Mothers’ autobiographical memory and book narratives with children with specific language impairment

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Abstract

This study examined the role that mothers’ scaffolding plays in the autobiographical memory (AM) and storybook narratives of children with specific language impairment (SLI). Seven 4–5-year-old children and their mothers co-constructed narratives in both contexts. We also compared children’s narratives with mothers to their narratives with an experimenter. Narratives were assessed in terms of narrative style (i.e., elaborativeness) and topic control. Mothers’ elaborate and repetitive questions during AM and book narratives were related to children’s elaborations, whereas mothers’ elaborate and repetitive statements were not. Mothers produced more topic-controlling utterances than children in both contexts; however, both mothers and children provided proportionally more information in the book context. Additionally, children were more elaborative with mothers compared to an experimenter.

Learning outcomes: Readers will be able to: (1) understand the importance of mother-child narratives for both typical and clinical populations; (2) understand how mother-child autobiographical memory and storybook narratives may differ between typical and clinical populations; and (3) consider the implications for designing narrative intervention studies for language impaired children.

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Keywords: Narrative; Autobiographical memory; Book; Language impairment; Mother–child interactions

1. Introduction

Narratives are a popular language assessment tool for children with language impairments as they provide a particularly rich assessment of language abilities. Narrative abilities also seem to be particularly informative in terms of predicting later outcomes. For example, Botting, Faragher, Smikin, Knox, and Conti-Ramsden (2001) found that narrative skills of language impaired children at age 7 were most predictive of language diagnosis at age 11, above and beyond measures of receptive grammar, expressive vocabulary, articulation, and nonverbal intelligence. Thus, examining narrative skills of young children with language impairments may be particularly useful for identifying children at continued risk for language impairment. Because of the importance of narrative development for children with language impairments, researchers have pointed to the importance of examining how the narrative interactions of

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parents and their language impaired preschoolers can benefit the language skills of these children (e.g., Crain-Thoreson & Dale, 1999).

The population of interest for the current study is preschool children with specific language impairment (SLI). Children with SLI are defined as being delayed in language in the absence of any related cognitive, emotional, physical, or hearing disability (Leonard, 1998; Tomblin et al., 1997). The current study assessed the narratives of mothers and their children with SLI in the context of autobiographical memory (AM) and storybook narratives. We were also interested in how children’s narratives differed under a supported (i.e., mother–child) versus a non-supported (i.e., experimenter–child) context. Because this study is somewhat exploratory, our sample size is small and largely descriptive. However, the rich amount of data this study provides is a significant starting point for future research on AM narratives of mothers and their children with SLI, as this context has not yet been explored in this population.

1.1. Theoretical framework for mother–child discourse

From a Vygotskian perspective, typically developing children learn narrative skill through the scaffolding provided by parents in a supportive interactive environment. Parents model how to participate in narrative activities starting in the preschool years as children become more competent conversational partners (Vygotsky, 1978), and research shows that narratives of scaffolded children are more complex and rich than those that are not scaffolded (Hudson, 1993; McCabe & Peterson, 1991; Peterson & McCabe, 1994). In terms of mother–child book reading, mothers provide a supportive environment for their child to learn the forms and functions of reading stories and elicit the appropriate responses from their children when possible. Bus (2003) asserts that because children are initially unfamiliar with the structure of storybooks and how they are communicated, that children need parents to help them bridge this gap. 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).

Researchers have found that adults do a great deal of discussion when reading books to younger children (Vigil & van Kleeck, 1996; van Kleeck & Beckley-McCall, 2002), and that the nature of this discussion is related to children’s participation. For example, adult questions elicit more information than adult comments, and children’s responses are more complex in response to mothers’ wh-questions compared to mothers’ comments (van Kleeck, 2004). Furthermore, intervention studies with children with typical language skills have shown that training parents in a particular style of reading referred to as dialogic reading, which includes asking the child open-ended questions, encouraging the child to play an active role in storytelling, and following up what the child says, results in an increase in children’s language skill and participation during parent–child book reading (Sénéchal, Thomas, & Monker, 1995; Sénéchal, 1997; Whitehurst et al., 1994a,b; Whitehurst et al., 1988).

1.2. Mothers’ discourse with children with SLI

Examining how mothers of children with SLI scaffold children’s narratives is particularly important as many researchers have reported on the difficulties that children with SLI have with narrative production when producing narratives on their own. For example, they tend to make more syntactic errors (Norbury & Bishop, 2003; Pearce, McCormack, & James, 2003), provide less information (Bishop & Donlan, 2005; Kaderavek & Sulzby, 2000), provide more inappropriate utterances (Brinton, Fujiki, & Powell, 1997), produce narratives that are less complex (e.g., goal direction; Pearce et al., 2003), and produce narratives that are rated as lower in quality (e.g., organization, clarity; McFadden & Gillam, 1996) than typically developing children.

