

FACTORS RELATED TO PRE-LITERACY SKILLS
AMONG LOW SES PRESCHOOLERS:
THE CONTRIBUTIONS OF PARENTING STRESS
AND ATTACHMENT ON EARLY NARRATIVE ABILITY

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Factors Related to Pre-Literacy Skills among Low SES Preschoolers:

The Contributions of Parenting Stress and Attachment on Early

Narrative Ability

by

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A Thesis submitted to the
School of Graduate Studies
in partial fulfillment of the
requirements for the degree of
Master of Science

Department of Psychology
Memorial University of Newfoundland

July, 2006



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Your file *Votre référence*
ISBN: 978-0-494-30492-1
Our file *Notre référence*
ISBN: 978-0-494-30492-1

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Abstract

It is well documented that preschoolers' narrative ability is a precursor for literacy. In fact, narrative ability at age four has been shown to predict reading comprehension as far into the future as the seventh grade. Because this oral language skill sets the foundation for literacy, it is important to identify factors which promote its development, particularly among high-risk groups. The present research explored two potential factors among 56 economically disadvantaged mother-child dyads: parenting stress and attachment security. Surprisingly, a significant relationship was not found between either parenting stress or attachment security and different properties of children's narrative ability. In fact, these variables only accounted for a very small proportion of the variance of all of the narrative properties analyzed. Restricted range in narrative ability and attachment security among the present sample may account for the non-significant findings. Future research aims to investigate whether subsequent intervention by fostering more proactive interaction skills will improve children's narrative ability and/or affect parenting stress among mothers.

Acknowledgements

I would like to thank all of the wonderful mothers and preschoolers who were part of this study and who willingly gave of their time and energy in support of this research. I would also like to thank Beulah Jesso for interviewing many of the children, superbly eliciting stories from their memories, and leading this project. Special thanks are also extended to Penny Voutier for teaching me the art of narrative scoring and Erika Chafe and Stephanie Avery for their involvement in home visits and daycare sessions. Thank you to Malcolm Grant for his statistical insight, calming presence, and for always being available for me when I needed him. I also want to sincerely thank my committee members, Dr. Christine Arlett and Dr. Catherine Button, for their foresight, support and guidance, and for always keeping my best interests at heart. Finally, I would like to thank my supervisor, Dr. Carole Peterson, for her direction, insightful feedback, enthusiasm, and consistent confidence in my research ability.

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Factors Related to Pre-Literacy Skills among Low SES Preschoolers:

The Contributions of Parenting Stress and Attachment on Early Narrative Ability

There is research providing evidence for a link between parent characteristics and children's narrative competence, which is an established pre-cursor for literacy acquisition. The present study specifically seeks to assess how attachment security and parenting stress relate to children's narrative ability among an economically disadvantaged sample of preschoolers.

The Importance of Narratives

From birth we are immersed within a world of narratives and our knowledge of ourselves largely depends on our conceptualizations of the past (Fivush, 1988). Moreover, the stories we relay to others about ourselves and our experience actually play a role in defining our self-concept. Perhaps the transition from internalizing to externalizing a personal experience allows one to reflect on the past in an introspective and interactive manner. Hence, narratives bring to light not only what we have experienced but also what that experience means to us (Fivush, 1991).

An interesting aspect of children's narratives is how they can be strongly influenced through social interaction by children first developing skills in a social context and later internalizing these skills. It is in a social light that we must evaluate narrative construction, as the concept of a born story teller is one of fiction. Rather, children learn narrative skills in a social context over the entire course of development. One of the most important social contexts is that of the parent-child dyad and eventually the school environment. Here, children embark on a journey in which they will learn the social

importance of 'story-telling', which is a mushrooming area of developmental research.

One group of researchers has demonstrated the importance of narratives in a longitudinal study of narrative skill and reading comprehension. Tabors, Snow and Dickinson (2001) found that narrative abilities in kindergarten aged children significantly predicted reading comprehension as far into the future as seventh grade. Likewise, Paul and Smith (1993) have found that narrative ability is one of the best predictors of success in school and literacy acquisition among children. It appears that teachers enter the classroom with the assumption that children already possess these skills, as they traditionally use narratives as tools for instruction (Graesser, Golding & Long, 1991). However, every child enters school with discourse skills that have been influenced by the community which they inhabit and, as such, not all children's skills are suitably matched to the discourse requirements of their school (Dickenson & McCabe, 1991). Children simply cannot learn effectively when their skills do not match the expectations of the teacher and as a result, teachers have been shown to be considerably less successful with these children (Michaels, 1991). Perhaps the most disturbing finding relevant to this mismatch in skills is that of Roth (1986) who found that children who do not possess these expected skills are more likely to be defined as learning disabled. Thus, there is a dire need to bring these children to the skill level consistent with the assumption teachers already have of them by kindergarten; otherwise, children may fall victim to poor performance, damaging labels, and self-fulfilling prophecies.

Undoubtedly, the importance of narratives lies in their function as a scaffold, which is later used to build a host of other skills such as literacy (Peterson, 1994). Their

significance was captured by Blank (1982) when she stated "...the failure in literacy impairs students' total scholastic functioning, leaving them at a major disadvantage in our highly complex technological society". Narratives, as a precursor for literacy, are the focus of considerable effort in the realm of developmental psychology. In purely theoretical terms, narratives are critical for cognitive development and are constructed on a foundation of event knowledge (Peterson, 1994). The key foundation for narratives is derived from the child's ability to decontextualize their captured experience, that is, to recount the there-and-then in the here-and-now. It seems that this ability is crucial for literacy in that this oral language skill is strongly correlated with pre-reading skills (Dickenson & Snow, 1987). Although it is a precursor to literacy, narrative ability appears to be a separate skill from vocabulary skill. This was evidenced in many studies failing to show correlations on measures of these language abilities (McCabe, Peterson, & Conners, in press; Peterson, 1994) suggesting that narrative ability is a unique language skill. Furthermore, Snow (1991) contended that the decontextualized language skills that foster the emergence of literacy are derived from various interactive experiences, in which children are taught to use and understand this type of language.

Therefore, narrative construction can be thought of in terms of an interactive process in which decontextualized language ability is built through the oral exchanges that take place between adults and children throughout the course of development. In this sense, it is a social process that is dependent on the child's environment and the quality of exchange that occurs through interactive story-telling. This very type of exchange can be thought of in terms of Vygotsky's (1978) concept of scaffolding, which can be used to

explain the construction of children's narrative ability as a socialization process. He posited that children's cognitive skills originate from social interactions, such that the child and the adult collaborate to set up a "zone of proximal development". By raising the task to a level slightly above the child's independent capability, the adult creates a scaffold from which the child will learn and eventually autonomously master. As such, Vygotskian theory holds that earlier adult input should correlate with the child's ensuing behavior. In this sense, the construction of a child's narrative ability occurs through socialization, in which adult-child scaffolding precedes independent narrative ability. With dwindling instruction, the child will learn to convey their experiences in terms of the "there and then" while in their current context.

