THE CO-CONSTRUCTION OF AUTOBIOGRAPHICAL MEMORY NARRATIVES OF CHILDREN WITH SPECIFIC LANGUAGE IMPAIRMENT

By

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LIST OF ABBREVIATIONS

AM	Autobiographical Memory
SLI	Specific Language Impairment

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Our study examined the mother-child co-construction of autobiographical memory (AM) and storybook narratives of seven preschoolers (*M* = 55 months) with specific language impairment (SLI). Mothers' and children's narrative contribution was examined in terms of style and content. Five of seven mothers were classified as having a low-elaborative style of talking about the past, and mothers' classifications differed for the storybook task. For the storybook task, but not the AM task, mothers' and children's style was related; their use of the same content categories was related for both tasks. Comparisons between tasks revealed little consistency in mothers' and children's style and content in the AM task compared to the storybook task. Children's narrative contribution did not differ in terms of style or content based on conversational partner. Implications of AM development for children with SLI are discussed.

CHAPTER 1
INTRODUCTION

Autobiographical memory (AM) emerges during the preschool years as a result of other developing cognitive and social skills. Cognitive developments, such as the emergence of language, have also been proposed as important contributors to AM development (Fivush, 1998; Nelson & Fivush, 2004). Researchers have also demonstrated that AM development is socially constructed by parents as they model AM talk and scaffold their children's own personal narratives. Nearly all examinations of AM development have focused on typically developing children. Given the important role language plays in AM development, studying this development in children with language impairments can contribute to further understanding the role of language in AM development; and how children's language level affects parents' style of talking about the past.

Our study focused on the AM narratives of preschool aged children with specific language impairment (SLI) and their mothers. Children with SLI are characterized as having a language delay without any known cause for this delay; a more detailed description will be provided below. A few studies have elicited autobiographical memories from children with SLI as a form of narrative (Miranda, McCabe, & Bliss, 1998; Kaderavek & Sulzby, 2000). However, AM development has not yet been examined in this population in terms of how parents scaffold their children's personal narratives, although there is an extensive amount of information about the narrative development and conversations of SLI children.

The purpose of our study was to observe mothers and their children with SLI co-constructing autobiographical memories as a way to further examine the view that AM is socially constructed through language. Specifically, the first aim was to assess maternal style of talking about the past. A second aim was to examine children's AM narratives and in terms of style and

content and their relations to mothers' style and content. The third aim of this study was to compare children's narratives with their mothers compared to children's narratives with an experimenter in order to compare children's narrative production when scaffolded by a parent compared to their narrative production with an adult who provided little support to the narrative. Finally, the fourth aim of this study was to compare mothers' and children's AM narratives to their storybook narratives.

Autobiographical Memory: the Personal Narrative

Children start talking about past events as soon as they develop language skills, usually between 16 to 20 months of age (Eisenberg, 1985). By the age of 3, children are actively engaging in conversations about the past, which coincides with the earliest autobiographical memories of most adults (Pillemer & White, 1989). According to Nelson (1996), the initial functional importance of AM is simply to share memories with others, which the acquisition of language makes possible. Other emerging cognitive developments co-occur with the onset of the AM system such as the child's developing sense of self (Harley & Reese, 1999) and the child's understanding of mental representations (Welch-Ross, 1997). Thus, Nelson and Fivush (2004) assert that AM development is a universal, dynamic process, but one that is socially mediated.

Advocates of the *social interaction model* of AM emphasize the significance of the child's social environment (Hudson, 1990; Pillemer & White, 1989; Fivush & Reese, 1992). These theorists propose that children gradually learn how to talk about their own past experiences through participating in parent-guided memory talk, in which parents model what is considered important to remember and emphasize that talking about the past is a desirable activity. By co-constructing their own narratives, young children are socialized to represent and

express their experiences in certain ways that are socially appropriate, particularly the forms and functions of memory talk. In the earliest stages of memory talk, parents scaffold their children's narratives by asking questions and providing feedback in an attempt to help them remember an event. Initially children rely on these cues to recall information.

Researchers of parent-child conversations about the past have identified two types of discourse styles (Fivush & Fromhoff, 1988; Haden, 1998; Reese & Fivush 1993). *High-elaborative* (or elaborative) parents involve their children in long conversations about past events, presenting rich and embellished details about the event. Although their children might not always recall information about the event, the parent maintains a coherent story by continuing to share information with the child. On the other hand, *low-elaborative* (or repetitive*)* parents' conversations with their children are short, redundant, and lack a story structure. They probe for expected answers from their children and when information is given that does not answer the parent's question, the parent does not incorporate the information into the narrative and does not embellish (Fivush, 1994). Consequently, elaborative parents give their children more unique information and provide more descriptive information than do repetitive parents (Fivush, 1994).

Longitudinal studies have shown that these styles of talk about the past are consistent across time (Reese, Haden, & Fivush, 1993). The importance of the cues that parents provide to their children when talking about past events is illustrated by the fact that children whose parents engage in a high elaborative style remember more information and also remember different types of information than do children of parents whose parents engage in a repetitive style (McCabe & Peterson, 1991; Reese et al., 1993). Reese et al. (1993) found that the level of elaboration that mothers expressed when their children were 40 and 46 months of age was related to children's

subsequent ability to recall memories at the ages of 58 and 70 months of age. Interestingly, they did not find a relationship between children's memory responses at the earlier two time points and their memory responses at the later two time points. The only direct relationship was that of maternal elaborations early on and children's memory responses at later ages, suggesting that maternal elaborations early in development are important for children's later ability to recall memories above and beyond children's own early abilities.

As described above, the way in which parents talk to their children about the past shapes children's subsequent verbalization of the event. However, language is not important merely because it is the medium used to talk about the past. Language allows children to organize and evaluate their autobiographical memories (Fivush & Haden, 2005). Language also allows children to maintain mutual dialogues with others about past events, which facilitates children's understanding of narrative structure and personal meaning of autobiographical memories (Fivush & Nelson, 2004). Additionally, through the use of temporal language, children come to understand that there is a sequence of events within a particular occasion, and that events themselves are ordered in time (Fivush & Nelson, 2004). This understanding facilitates the child's own sense of having a personal past that is meaningfully connected to the current self (Fivush & Nelson, 2004).

Researchers who have examined the link between AM and language have found that for young preschoolers, mothers tend to be more elaborative with children with better language skills (Farrant & Reese, 2000; Newcombe & Reese, 2004). This relationship does not seem to hold for older preschool children (Reese & Brown, 2000; Reese et al., 1993). One explanation is that when children achieve a particular language level, their language skills are no longer related to maternal elaborations (Fivush, Haden, & Reese, 2006). However, most researchers

examining language and AM have used vocabulary as a measurement of language. It may not be vocabulary or any other aspect of language (e.g., morphosyntax) that is directly related to AM development. Rather, as Fivush (1998) pointed out, "once children become language uses, they have a powerful additional tool for encoding, organizing and retrieving memories." Thus, more generally, through children's increasing ability to represent a past event through language, children are also developing increased competence in representing narrative structures.

Autobiographical Memory in Language Impaired Children

One way to explore the role of language more directly is through comparing children with language difficulties, such as deaf children or those with specific language impairments. Deaf individuals, for example, tend to have less dense recollections of their early memories; their early memories are less frequent; and they include less types of information in their narratives as compared to individuals who have normal hearing (Weigle & Bauer, 2000).

Similarly, children who show difficulties or are delayed in language acquisition, such as children with SLI, may also show subsequent delays in AM development. Children with SLI have a delay in language comprehension of at least six months or more and a delay in language production of a year or more (Stark & Tallal, 1981). These deficits exist despite normal nonverbal IQ and emotional maturity, undamaged hearing, intact speech abilities (Stark & Tallal, 1981), and lack of neurological damage (Leonard, 1998). Children with SLI tend to acquire their first words at a later age than their peers, and do not learn words as rapidly as their peers, although they can still have a high receptive vocabulary. Children with SLI also have trouble with morphosyntax. For example, they often make errors when using tense markers on verbs, when using possessive markers on nouns, and when making nouns plural (Menyuk, 1993). In terms of pragmatics, children with SLI often fall behind their peers as well; for example, they

have difficulty understanding figurative language or metaphors (Leonard, 1998). The population of children with SLI is very diverse with a wide range of variability on any one linguistic aspect, which sometimes makes it difficult to conceive of the SLI population as a homogeneous one. Children with SLI may be delayed in AM development because they are less able to participate in conversations or because mothers may adapt a less elaborative style with their SLI children. Children with SLI may also be less equipped to discuss their personal past because they did not have the required language skills at the time of encoding.

Mother-child conversations in children with SLI

Several researchers have examined conversations between mothers and their children with SLI. The results of this research suggest that children with SLI have difficulty early on during conversations with parents, and that parents of children with SLI adjust their language accordingly. For example, mothers of SLI children tend to simplify their speech in accordance to their child's language ability, resulting in conversations that are below the child's cognitive capacity to understand. In a series of studies with 3- to 4-year-old children with SLI and controls matched on language ability, Grimm (1995) found that whereas SLI mothers' utterances were similar to the mothers of normally developing children in terms of grammatical complexity, there were differences in the types of questions posed by the mothers of children with SLI compared to mothers of language-matched controls. The mothers of SLI children asked more "information-demanding questions," whereas the mothers of the younger children engaged their children in more mutual dialogues. Additionally, the children with SLI asked fewer "topic-initiating questions" and were more likely to disregard what their mother had just said. When adding a second control group of children matched on chronological age, Grimm (1995) also found that the speech of mothers with children with SLI was far more comparable to the language-matched

children in terms of grammatical complexity as opposed to the age-matched group. These results led Grimm to conclude that SLI mothers were using a dysfunctional parenting strategy.

Conti-Ramsden (1995) presented an alternative to the view that parental input to children with SLI is deficient. She pointed out that whereas parents of children with SLI are indeed more directive and controlling in their conversations, children with SLI are also more unreceptive than their normally developing peers in terms of conversational style (Conti-Ramsden and Friel-Patti, 1983, 1984). Parents may have to use a more directive conversational style to keep the conversation going, and to accomplish some amount of involvement from the child (Conti-Ramsden, 1995).

Narratives of Children with SLI

Several researchers have also examined the language production of children with SLI by observing their performance on narrative tasks without the aid of an adult. Narratives provide a particularly rich assessment of language abilities because they are a complex, functional language task, which enables researchers to explore a child's language impairment beyond morphosyntax and single utterances. They also require the narrator to organize story elements and link meaning across several sentences; thus, narratives require cognitive, pragmatic, and social skills in addition to language skills (Pearce, McCormack, & James, 2003). Researchers have found that the ability of children with SLI to narrate a story on their own is related to future language abilities (Stothard, Snowling, & Bishop, 1998), perhaps above and beyond other types of language measurements (Botting, Faragher, Simkin, Knox, & Conti-Ramsden, 2001

Not surprisingly, researchers examining many aspects of narrative development have found that the narrative abilities of children with SLI are impoverished. The narratives of children with SLI have typically been solicited by generation or retelling tasks. Generation tasks

include eliciting narratives from children by asking them to create a narrative from a wordless picture book (Botting, 2002; Pearce, McCormack, & James, 2003); and by asking the child to generate a story from a single picture (McFadden & Gillam, 1996; Pearce et al., 2003). Retelling tasks involve presenting children with the narration to a particular story and then asking them to retell the story in their own words (Liles, Duffy, & Merritt 1995; Paul & Smith, 1993; Kaderavek & Sulzby, 2000; Botting, 2002). AM narratives have been elicited as well, generally after an experimenter prompts the child with an autobiographical memory of their own (Miranda et al., 1998; Kaderavek & Sulzby, 2000). However, as mentioned above, very few researchers have used this type of narrative task.

Kaderavek and Sulzby (2000) looked at the production of oral narratives and emergent readings in a group of children with SLI aged 2;5 to 4;2 and their age-matched peers. The oral narratives were elicited by an experimenter who related a personal narrative to the child and then prompted the child to share a memory of her or his own. For the emergent readings, mothers of the children were given a book to read to their child after which the child was asked to retell the story. Only half of the children with SLI were able to produce an oral narrative, and the youngest SLI child to produce an oral narrative was 3;1 whereas the youngest control subject was 2;4. For the emergent reading, children with SLI were more comparable to the control group. Thus, it seems that children with SLI are better able to produce a narrative when their mothers first provide them with a supported context. This scaffolding also helped both groups to provide longer emergent readings than oral narratives, presumably because of the children's exposure to vocabulary, syntax structure, and causal relationships.

In another study examining personal narratives of SLI children, Miranda, McCabe, and Bliss (1998) elicited narratives from 8- to 9-year-old children with SLI and two control groups

matched on language ability and chronological age. They found that the children with SLI presented greater difficulties than the other two groups in terms of topic maintenance, event sequencing, and explicitness. These results suggest that children with SLI may have a deficit rather than a delay in narrative abilities as they had more trouble than their language-matched peers on these aspects. They also found that children with SLI were more likely to add irrelevant information to the middle of their narratives than the control groups.