Despite these difficulties, however, children with SLI do benefit from parent–scaffolded narrative interactions. Most studies of parents’ narrative interactions with children with SLI have focused on the context of book reading as this is a very practical context for mothers to interact with children. Intervention studies with mothers and their preschool children with SLI in book reading interactions have shown that parents who are encouraged to ask more wh-questions, to follow up children’s utterances, and to expand on children’s utterances can increase children’s participation and vocabulary growth (Dale, Crain-Thoreson, Notari-Syverson, & Cole, 1996; McNeill & Fowler, 1999; Yoder, Davies, Bishop, & Munson, 1994). These strategies are particularly relevant for children with SLI because these children tend to ask fewer questions, initiate new topics less often, and disregard their mothers’ utterances more often compared to typically developing children (Marvin & Wright, 1997; van Kleeck & Vander
Woude, 2003). Furthermore, mothers of children with SLI tend to reduce the linguistic demands on children during book reading interactions, for example, by asking yes–no questions instead of open-ended questions (Crow, 2000) or by being more directive (Kaderavek & Sulzby, 1998).

1.3. Autobiographical memory narratives

In addition to book reading, another narrative form that emerges during the preschool years is AM narratives, which has been extensively examined in children with typically developing language skills (see Fivush, Reese, & Haden, 2006; Nelson & Fivush, 2004 for reviews). AM narratives share many aspects of storybook narratives in that AM narratives require the narrator to temporally sequence events and provide contextual information, such as who was there, where the event took place, and what happened during the event. However, AM narratives differ from storybook narratives in that they require narration of an event that occurred in the past, and thus require mental representation of that event whereas narration of a storybook is done with the aid of pictures.

Advocates of the social interaction model of AM emphasize the importance of how parents scaffold children’s AM narratives (Fivush & Reese, 1992; Hudson, 1990). In the earliest stages of memory talk (i.e., around age 3), parents scaffold children’s narratives by asking questions and providing feedback in an attempt to help them remember an event, and initially children rely on these cues to recall information. AM researchers have focused on the importance of mothers’ elaborations (i.e., provision of new information) in facilitating children’s AM narratives. Researchers have argued that elaborative questions, particularly open-ended questions, are facilitative of typically developing children’s AM development because these questions function to provide children with new information about the event, but also to elicit children’s participation in the recall (Farrant & Reese, 2000; Fivush et al., 2006). High-elaborative parents give their children more unique information and provide more descriptive information than do low-elaborative parents (Fivush, 1994). Consequently, children whose parents are high-elaborative remember more information (McCabe & Peterson, 1991; Reese, Haden, & Fivush, 1993). Furthermore, mothers’ elaborations appear to play a causal role in children’s later ability to recall memories above and beyond children’s own earlier memory abilities (Reese et al., 1993).

Researchers have also been interested in mothers’ level of autonomy support during AM narratives. Parents who are high on autonomy support are less likely to control the conversation about the past event and to follow their child’s lead. Thus, parents high in autonomy support are allowing their children to have more independence in co-constructing the narrative. Cleveland and Reese (2005) found that mothers who were both high-elaborative and autonomy supportive had preschoolers who gave the most memory information in conversations about the past. Thus, typically developing children’s AM memory is benefited most by parents who are high-elaborative, ask open-ended elaborative questions, and support their children’s autonomy.

1.3.1. Autobiographical memory narratives of children with language impairments

Only a few studies have elicited AM narratives from children with SLI. However, children’s narratives were not scaffolded by mothers in these studies. Miranda, McCabe, and Bliss (1998) found that 8–9-year olds with SLI had greater difficulty producing independent AM narratives than control groups matched on language ability and age in terms of topic maintenance, event sequencing, and explicitness. Additionally, Goldman (2008) found that 9–13-year olds with SLI produced fewer story elements in their AM narratives (e.g., comments about places, actions, etc.) compared to a control group matched on age. Kaderavek and Sulzby (2000) found that only half of their sample of preschoolers with SLI was able to produce an AM narrative whereas all of the children matched for language could. Furthermore, the youngest child with SLI to produce an AM narrative was 3:1 whereas the youngest control subject was 2:4. In addition, mothers read a book with children, who were later asked to retell the story. For the emergent reading, children with SLI were more comparable to the control group. Thus, it seems that children with SLI were better able to produce a narrative when their mothers first provided them with support.