As Vygotsky (1978) predicted, parental influence has been shown to be highly influential over children's narrative ability; that is, the acquisition of narrative skill is directly related to the quality of interaction with their parent or caregiver (McNamee, 1987). Thus, to fully understand the development of narrative ability one must see it as emerging within a context of adult-child conversational interactions. Research generally tends to show a maternal monopoly over children's narrative competence (Peterson & Roberts, 2003). Fivush (1991) has shown that the manner in which mothers structure their conversations about past events early in development is highly influential over children's developing narrative abilities. In addition, it appears that mothers who provide narratives that are temporally rich and informationally dense early in development have children who produce similar narratives later in development. The same trend holds for mothers who provide orienting and evaluative information in their conversations about

the 'there and then'. Hence, mothers provide the model of narrative structure to their child and through socialization the child internalizes the kind of cognitive tasks that their culture deems necessary (Fivush, 1991).

Researchers have distinguished between two types of parental narrative elicitation styles (Fivush & Fromhoff, 1988; McCabe & Peterson, 1991). The first style, termed "elaborative" or "topic-extending" refers to mothers who frequently discuss past events with their children while asking numerous questions and providing rich background details. Conversely, mothers who are labeled "repetitive" or "topic-switching" infrequently discuss past events with their children and when they do, they ask few and repetitive questions. Mothers of this type also switch from topic to topic without providing detailed background information to add to the narrative's overall understandability. Fivush, Haden and Reese (1996) have argued that children of elaborative mothers acquire linguistic narrative skills through learning and eventually come to reorganize and think about their past experiences in more elaborate ways. In this sense, children eventually internalize their mother's narrative style. This idea was manifested in the research conducted by Peterson and McCabe (2004) involving parental conversational style and children's narrative ability. Their findings support the contention that children's narrative abilities are a reflection of their parent's conversational style in a host of ways. Children who provided narratives that were rich in detail had parents who also showed concern for descriptive details. Furthermore, the overall time parents spent talking about the 'there and then' with their children was predictive of their child's evaluation of the event. In light of these findings, Peterson and McCabe asserted that not

only can children's narrative ability be predicted by their parents' expressed interest in past events, but this interest actually causes narrative abilities to develop. It seems that higher quality narratives are derived from parents' interest in their children's past experiences.

The research in the field that has analyzed narratives has employed many different scoring procedures. More than 20 years ago, Peterson and McCabe (1983) devised the high point analysis technique as a means to shed light on individual differences in children's production of narratives. They analyzed the types and patterns of organization of clauses and distinguished among five types of narratives: *complicating action* (distinct events preceding a high point); *resolutions* (distinct events following the high point); *appendages* (consisting of abstracts that occur at the beginning and summarize the narrative); *attention-getters* (which serve the function of capturing the audience's attention); *prologues* (which are comments on the ending or significance of the narrative and are placed at the beginning); *codas* (formal endings of the narrative); *orientation* (statements about the context of an event with respect to persons, location, time); and *evaluation* (statements relaying how the listener should conceptualize a person, event, location, thing, or the experience in its entirety).

The most interesting aspect about this research was the specific, yet consistent, patterns that emerged, in terms of the narratives being viewed as coherent wholes. Peterson and McCabe (1983) distinguished among the following patterns: "*adult-like*" *classic pattern* (narrative builds to a climax and then provides a resolution), *ending-at-the-high-point* (narrative builds to high point but there is no resolution), "*leap-frogging*"

(narratives that skip from one event to another while omitting important details that must be inferred), *chronological* (description of successive events), *impoverished* (focuses on only one or two events and are too short to identify a pattern), *disoriented* (narratives that are not coherent and ones that the audience cannot follow), and *miscellaneous* (narratives failing to meet any of the aforementioned criteria). These researchers found that on the path of development, children increasingly approach the “adult-like classic pattern”. For 4, 5, and 6 year olds however, the most common patterns of narratives were leap-frog, end-at-the-high-point, and classic, respectively.

This method of analysis was effective in discovering age discrepancies in narrative ability; however, other methods of analysis were beginning to emerge. An intervention study conducted by Peterson, Jesso and McCabe (1999) involved identifying the basic properties of narratives produced by children between the ages of 3 and 7. They identified the following properties thought to describe the understandability of a narrative: *overall length in words*, *total number of clauses*, occurrences of *temporal* (when) and *spatial* (where) contexts, and the total amount of *unique information* reported about persons, locations, activities, and objects.

Similarly, Fivush, Haden and Adam (1995), in an extensive review, focused on narrative structure coding and highlighted the necessity of including the following properties: *Orientations* which are propositions that frame the reported experience in a spatial temporal context while providing necessary background information that contributes to the overall understandability and cohesion. This property may refer to time, persons, location, or any background information that provides contextual details or

explanations; *Referentials* which are also propositions but those describing the action taking place in succession within the event; *Evaluations* which are any reported occurrences of affect or evaluative commentary. These may include references to cognition or affect, suspense, intensifiers, dialogue, and qualifiers; and *Narrative cohesion*, which describes the overall temporal and elaborative cohesion of the narrative.

The aforementioned scoring methods have been successful in discovering individual differences in the quality of narrative ability between children. The most obvious factor that can account for differences in children's narrative ability is age. As mentioned earlier, Peterson and McCabe (1983) found differences among 4, 5, and 6 year olds' narratives in terms of their overall structure: 4 year olds exhibited the leap-frog pattern; 5 year olds produced narratives of the end-at-the-high-point style; 6 year olds produced classic pattern narratives. Generally, as children develop, their narrative ability approaches the adult-like classic pattern. Similarly, children's usage of emotional references, both in frequency and type, also increases and advances as they enter the later preschool period (Adams, Kuebli, Boyle, & Fivush, 1995; as cited in Newcombe & Reese, 2004). Like age, culture can also be a contributing variable in the discovery of individual differences in narrative ability. McCabe (1996) documented large differences in the story-telling of individuals of different cultural heritages, even between individuals of different cultures residing in the same country.