Botting (2002) found another interesting tendency of children with SLI in a study that examined narratives of 7- to 8-year old children with SLI and children with pragmatic language impairment (PLI). She found that amount of information included on the *bus story* narrative was highly negatively correlated with devices, such as sound effects, negatives, and emphatic devices and with tense errors used in the *frog story*. Some have proposed that children with SLI have poorer working memory (Ellis-Weismer et al., 1999), which could potentially interfere with their ability to both comprehend and produce a narrative in both generative and retelling tasks. The author proposed that to compensate, these children used these literary devices to "buy the child time" while she or he thought about what they were going to say next or simply to make the story more interesting. Another characteristic of the SLI children's narratives is their tendency to include 'openings' and 'endings' in their narratives, but few utterances about orientation (Botting, 2002). Thus, it seems that children with SLI have greater difficulty with discourse in general.

Another way in which researchers have assessed narrative skills in children with SLI is through rating the overall quality of their narratives rather than breaking them down into their linguistic components. Gillam and Carlisle (1997) examined the oral reading abilities and story retelling abilities of 8- to 11-year old Children with SLI and a control group matched on reading

ability. As part of the story retelling analysis, they rated the children's narratives into categories based on general quality. These categories consisted of 'deficient,' 'confusing,' 'adequate,' and 'complete.' They found that the SLI group more often produced narratives that were classified as confusing and less often classified as complete, despite the fact that both groups had a comparable percentage of words, problem-resolution pairs, and story elements. Thus, it seems that although the children with SLI comprehended the same amount of information as the control group, their ability to organize that information and express it verbally was poor.

Mother-Child Book Reading

Mother-child book-reading parallels reminiscing about the past in that during this activity, mothers provide children with a basis for contributing to the story reading process. Both narrative types require an understanding of decontextualized language, meaning that the child must understand the language of an event that is not currently happening (Wareham and Salmon, 2006). Additionally, as Nelson and Fivush (2004) point out, experience with different kinds of narratives (e.g., play, stories, personal past) helps children to organize their own personal memories in terms of relevant themes. As mothers read to their children, they provide a supportive environment for their child to learn the forms and functions of reading stories and elicit the appropriate responses from their child when possible in preparation for the child's later narrative involvement. Additionally, caregivers often provide a model of narrative that is slightly more advanced than their child's communicative abilities, resulting in an optimization of the child's opportunity to learn from the interaction (Arnold, Lonigan, & Whitehurst 1994). In this way, book reading is similar to sharing personal events as parents initially provide most of the memory information, and only gradually do children become active participants in the story.

Not surprisingly, then, researchers have found relations between normally developing children's exposure to AM narratives and their comprehension of storybooks (Beals, 2001; Reese, 1995).

Researchers have found that parents of children with SLI use different strategies when narrating books with their children. Similar to their conversations, these mothers tend to simplify their requests for information from their children when reading books together, which results in mothers dominating most of the interaction. Children with language impairments have limited language output which often results in mismatches between the reader's perception of the child's ability and the child's actual comprehension ability which can impact the reader's role as facilitator of the story (Whitehurst, Falco, Lonigan, Fischel, DeBaryshe, Valdez-Menchaca, & Caulfield, 1988). Thus, children with SLI tend to provide less information than normally developing children when engaging in joint book reading with their mothers (Kaderavek & Sulzby, 2000; Crowe, 2000), and need an environment which encourages reciprocal communication in constructing the story (Kaderavek & Sulzby, 2000). Additionally, because children with SLI have limited language abilities already, they may not benefit from shared story reading as normally developing children do which puts them at risk for later reading and writing disabilities (Crowe, 2000). In a similar way, mothers' perceptions of their children's language abilities may impact their engagement in talk about the past with their SLI children.

AM Narrative and Storybook Comparisons

Although some researchers have examined maternal style during AM narratives and storybook reading in typically developing children, few researchers have examined the relationship of maternal style between these contexts. Laible (2004) examined maternal elaborations in a storybook task and maternal elaborations during a task in which mothers and children discussed two events that occurred in the past week concerning the child's behavior

(one in which child misbehaved and one in which the child behaved well); she found no significant relationship between the two tasks in terms of elaborations. However, the overarching aim of Liable's (2004) study was the relationship between mothers' elaborations and emotional content to children's attachment security and temperament, and elaborations were not measured in terms of frequency. Rather, mothers were rated more globally on a 5-point scale in terms of overall elaboration for both contexts. One possibility is that there truly is no relationship between mothers' elaborations in these two narrative tasks. However, a second possibility is that this measurement of elaboration is not sensitive to total frequency of maternal elaboration because of the low range of possible scores, which masks the relationship between the two. Additionally, AM narratives are of particular interest in the current study, which differ from the events discussed in Laible (2004) in that AM narratives are presumably personally relevant events that allow for rich discussion unlike daily behavioral events.

Summary

In summary, the joint parent-child conversations and storybook narratives of mothers and their children with SLI differ in several ways compared to age-matched controls. The language and narrative production of children with SLI is delayed and their parents tend to simplify their speech to match their child's language ability. These children's narratives are less coherent in terms of topic maintenance, event sequencing, and explicitness. Narratives of children with SLI also contain more morphological errors, and children with SLI are less able to initiate narrative exchanges with parents. Undoubtedly, children's own language skills affect parent-child narrative interactions. However, there is an abundance of previous research that suggests that parents play a role in their children's language and narrative development as well. This research has led to the conclusion that naturally occurring, oral narratives (e.g., talk about the past) in

which parents' narratives are lexically rich, elaborative, and connected to other relevant aspects of the child's life are essential for children's optimal language development (Dickinson & McCabe, 1991; Weizman & Snow, 2001).

Research on AM development, specifically, demonstrates that parents' who model and engage their children in an elaborative style of talking about the past have children whose AM skills are more advanced in that they participate more fully and provide more details (Fivush, Haden, & Reese, 2006). Also, research suggests that mothers' elaborations are related to children's later AM narratives more so than children's narratives are related to mothers' narratives. Additionally, children's own skills do not seem to be related over time (Reese, Haden, & Fivush, 1993). Based on research from both narratives of children with SLI children and AM narratives of normally developing children, we proposed that examining AM narratives in this population is a necessary step in understanding the role of language in AM development. Researchers examining narratives of children with SLI have previously looked at their independent narratives, their narratives with experimenters, and their general conversations with mothers. However, AM narratives are a frequently, naturally occurring form of talk between parents and their children and should also be included in these examinations because a child's language impairment may impact the parent-child memory talk and the children's subsequent AM development.

CHAPTER 2
CURRENT STUDY

The primary purpose of the present research project was to examine the co-construction of AM narratives of mothers and their children with SLI. Within this framework, there were four aims. The first aim was to classify mothers in terms of AM narrative style as high-elaborative or low-elaborative. In normally developing children the way in which parents speak to their children about past events clearly affects the amount and quality of the information subsequently provided by the child. Parents of children with SLI tend to have a more directive and limited discourse style. Despite the fact that studies have used autobiographical memory narratives of children with SLI as a measurement of narrative abilities, and parents of children with SLI have different conversational styles, no research has been conducted that directly at how parents scaffold their child's personal narratives in this population.

The second aim was to examine children's AM narratives in terms of style and content (e.g., actions, descriptions) and their relations to the mothers' style and content. Of interest was the nature of the AM narratives of children with SLI as a reflection of early autobiographical memories. The related third aim was to compare children's AM narratives when they were scaffolded by their mothers compared to an experimenter. The purpose of this comparison was to examine the relationship between children's mother-scaffolded narratives compared to children's narrative production with an adult unfamiliar with the event, and thus unable to scaffold the child—at least not with detailed information.

The fourth aim was to compare mothers' and children's AM narratives to their storybook narratives. The first step in addressing this question was to compare children's and mothers' contributions within the storybook task. Additionally, we compared children's mother-scaffolded storybook narratives to children's storybook narratives with an experimenter. These two

comparisons allowed us to address the question of whether children's style and content was related to mothers' style and content within the storybook task, and to compare children's narratives with their mothers versus an unfamiliar adult. Finally, direct comparisons were made between children's storybook narratives and their AM narratives in terms of style and content. As the AM literature suggests, narrative abilities play an important role in AM development. It is unclear, however, how developing the skills to narrate autobiographical memories relates to other narrative contexts as there has not been much research to date which directly links the two. In support of this relationship, Lange and Carroll (2003) found that children's level of narrative talk when engaging in a picture-book task with their mothers was correlated to the child's performance with an unfamiliar experimenter on the same type of task. Although the narrative of the picture-book task was not an AM task, one could draw the conclusion that the information provided to the child by the mother's scaffolding of a picture-book narrative influenced the child's performance on the same task in the absence of the mother's help. Thus, while parent-child talk about the past clearly facilitates the development of the child's autobiographical memory, we proposed that by modeling how to narrate one's personal events, parents are more generally modeling how to narrate any type of story.

CHAPTER 3
HYPOTHESES

In regards to the first aim of the study, mothers of children with SLI were predicted to have a low-elaborative style of talking about the past in general. The second aim was to examine children's AM narratives in terms of style (e.g., elaborations, repetitions) and content (e.g, actions, descriptions). An additional question was whether mothers' style and content related to children's concurrent use of the same devices. We predicted that both style and content would be related between mothers and children, although the extent to which they would be was exploratory. The third aim focused on comparing mother-elicited narratives to experimenter-elicited narratives. In particular, would the types of narrative style and content that children with SLI used in the AM narrative task mothers be related to the narrative style and content that children used when sharing AM narratives with an experimenter? No specific hypothesis was proposed for this aim. The fourth aim was to compare AM narratives to storybook narratives. We predicted that mothers' and children's content and style would be related within the storybook task. However, we had no specific predictions about the latter two questions. That is, would the style and content used by children with mothers be related to their style and content with an experimenter during the storybook task? In addition, would the narrative content and narrative style (e.g., elaborations, repetitions) present in the children's personal narratives would be related to those present in the storybook narratives?

CHAPTER 4
METHODS

Participants

Eight mother-child dyads from an urban city in Florida participated in this study. The participants were recruited from a speech and hearing center preschool program. Children ranged in age from 50 to 68 months ($M = 55$, $SD = 6.3$). There were four girls and four boys in this sample, and families were predominately middle-class. Six of the children were Caucasian, one girl was Hispanic, and one boy was adopted by Caucasian parents from Cambodia as an infant. One child was later dropped from the study because he did not meet the qualifications to be labeled SLI. Thus, analyses were conducted on the remaining seven mother-child dyads.

Procedures

To classify children as SLI, we first confirmed with each child's speech language pathologist that he or she was language impaired, as opposed to having phonology impairments only. We also conducted a file review on each child, which contained the child's medical history as well as previous language assessments to ensure that each participant: was from an English-speaking home; passed hearing screenings; had no previous medical conditions that could be the cause for a language delay (e.g., cerebral palsy); had no diagnosed behavioral problems; and had a history of language delay.

In addition, the children were individually assessed at their preschool using two language measures and one measure of nonverbal cognitive ability. Language was measured using the *Structured Photographic Expressive Language Test 3 (SPELT-III; Dawson & Stout, 2003).* This test assesses expressive language, specifically morphology and syntax. Receptive vocabulary was also assessed using the *Peabody Picture Vocabulary Test –3rd Edition* (PPVT-3; Dunn and Dunn, 1997). Nonverbal cognitive ability was measured using the *Leiter-R*. (Roid, Nellis, &

McLellan, 2003). This test is a completely nonverbal measure of intellectual ability, which measures visualization, reasoning, memory, and attention. Typically, children are classified as SLI if they fall 1.5 standard deviations or more below the mean for their age on two language measures and score within the normal range on one cognitive measure. Because of the extensive background we obtained from each child's preschool we considered this as one indicator of language impairment along with the scores from the SPELT-3. Scores on the SPELT-3 ranged from 72 to 92 (M = 81.86, SD = 6.79). A cut-off of 95 instead of 85 was used as Perona, Plante, and Vance (1995) recently suggested that this was a more appropriate criterion to differentiate between normally developing and Children with SLIusing the SPELT-3. Scores from the PPVT-3 were not used for identifying children as SLI as receptive vocabulary is often normal in this population. Scores on the Leiter-R ranged from 101 to 119 (M = 110.14, SD = 7.73). Thus, each child qualified as having SLI.

Narratives

The same female experimenter went to each of the visits. Six of the mother-child dyads were visited in their homes for this portion of the study, and one dyad chose to have their session at the child's preschool. Upon arrival, the experimenter developed a rapport with the child through conversation until the child was comfortable. Mother-child and experimenter-child dyads were audio taped and videotaped while they engaged in joint memory talk about three events and a storybook narrative. These four narrative tasks were counterbalanced.

Personal narratives. Mothers were contacted the day before the visit to help them think of six appropriate events to discuss with their children, in which mother and child had participated in together. They were instructed to remember six unique events, excluding memories such as birthdays or holidays as children may already have a schema for these

activities as suggested by other researchers (e.g., Reese et al., 1993). Other than this restriction, mothers were free to choose any events to discuss rather than limiting them to a particular type of event (e.g., family vacation) in the hopes that mothers would choose events that were salient to her child. During the visit, mothers discussed three of these events with their child.

The experimenter elicited the other three events from each child in an open-ended manner. The purpose of this task was to determine how much information the child could recall without being cued. Thus, the experimenter asked questions such as *What happened*? or *Tell me about it*. When the child stopped providing information, the experimenter gave another open-ended prompt such as *Anything else*? until the child stopped responding.