AM narratives may be particularly important for children with SLI because they represent a naturally occurring topic of conversation not only with parents but also with other adults and peers. Results from these three studies suggest, however, that children with SLI may have difficulty producing AM narratives without the scaffolding of an adult. It is important to understand the circumstances that may promote the ability to tell an AM narrative at an earlier age when this ability first emerges (i.e., the preschool years). Considering the important role of parents’ scaffolding of
typically developing children’s AM narratives and the book narratives of children with SLI, it is surprising that no studies have examined the mother–child AM narratives of children with SLI.

Furthermore, research with typically developing preschoolers suggests that mothers’ elaborative questions and statements promote children’s participation in the AM narrative, whereas mothers’ repetitions are seen negatively. Specifically, repetitive mothers are described as providing shorter conversations, less embellishment, and less narrative structure; and this style has not been shown to elicit children’s participation (e.g., Cleveland & Reese, 2005; Farrant & Reese, 2000; Reese & Fivush, 1993). However, this same pattern may not classify children with SLI, as mothers often use a more directive style to encourage children’s participation in book reading interactions and in conversation (Grimm, 1995; Kaderavek & Sulzby, 1998). Conti-Ramsden (1995) 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 & 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).

Thus, mothers’ AM style with children with SLI is of practical importance. Several interventions have been conducted to promote storybook narratives of mothers and children with SLI (e.g., Crain-Thoreson & Dale, 1999; Crowe, Norris, & Hoffman, 2000; Justice, Kaderavek, Bowles, Grimm, 2005). However, in order to understand what behaviors should be targeted in narrative interventions for other contexts, such as AM narratives, we must first explore what behaviors elicit participation of children with SLI in the AM context as this has not been examined in this population.

2. The current study

The overarching goal of this study was to examine the AM narratives of mothers and their children with SLI. We had three main aims. First, we examined mothers’ scaffolding of their children’s AM narratives. Second, we compared mother–child AM narratives to mother–child storybook narratives, as the latter context has been studied more extensively in terms of the role of mothers’ scaffolding of children with SLI. We compared these contexts both in terms of style (i.e., elaborativeness) as well as topic control as research on storybook interactions shows that mothers of children with SLI tend to dominate these interactions (van Kleeck & Vander Woude, 2003). Third, we compared mother–scaffolded AM and book narratives to children’s experimenter-elicited AM and book narratives to assess the impact of mothers’ scaffolding.

2.1. Level of narrative analysis

Narratives of children with SLI have been examined in many ways, such as syntactic complexity, morphological errors, and narrative complexity (e.g., Norbury & Bishop, 2003; Reilly, Losh, Bellugi, & Wulfek, 2004). Within the AM literature, however, researchers focus primarily on the narrative element of elaborations (i.e., provision of new information). Elaborations are important because they indicate an active processing of the event. As Fivush et al. (2006) point out, modeling is not enough—the child must be actively engaged in the task in order to internalize the skills required for narrating an event. Furthermore, as mentioned above, one of the common characteristics of narratives of children with SLI is that they contribute less information compared to typically developing children. Thus, we were interested in how much unique information children with SLI contributed to narratives.

Note that narratives were examined in terms of mothers’ style and children’s participation rather than the content of the narratives. This coding does not allow for measuring aspects of the narratives such as episodic coherence, which some may argue is necessary for discourse to be considered narrative (e.g., Trabasso & Stein, 1997). This description of narrative may be problematic as preschoolers with SLI may simply describe each picture rather than connecting story elements across pictures, which is typical of young children (e.g., Trabasso & Nickels, 1992). However, the aim of the current study is to determine how mothers’ talk encourages children’s participation. This is relevant because researchers have found that children with SLI contribute less information to book reading interactions with mothers compared to typically developing children (e.g., Evans & Schmidt, 1991; Sulzby & Kaderavek, 1996). Furthermore, several other studies of mother–child book reading interactions have also focused on encouraging children’s participation (e.g., Crain-Thoreson & Dale, 1999; Crowe, 2000; Crowe et al., 2000; Kaderavek & Justice, 2005; Rabidoux & MacDonald, 2000) Additionally, the coding for this study was adopted from the AM literature, which
refers to AM talk as narrative despite the lack of coding at the level of the narrative (e.g., Reese & Fivush, 1993). Thus, the term narrative is used in the current study to describe the type of task (i.e., book reading or AM) and its potential for a narrative format rather than the content of each task (e.g., reference to goals).