An interesting study conducted by Peterson (1994) demonstrated that social class is associated with individual differences in narrative skill among preschool aged children, even within similar cultural groups. She showed that Canadian children from low SES

disorganized households generated narratives that contained fewer accounts of new information as compared to children from middle income organized households. The low SES children were unable to generate new information despite considerable prompting from adults; instead, their narratives included repetitions of old information. Peterson suggested that the lack of organization in these narratives may have been associated with difficulty in the classroom arena. This suggestion was supported by the findings of Snow and Dickenson (1990) who found that children whose school environment consisted of literacy activities tended to produce narratives of a higher quality than those not engaging in school literacy activities. Higher quality narratives were also contingent on maternal ability to elicit information from their children using appropriate language strategies. Interestingly, even among a relatively homogeneous sample where social class is controlled, there is staggering variability in children's access to literacy, decontextualized linguistic interaction, and narratives (Snow & Dickenson, 1990).

Because a preschoolers' narrative ability sets the foundation for literacy acquisition and academic success, it is important to identify the factors which promote its development, especially among high-risk groups. Additionally, since narrative ability emerges within the child's social and interactive context, it is important to examine the contextual factors that specifically impinge on the parent-child dynamic, as the quality of this context is the strongest environmental predictor of children's cognitive outcomes over and above that of the school and child care environments (NICHD Early Child Care Research Network, 2005; Wacharasin, Barnard, & Spieker, 2003).

Attachment Security

The quality of a child's attachment relationship with his or her parent has been shown to be a powerful predictor of that child's cognitive abilities, reading comprehension and narrative competence. In a study of children's attachment security at school age and their academic performance, Moss and St-Laurent (2001) found that attachment security measured when children were 6 years old was significantly related to school related cognitive function measured 2 years later. Specifically, children rated as securely attached at age 6 years scored higher on measures of communication, cognitive engagement and mastery motivation at age 8 years. Likewise, other researchers have found that securely attached children are significantly more likely to engage in collaborative regulation of joint problem solving and reading activities than their insecurely attached counterparts (Bus & van Ijzendoorn, 1988; Meins, 1997; Moss, Gosselin, Parent, Rousseau, & Dumont, 1997). These studies showed that more secure attachment was associated with fewer communicative difficulties in the mother-child dynamic and increased cognitive and language performance of the child.

Similarly, Bus and van Ijzendoorn (1995a) found that among mother and child dyads matched for socioeconomic status, attachment security significantly predicted the frequency of reading that occurred within mother-child interactions. Specifically, mothers whose attachment to their child was more secure spent more time reading to their child and experienced less troublesome episodes during the reading time. This led the authors to conclude that the affective relationship between mothers and children is important for literacy instruction and the children's cognitive development. It seems that within the

context of a secure attachment relationship, there is a more positive affective atmosphere which may stimulate mothers to read more often to their children and make them more effective at instructing their children in this task.

These findings led Bus and van Ijendoorn (1995b) to follow up their research by examining attachment security and frequency of reading among both high and low SES mother-child dyads. They sought to discover whether the effects of attachment security on early literacy were similar in a low SES group at risk for reading difficulties. They found that the main difference between frequently and infrequently reading dyads was mother-child attachment security, even among the low SES group. This important finding lent further support to the contention that learning within the literacy domain is firmly embedded within the emotional relationship between children and their mothers. Furthermore, the findings illustrate that literacy is not an outcome of an environment that is saturated with written material but rather, it is the outcome of the parent's ability to involve their children in literacy activities: Literacy occurs within, and is strongly influenced by, the security of parent-child attachment relationship. Hence, attachment security appears to be important in explaining the reading experience of children from both low and high SES backgrounds.

Since narrative ability is an important precursor for literacy development, it is not surprising that it is also influenced by attachment security. In a longitudinal investigation of mother-child narratives and attachment security, Newcombe and Reese (2004) found different patterns of narrative use between mothers and children as a function of children's attachment security. In particular, children who were rated as having more

secure attachment relationships also produced more consistent and elaborative narratives than their insecurely attached peers. The securely attached children and their mothers tended to emphasize the emotional and evaluative aspects of their experience and relayed their stories in a richer, more affective, and more connected manner. In other words, children who are rated as being more securely attached are more likely to display more advanced narrative skill.

In light of this research, McCabe, Peterson and Connors (in press) questioned whether the relationship between attachment security and narrative elaboration would hold when children's narratives were elicited by a researcher (a person unfamiliar to them) and not their mothers. The findings that emerged from this study revealed that the narratives elicited by a researcher did indeed reflect the children's attachment security. Specifically, the securely attached children produced narratives that were longer, more informative, and more elaborate than those of insecurely attached children. Conversely, the insecurely attached children only gave narratives after extensive prompting and they tended to be short and lacking elaboration. These findings led the authors to conclude that attachment security enhances narrative skill and the likelihood of children engaging in self-disclosure through this type of exchange. Hence, a child who possesses a secure attachment is more likely to master these essential pre-literacy skills and demonstrate this mastery to others.

Parenting Stress

It is reasonably well established in the child development literature that parenting stress is associated with a host of adverse cognitive and behavioral outcomes among

children (for a review see Crnic & Low, 2002). Moreover, it is currently understood as a multifactorial concept that involves the parent, child, and the context within which parent-child interactions occur (Abidin, 1995). Particularly in the preschool period, it has been shown that parenting and its associated responsibilities generally create high levels of stress (Kuczynski & Koeske, 1990; as cited in Anthony, Anthony, Glanville, Naiman, Waanders, & Shaffer, 2005). Although there is some evidence supporting a direct link between parenting stress and child outcomes (Crnic, Gaze & Hoffman, 2005; Anthony et al., 2005) the majority of research provides evidence for an indirect effect, which is mediated by parenting behavior and the quality of parent-child interactions (Crnic & Low, 2002). It is not stress in itself that affects children, but rather, stress seems to affect the parent-child interactions, which consequently affect the quality of children's developmental functioning across social, affective and cognitive domains (Crnic & Low, 2002). Furthermore, higher parenting stress has been associated with more insecure attachment which has been identified as a salient factor involved in children's narrative development.

One such study was conducted by Herrick (2002) who looked at maternal depression, relationship quality, perceived parenting stress and children's attachment security. The results of this study revealed a relationship between parenting stress, as measured with the Parenting Stress Index-Short Form (PSI-SF), and children's attachment security. Specifically, those mothers who reported higher levels of parenting stress had children who were rated as being more insecurely attached. The link between parenting stress and child attachment was also supported in an earlier study by Jarvis and

Creasey (1991) who examined parental stress, coping, and attachment in families with an 18-month old infant. They also found parenting stress to be significantly associated with insecure attachment to both mothers and fathers. Moreover, they concluded that the psychological separation that emerges as a result of parenting stress may play a more important role in the parent-child relationship than actual physical separation. This idea of stress as creating a psychological separation is useful in understanding these findings. It seems that parents who experience this type of stress may not be providing the necessary nurturing and socio-emotional cues required for the development of a secure attachment relationship. In this sense, they are psychologically removed from their child's affective needs. On the other hand, it is also important to remain open to the possibility that having a securely attached child may consequently lower parenting stress.