Storybook narratives. Children provided narratives for two wordless storybooks of equal length, *Frog Where Are You?* (Mayer, 1969) and *Frog Goes to Dinner* (Mayer, 1974). *Frog Where Are You?* is about a boy who loses his pet frog and his subsequent quest to find the missing frog. *Frog Goes to Dinner?* is about the same character going to a fancy restaurant with his family and the mischievous frog that tags along. Mothers were asked to co-construct a storybook narrative with their child using one wordless picture book. The experimenter elicited a storybook narrative from the other wordless picture book. Parallel to the experimenter-elicited AM narrative, the experimenter used open-ended prompts to elicit information from children.

Coding

All narratives were transcribed following the CHILDES system (MacWhinney, 2000). The most common events discussed were everyday activities like going to the pool or to the park and family vacations such as camping trips. The majority of personal narratives were positive in valence. Of all narratives shared with both mothers and the experimenter, two involved a negative event—the loss of a pet.

For the mother-child AM narratives and mother-child book narratives, we coded mothers' and children's utterances for: (1) conversational style (Reese & Fivush, 1993) and (2) memory content (Haden, Haine, & Fivush, 1997). For the experimenter-child AM narratives and experimenter-child book narratives, we coded children's utterances for memory content and style.

Style Coding

Mothers' memory talk.

1. Elaborations: Mothers introduced the event to the child or added more information to the event in the form of a question or statement.

   M: "What did we do?"

   C: "We jumped in the water."

   M: "*And the water was so cold!"*

2. Repetitions: Mothers either repeated the exact content or the gist of a previous utterance made by either herself of the child.

   M: "No, what was his name?"

   C: "I forget his name."

   M: "*Do you remember his name?"*

3. Memory Prompts: Mothers asked the child to say more without providing any information about the event.

   M: "*Tell me about it."*

4. Evaluations: Mothers' utterances that either confirmed or negated the child's memory response.

   M: "Do you remember where?"

   C: "From Georgia?"

   M: "Georgia. *Very good!"*

Children's memory talk.

1. Elaborations: Children provided new information about the event or elaborated on mother's previous utterance.

   M: "What did you do while we were there?"

   C: "*I swimmed!"*

2. Repetitions and placeholders: Children repeated their previous utterance made by mother or child, or provided no new information in their utterance (e.g., *I don't know*.)

   M: "Remember when we went to the mountains?"

   C: "*Mountains*."

3. Evaluations: Children's utterances that either confirmed or negated the mothers' memory response, including meaningful head nods or shakes.

   M: "Did we go to any shows?"

   C: "*Yup!"*

Non-event talk. This refers to comments that are related to the event, but refer to something that did not happen during the event. These codes were used for both children and their mothers.

1. Future Talk: Utterances that referred to participating in the target event again in the future.

   M: "We can go back and pet the kitties again."

2. Associative Talk: Utterances that diverged from the target event, but were related in one of three ways:

   a. Factual associative talk: comments about another event related to the target event.

      M: "That happened to Grandpa one time."

   b. Fantasy associative talk: comments that refer to the event, but represent fantasy rather than reality.

C: “I thought the monsters tried to eat me.”

c. General knowledge talk: comments that referred to facts about the world.

M: “And water mocassins, sometimes they get angry and they come across the water and they try to get ya.”

3. Metamemory Comments: Utterances that referred to a participant’s own memory performance.
M: “You might not remember that because it was so long ago.”

4. Off-topic comments: Utterances not related to the event in question in any way or disruptions from the child (e.g., mother reprimanding child).

5. Unclassifiable comments: Comments made by the child that were unintelligible or comments made by the other that did not address the child.

Content Coding

Secondly, the mother’s and children’s utterances were coded for as many unique types of memory content it contained (Haden, Haine, & Fivush, 1997). Because we were interested in frequency of content, we coded for repetitions made in subsequent utterances.

1. Actions (Act): Information about actions that took place.

M: “Mommy *went* down the slide.”

2. Descriptions (Des): Objective details about the event.

M: “Was he *fast* or *slow*?”

3. Orientations: Comments referring to time, location, or people present.

a. Spatial-temporal (Ori_st):

M: “Do you remember going *to the pool last weekend*?”

b. Person (Ori_p):

M: ”*Who* all was there?”

4. Evaluations: Evaluative remarks about the event.

    a. Internal states (Eval_is): Comments regarding the personal feelings, desires, or cognitions of participants in the event as well as references to quoted speech.

       M: "I *thought* the snake was real."

    b. Intensifiers (Eval_int): Comments that exaggerate what they refer to.

       M: "And you went to bed *very, very* late."

    c. Affect modifiers (Eval_am): Subjective responses about a person or detail of the event.

       M: "You *liked* the whipped cream."

       M: "What was your *favorite* part?"

    d. Emphasis (Eval_em): Comments that did not directly refer to something that happened at the event, such as a reaction to the narrative.

       M: "That was nice."

       M: "I didn't see that."

    e. Sensory states (Eval_sen): Comments related to a sensory experience.

       M: "Did you *see* that big ant hill?"

       Note: Sensory states was added by the current author.

Two coders independently coded approximately 30% of the transcripts for reliability; additionally, Cohen's kappa was calculated for approximately 15% of the transcripts. For style coding, the average agreement was 86% (Cohen's $\kappa = .78$); for content coding, the average agreement was 83% (Cohen's $\kappa = .78$). We also measured the length of each memory discussion in terms of number of utterances provided by mother and child; number of memory utterances given by both mother and child (i.e., number of utterances that directly pertained to the event

excluding off-topic comments and unclassifiable comments); and MLU for both mother and child.

CHAPTER 5

RESULTS

AM Narratives

The results will be presented primarily in descriptive terms (group and individual differences) because of the sample size. Some types of memory talk are not included in the results as they were low in frequency (e.g., future talk and associative talk). Table 1 presents the mean number of on-topic utterances and mean number of elaborations for mothers and children in the mother-child conversations and for children in the experimenter-child conversations. This measure reflects a general assessment of the overall amount of memory talk. Memory narratives were not collected for the experimenter-child condition for two children because the experimenter was unable to elicit memories from them. For dyad 2, the child was only able to discuss one event with the experimenter. Thus, all results reported that include the experimenter conversations are reported as means across events. Mean number of utterances refers to the mean length of each dyad's three memory narratives.

Maternal style

Of particular interest was the narrative style mothers used to talk to their children with SLI about the past. Previous researchers have used the proportion of elaborations over repetitions to identify parental style. All mothers used many repetitions and elaborations. Using the criteria of Reese et al. (1993), elaborative mothers were defined by using at least twice as many elaborations (defined by elaborations plus evaluations) as repetitions. As Table 2 shows, only two of the seven mothers met this criterion. The mother of dyad 3 had a ratio of 4.81 and thus had a highly elaborative style. Additionally, the mother of dyad 4 had a ratio of 2.62. The other four dyads clearly fell into the repetitive, or low-elaborative, group. Furthermore, looking at the

group as a whole, there is a wide variety of amount of memory information provided by mothers (Figure 1). Some mothers provided their children with many elaborations, whereas other mothers provided their children with little memory information. As Figure 1 illustrates, although mothers of dyads 3 and 4 had higher ratios of elaboration to repetitions, these mothers did not necessarily provide more elaborations overall than other dyads.

Children's participation

Figure 2 shows the mean frequencies of children's elaborations, repetitions, and evaluations across all dyads and all events for conversations with their mothers and with the experimenter. With mothers, children provided mostly elaborations, followed by evaluations, and then repetitions. Children provided significantly more elaborations than repetitions, $t(6) = 3.18$, $p = .02$. No other comparisons were significant. Children also showed considerable variability in terms of how much memory information they provided to the narrative. Figure 3 shows the total frequencies of children's elaborations, repetitions, and evaluations with mothers per dyad. Five of the children were able to provide more memory information than repetitions, whereas two of the children provided very little memory information at all. Additionally, examining individual dyads allows us to see that the child of dyad 1 had an unusually large amount of evaluations.

When talking to the experimenter, children provided significantly more elaborations than repetitions, $t(4) = 3.14$, $p = .04$, as well as evaluations, $t(4) = 3.44$, $p = .03$. Repetitions and evaluations were not significantly different in the experimenter condition. There were no significant differences in the amount of memory information in general or number of children's elaborations between the mother and experimenter tasks, indicating that mothers' scaffolding did affect children's narrative length in a substantial way.

Relationship between Mothers' and Children's Memory Talk

Using paired samples t-tests, we found that mothers talked significantly more than children about the events, t (6) = 5.63, $p < .01$. We also compared the mean number of elaborations as an indicator of how often participants provided new memory information. Not surprisingly, mothers also provided significantly more unique memory information (i.e., elaborations) than did children, t (6) = 3.06, $p = .02$. Mothers also provided significantly more repetitions than did children, t (6) = 2.99, $p = .02$. Thus, although mothers differed in their style of talking to their children, mothers consistently provided more information in their narratives. Because mothers tended to provide more information, however, we also compared proportions of memory talk to account for talkativeness. Mothers did not differ from children in proportions of elaborations or repetitions. Mothers also provided fewer evaluations than did children, t (6) = 3.28, $p = .02$.

Also of interest were the relations between mothers' and children's memory comments. Children's elaborations were significantly related to both mothers' elaborations, $r(5) = .89$, $p < .01$, and mothers' repetitions, $r(5) = .76$, $p < .05$. Children's evaluations were similarly related to both mothers' elaborations, $r(5) = .88$, $p < .01$, and mothers' repetitions, $r(5) = .91$, $p < .01$. Children's repetitions were not significantly correlated with any of the mother variables. Thus, it appears that as mothers provide more memory information in the form of elaborations and repetitions, children are providing more elaborations and evaluations, but not necessarily more repetitions. However, these correlations may be driven by mothers' talkativeness in general in that mothers who talk more overall, have children who talk more. To adjust for talkativeness, we also compared correlations between proportions of mothers' and children's memory talk. No significant correlations emerged when proportions were examined.

In order to further examine the relationship between mothers' autobiographical memory talk and that of their children we conducted contingency analyses on the responses that children gave based on what their mother's previous utterance was. That is, when mothers provide memory information in the form of elaborations, are children more likely to respond with an elaboration, a repetition, or an evaluation? Probabilities were examined in terms of elaborations, repetitions, and evaluations; thus, they do not total one because infrequently used categories were not analyzed. When we examined the group as a whole, it appears that these children respond very similarly whether their mother just provided an elaboration or repetition. The probability that children elaborated mothers' elaborations was .43, and repeated mothers' elaborations was .45. The probability that children elaborated mothers' repetitions was .17, and repeated mothers' repetitions was .18. The probability that children elaborated mothers' evaluations was. 29, and repeated mothers' elaborations was .25. Thus, whether mothers elaborated or repeated information, children responded in a very similar manner.

We also conducted contingency analyses on the probability of the responses mothers gave to children's elaborations, repetition, and evaluations. Mothers were more likely to elaborate than to repeat children's utterances, regardless of whether children provided an elaboration, repetition, or evaluation. The probability that mothers elaborated children's elaborations was .58, and repeated children's elaborations was .38. The probability that mothers elaborated children's repetitions was .44, and repeated children's repetitions was .14. The probability that mothers elaborated children's evaluations was .69, and repeated children's evaluations was .20.

There were also individual differences in how mothers responded to their children's utterances. Interestingly, for both of the more elaborative dyads, dyad 3 and dyad 4, mothers

were more likely to elaborate on children's repetitions than their elaborations or evaluations. Additionally, with the exception of dyad 1, the more repetitive mothers tended to elaborate on children's elaborations more so than their repetitions or evaluations. For all dyads, with the exception of dyad 7, mothers were more likely to repeat children's elaborations than to repeat their repetitions or evaluations. Thus, it is possible that mothers with an elaborative style adapt a different strategy than repetitive mothers when responding to their children's memory responses.

Content

In addition to style, we examined the content of the autobiographical memories provided by the mothers and children. Figure 4 provides the mean frequency of types of content per event for mothers and children. Mothers provided mostly actions and descriptions related to the events they discussed. Mothers also provided a good deal of orientations to people, locations, and time. They provided little content that was classified as intensifiers, affect modifiers, emphasis, or sensory states; however mothers did provide a fair amount of evaluations referring to internal states. Comparisons were also made between mothers' and children's content. Because mothers tended to contribute more information in general across categories, we examined the proportions of each type of memory talk to account for talkativeness. Mothers talked significantly more about descriptions, $t(6) = 2.83$, $p = .03$; intensifiers, $t(6) = 3.36$, $p = .02$; and affect modifiers, $t(6) = 2.52$, $p = .05$. Notice that children rarely talked about the latter two categories, which could explain why mothers talked proportionately more about these two categories. Thus, with the exception of descriptions, mothers and children's proportionate use of content was very similar.

