. Feedback from myself concerning the results of the study will be available upon its completion. Lastly, all records will be destroyed two years after completion of the analyses.

Participation in this study is voluntary so you or your child are free to withdraw at any time without penalty. I will also discontinue your child's involvement if I feel it is not in his or her best interest to continue to participate. The reason for that termination will be conveyed to him or her and yourself. The risk factors from participation are no greater than those experienced in daily activities.

If you have any questions please feel free to contact myself (277-8084), my supervisor, Dr. McKeough (220-5723), the Office of the Chair, Faculty of Education Joint Ethics Committee at 220-5626, or the Office of the Vice-President (Research) at 220-3381. Two copies of the consent form are provided. Please return **one signed consent form** to your child's daycare by _____ and retain the other copy for your records.

Thank-you for your cooperation.

Sincerely,

Shelley Bergman, M.Sc., Ph.D. Candidate

Appendix C
Parental Consent Form

I/We, the undersigned, hereby give my/our consent for _____ to participate in a research project entitled _____.

I/We understand that such consent means that my child will be videotaped playing with a peer at his or her daycare. The study will take approximately 10 minutes each week over four consecutive weeks to complete. Information on my/our occupation, education level, cultural background, and childcare status will be obtained. A brief verbal assessment and working memory task be done on my/our child prior to the study.

I/We understand that participation in this study may be terminated at any time by my/our request, or by the researcher. Participation in this study and/or withdrawal will not affect my/our request or receipt of other services from the daycare or the university.

I/We understand that all data and information collected will be labeled by my child's assigned personal identification number to maintain anonymity. The master list of identification numbers will be kept in strictest confidence.

I/We understand that some segments of videotaped storytelling may be used to present these findings to professional and academic groups.

I/We understand that only group findings will be used in publications and pseudonyms will be used if individual examples are needed for purposes of illustration.

I/We understand that, although my-our child may be addressed by his/her first name on videotape, all other identifying information will not be released without my/our prior knowledge and written consent

I/We understand that all test scores, videotapes, and transcripts on my child will be kept in a locked filing cabinet in my home and destroyed upon completion of the analyses.

I/We have received a copy of this consent form for my/our records. I/We understand that if I/we have a question at any time, I/we can contact the researcher at 276-9134, her supervisor Dr. McKeough at 220-5732, the Office of the Chair, Faculty of Education Joint Ethics Committee, at 220-5626, or the Office of the Vice-President (Research) at 220-3381.

Signature of Parent/Guardian

Signature of Parent/Guardian

Date

Date

Appendix D
Parental Information Form

Please return form by _____

Child's Name _____

Date of Birth _____

Parent/Guardian Name (please print)

Parent/Guardian Name (please print)

Occupational Title

Occupational Title

Current Educational Level (check one)

Parent/Guardian

Parent/Guardian

Completed high school
 1 year post secondary
 2-4 years post secondary
 Graduate Studies
 Other

Cultural Background (check one)

Parent/Guardian

Parent/Guardian

European Canadian
 African Canadian
 Asian Canadian
 First Nations
 Other (please specify)

Primary language spoken in the home: English _____ Other _____

Date child began childcare program _____

Childcare Status (circle one):

Full-time Part-time Drop-in Other (please specify)

Appendix E

Auditory Word Span Task (memory capacity)

Name- Age- Center-

"Listen and say exactly what I say":

Scoring criteria: Discontinue when all three trials incorrect. Score the largest number of names correct for at least two of three trials

2 words

bear, mouse –
horse, tiger-
fish, duck-

3 words

sheep, cat, turtle-
bird, frog, chicken-
rabbit, cow, lion –

4 words

dog, pig, fox, monkey-
bear, mouse, horse, tiger-
cat, bird, frog, chicken-

5 words

rabbit, cow, lion, dog, pig-
fox, monkey, bear, mouse, tiger-
horse, fish, turtle, duck, chicken-

6 words

sheep, cat, rabbit, bird, frog, cow-
lion, dog, pig, fox, monkey, bear-
mouse, horse, tiger, fish, monkey, turtle-

Score:

Appendix F

Revised Plot Structure Level Scoring Criteria and Examples

(1) Level 1: Verbal reference to a time, place, character, identity, or situation.

Examples: "I'm Mr. Toaster" (character), "Ah, a ladder" (identity), "I wanna another flower" (situation), "This is where the swimming pool is" (place), "Pretend it's morning now." (time)

(2) Level 2: Verbally described action associated with the referent or additional descriptive detailing associated with the referent.

Examples: "That's a bedtime light." (describes light), "I saw the black bed light." (action ascribed to referent)

(3) Level 3: Verbally reported sequence of two or more actions that are temporally, causally, or referentially linked.