Parenting stress was also examined by Calkins, Hungerford and Dedmon (2004) in their study of mothers' interactions with infants who had different degrees of frustrated temperaments. They found that maternal physical stimulation was predicted by an interaction between infant temperament and mother's reported parenting stress. Specifically, mothers of less frustrated infants provided more physical stimulation to their children than mothers of easily frustrated infants under conditions of low or moderate parenting stress (as measured with the PSI-SF). Interestingly, however, mothers who reported high parenting stress also provided low levels of physical stimulation to their children, regardless of their temperament. That is, under conditions of high parenting stress, mothers of both less frustrated and easily frustrated infants provided low levels of physical stimulation to their children. Hence, it seems that parenting stress is a powerful

predictor of the quality of the mother-child dynamic as it can affect children (regardless of their temperamental qualities) and is related to parent-child interactions and maternal responsiveness.

Resilience

Even in highly stressed environments, some children still function better than expected, given the level of deprivation they have experienced and the general trends in the literature that do not predict positive developmental outcomes for them. The resilience literature reveals that certain factors provide a protective function for children exposed to socioeconomic deprivation. This was clearly evidenced by Kim-Cohen, Moffitt, Caspi, and Taylor (2004) in their study of 5-year old children's resilience and vulnerability to socioeconomic deprivation. Their results lend support to previous research showing that the parent-child dynamic can promote positive adjustment in children exposed to financial deprivation. Specifically, cognitive resilience was found among children whose mothers rated high on maternal warmth (nurturing involvement) and engaged in cognitively stimulating activities with them. Taken together, the results support the contention that a warmer and more secure attachment relationship between mothers and children is associated with more positive cognitive outcomes among low SES kindergarten-aged children.

Other researchers have also looked at resilience among children exposed to multiple risks and stressors. In a study on the factors that differentiate resilient versus stress-affected outcomes in young urban children, the quality of the parent-child relationship was shown to predict resiliency (Wyman, Cowen, Work, Hoyt-Meyers,

Magnus, & Fagen, 1999). In particular, parents of resilient children reported more emotional closeness and nurturant involvement with their children in the preschool and school age periods. The results of this study also suggest that the parent-child dynamic and aspects of the caregiving environment play a crucial role in the promotion of positive development, even over the well established factors of socioeconomic status and parental mental health. Hence, when assessing at-risk children's cognitive development, one must take these critical factors into consideration.

Hypotheses

The present study seeks to assess how attachment security and parenting stress relate to preschool-aged children's narrative ability among an economically disadvantaged sample. Due to the importance of this pre-literacy ability, it is imperative to locate factors that promote its development, especially among at-risk children prior to school entry. Specifically, it is hypothesized that children with higher attachment security and whose parents report less parenting stress will have more advanced narrative skills. Moreover, the present study aims to determine the relative importance of each factor to children's narrative ability.

Method

Participants

Participants were 56 preschoolers and their mothers from economically disadvantaged groups (33 girls and 23 boys, mean age = 48.11 months, SD= 6.25, range = 32 months to 58 months). The sample represented a homogeneous sub-sample of low SES individuals as all of the children were enrolled in government-subsidized daycare or

partook in community center programs. Participants were recruited in preschools and daycares that enroll children from low SES backgrounds, as well as in community centers that provide services to these families. Economic disadvantage in this study was defined as individuals who receive financial subsidization from the government. All of the mother-child dyads included in this study fell into this category, as verified through daycare and community center personnel. All aspects of the study were approved by the Interdisciplinary Committee on Ethics in Human Research of Memorial University of Newfoundland.

Measures

Attachment security

To measure the security of children's attachment, mothers were required to complete the *Q-Sort Assessment of Attachment* (AQS; Waters & Deane, 1985). This measure is widely used in assessing child attachment and is the most highly recommended measure of attachment for use with preschool-aged children (Thompson, 1998). A meta-analysis of 139 studies with over 13,000 children assessed the reliability and validity of the observer rated Attachment Q-Sort (AQS) and found that it showed adequate convergent validity with the Ainsworth Strange Situation. Moreover, this study revealed that the AQS has excellent predictive validity with measures of sensitivity (van Ijzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004). This finding is particularly relevant to the present sample since observers' ratings have been shown to be reliably correlated with mothers' ratings of the AQS (Teti & McGourty, 1996).

The children's attachment scores were rated as a continuous variable and not a

categorical variable, due to research indicating that variation in infant attachment patterns is largely continuous and not categorical (Fraley & Spieker, 2003). This approach is identical to that of McCabe et al. (in press) in their study on attachment security and narrative elaboration. Scoring involved entering the data into a computer program that compares each child's AQS to a criterion sort of a hypothetical secure child. Hence, each child received a score that reflected the degree of security of their attachment relationship in comparison to a prototypical criterion sort.

Parenting stress

Parents were also required to complete *The Parenting Stress Index-short form [third edition]* (PSI-SF), which is a measure of stress occurring within the parent-child system, regarding their role as a parent (Abidin, 1995). The PSI-SF has 36 items and consists of 3 subscales: Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. Each subscale is comprised of 12 items rated on a scale from 1 (strongly disagree) to 5 (strongly agree) thereby allowing a possible range of 12-60 for each subscale score. To obtain a Total Stress score (the specific stress score assessed in the present study), scores on the three subscales were added to produce a score that could range from 36-180. Parents who produce higher PSI-SF Total Stress scores are indicating greater levels of stress. Total stress on the full length PSI correlated 0.94 with PSI-SF total stress, which is high and comparable to the 2-week test-retest reliability of the full length PSI, which is 0.95. Hence, the PSI-SF is a brief but psychometrically sound measure that is comparable to the longer form from which it is adapted.

Further evidence related to the reliability and validity of the PSI-SF was obtained

in a study by Reitman, Currier and Stickle (2002) which critically examined the measure among a low-income Head Start Population. Regression analyses lent support for the construct validity of the PSI-SF as the internal consistency of the measure was reported to be very good to excellent. Thus, the results from this research revealed that the high internal consistency and factor structure of the PSI-SF holds even when the test is administered in populations other than the standardization sample.