We were also interested in whether mothers' use of particular information was related to children's use in the same conversation. Again, we compared proportions of mothers' and children's content in an attempt to control for total amount of talk. Using Pearson product-

moment correlations, we found that mothers' and children's proportional use of the same type of content was significantly related for descriptions, $r(5) = .92$, $p < .01$; affect modifiers, $r(5) = .93$, $p < .01$; emphasis, $r(5) = .88$, $p < .01$; intensifiers, $r(5) = .91$, $p < .01$; orientations to people, $r(5) = 1.00$, $p < .01$; and spatial-temporal orientations, $r(5) = 1.00$, $p < .05$ as shown in Table 3. Of course, these content categories are not independent of one another, and some inter-category correlations are inevitable. For example, a high correlation between orientations to people and internal states, $r(5) = .93$, $p < .01$ would be expected because in order to talk about a person's state of mind you must introduce a character.

We also examined children's memory content in the mother condition compared to the experimenter condition. Figure 5 demonstrates the mean frequency of types of content for children across the two conditions. A similar pattern as the mother condition emerged as children talked mostly to the experimenter about actions and descriptions, followed by orientations. There were no significant differences between the mother and experimenter condition for any type of content, in terms of frequency of proportion. There were also no significant correlations between types of content across conditions. This suggests that, at least at this point in their development, children with SLI are not significantly affected by mothers' scaffolding in terms of narrative length (as mentioned above) or content as compared to an unfamiliar adult.

Children's Age and Language

Finally, we examined the relations between children's age, language, and amount of information they recalled and the mothers' conversation variables by conducting Pearson product-moment correlation analyses. In this sample, mothers tended to provide more elaborations to the child if she or he was older, $r(5) = .82$, $p < .05$. Mothers' use of repetitions was not significantly related to age. Older children also tended to provide more evaluations of

the narrative, $r(5) = .90$, $p < .01$; however, this correlations may be driven by the fact that one of the oldest children had an unusually large number of evaluations. Children's use of elaborations and repetitions were not significantly related to age. None of the child language variables were significantly related to the mothers' conversation variables. Specifically, when looking at the SPELT scores, there appeared to be very little relation to any of the variables.

Summary of AM Narrative Results

The first aim of this study was to examine mothers' style of talking to children with SLI about the past. The results support the hypothesis that mothers of children with SLI are more likely to have a repetitive style of talking about autobiographical memories as five of the seven mothers demonstrated a low-elaborative (or repetitive) style. The second aim was to examine children's AM narratives with mothers in terms of style and content. Children provided significantly more unique memory information than repetitions; however, there were individual differences in children's participation in the narratives. We also compared children's style to their mother's style of talking about the past. When examining frequency of memory talk, there was evidence of a relation between mother's and children's elaborations and repetitions; however, when examining proportions of memory talk these correlations were no longer significant. In addition, when examining conditional probabilities, children did not respond differentially based on whether mothers provided elaborations or repetitions. Mothers, on the other hand, were more likely to elaborate children's utterances regardless of the type. Thus, there is not clear support for the hypothesis that mothers' style of talking about the past has a direct effect on children's memory talk.

We also compared mothers' and children's content as part of the second aim of the study. Mothers' and children's proportionate use of the same types of content was very similar; they

both provided mostly actions, descriptions, and orientations to people. This is not surprising considering that when participating in mutual dialogues much of what is discussed is dependent on what the other participant is saying. Additionally, there were significant correlations between mothers' and children's proportional use of the same types of content for six of the nine content categories. Thus, there is support for the second hypothesis that mothers' and children's content would be related in that mothers and children talked about very similar aspects of their shared AM narratives.

Finally, the third aim, for which there was no specific hypothesis, was to compare children's memory responses with their mothers compared to an experimenter. Children did not provide significantly longer narratives or provide more memory information with mothers. Thus, mothers' scaffolding did not result in children having richer narratives when narrating a past event with their mothers. We also compared children's AM content when talking to their mothers compared to an experimenter as part of the third aim. Children seemed to talk about similar types of content with mothers versus an experimenter. Additionally, as with their memory contribution, children's content was not significantly different in terms of proportions of use or correlations between conditions. These results also suggested that mothers' scaffolding did not provide children with the support to provide more information in terms of content or that the types of information children provided with mothers was related to what they provided with another conversational partner.

Examples of Mother-Child Conversations about the Past

To illustrate what the AM narratives of these children with SLI and their mothers were like, provided below is an example from both a high-elaborative mother and a low-elaborative mother. The first narrative presented here is from the dyad in which the mother had the highest

ratio of elaborations to repetitions; her daughter was 58 months old at the time of the conversation. In this narrative, mother and child recalled a trip to visit the child's uncle.

M: Yup, and what was your favorite thing to do when we were there?
C: Watch movies.
M: No, we didn't watch movies, what did you jump on?
C: Um, um, I don't know.
M: You don't remember jumping on the trampoline?
M: Yes, you do, we all jumped on the trampoline.
M: You and Cooper and all your cousins.
M: And you jumped and you jumped so high we thought you were going to jump all the way up to the.
C: Clouds.
M: Clouds, yeah.
M: And then we stayed in the, where did we spend the night?
C: Um, at Bubba's?
M: No, well you did spend one night at Uncle Bubba's house.
M: One you stayed in a hotel room, remember that?
C: No I don't remember a hotel.
M: And who did you sleep with in the big bed?
C: Um, I don't know.
M: You slept in bed with?
C: Gaga?
M: No, with your brother, with Cooper.
M: Do you remember?
M: And he snored!
M: You remember that?
M: And you were like "Mommy, Cooper won't be quiet, he's snoring."
M: And you went to bed very, very late.

In this interaction, the mother provided the child with many elements of the event. Even when the child replied with a memory placeholder or incorrect information, the mother elaborated on what the child said and directed the conversation to different aspects of the event. Although the child did not contribute much new information to the conversation, the mother maintained a cohesive and sequential narrative.

The second dyad presented here is that of one of the low-elaborative mothers and her 53-month-old girl. In this narrative, mother and child recalled a trip to the mountains.

M: Remember when we went to the mountains?

C: Mountains.
M: Can you tell her what all we saw?
C: Mmm.
M: What all did we see on vacation?
M: What were the things that we saw?
M: What kind of animals did we see?
C: Lions.
M: The lion?
M: And what else?
C: Deer.
M: Deer.
M: And what else did we see?
C: Uhm, uhm.
C: With teeth.
M: What were those big animals that we saw?
C: (unintelligible)
M: What were they?
M: Remember we went up that big tram and we saw?
M: In the cage?
M: And they would bite you if you got too close.
M: Remember what they were?
C: Lions.
M: No, they weren't the lions.
C: Baby lions.

In this conversation, the mother repeatedly asked the child the same question, probing for an answer. Although the child did provide some memory information, the mother repeated the child's responses and prompted for more information rather than elaborating on them. Unlike the first conversation, this mother provided few story elements and did not embellish the event with details.

Storybook Narratives

The fourth aim of this study was to compare mothers' and children's AM narratives to their storybook narratives. We first compared children's style and content to mothers' style and content within the storybook narrative task. Next, we compared children's storybook narratives with mothers to their storybook narratives with an experimenter, Finally, we directly compared children's AM narratives to their storybook narratives with mothers in terms of style and content.

All seven children participated in co-constructing a book narrative with their mothers and with an experimenter. Mothers were asked to share the book with their children as they would normally do, whereas the experimenter provided minimal support for children during this task. Table 4 presents the total number of on-topic utterances and total number of elaborations for mothers and children in the mother-child book narratives and for children in the experimenter-child book narratives. As with the AM narratives, there was considerable variability across dyads in terms of how much mothers and children contributed to the storybook narratives.

Maternal Style

Maternal style was assessed in the same way for the storybook narratives as it was for the AM narratives—the ratio of elaborations over repetitions. There appears to be little consistency in parental style between the two types of narrative tasks; only three of the seven mothers were classified in the same way in the two tasks. Three mothers who were classified as low-elaborative in the AM narrative task were classified as high-elaborative in the storybook task; one mother who was classified as high-elaborative in the AM narrative task was classified as low-elaborative in the storybook task. As Table 5 shows, four mothers were classified as high-elaborative for the storybook condition. Dyads two and four had very low ratio scores and thus provided many more repetitions than elaborations. Additionally, mothers of these two dyads had the shortest narratives of the group in terms of on-topic talk and elaborations.

Children's Participation

Figure 7 shows the total frequencies of children's elaborations, repetitions, and evaluations across all dyads for the mother-child storybook narrative. As with the AM narrative, the child of dyad 1 had an unusually large amount of evaluations. Despite this outlier, children provided significantly more elaborations than evaluations $t(6) = 3.08$, $p = .02$ and repetitions t

(6) = 4.83, p = <.01.Thus, for the most part children were able to contribute considerable information to the storybook narratives.

With the experimenter, children provided significantly more elaborations than evaluations, t (6) = 11.77, p <.01; and repetitions, t (6) = 5.09, p <.01. There were no significant differences in total amount of narrative information in general or in how many elaborations, repetitions, or evaluations children provided with mothers compared to the experimenter when narrating the storybook. In terms of proportions, children provided significantly more evaluations with mothers compared to the experimenter, (6) = 3.74, p = .01. This suggests that, as with the AM narratives, children with SLI are not benefiting from their mother's scaffolding during the storybook task in a substantial way. In terms of relations between children's narratives in the two tasks, their use of evaluations with mothers was significantly related to their use with the experimenter in terms of frequency, r(5) = .80, p = .03; and proportion, r(5) = .85, p = .02. Elaborations and repetitions were not related.

Relationship between Mothers' and Children's Storybook Narratives

Using paired samples t-tests, we found that as with the AM narratives mothers talked significantly more than children about the storybook, t (6) = 3.82, p < .01. Elaborations were also compared as an indicator of how much unique information each participant provided to the narrative. Unlike the AM narratives, there was no significant difference in how many elaborations mothers provided compared to children. Similar to the AM task, mothers provided significantly more repetitions than did children in the storybook narratives, t (6) = 3.40, p = .02. Interestingly, when proportions of narrative information were compared, children provided significantly more elaborations than mothers. Evaluations and repetitions were not significantly different. Figure 6 shows mothers' and children's elaborations per dyad. Three of the seven

children provided more elaborations than mothers, although this was not a significant difference. Thus, there appears to be a different pattern of results when maternal style was compared between the two narrative conditions.

There were no significant relationships between mothers' and children's style (i.e., elaborations, repetitions, and evaluations) for the storybook narratives in terms of frequency of use. As mentioned above, mothers also talked more than children during the storybook. Thus, we also examined correlations between mothers' and children's proportions of narrative talk. There were also no significant correlations between mothers' and children's style in terms of proportions.

Content

As with the AM narratives, we also examined the content of the storybook narratives provided by each dyad, which is shown in Figure 8. Mothers provided mostly orientations to people, followed by actions, and descriptions, spatial-temporal orientations, and internal states. The greater number of orientations to people in the book condition is most likely due to a slight difference in coding of the two narrative types. For the AM narratives, it was assumed that mother and child participated in the event. Thus, utterances were only coded for orientations to people when another person was introduced to the event. Because the storybook narratives involve fictional characters, there were many more opportunities to discuss orientations to main characters.

Comparisons were made between mothers' and children's content. Because mothers tended to provide more information to the narratives, we also examined the proportions of each type of content. When proportions were examined, actions was the only content category for which mothers provided significantly more information, $t(6) = 3.58$, $p = .01$. We were also

interested in the relationship between mothers' use of particular types of content and children's use of the same type of content. Using Pearson product-moment correlations, we found that mothers' and children's proportional use of descriptions $r(5) = .77$, $p = .04$; affect modifiers, $r(5) = .81$, $p = .03$; emphasis, $r(5) = .80$, $p = .03$; internal states, $r(5) = .82$, $p = .02$; and sensory states, $r(5) = .88$, $p = <.01$ was significantly related. As Table 6 shows, there were virtually no other significant relationships across content categories. Interestingly, the three content categories which were talked about most frequently (actions, orientations to people, and spatial-temporal orientations) were not significantly related between mothers and children.

We also examined children's narrative content in the mother condition compared to the experimenter condition, which is shown in Figure 9. Parallel to the AM narrative task, children talked very similarly to the experimenter as they did with mothers. The only type of content for which children talked significantly more with mothers was spatial-temporal orientations $t(6) = 4.5$, $p < .01$, although there were no significant differences in terms of proportional use of any types of content. Additionally, spatial-temporal orientations, $r(5) = .77$, $p = .05$ was the only content categories for which there was a significant correlation for children in the mother condition compared to the experimenter condition. Again, when adjusting for talkativeness, there were no significant differences in children's proportional use of content with mothers compared to the experimenter.

Comparisons between AM and Storybook Narratives

Narrative style. The first question of interest was whether maternal style was similar between the two narrative contexts. As mentioned above, there was little consistency between the two as measured by the ratio of elaborations to repetitions. Pearson product-moment correlations confirmed that there was no significant relationship between the two ratio scores.

Next, maternal elaborations in the AM narratives were compared to maternal elaborations in the storybook narratives. Maternal elaborations were highly correlated, although not significant, $r(5) = .61$, $p = .15$; and maternal repetitions were significantly related, $r(5) = .96$, $p < .01$ between the two narrative contexts. However, mothers' repetitions in the storybook were also significantly related to mothers' elaborations, $r(5) = .95$, $p < .01$; and mothers' evaluations, $r(5) = .81$, $p < .05$ during the AM task. These cross correlations suggest that mothers total amount of talk may be driving these correlations. In fact, when proportions were examined, mothers' use of evaluations was the only type of narrative talk that was significantly related between the two narrative contexts, $r(5) = -.76$, $p = .05$. This suggests that there was little consistency in terms of maternal style between the two narrative tasks in that the only significant correlation was an inverse relationship. Thus, in terms of style ratio scores and proportions of types of narrative talk, mothers appear to show little consistency between the AM and storybook narratives.