Examples: Kody: "It's going to cool down." (stirring food on stove) "When it turns this one off (points to stove knob), it's going to be ready." (temporal linking of actions)

Kody: "I'm going to phone the police." (picks up phone and begins pressing buttons) "Because they will take Kerry to jail." (causal linking of actions)

Kody: "I'm making toast." (puts bread into toaster and pushes down lever) "And now I'm going to make it." (begins to arrange food between two pieces of toast) "Sandwich. And there's a sandwich." (referential linking of actions)

(4) Level 4: Further descriptive detailing around action, reference to underlying mental state, or introduction of a problem.

Example: Randy: "My mom and dad want to talk to you." (hands play phone to Chloe)

Chloe: "What?"

Randy: "About the big bad sisters." (descriptive detailing re: action + implied problem)

Chloe: "Big, bad sisters." (speaking into phone) "Oh man...yep...I don't like that."
(very soft tone of voice) "I don't like that big, bad sister." (underlying mental state)

(5) Level 5: Partially enacted/verbalized problem-solution plot structure.

Example 1 (verbalized problem, enacted solution):

Randy: "I'm going to call my mom." (pressing buttons on phone, puts phone to his ear) "I guess they're not there." (redials) "It's me now." (excited tone as talks into phone) "Hello, mommy, hi."

Example 2 (enacted problem, verbalized solution):

Rick: "I need to do the cooking job." (grabs pan of food away from his partner who had been cooking it over the stove)

Leah: "You have to do this, silly." (picks up spatula and waves it in the air, Rick looks then refocuses back to food)

Rick: "No."

(6) Level 6: Verbalized problem and resolution with implicit or explicit reference to mental states.

Example: Leanne: "These are our plates, okay?" (sets plates down onto floor)

Rory: "Yeh. But this is not a plate." (points to pizza dough Leanne had laid onto the floor; explicit problem)

Leanne: "Yes. That's a plate." (picks up dough and flexes it between her hands)

"It's just a pancake plate." (puts dough back to floor). "Okay, so these are the plates."

Rory: (shrugs his shoulders and looks at his partner) "We're just pretending it's a plate, right?" (explicit resolution, explicit reference to underlying mental state of pretend).

(7) Level 7: Descriptive detailing associated with problem/resolution or several problem/resolution structures linked together.

Example 1 (problem/resolution descriptive detailing):

Rick: "Okay, it's all ready. For dinner. But first I need the glove to get out the bread." (puts oven mitt onto his hand; explicit solution) "The bread is really hot." (starts to remove bread from pan with bare hand then switches to his gloved hand; explicit problem) "We'll need to cool this down." (puts bread into sink and pretends to pump water over it; descriptive detailing related to problem-resolution structure) "Ow ow ow." (falls back and rolls onto his stomach as though he had burned his hand on the tap, implied mental state)

Example 2 (linked problem/resolution structures)

Kary: "Those are the swingers so it will catch the bad guys." (points to loosely attached fence like contraptions attached to her structure)

Kendall: "Then the guy will hook 'em on and then...Hey." (excited shout as she swings the fence pieces) "Hook 'em on and then put 'em in the dungeon."

Kary: "This in the magnet." (points to piece she's holding that is similar to one attached to structure) "One of them is a magnet to stick onto there (gestures to trap) and one of them is to catch the bag guys, right?"

(8) Level 8: Failed attempt of complication inserted into problem/resolution.

Example 1 (failed attempt):

Abby: "And you shoot this rocket off to kill a whale." (gaze to structure she build and is holding in her hand) "I made it and it's gonna shoot off and kill a whale."

Here goes the gun. Here it goes to kill the whale." (pokes piece onto floor)

"Ah, missed. Missed the whale." (picks up another piece) "I'm using...I'm gonna use this as a whale. Psshshaww." (shooting sound effects) "Aahh, bong. Missed the whale again."

Example 2: Complicating event:

Chad: "I've got a hose in case some robbers come." (picks up string and attaches it to his structure) "And it goes chheww." (shooting sound effects) "It's just to spray them away. Because it's cold water. They don't like cold water. Oh, I need a ladder." (adds block to his structure) "There now. We need robber's gonna come." (walks finger up ladder structure) "And they climb up the ladder. Aahh." (yells) "It's a trap. This is a trap." (picks up piece with string) "Pssss." (sound effect of shooting water) "That's part of the trap, too. Trap number two."

(9) Level 9: Descriptive detailing around complication or failed attempt.

There were no examples in the transcript to illustrate this highest plot level structure.