Narrative ability

The following narrative properties were assessed (refer to Data Coding section for concrete examples):

1. Narrative length. This was measured by both the total number of words in the narrative and by the overall number of subject-predicate clauses.
2. Elaboration. This measure indicates how descriptive the narratives were. Descriptive vividness was measured by the number of adjectives and adverbs including their repetitions (also temporal, location, emotion, and cognitive terms).
3. Coherence. This measure indicates the narratives' overall organizational structure, that is, how the events were temporally and causally linked (causal/conditional and temporal linking terms). It also includes the narratives' cohesiveness (intercausal connectives) which refers to how smoothly and intricately the narrative was knit together.
4. Contextual embeddedness within time and space. This narrative property measures how the narrator orients the listener to the where (context) and when (time) of the event discussed.

5. Informativeness. This was measured by the amount of new and unique information of various types generated (minus repetitions).

Procedure

Upon initially agreeing to partake in the study, parents were given a consent form documenting their agreement to join the study and permitting the researcher to audiotape their child. Parents then completed a demographic questionnaire and the PSI-SF. Before leaving, parents received the AQS cards to sort on their own before the second interview. Parents were instructed to read each card describing a child behavior and sort each card into one of three piles: High (most like their child), Medium (somewhat like their child), and Low (least like their child).

One week later, the second interview took place in the participants' homes, at which point one researcher completed the AQS with the mother while another trained interviewer individually conversed with the child and elicited personal experience narratives from them. The two researchers carried this out in separate rooms to ensure that the mothers did not hear and bias the children's narration. The children's narratives were elicited by incorporating standardized lists of a dozen narrative prompts into play interactions with the children. Examples of this are as follows: 'One time I fell down and bumped my head. Did you ever fall down and hurt yourself?'; 'Last weekend I went to a birthday party. Have you ever gone to a birthday party?'. Once the child began narrating about a specific topic, the researcher encouraged elaboration through backchannel responses such as 'yeah?', 'uh-huh?', 'and?', 'tell me more'. Such responding techniques have been shown to eliminate experimenter-generated structure while encouraging the

child to continue narrating (Peterson & McCabe, 1983). Once a child introduced a new story or indicated that they had nothing more to say about the topic, the interviewer moved on and began eliciting a different narrative. The children's narratives were audio-recorded and transcribed verbatim. Assessments were also made of temperament, pre-reading skills and school readiness but these assessments are beyond the scope of the present study.

Data Coding

Each interview was subdivided into complete narratives, of which the three longest (with respect to clause count) were analyzed. This was done based on Peterson and McCabe's (1983) research that demonstrated that narrative length from preschoolers is an excellent measure of narrative ability. Additionally, inter-coder reliability was determined by computing Cohen's kappa which was .96 in the present study. The narratives were assessed in terms of the narrative properties of length, elaboration, coherence, contextual embeddedness in time and space, and informativeness, all of which have been adapted from the extensive coding system outlined by Peterson and Roberts (2003). The scoring procedure that was followed has been successfully used in previously conducted research involving children's narratives (e.g., Fivush, 1991; McCabe et al., in press; Peterson, Jesso, & McCabe, 1999; Peterson & Roberts, 2003). The narratives were subdivided based on the following elements:

Elements of length

An important property of narratives is how long they are and length was measured by:

- (1) Word count, i.e., the total number of words in the narrative.
- (2) Clause count. A clause was considered to be a subject-predicate proposition.

Elements of elaboration

Children's narratives are often more than a simple account of what happened through the provision of new information; they often elaborate and repeat information for emphasis. Therefore, in the following section, a word was counted and coded each time it was produced:

- (1) Descriptors, adjectives and adverbs. (e.g., 'my shirt was *blue*').
- (2) Time (e.g., yesterday, one time, once, etc.).
- (3) Location (e.g., I went to *Harbor Breton*).
- (4) Emotion (e.g., 'I was a little bit *scared* on the waterslide').
- (5) Cognition (e.g., 'I *knew* that I shouldn't go outside').

Elements of coherence

Children's narratives are essentially about a series of temporally and causally linked series of events that are cohesively woven together. Hence, the organizational coherence of a narrative was measured by the amount of linguistically explicit links that specified how events were related to each other temporally, causally or conditionally, and interclausally. Thus, coherence was measured by the following elements:

- (1) Causal/conditional connectives. These are words that link two causally or conditionally connected events (e.g., because, so, while, and until).
- (2) Connectives. Connectives are defined as any word that joins two clauses together but do not imply cause or condition and exclude temporal terms and

causal connectives (e.g., and, but, or).

(3) Temporal terms. These are defined as terms which temporally link things together (e.g., first, next, later, before, and after).

Elements of contextual embeddedness in time and space

Children's narratives should orient the listener to the time and place that the events took place, that is, they should provide a context for the story. The following narrative elements (also included in elaboration) provided a measure of contextual embeddedness:

(1) Time (e.g., yesterday, one time, once, etc.).

(2) Location (e.g., I went to *Harbor Breton*).

Elements of informativeness

This section measures the information that the child provides that is new and different, that is, how informative the narrative is. For example, if a child said "It was a big, big, big, party", the attribute "big" would be scored only once, whereas in terms of elaboration (described above), it would be scored three times. Each instance of a word is scored only once. The following are the subcategories of unique units of information:

(1) Person (e.g., 'Jenny was at my party').

(2) Object (e.g., 'I had a *band-aid* on my foot').

(3) Activity (e.g., 'I was *shouting* to my brother').

(4) Attributes. This element differs from descriptors only in the fact that each instance of a word is counted only once (e.g., 'the sky was a *bright red*').

(5) Location (e.g., 'She was in *Cuba*').

(6) Emotion (e.g., 'I was *happy* to go to see my nanny').

(7) Cognition (e.g., 'I was *allowed* to go to Freddie's house').

(8) Time (e.g., '*Yesterday* I went to the park').

Data Analysis

To see if and to what degree parenting stress and child attachment security predicted children's narrative ability, a series of regressions were conducted with parenting stress and attachment as predictors and different aspects of narrative ability (length, elaboration, coherence, contextual embeddedness in time and space, and informativeness) as outcomes.

In order to create the five narrative properties of length, elaboration, coherence, contextual embeddedness in time and space, and informativeness, age was first partialled out of each individual narrative property. This was done based on the fact that the quality of narratives changes rapidly over the preschool period (Peterson & McCabe, 1983) and the ages ranged considerably between children within the present sample. Once age was controlled, residual scores were then standardized so that composite scores corresponding to the five narrative outcomes of interest could be created. Composite scores were created by adding together the standardized residual narrative properties belonging to each outcome: Length (clauses + overall length); Elaboration (descriptors + location + time + cognition + emotion); Coherence (temporals + causals + connectives); Contextual embeddedness in time and space (location + time); and Informativeness (sum of all unique units of information). The conceptual basis for forming the composite scores was

based on previous research on narrative elaboration and attachment security (McCabe et al., in press).