Narrative content. Comparisons of mothers' use of content in both narrative contexts were examined to assess similarities across tasks. There were no significant correlations between mothers' total content or proportional content in AM narratives compared to storybook narratives. Comparisons of children's use of content in both narrative contexts with mothers were also examined. In terms of total content, the only significant within category correlation between AM narratives and storybook narratives was found for emphasis, $r(5) = .76$, $p = .05$. In terms of proportions of content, there was one negative within content category correlation, which was for spatial-temporal orientations, $r(5) = -.93$, $p < .01$. Thus, there was little consistency in mothers' and children's content across the two narrative tasks.

Children's narratives with different conversational partners. We also compared children's narrative talk in the two tasks with experimenters. In terms of style frequency, there

were no significant correlations between children's use of elaborations, repetitions, or evaluations between the AM task and the storybook task. In terms of proportions, there were no significant positive correlations, and one significant negative correlation between children's repetitions in the AM task and children's repetitions in the storybook task, $r(5) = -.99$, $p < .05$. Thus, children showed no consistency between the two narrative tasks when their conversations partner was an unfamiliar adult. Comparisons were also made between children's content when engaging in the AM narratives task and the storybook task with the experimenter. In terms of frequency and proportions of content, there were no significant relations within content categories between the two narrative tasks.

We were also interested in comparing children's AM and storybook narratives with mothers and with experimenters to address the question of whether children's narrative contribution during the AM task is related to their contribution in the storybook task with the same conversational partner. When examining total frequency of narrative talk with mothers, children's elaborations during the AM task were significantly related to elaborations, $r(5) = .79$, $p < .05$; and evaluations, $r(5) = .77$, $p < .05$ during the storybook task. Additionally children's evaluations during the AM task were significantly related to elaborations, $r(5) = .79$, $p < .05$; and evaluations, $r(5) = .99$, $p < .01$ during the storybook task. Repetitions were not related. However, when proportions were examined, children's evaluations in the two narrative tasks were the only category for which there was a significant positive relationship, $r(5) = .90$, $p < .01$. In addition, there were significant negative correlations for children's evaluations in the AM task and elaborations in the storybook task , $r(5) = -.88$, $p < .01$; and children's repetitions in the AM task and evaluations in the storybook task, , $r(5) = -.95$, $p < .01$. Thus, children showed little

consistency, with the exception of evaluations, when talking to mothers about past events compared to a storybook.

Summary of Storybook Narrative Results

Within the fourth aim of comparing mothers' and children's AM narratives to their storybook narratives, we first compared children's style and content to mothers' style and content within the storybook narrative task. Although mothers talked significantly more about the storybooks than did children and provided more repetitions, they did not provide more elaborations. In fact, when examining proportional use of elaborations, children provided significantly more. There were also no significant correlations between mothers' and children's narrative talk in terms of elaborations, repetitions, or evaluations. Thus, the interaction between mothers and their SLI children appears to be different when sharing a storybook. In terms of content, results were similar to the finding from the AM narratives in terms of comparisons of mothers' and children's content. Mothers and children used proportionately very similar types of content. In addition, mothers' and children's use of the same content was significantly related for five of the nine content categories. Thus, there was support for the hypothesis that mothers' and children's content would be related as they talked about very similar content in the storybook task; whereas, the hypothesis that mothers' and children's style would be related was not supported.

The second question of the fourth aim was addressed by comparing children's narratives with mothers to their narratives with an experimenter. Similar to AM narratives, children's storybook narratives were not significantly different in terms of total length, or frequency of elaborations, repetitions, and evaluations. Children, however, provided proportionately more evaluations with mothers. Thus, children with SLI did not provide significantly more information

when scaffolded by their mothers. In terms of content, children talked in very similar ways with mothers versus an experimenter. Children talked about one content category more with mothers, however there were no differences in terms of proportions of talk. There was also only one content category that was related between the mother and experimenter condition, but none were related when talkativeness was taken into account. Thus, similar to the AM results, children's did not seem to benefit from mothers' scaffolding; and children's content with mothers was not related to their content with an unfamiliar adult.

Lastly, the third question of the fourth aim involved direct comparisons of the AM narratives and storybook narratives. In terms of mother's style of sharing a storybook, there was little consistency between the AM task and storybook task. Only three mothers were classified in the same way in both tasks. In terms of children's style with mothers, evaluations were consistent between the two tasks; although this may be a result of one child's unusually large amount of evaluations. Additionally, children showed no consistency in their style between tasks with an experimenter. Finally, in terms of proportions of content, there were no relations within content categories for children and mothers, or children and the experimenter. Thus, mothers' and children's AM narratives did not relate more broadly to the storybook narrative task in terms of style or content.

Examples of Mother-Child Storybook Narratives

To illustrate what the storybook narratives of children with SLI and their mothers were like, provided below are examples from a high-elaborative mother and a low-elaborative mother. The first narrative is from dyad 7, and they are narrating *Frog Goes to Dinner*. This mother was classified as high-elaborative for the storybook condition; her daughter was 50 months at the time of this conversation.

M: Well, what happened to the frog?
C: He's in his pocket.
M: It was in the pocket, doesn't look like he's in the pocket anymore, does it?
M: He jumped out.
M: And he jumped right into that man's saxophone.
M: Oh no!
M: Now the man's looking,
M: He's trying to play his music and he can't play his music with a frog in his saxophone.
M: Oh, where'd the frog go?
C: On his head.
M: Uh huh.
M: And now oh, now look the whole band is falling apart!
M: Oh no, he's causing chaos!
M: That bratty little frog.
M: Look!
M: Oh no!
M: The frog is on the plate and the lady sees the frog and what do you think she's gonna do?

In this conversation, the mother provides a rich narrative and elaborates on what is happening in the story. Although, she does not elicit much information from the child, she sustains a cohesive and causally linked narrative.

The second dyad presented here is a mother classified as low-elaborative in the storybook condition and her 68-month-old daughter. They are narrating *Frog Where Are You*?

M: What, what's he looking at right now?
C: The shoe.
M: He's looking in the shoe.
M: Do you think he's in the shoe?
M: Do you think the frog is?
M: No?
C: Mm mm.
M: What's, what's the puppy doing?
C: Looking.
M: Looking where?
C: Outside.
M: No the puppy's not looking outside.
M: Oh over here he is.
C: Mm hmm.
M: What happened to the puppy?
C: He got stuck to the.

M: He got stuck in the frog's bowl?
C: Mm hmm.
M: What, what are they doing over here though?
M: What's that little boy doing?

In this conversation, the mother asks many prompting question, which are considered a less informative type of question than questions that provide detail. The child did not provide much detail to the narrative, and when she did the mother does not elaborate on her responses. Unlike the first dyad, this mother did not provide as much embellishment to the narrative.

Table 5-1. General characteristics of mother-child and experimenter-child AM narratives.

	Mean number of utterances			Mean number of elaborations		
	Mother	Child with Mother	Child with Exp	Mother	Child with Mother	Child with Exp
Dyad 1	72.33	44.33	--	30.67	13.33	--
Dyad 2	37.33	21.67	3.50	16.67	10.67	2.00
Dyad 3	29.67	17.67	7.67	15.33	7.33	3.00
Dyad 4	25.00	16.67	10.67	12.67	10.33	7.00
Dyad 5	27.33	14.00	6.33	7.00	5.00	4.33
Dyad 6	14.00	8.67	--	5.33	1.00	--
Dyad 7	14.33	9.67	14.00	4.33	1.00	4.67
Mean	31.43	18.95	8.43	13.14	6.95	4.20
SD	(19.85)	(12.07)	(4.04)	(9.14)	(4.84)	(1.89)

Table 5-2. Proportion of mothers' elaborations to repetitions per dyad in the AM narrative task.

Dyad 1	1.59
Dyad 2	1.48
Dyad 3	4.81
Dyad 4	2.62
Dyad 5	1.28
Dyad 6	1.78
Dyad 7	1.07

Table 5-3. Correlations among mother and child AM content proportions

	Children's Content								
Mothers' Content	Act	Des	Ori_p	Ori_st	Eval_am	Eval_em	Eval_int	Eval_is	Eval_sen
Act	**.31**	-.56	.50	.14	.06	.27	-.78*	.28	.31
Des	-.06	**.92****	-.88**	-.46	-.72	-.78*	.15	-.42	-.22
Ori_p	.36	-.67	**1.00**	.08	.66	.58	.14	.04	-.26
Ori_st	-.80*	-.78*	.08	**1.00**	.70	.82*	.00	.85*	.84*
Eval_am	-.39	-.67	.51	.66	**.93****	.88**	.61	.32	.15
Eval_em	-.31	-.63	.35	.70	.75	**.88****	.35	.24	.29
Eval_int	-.23	-.06	.13	.21	.55	.40	**.91****	-.17	-.28
Eval_is	.05	-.87*	.93**	.38	.76*	.72	.00	**.40**	.10
Eval_sen	-.35	-.30	-.32	.62	.03	.42	-.42	.32	**.72**

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

Table 5-4. General characteristics of mother-child and experimenter-child book narratives.

	Total utterances			Total elaborations		
	Mother	Child with Mother	Child with Exp	Mother	Child with Mother	Child with Exp
Dyad 1	208	127		92	55	
Dyad 2	59	36	42	17	29	14
Dyad 3	88	24	19	57	18	13
Dyad 4	32	35	7	10	28	4
Dyad 5	110	71	23	52	46	9
Dyad 6	64	34		33	24	
Dyad 7	96	21	32	56	12	22
Mean	93.86	49.71	24.60	45.29	30.29	12.40
SD	(56.66)	(37.78)	13.24	(27.91)	(15.22)	6.66

Table 5-5. Proportion of mothers' elaborations to repetitions per dyad in the storybook narrative task.

Dyad 1	1.11
Dyad 2	0.41
Dyad 3	2.48
Dyad 4	0.78
Dyad 5	2.06
Dyad 6	2.05
Dyad 7	4.67

Table 5-6. Correlations among mothers' and children's book content proportions

	Children's Content							
Mothers' Content	**Act**	**Des**	**Ori_p**	**Ori_st**	**Eval_am**	**Eval_em**	**Eval_is**	**Eval_sen**
Act	**.51**	.38	.08	.67	.31	-.34	-.70	.30
Des	-.07	.77*	-.02	.19	-.30	-.34	-.49	.70
Ori_p	-.48	-.19	**.28**	-.79*	-.50	.34	.39	.03
Ori_st	.31	-.24	-.12	**.63**	.57	-.19	-.09	-.01
Eval_am	.60	-.64	.39	.23	**.81***	.25	-.25	-.34
Eval_em	.53	-.30	-.10	-.37	.37	**.80***	-.29	-.41
Eval_is	-.74	-.07	-.24	-.52	-.62	-.04	**.82***	-.27
Eval_sen	-.22	.49	.15	.05	-.16	-.23	-.33	**.88***