A total of five regression analyses were conducted corresponding to each outcome (specific narrative property) and it was predicted that both lower parenting stress and higher child attachment security would be related to higher scores on each of the narrative properties.

Results

Narrative Ability

For each child, one set of narrative scores was obtained from their interviews. Their three longest narratives (in terms of number of clauses) were scored, averaged and entered into the analysis. These means and standard deviations are presented in Table 1. Within the present sample, the average number of clauses for each narrative was 11.11. Certain elaborations were used more frequently than others. For example, participants used many more descriptor words ($M = 4.56$) for each narrative than references to emotion ($M = 0.52$). In fact, preschoolers among this sample rarely included references to emotion or cognition ($M = 0.21$) in their narratives. In terms of unique information, the average of the total units of unique information was 14.70. Within this category of narrative elements, there was some variation. Words referring to activities (verbs) were used the most ($M = 4.64$) while references to cognition were used the least ($M = 0.19$).

Attachment Security and Parenting Stress

Attachment Security was measured with the AQS and parenting stress was measured with the PSI-SF. The means, standard deviations, and ranges are shown in

Table 2. Among the sample, there were 8 incomplete AQS measures and 3 incomplete PSI measures that were not included in the analysis. The children in the present sample had an average AQS score of 0.13, falling between -0.23 and 0.39, which according to McCabe et al. (in press) is within the criteria for being considered insecurely attached. The average PSI-SF total stress score across all mothers in the sample was 83.00, which indicates that the average stress level reported concerning the mothers' role as a parent fell within the 83rd percentile. Since a total stress score of 90 is considered to indicate clinically significant levels of stress (warranting closer diagnostic studies and professional assistance: Abidin, 1995), and the total stress scores within the present sample ranged from 42.00 – 149.00, the sample widely varied on, and represented both extremes of, the total parenting stress dimension. The AQS and the PSI were not significantly correlated with each other ($r(2, 42) = -.189, p > .05$).

Regression Analyses

To see whether and to what extent attachment and parenting stress predicted each of the five narrative properties of interest (length, elaboration, coherence, contextual embeddedness in time and space, and informativeness), a series of regressions were conducted. The predictors were entered simultaneously, as there was no theoretical reason to enter one of the variables before the other. This analysis provided the amount of variance that both parenting stress and attachment security accounted for collectively. The analysis also provided t values which were used to determine the significance of the unique variance that each predictor added to the narrative properties, over and above the other predictor.

Length

Parenting stress and attachment security did not contribute significantly to the variance of narrative length. Together, the predictors accounted for 4.2 % of the total variance of narrative length ($F(2, 42) = .921, p > .05$). Separately, attachment security did not account for a significant proportion of the variance of narrative length, over and above parenting stress ($t(44) = .462, p > .05$). Likewise, the unique variance that parenting stress contributed to narrative length over and above attachment security showed non-significance ($t(44) = -1.139, p > .05$).

Elaboration

The second regression that was conducted revealed that attachment security and parenting stress did not contribute significantly to the variance of narrative elaboration. Together, the predictors only accounted for 2.4 % of the total variance of narrative elaboration ($F(2, 42) = .523, p > .05$). Separately, attachment security did not account for a significant proportion of the variance of narrative elaboration, over and above parenting stress ($t(44) = .611, p > .05$). The unique variance that parenting stress contributed to narrative elaboration, over and above attachment security, also failed to show significance ($t(44) = -.660, p > .05$).

Coherence

The third regression revealed that attachment security and parenting stress did not contribute significantly to the variance of narrative coherence. Together, the predictors only accounted for 3.8 % of the total variance of narrative coherence ($F(2, 42) = .828, p > .05$). Separately, attachment security did not account for a significant proportion of

the variance of narrative coherence, over and above parenting stress ($t(44) = .472$, $p > .05$). Likewise, the unique variance that parenting stress contributed to narrative coherence over and above attachment security showed non-significance ($t(44) = -1.060$, $p > .05$).

Contextual embeddedness in time and space

The fourth regression that was conducted revealed that attachment security and parenting stress did not contribute significantly to the variance of narrative contextual embeddedness in time and space. Together, the predictors only accounted for 2.2 % of the total variance of contextual embeddedness in time and space ($F(2, 42) = .479$, $p > .05$). Separately, attachment security did not account for a significant proportion of the variance of contextual embeddedness in time and space, over and above parenting stress ($t(44) = .450$, $p > .05$). The unique variance that parenting stress contributed to contextual embeddedness in time and space over and above attachment security also failed to show significance ($t(44) = -.744$, $p > .05$).

Informativeness

The fifth and final regression revealed that attachment security and parenting stress did not contribute significantly to the variance of narrative informativeness. Together, the predictors only accounted for 3.0 % of the total variance of narrative informativeness ($F(2, 42) = .641$, $p > .05$). Separately, attachment security did not account for a significant proportion of the variance of narrative informativeness, over and above parenting stress ($t(44) = .233$, $p > .05$). Likewise, the unique variance that

parenting stress contributed to narrative informativeness over and above attachment security showed non-significance ($t(44) = -1.027, p > .05$).

Summary

Attachment security and parenting stress did not significantly predict any of the narrative properties explored (length, elaboration, coherence, contextual embeddedness in time and space, and informativeness). Together, attachment security and parenting stress only accounted for a very small proportion (4.2 % and less) of the variance of each narrative property. Likewise, the unique variance that each predictor accounted for over and above the other predictor was not statistically significant.

Discussion

The results of the present study do not provide support for the prediction that attachment security and parenting stress are related to children's narrative ability among economically disadvantaged preschoolers. Securely attached children of parents with low parenting stress did not exhibit more advanced narrative skills as compared to insecurely attached children of parents with higher parenting stress. The hypotheses that higher parenting stress and less attachment security would be related to poorer performance on all of the narrative properties (length, elaboration, coherence, contextual embeddedness in time and space, and informativeness) was not supported: Attachment security and parenting stress did not significantly predict any aspect of narrative ability. Taken together, this preliminary study seems to imply that economically disadvantaged parents who perceive heightened stress in their role as a parent and whose attachment relationship with their child is insecure, do not necessarily have children who are lacking

in this crucial pre-literacy skill. Conversely, securely attached children whose parents exhibit lower levels of parenting stress do not necessarily have more advanced narrative skills. Could it be that in the face of economic disadvantage, children are resilient even despite threats to the quality of their attachment relationship and their parents' mental health? Or, was this apparent "resilience" in fact a reflection of measurement flaws and homogeneity within the overall sample of participants?