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

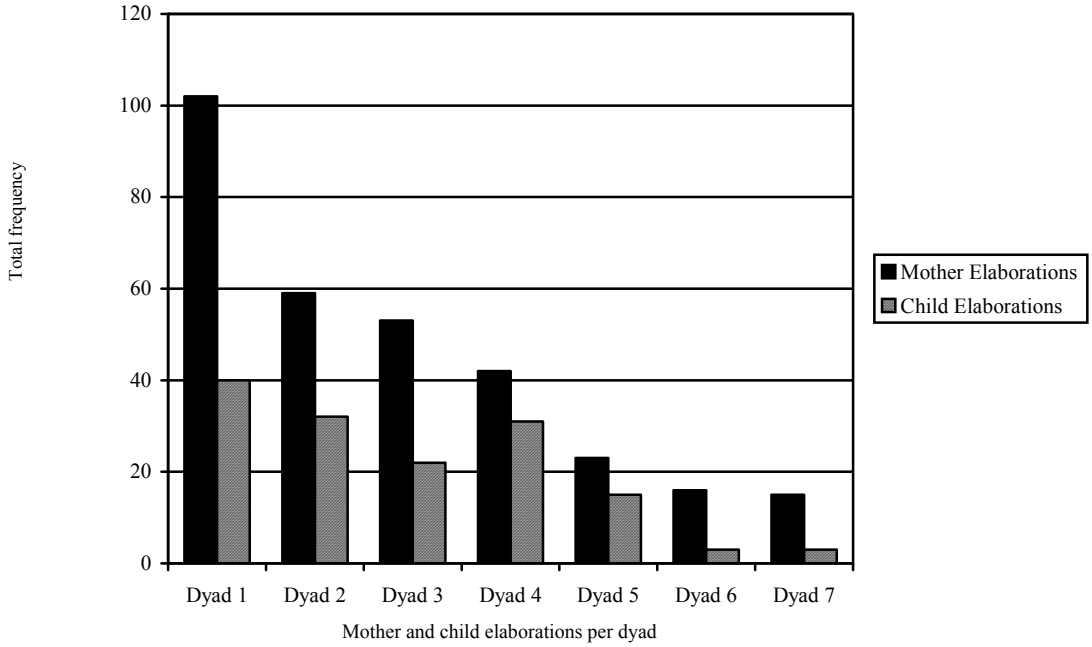
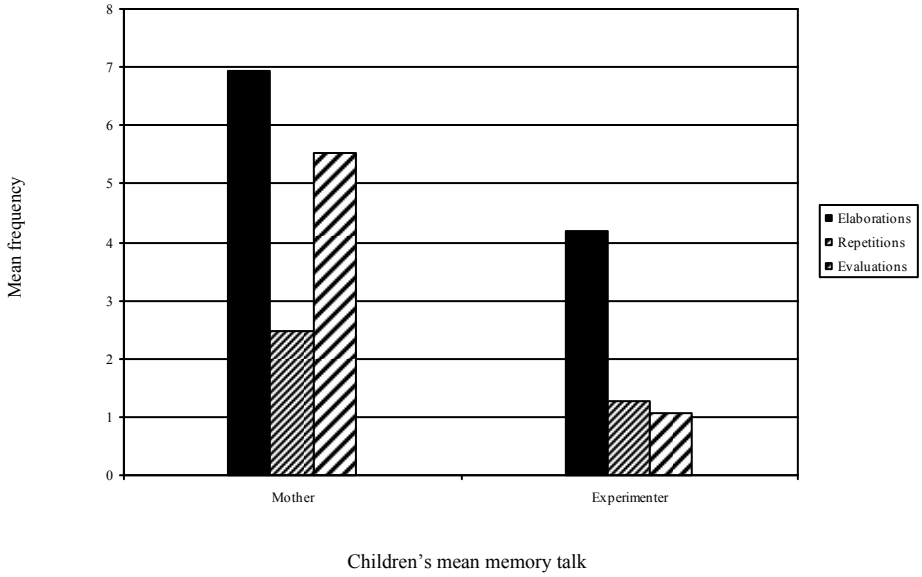


Figure 5-1. Total frequency of mothers' elaborations and children's elaborations per dyad for the AM narrative.



Note: Mother condition, N = 7; Experimenter condition, n = 5.

Figure 5-2. Mean frequency of children's elaborations, repetitions, and evaluations with mothers and an experimenter.

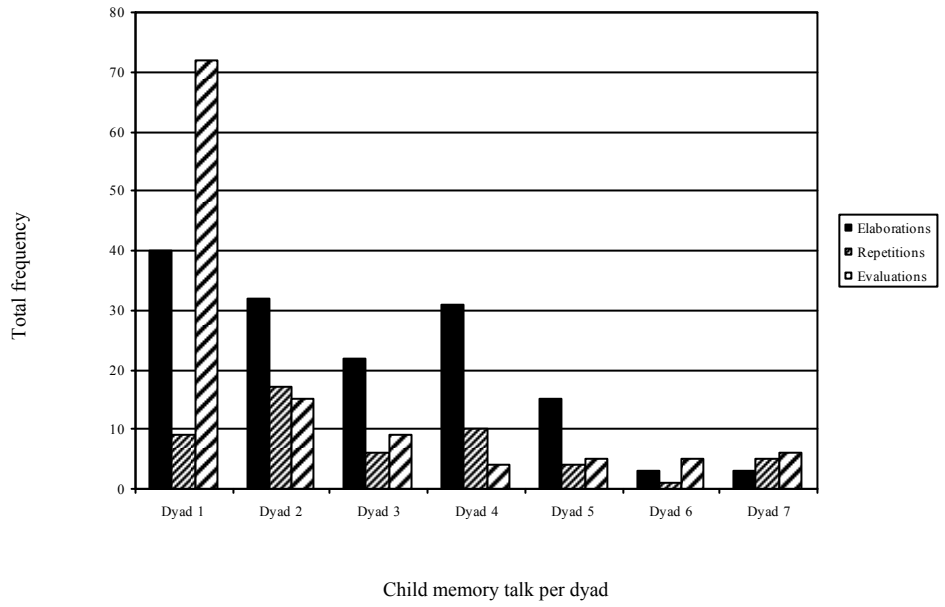


Figure 5-3. Total frequency of children's elaborations, repetitions, and evaluations per dyad for AM narrative with mothers.

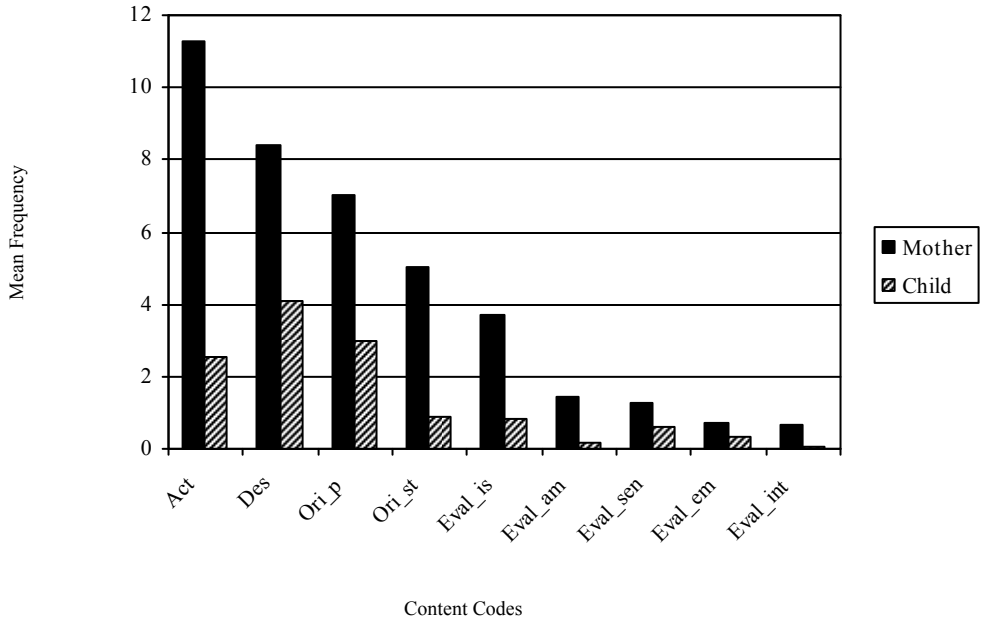


Figure 5-4. Mean frequency of content codes for AM narratives for mothers and children.

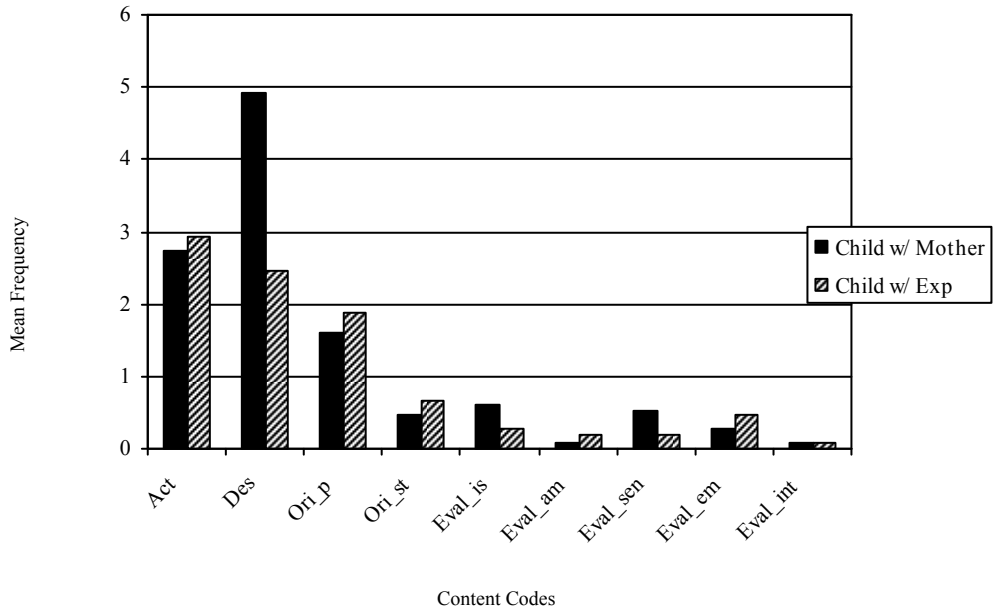


Figure 5-5. Mean frequency of content codes for children's personal narratives with mothers and an experimenter.

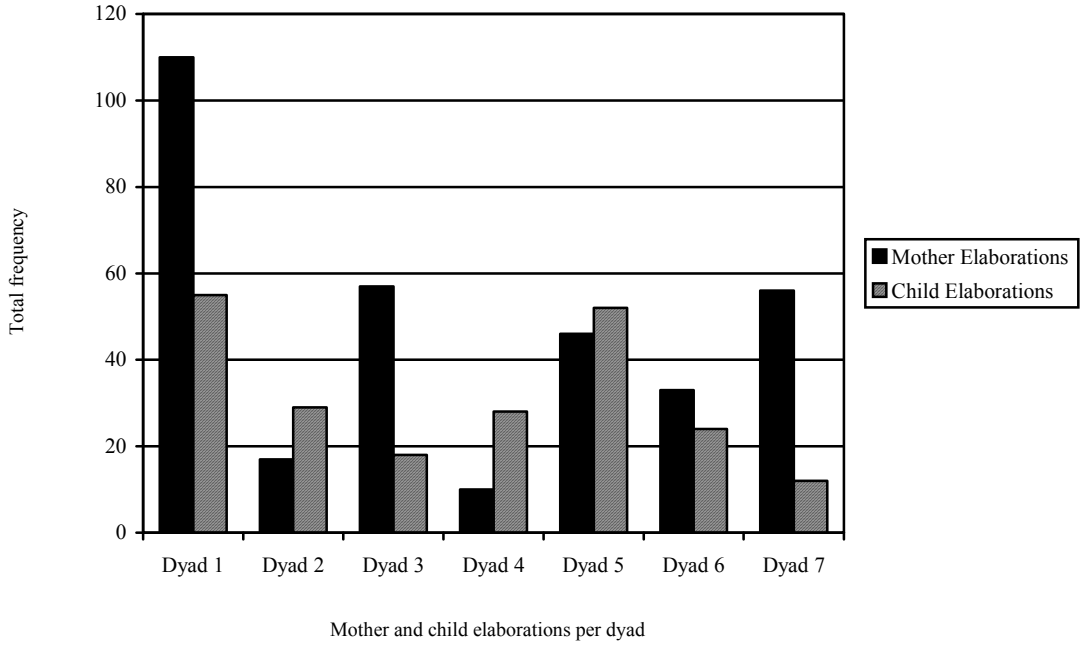


Figure 5-6. Total frequency of mothers' elaborations and children's elaborations per dyad for the book narrative.

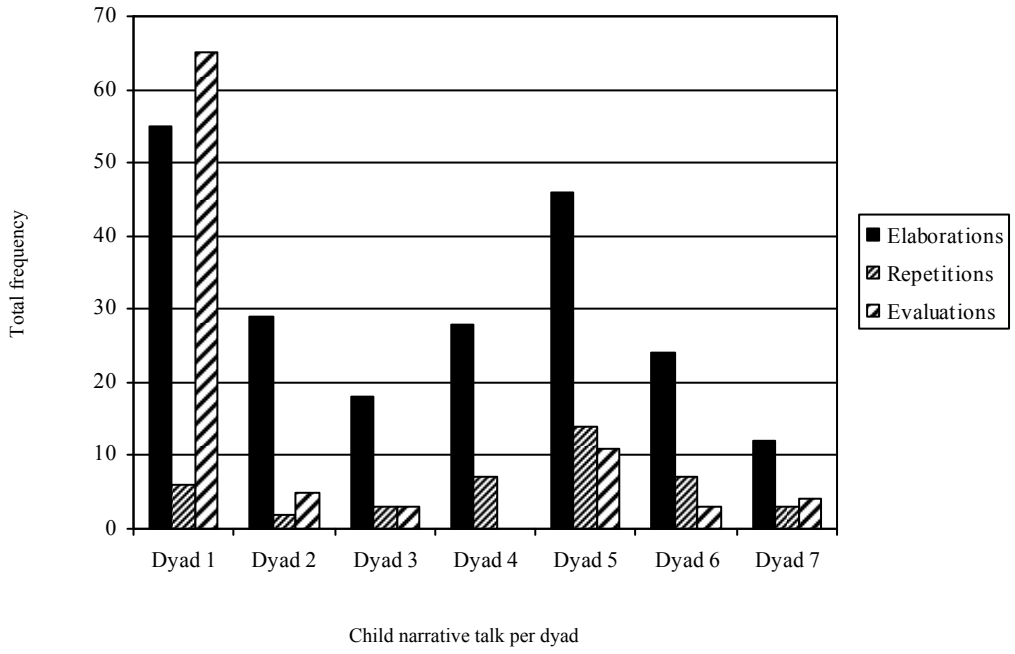


Figure 5-7. Total frequency of children's elaborations, repetitions, and evaluations per dyad for storybook narrative.

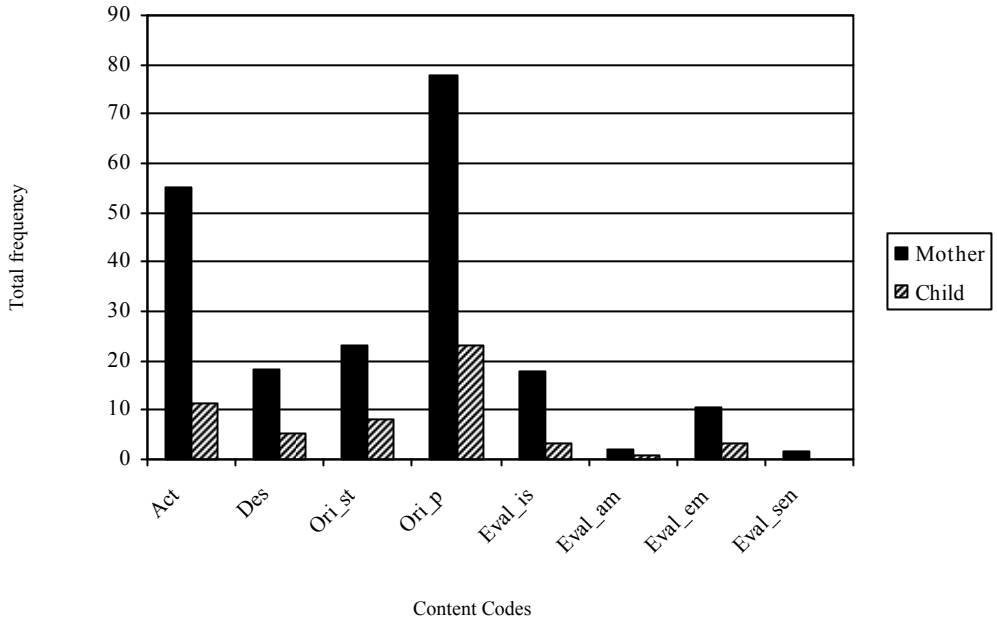


Figure 5-8. Total frequency of content codes book narrative for mothers and children.

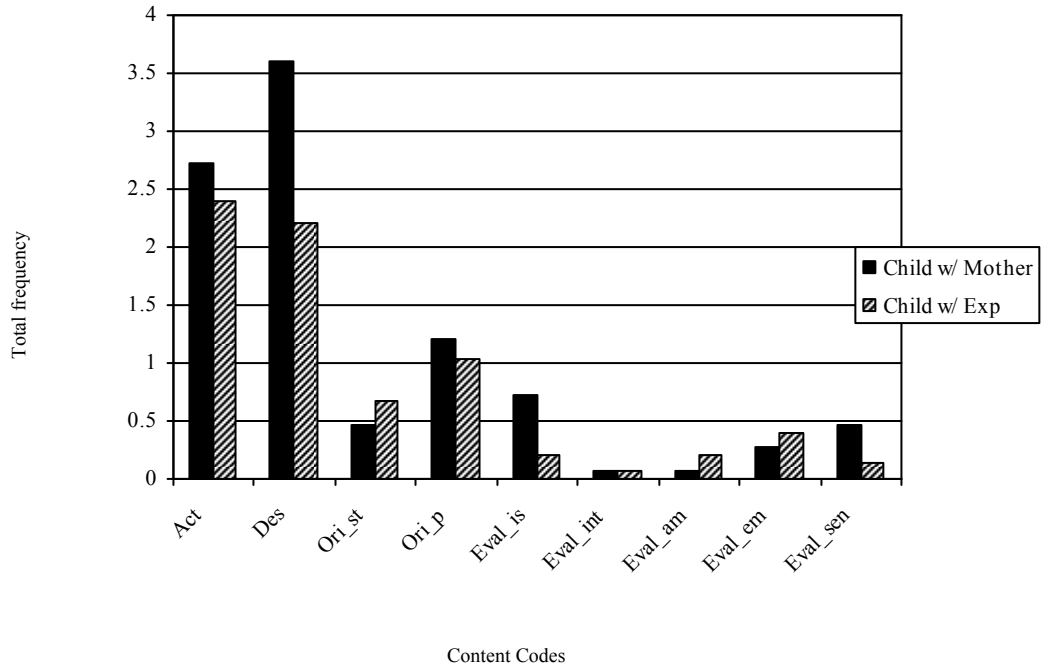


Figure 5-9. Total frequency of content codes for children's book narratives with mothers and an experimenter.

CHAPTER 6
DISCUSSION

The primary purpose of this project was to examine the co-construction of AM narratives of mothers and their children with SLI. The first aim was to classify mothers in terms of their style of talking about the past. This classification is significant because researchers have found that high-elaborative parents have children who develop more sophisticated AM skills. The tendency for parents of SLI children to be more directive in their conversations may impact their children's subsequent AM development. The second aim was to examine and children's narrative style and content within each task and to compare their style and content to that of their mothers. Researchers have not yet examined AM narratives in children with SLI in terms of style. Thus, this study was a first step in describing what their AM narratives are like and how they may be related to mothers' narratives. The third aim was to determine how children's narratives during both mother elicited tasks compared to children's narratives with the experimenter. This comparison was assessed in order to determine if the scaffolding provided by mothers resulted in children having richer narratives with mothers compared to an unfamiliar adult. A fourth aim was to compare children's AM narratives to their storybook narratives. Although there is extensive literature on narrative development in both normally developing and language impaired children, not much research has linked how developing the skills to narrative an AM relates to other narrative contexts such as storybooks.

AM Narratives

Maternal Style

The first aim of this study addressed whether mothers adopted a more elaborative or repetitive style when conversing about their past with their SLI children. It was expected that mothers of children with SLI might be more repetitive than elaborative because of their

children's limited language abilities. This hypothesis was supported. Five of the seven mothers used a clearly low-elaborative style, whereas only two of the mothers were classified as high-elaborative. This compares to a rate of 50% of elaborative mothers for typically developing children (Reese et al.,1993). More generally, mothers in our study provided on average 25.52 units of information per event in terms of elaborations, repetitions and evaluations. In contrast, Lewis (1999) reported that mothers provided an average of 36.15 and 33.54 units of information in the form of elaborations, repetitions, and evaluations per event for younger and older children, respectively. Thus, compared to at least one other report, mothers and children with SLI provide less information than previously studied typical mother-child dyads.

Children's Style

In terms of children's contributions to the AM narratives with mothers, children with SLI provided mostly elaborations in their memory conversations, followed by evaluations, and lastly repetitions. Thus, children with SLI were able to contribute to the memory narratives in a substantial way, although they may be doing so at a somewhat lesser rate than their peers. In fact, with mothers and with the experimenter, children provided significantly more elaborations than repetitions. However, when we examined children's individual differences in the mother-elicited AM narratives, three of the children provided more evaluations than elaborations, and two of these children provided very little information overall. Thus, for at least part of our sample, children were predominantly providing responses in the form of negations or affirmations of mothers' previous utterances, which is a less informative type of response than an elaboration. There were no differences in children's AM narrative contributions in terms of total length, total memory talk, or total elaboration with mothers as compared to their narratives with experimenters.

Children with SLI talked somewhat less about the events as compared to dyads from previous studies of normally developing children. The children with SLI provided an average of 6.95 unique pieces of information per event. Typically developing children generally provide more information with mothers. For example, Lewis (1999) used a very similar protocol in terms of narrative elicitation and coding and reported that younger children (*M* = 38 months; n = 16) provided an average of 10.38 (*SD* = 5.05) elaborations per event, whereas older children (*M* = 64 months; n = 16) provided an average of 14.40 (*SD* = 8.76) elaborations per event.

Relationship between Mothers' and Children's Style

The second aim of this study was to compare children's style to their mothers' style of talking about the past. There were no significant relations when comparing children's and mothers' proportional use of elaborations, repetitions, and evaluations. Additionally, the contingent analyses of mother-child utterances showed that children responded to mothers in a very similar way regardless of whether mothers provided elaborations or repetitions. On the other hand, mothers were more likely to elaborate on any of the children's utterances than to repeat them. Additionally, the two high-elaborative mothers were more likely to elaborate on children's repetitions than their elaborations or evaluations. This finding is consistent with previous studies (Reese et al., 1993; Fivush & Fromhoff 1988). These researchers suggested that mothers' elaborations are not simply related to children's memory skills; rather, high-elaborative mothers elaborate when children are not providing new information in order to engage them in the narrative. Subsequently, children with SLI may also develop richer AM skills if their parents have a high-elaborative style of talking about the past.

Finally, Pearson product-moment correlations were conducted for children's age, language, memory information, and mother variables. Mothers provided significantly more

elaborations to children the older they were, whereas mothers' repetitions were not significantly related to age. Although these results cannot indicate how mothers' memory talk is changing over time, this finding is in line with other researchers who have found that mothers, regardless of whether they are initially classified as repetitive or elaborative, tend to become more elaborative over time. Researchers have also found that mothers' repetitions decrease with time (Reese et al., 1993; Farrant & Reese, 2000).

Mothers' and Children's Content

Also part of the second aim of this study was the nature of the content of mother-child conversations about the past and how mothers' and children's content was related. Both children and mothers used the same type of information in describing past experiences. Both overwhelmingly discussed actions and descriptions related to events most frequently. Mothers also referred to spatial-temporal and person orientations, and internal states a fair amount. Mothers seemed to show similar patterns in terms of what they talked about, although there were also variations among dyads. In both tasks, mothers tended to provide more information than children. In terms of proportions of content categories used, mothers talked significantly more about descriptions, intensifiers, and affect modifiers in the AM task.

This relative distribution of memory content is comparable to what Haden et al. (1997) found in that mothers in their sample also focused mostly on actions and descriptions, relatively less on orientations, and talked least about evaluations when children were 40 months old and later at 70 months. Thus, it seems that the content of the memory narratives of mothers and their children with SLI is very similar compared to mothers with normally developing children even if the length of their narratives is shorter.

We also examined the relationship between mothers' and children's concurrent use of content in the two narrative tasks. For the AM narratives, we examined proportions of content use to account for participants' talkativeness. Mothers' proportional use of descriptions, affect modifiers, emphasis, intensifiers, orientations to people, and spatial-temporal orientations were significantly related to children's concurrent use of these same types of content. Thus, at least in terms of proportional use, there was support for the hypothesis that mothers' and children's content would be related in the AM task.

Children's Narratives with Mothers compared to the Experimenter

The third aim of this study was to compare children's memory responses with their mothers to an experimenter in order to assess whether the added contextual support provided by mothers would result in children having substantially richer narratives. Children did not provide more information with mothers; rather, their narratives were very similar in terms of style and content. It was assumed that because parents participated with their child in the events that they discussed; because mothers and children shared an emotional bond that the experimenter and child did not; and because the experimenter provided limited narrative structure, that mothers would provide more narrative support to children. However, this support did not seem to lead to richer narratives. Other researchers have also found that children do not necessarily provide more information in narratives with mothers compared to an experimenter (e.g., Haden, Haine, & Fivush, 1997). However, other researchers have found the opposite to be true (e.g., Lange & Carroll, 2003).

Storybook Narratives

The fourth aim was to compare mothers' and children's AM narratives to their storybook narratives. We first compared mothers' and children's storybook narratives. Mothers contributed

significantly more than children did in general. This is consistent with previous research that suggests that parents of preschool children with language impairments tend to participate a disproportionate amount in storybook readings with children even as their language skills improve (Van Kleeck & Vander Woude, 2003). But, unlike the AM narratives, there were no differences in how much unique information they were providing compared to children. And in terms of proportions, children provided significantly more elaborations. It may be that the illustrations present in the storybook task gave children added scaffolding that made it easier for them to provide information about the story. Mothers and children also used similar types of content in the storybook narratives. Thus, although mothers and children's style was unrelated in the storybook task, there was some support for similarity in content.

In terms of the second part of the fourth aim, there were no significant differences for children's responses in terms of amount of information or proportions of content between the two adult partners. Thus, it seems that for this task, as with the AM task, mothers' scaffolding did not result in children providing substantially richer narratives with the support of their mothers. One possibility for this finding is that mothers of SLI children did not provide their children with narratives that were significantly more elaborative than an adult unfamiliar with the event did. This is plausible given the number of mothers classified as low-elaborative in this sample. Another possibility is that when mothers of SLI children are providing elaborations, their effect on children's narratives will be demonstrated later in their children's development rather than having immediate effects. Reese et al. (1993) suggested that the effect of mothers' elaborations on children's ability to engage in AM narratives becomes apparent after children become competent conversational partners. Although the age of the children in this sample corresponds to the same age group in which normally developing children are becoming

competent at talking about the past, the language level of this sample corresponds to language skills of a younger sample of normally developing children. Thus, further investigations should take into account the age and language level of children with SLI.