Attachment Security

Among the children in the present study, attachment security did not appear to uniquely predict any aspect of narrative ability. This is surprising given the previous research which supports a clear link between higher attachment security and more advanced narrative skills (Newcombe & Reese, 2004; McCabe et al., in press). However, there is empirical evidence showing that the AQS is only reliable when completed by trained observers as opposed to untrained mothers of high-risk groups (Teti & McGourty, 1996; Van Ijzendoorn, et al., 2004). One such study compared mothers' AQS sorts with the AQS sorts of trained observers who observed the children's behavior in the participants' homes for 2-3 hours and who were blind to the mothers' sorts (Teti & McGourty, 1996). While the results from this study showed that mothers' and trained observers' AQS scores were moderately but significantly intercorrelated, the sample of mothers in this study were demographically quite different from those in the present sample. Specifically, these researchers (1996) looked at "low-risk", well educated mothers whereas the mothers in the present study were all considered to be economically disadvantaged and "high-risk". In fact, Teti and McGourty (1996) cautioned against

using high risk mothers to complete the AQS, especially if they were not properly trained in the AQS procedure. Hence, since the mothers in the present study were both high-risk and untrained, it is possible that their attachment security scores were not reliable.

Similarly, there is other empirical evidence suggesting that the AQS is most reliable when completed by a trained observer, casting doubt on the reliability of the attachment security scores in the present sample. A fairly recent meta-analysis of 139 studies ($N = 13,835$) focused on the convergence between either mother or trained observer completed AQS scores and the well established Strange Situation procedure, which assesses the attachment security of children in infancy (van Ijzendoorn et al., 2004). It was found that the observer AQS was the only valid assessment of children's attachment security, especially when children were observed for more than 3 hours. It therefore seems highly likely that self-reported attachment security scores derived from mother sorts may not be a valid or reliable indicator of a child's attachment security. These findings may be useful in explaining the weakness of the relationship between attachment security and narrative ability found in the present study.

But why would previous research that has employed parallel procedures reveal significant relationships between attachment security and narrative ability, while the present study failed to do so? One statistical consideration which may help to explain this discrepancy is the problem of restricted range. Previously conducted research that has revealed significant relationships between attachment security and children's narrative abilities had very different mean AQS scores than those of the present study. While the mean AQS score of the present study was .13, the AQS scores of previous research,

which found significant relations between attachment security and narrative ability, was .38 and .32 (Newcombe & Reese, 2004; McCabe et al., in press, respectively). Hence, the children in the present study were predominantly insecurely attached as compared to the more securely attached children in other studies. Additionally, since the AQS scores in the present study had such a small amount of variance between children ($SD = .16$), it is likely that this may have obscured any possible relationship that may have been present in a more heterogeneous sample. Given a wider spread of scores, it is plausible that a stronger relationship between attachment security and narrative ability may have been apparent.

Parenting Stress

A somewhat more perplexing finding was the weak and non-significant relationship found between parenting stress and narrative ability among these economically disadvantaged preschoolers. Higher parenting stress was not significantly related to lower scores on any of the narrative properties studied. This is unexpected given the wealth of literature documenting both direct and indirect links between higher parenting stress and poorer cognitive outcomes among children (Crnic et al., 2005; Crnic & Low, 2002; Anthony et al., 2005). Most often, the research seems to provide evidence for an indirect relationship between parenting stress and child outcomes whereby parenting stress diminishes the quality of parent-child interactions and changes parent behavior, which in turn affects children's cognitive abilities (Abidin, 1995; Belsky, 1984; Crnic & Acevedo, 1995; Crnic & Low, 2002; Deater-Deckard & Scarr, 1996; Dix, 1991). In addition to showing less warmth and responsiveness in parent-child interactions,

parents reporting heightened parenting stress have also been reported to exercise inconsistent discipline and have developmentally inappropriate expectations of their children (Crawford & Manassis, 2001, Creasey & Reese, 1996, Crnic & Greenberg, 1987, Karrass, VanDeventer, & Braungart-Riker, 2003, Pinderhuges, Dodge, Bates, Pettit, & Zelli, 2000).

It seems that parenting stress is an important predictor of parent-child behavior and dyadic interaction such that higher parenting stress is associated with less dyadic pleasure (Crnic et al., 2005). Since attachment security is an indicator of the quality of mother-child interactions, it is not surprising that research also shows a clear link between insecurity of attachment and higher parenting stress (Herrick, 2002). The findings in the present study are surprising given mother-child interactions are strongly influenced by parenting stress and the quality of this dynamic has been shown to be the best environmental predictor of children's cognitive development, over and above that of the school and child care environments (NICHD Early Child Care Research Network, 2005; Wacharasin, Barnard, & Spieker, 2003). Moreover, children's acquisition of narrative skills has been shown to be directly related to the quality of interaction with their parent or caregiver (McNamee, 1987). In light of this research, it is puzzling as to why the children of highly stressed mothers in the present study did not exhibit poorer narrative abilities. Conversely, why weren't children of mothers who reported less parenting stress producing more advanced narratives?

One possible explanation for the weak and statistically non-significant relationship between parenting stress and narrative ability among the economically

disadvantaged preschoolers in the present study is the narrow range of scores on many of the narrative properties. While total stress scores within the present sample on the PSI-SF widely varied on, and represented both extremes of, the total parenting stress dimension, many of the narrative property scores showed very little variance between children. With relatively homogeneous outcome measures of narrative ability, the effect of parenting stress may have also been obscured. It would be interesting to see whether parenting stress and narrative ability are related to one another in a more heterogeneous sample where there is more variance between the narrative abilities of children.

It is also entirely possible that parenting stress is not strongly related to children's narrative competence. It was assumed in the present study that parental interaction with children (the context where narrative ability emerges), whose quality was characterized by their attachment relationship, was associated with parenting stress levels. However, the rationale for this assumption came from previous research that revealed relationships between parenting stress and cognitive (Crnic & Low, 2002; Miller, 2000) and behavioral outcomes (Anthony et al., 2005; Deater-Deckard & Scarr, 1996; Jackson, 2000; Webster-Stratton, 1990). Previous research has not specifically looked at the relationship between parenting stress and narrative ability and as such, to date there is no empirical evidence for a relationship between parenting stress and narrative ability.

Future Directions

Although the present study did not provide evidence for a relationship between both attachment security and parenting stress and narrative ability among economically disadvantaged preschoolers, there is a need to continue research in this area. Since the

quality of the family environment is more strongly related to children's cognitive outcomes than are the qualities of the school and child-care environments (NICHD Early Child Care Research Network, 2005), a closer examination of the contextual factors that impinge on children's developing cognitive skills is needed. Since preschoolers' narrative abilities are one of the strongest predictors of success for literacy acquisition and in the school arena (Paul & Smith, 1993; Tabors et al., 1991) and deficits in these skills are associated with subsequent deleterious academic and personal outcomes (Michaels, 1991; Roth, 1986), it is necessary to continue to search for factors that relate to this crucial pre-literacy skill, especially among at-risk children.