The third question of the fourth aim addressed the direct comparison of AM narratives and storybook narratives. In terms of the ratio of mothers' elaborations to repetitions, there was little consistency between AM narratives and storybook narratives. However, unlike the AM narrative ratio, there was not a clear distinction between the low and high ratio scores. In fact, two of the dyads that were classified as low-elaborative in the AM narrative task had ratio scores of 2.06 and 2.05, which put them in the high-elaborative category for the storybook narrative task although these scores were near the cutoff of 2.00. Additionally, looking more closely at the types of elaborations used by the third dyad (who was classified as low-elaborative in the AM narrative task but high-elaborative in the storybook narrative task) allowed us to see that she used many statement elaborations rather than questions. Haden and Fivush (1996) asserted that mothers with a conversational-eliciting style do so with the intention of sustaining their children's participation in the activity, whereas mothers with a directive style are intending to control the child's activity. Thus, examining differences in statement elaborations and question elaborations may provide further information about the role of these types of maternal input in that using statement elaborations does not serve the same purpose as question elaborations in terms of eliciting involvement from the child.

We also compared mothers' and children's style and content between the two narrative tasks to determine whether the way in which participants narrated the AM narratives related more broadly to a storybook task. When examining the relationship between frequency of elaborations and repetitions in the AM narratives to the frequency of elaborations and repetitions

in the storybook narratives, there did appear to be some consistency in terms of frequency of use. Maternal elaborations were highly correlated and approached significance, and maternal repetitions were significantly related in the two narratives contexts. However, because a possible explanation of these findings is that mothers' talkativeness is driving the correlations, we also examined proportions. This examination revealed that there were no relations between elaborations or repetitions between the AM task and storybook task.

Researchers have previously examined maternal style across different parent-child interactions. For example, Haden & Fivush (1996) found no relationship between maternal style in free-play and conversations about past events. Hoff-Ginsberg (1991) also found differences in mothers' speech across the contexts of mealtime, dressing, book reading, and play. Very few, however, have examined maternal style across different *narrative* interactions. As mentioned above, Laible (2004) found no relationship between mothers' elaborations (on a 5-point scale) during book reading compared to talk about an event that occurred a week previously. Similarly, we found no correlation between the two contexts when looking at the single ratio score or proportional use of elaborations or repetitions. Children also showed little consistency between the two narrative tasks in that with mothers, there was only a significant correlation for proportional use of evaluations; with experimenters there were no significant correlations.

In terms of mothers' and children's content, there was also little consistency in that there were no positive within category correlations between narrative tasks. Thus, in terms of the fourth aim, there was no evidence for consistency in maternal style or content between the two tasks. In addition, there was little consistency in children's style or content between the two tasks except for evaluations.

Implications for AM Development

According to the social constructivist view of AM development, it is through the context of parent-child conversations about the past that children learn to represent and talk about their prior experiences. Children with SLI may be less able to participate in and benefit from these memory conversations because of their more limited language skills which may affect both mothers' and children's narrative style as well as children's memory. In the current study, children with SLI tended to elicit a more repetitive narrative style from their mothers and recalled less information from their past, although the content of their memories are similar to other preschoolers. What are the implications for autobiographical memory development of SLI children? Typically developing children of elaborative mothers tend to recall more information than children of repetitive mothers (Reese et al., 1993; Reese & Fivush, 1993). This relationship seems to be driven primarily by maternal elaborativeness. Reese et al. (1993) found that although at 40 and 46 months of age, mothers' elaborations were not longitudinally related to children's memory responses, by 58 and 70 months of age they were. That is, it seems that mothers' elaborations when children are younger facilitate children's ability to provide memory information in the future. Reese et al. (1993) also found that all mothers, regardless of style, showed an increase in elaborativeness over time. Future research is needed to determine if mothers of children with SLI would show a similar trend.

Reese et al. (1993) also pointed out that children's narrative contributions were not related longitudinally, which further suggests that it is the mother's elaborations driving autobiographical memory development. It is unclear from the current study whether mothers' elaborations similarly drive the development of autobiographical memory in children with SLI or whether the limited contribution provided by children with SLI affects this bidirectional

relationship in a qualitatively different way. As mentioned above, in normally developing children, early language skills may not be as influential on later AM development as maternal style. However, does children's language skill operate differently on mothers when children have language impairments? Obviously, longitudinal examinations are needed to answer these questions.

Having a less elaborative model to scaffold the memory narratives of children with SLI may impact these children in two related ways. First of all, as mentioned above, researchers have consistently found that children of more elaborative mothers recall more information about events and provide more elaborative narratives themselves in comparison to children of mothers who are more repetitive (Fivush, 1991; Reese & Fivush, 1993; Reese et al., 1993). If children with SLI tend to have mothers who are more repetitive, this may affect the actual representation of memories in children with SLI in that they are not able to recall as much information as their peers. As Fivush (1998) pointed out, language is a very influential tool that allows us to encode, organize, and retrieve memories. A delay in language may impact the SLI child's ability to represent their experiences linguistically. Secondly, children with SLI may not have as much practical experience participating in rich, coherent narratives, which may make it harder for them to maintain conversations about their past with others. After all, children learn the cultural significance, as well as the narrative forms, of talking about the past through the modeling of their parents. If parents, however, are modeling a more repetitive, directive, and less interactional style of talking about the past to their children with SLI, these children may subsequently be less proficient in maintaining a conversation outside of the parent-child dyad.

Interestingly, child language variables were not significantly related to any aspects of either mother or child's memory talk. There appeared to be little to no relationship between

SPELT scores and any of the child or mother variables. These results are in line with other studies that have found that parental style is not significantly related to children's language (Harley & Reese, 1999; Welch-Ross, 1997; Reese & Brown, 2000). Although these results may seem counterintuitive given that our aim was to look at the impact of language impairments on mothers and children co-constructing the past through memory conversations, there may be a plausible explanation. It may be that the child's specific language difficulties as assessed by the SPELT (e.g., past tense, passive tense, possessive pronouns, etc.) do not affect either the child's ability to provide memory information or the mother's contribution to the narrative. Rather, it may be that the child's language impairment in a general sense affects the type of interaction between mother and child regardless of whether the child has acquired the correct morphosyntactic structures. In fact, other researchers have found that mothers tend to be more elaborative with preschoolers who have higher language skills in terms of receptive and expressive vocabulary (Farrant & Reese, 2000; Newcombe & Reese, 2004). Thus, children's difficulty in contributing to the memory conversation may be due to a more general inability to utilize language.

Mothers' perceptions of their children's language abilities, either real or imagined, may also shape the relationship between children's language skills and both their own and their mothers' narrative talk. Dunn and Plomin (1986) found that when comparing sibling pairs, mothers talked more often to their children who they rated as more sociable. Similarly, Lewis (1999) found that regardless of how much memory information children provided, children rated as more sociable by their mothers elicited more elaborations from their mothers. As Lewis (1999) suggested, when talking about past events, mothers may perceive their less sociable child

as less capable of contributing to the conversation and adapt a more repetitious type of interaction to keep them interested.

A mother's perception of her child's language ability may similarly play a role in her use of repetitions regardless of the child's actual ability. Mothers who see their children as less advanced in terms of language ability may assume that their children cannot contribute fully to a conversation and may consequently use many prompts and repetitions. In fact, Hampson and Nelson (1993) found that differences in maternal style were related to child's rate of language acquisition, although causality was not clear in this study. Additionally, Whitehurst, Falco, Lonigan, Fischel, DeBaryshe, Valdez-Menchaca, & Caulfield (1988) found that during joint book-reading there is often a mismatch between the reader's perception of the language-impaired child's ability and the child's actual comprehension ability children can impact the reader's role as facilitator of the story. Although we did not assess mother's perceptions of their children's language abilities, many mothers from our sample provided anecdotal evidence that they were concerned with their child's language, and believed them to be behind compared to their peers.

The relationship between mothers' memory talk and children's contributions to the conversations in this sample are consistent with previous findings in that mothers' elaborations were significantly related to children's elaborations (e.g., Lewis, 1999: Reese & Fivush, 1993; Reese et al., 1993). Interestingly, in our sample, mothers' use of repetitions was also significantly related to children's memory responses, which is contrary to what other researchers have found (e.g., Lewis, 1999: Reese & Fivush, 1993; Reese et al., 1993; Reese & Brown, 2000). One possible explanation for this association where others have found a lack of one is that children with SLI are more passive in their conversations because of their limited language skills (Conti-Ramsden, 1995). This passivity may lead parents to use more repetitions to keep the

conversation going and to elicit memory information from their child. Thus, this strategy may result in more information provided by the SLI child than it does for a child with normally developing language. Mothers' repetitions were also significantly associated with children's evaluations in this sample, which Reese and Brown (2000) also found. However, contrary to their results, in the current study there was not a significant relationship between mothers' repetitions and children's repetitions.

Examining both AM narratives and storybook narratives allowed us to compare children's involvement in two different types of narratives. Regardless of the context, narrative development is complex in that it requires more than linguistic knowledge (although this is important); its development reflects an understanding of "expression of time, perspective, mental states, emotions, motivations, plans, and problems" (Nelson & Fivush, 2004). In addition, it is the experience of participating in narrative production that advances these types of understanding. Children with SLI may be doubly disadvantaged in that they lack the linguistic devices necessary to talk about these concepts and that their interactions with more advanced conversational partners are limited by their partners' less complex narrative construction. In the current study, mothers' provided significantly more unique memory information than did children during the AM task; however, there were was not a significant difference between mothers and children during the storybook task. Additionally, there was little consistency for mothers or children between tasks. The AM task may have been linguistically more challenging for children with SLI because they had to express events that were not as readily available to them compared to a task in which they had the added benefit of pictures to scaffold their narratives. Thus, explorations of different types of narrative tasks that vary in terms of their

linguistic or representational support may provide further information about how children with SLI may benefit from variations in scaffolding.

Other researchers have suggested that maternal style differs across conversational contexts (Haden & Fivush, 1996; Hoff-Ginsburg, 1991); thus, the characteristics of AM narratives may not be generalizable to other contexts. One implication is that the conversational style of mothers that facilitate or delay children's narratives may be greater in some conversational contexts compared to others. As mentioned above, however, these comparisons have not directly compared AM narratives and book narratives; rather they typically compare AM narratives and play or daily routine contexts. AM narratives and storybook narratives share important aspects such as establishing a causal chain of events, and establishing connections between characters. In terms of children with SLI, researchers have established that this population has difficulty across a wide variety of narrative contexts. Thus, comparing a wider range of narrative tasks in children with SLI could also demonstrate whether maternal style differs across narrative contexts or whether the language difficulties of this population will affect maternal style in a similar way across contexts.

Limitations and Future Directions

One limitation of the current study is the small sample size. Although not atypical of such a population, our sample limited our ability to make between-group comparisons between elaborative and repetitive mother-child dyads. However, a benefit of our sample was that it was a relatively homogeneous one in that all children were receiving services from the same location, had similar language profiles, and were from comparable economic backgrounds.

Additionally, this study was conducted at only one time-point. Although we were interested in the bi-directional relationship between mother and child variables, this study was

only correlational; only a longitudinal examination can truly examine this relationship. As Reese et al. (1993) pointed out, longitudinal assessments are crucial because they allow us to examine how the way mothers structure their memory conversations with children change over time. They also allow us to explore how maternal style changes depending on children's narrative development, and how the way in which children remember changes as a function of how mothers' structure their narratives (Reese et al., 1993). As mentioned above, previous researchers have suggested that children's language skill is not as influential as maternal style on children's ability to provide elaborative narratives. However, is this relationship different when the child is language impaired? It may be that above a certain threshold children's language skills do not play a role in their own memory conversation; future research could explore whether children with lower language skills show a different pattern of results.

A longitudinal assessment would also be beneficial in determining the relationship between the kinds of information mothers provide and SLI children's later use of these same types of information. Haden, Haine, and Fivush (1997) found that mothers' use of orientation and evaluation terms when children were three-and-a-half years old predicted children's use of those types of information almost 2 ½ years later. They also found that parents increased their use of actions, descriptions, orientations, and evaluations over time as their children developed better narrative abilities. Thus, a longitudinal examination of SLI children's memory narratives could also assess how mothers change in how much information they provide to the narrative. If children with SLI develop narrative skills at a slower pace, does this affect mothers' narrative complexity?

Future comparisons with both age-matched and language-matched controls will also elucidate the relationship between maternal style and children's personal memory narratives. As

mentioned above, Grimm (1995) found that mothers' speech in conversations with their children with SLI was more similar to language-matched children than age-matched children in terms of complexity. Additionally, Conti-Ramsden and Dykins (1991) found that mothers tended to use shorter utterances when talking to their children with SLI as compared to their language-matched siblings. Thus, comparative studies are needed in order to further examine the relationship between a child's age and language level on maternal style of talking about the past to determine if the above mentioned results extend to conversations about the past.

Conclusion

The power of mothers' style of talking about the past on children's subsequent AM development has been well established in the AM literature. The quality of the social interaction during these types of conversations, in particular the language interaction, has been proposed to play an important role in children's developing AM system. A separate literature, research on the conversations between children with SLI and their mothers, demonstrates that mothers tend to adopt a directive style of talking to their children because of children's limited language ability. This study was the first step in extending the AM literature on normally developing children to AM narratives of SLI children. The primary purpose of this study was to examine the co-construction of AM narratives of mothers and their children with SLI. The fact that the majority of mothers in this sample had a low-elaborative style of talking about the past, suggested that language is indeed an important contributor to this development. Future research should examine the impact of maternal style on children with SLI in terms of children's subsequent AM development.

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BIOGRAPHIICAL SKETCH

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