In light of the limitations of the present study, future research should aim to improve upon the present methodology in order to investigate whether attachment security and parenting stress are actually related to children's narrative abilities. The trained-observer-completed AQS, which is the most valid and reliable measure of attachment security (van Ijzendoorn et al., 2004), should be used as opposed to the untrained-mother-completed AQS. In addition, it would be beneficial to employ a larger sample of more demographically diverse parents and children to eliminate problems of restricted range that were ever present in the current study. Specifically, participants should be from varying socio-economic backgrounds and represent both ends of the attachment security and narrative ability spectrums. Children should be both securely and insecurely attached and they should possess both advanced and sparse narrative skills.

Although the present study only focused on attachment security and parenting stress as potential predictors of children's narrative abilities, there are many factors that

have been shown to affect child outcomes that were not included. Perhaps if these protective factors had been measured and incorporated into the present research, a more holistic picture of children's narrative competence would have emerged. One obvious factor that has been shown to mediate the relationship between parenting stress, parent-child interactions, and child outcomes is the availability of social support (Rodgers, 1998). In a review of stress as a potential disruptor of parent perceptions and family interactions, it was revealed that social support has been shown to act as a protective factor by ameliorating the deleterious effects of stress on family and individual functioning. Moreover, the presence of a supportive social network has been shown to buffer the relationship between parenting stress and parenting behavior through the promotion of competent parenting and presumably healthier parent-child interactions (Crnic & Greenberg, 1990, Rodgers, 1993). Since the parent-child arena is the foundation for narrative development, and this context is buffered from stress by the availability of social support, future research should consider this important protective factor when examining the relationship between both parenting stress and attachment security and narrative ability.

Another factor that was not measured in the present study but that has been shown to mediate the relationship between parenting stress, parenting behavior and child outcomes is self-efficacy. In a study on parenting stress and behavior among single at-risk mothers and their preschoolers, children's behavioral outcomes were both directly and indirectly associated with less competent parenting through their effects on parenting stress and self-efficacy (Jackson & Huang, 2000). It seems that how mothers perceive

their mastery in difficult situations and their ability to act competently and effectively, acts to protect children in highly stressed environments (Bandura, 1997; Jackson & Huang, 2000). People who exhibit high self-efficacy often show optimism in difficult times, persist in the face of setbacks, and attempt to make their environments more manageable and non-threatening (Bandura, 1997). Taken together, it is not surprising that this important cognitive element among parents has been associated with resilience in hardships, coping, and less depression (Coleman & Karraker, 2000). Hence, it is beneficial to consider the role of self-efficacy in future research that assesses the relationship between parenting stress and narrative ability.

Aspects of children's temperament have also been established as a factor in children's learning (Matheny, 1989) and as a predictor of children's academic achievement, language and literacy development, and cognitive abilities. This was clearly evidenced in a study by Coplan, Barber and Lagace-Sequin (1999) who found that temperament characteristics (activity and emotionality) uniquely contributed to preschoolers' literacy skills over and above well established factors of achievement, such as parental education, child gender and vocabulary. Likewise, child temperament has also been found to influence low SES preschoolers' later educational achievement, such that temperament characteristics are related to school achievement at the cusp of kindergarten entry, even with the effects of ability controlled (Miller, 2000). Other research has also showed that aspects of children's temperament are predictive of children's literacy development and oral language skills in the early school years (Greenfield-Spira, Storch-Bracken, & Fischel, 2005). Hence, it seems that children's early temperament exerts a

powerful influence on their later success in the school arena. Since narrative ability is also an established precursor to literacy and academic achievement, the inclusion of child temperament in future research also provides potential for a more complete picture of children's emerging narrative abilities.

Intervention

The present study provides a preliminary glimpse at where economically disadvantaged preschoolers' narrative skills, attachment security and mothers' parenting stress lie prior to intervention. The results of the present study seem to suggest that attachment security and parenting stress are not significantly related to children's narrative ability. Future research will reveal whether fostering proactive ways of interacting with children in turn improves their narrative ability and pre-literacy skills. Peterson et al. (1999) found one-on-one intervention to be effective in improving these skills and future research will extend this intervention to group settings with the expectation that children will show a similar improvement in pre-literacy skills. Other research has also been successful at teaching mothers to employ decontextualized language and encouraging children to adopt these strategies (Morgan & Goldstein, 2004). Additionally, Huebner (2000) found that community-based intervention not only improved children's narrative ability but also decreased parental reports of stress.

If parents can be taught effective communication skills, parent-child relationships should improve, resulting in less parenting stress, more effective parenting techniques, and, importantly, advanced narrative competence. Hence, future research aims to investigate whether fostering improved parent-child interactions will lower parenting

stress, and enhance children's narrative skills among economically disadvantaged parent-child dyads. Given that social engagement between parents and children is a buffer against the risks posed by poverty among low income samples (Chase-Lansdale & Brooks-Gunn, 1995, Duncan, Brooks-Gunn & Klebanov, 1994), future intervention holds rich potential for equipping at-risk children and mothers with the skills necessary to succeed in their academic, familial, and interpersonal worlds.

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Table 1

Mean number of occurrences of each narrative variable measured (and standard deviations) for the three longest narratives (N = 56)

Variable	Mean (SD) Three Longest (N =56)	
Length:		
Narrative Length	55.76	(27.01)
Clauses	11.11	(4.49)
Elaboration:		
Descriptors	4.56	(3.02)
Time	0.71	(0.76)
Location	1.72	(1.15)
Emotion	0.52	(1.11)
Cognition	0.21	(0.33)
Coherence:		
Causal/Conditional connectives	0.31	(0.43)
Connectives	4.32	(3.02)
Temporal terms	1.27	(1.56)
Contextual Embeddedness in Time and Space:		
Time	0.71	(0.76)
Location	1.72	(1.15)
Informativeness (unique units of information):		
Person	1.57	(0.95)
Object	2.59	(1.27)
Activity	4.64	(2.04)
Attributes	3.54	(2.26)
Location	1.27	(0.77)

Variable	Mean (SD) Three Longest (N =56)	
Cognition	0.19	(0.26)
Time	0.58	(0.56)

Table 2

Mean scores (and standard deviations) on parent reported measures of attachment and parenting stress (N = 56)

Variable	Mean (SD) (N = 56)	Range
Attachment Security		
AQS	.13 (0.16)	- 0.23 - 0.39
Parenting Stress		
PSI-SF	83.00 (21.26)	42.00 - 149.00