2.2. Hypotheses

The first aim of this study was to examine mother–child co-constructed AM narratives in terms of style (e.g., elaborativeness). We predicted that mothers’ elaborative questions would be related to children’s elaborations in both narrative contexts more so than their elaborative statements. Although AM researchers do not typically consider mothers’ repetitions in terms of questions or statements, we further classified repetitive utterances in this way. Given that mothers with SLI children may adopt a more directive conversational style, it may be informative to examine the role of mothers’ repetitive utterances. We made no predictions about the relations between repetitive utterances and children’s elaborations.

The second aim of this study was to compare mother–child AM narratives to their storybook narratives in terms of style and topic control. By directly comparing these contexts, we can gain a better understanding of how mothers’ scaffolding is related to children’s participation between contexts, as well as how topic control between mother and child compares between contexts. Based on previous studies of book narratives of mothers and children with SLI and AM narratives of mothers and typically developing children, we predicted that elaborative questions would be particularly related to children’s participation in both the AM and book context. We analyzed mother–child topic control using a coding scheme from the SLI literature used for joint book reading (Justice & Kaderavek, 2003). Topic control as measured here is conceptually similar to the concept of autonomy support, which has been used to assess AM narratives (Cleveland & Reese, 2005). This comparison between AM and book narratives has not been examined in children with SLI as researchers have not yet studied mother–child AM narratives. Topic control is important to examine, however, because previous research shows that mothers may be more topic controlling in their interactions with children with SLI, and topic control plays a role in how much information children contribute to narratives (van Kleeck & Vander Woude, 2003). We predicted that mothers would be more controlling in their narratives compared to children.

The third aim of this study was to contrast children’s narratives with their mothers to children’s narratives with an experimenter. Researchers have found that typically developing children tend to provide more information during AM talk with mothers compared to an experimenter who offers minimal scaffolding (Hudson, 1993; McCabe & Peterson, 1991; Peterson & McCabe, 1994). However, researchers have not typically directly compared scaffolded versus unscaffolded narratives of children with SLI. We used the experimenter–child narrative as a control condition for both the AM and the book context. We predicted that in both contexts, children would be able to contribute more to conversations with mothers compared to an experimenter, who provided minimal scaffolding.

3. Methods

3.1. Participants

Seven mother–child dyads participated in this study. The participants were recruited from a speech and hearing center preschool program, in which only children qualified for language services based on Florida state standards were enrolled. As shown in Table 1, children ranged in age from 50 to 68 months. There were four girls and three boys in this sample, and families were predominantly middle-class. As shown in Table 1, two mothers had a high school education, one mother had 3 years of college, and four mothers had a 4-year degree. Six of the children were Caucasian, one girl was Hispanic, and one boy was adopted by Caucasian parents from Cambodia at nine months.

3.2. Procedure

To classify children as SLI, we first conducted a file review on each child, which contained the child’s medical history and 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 or diagnosed behavioral problems, and had a history of language delay. To further confirm children’s language status,
children were individually assessed at their preschool using one language measure and one measure of nonverbal cognitive ability. Language was measured using the Structured Photographic Expressive Language Test 3 (SPELT-3; Dawson, Stout, & Eyer, 2003). The SPELT-3 is a popular assessment for diagnosing SLI because it is a sensitive measure of expressive morphosyntax, which children with SLI have particular difficulty with. 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. We also assessed children’s receptive vocabulary using the Peabody Picture Vocabulary Test-3rd Edition (PPVT-3; Dunn & Dunn, 1997); however, scores from the PPVT-3 were in the normal range and were not used for identifying children as SLI as receptive vocabulary can be normal in this population (e.g., Bishop & Donlan, 2005). Children’s language scores are summarized in Table 1. Scores on the SPELT-3 ranged from 72 to 92, and each child was classified as falling below the age of four according to the SPELT age equivalency ranges. A cutoff of 95 instead of 85 was used as Perona, Plante, and Vance (2005) suggested that this was a more appropriate criterion to differentiate between typically developing children and children with SLI using the SPELT-3. They argue that this cutoff results in greater specificity and sensitivity. All children scored within normal limits on the Leiter-R. Thus, each child qualified as having SLI, and had a deficit primarily in expressive language.

### Table 1

General characteristics of participants.

<table>
<thead>
<tr>
<th>Dyad</th>
<th>Gender</th>
<th>Age in months</th>
<th>Leiter-R</th>
<th>PPVT-R</th>
<th>SPELT-3</th>
<th>Mother’s years of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F</td>
<td>68</td>
<td>102</td>
<td>86</td>
<td>81</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
<td>50</td>
<td>108</td>
<td>116</td>
<td>87</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>F</td>
<td>58</td>
<td>101</td>
<td>90</td>
<td>92</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>56</td>
<td>118</td>
<td>101</td>
<td>72</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>M</td>
<td>51</td>
<td>106</td>
<td>99</td>
<td>83</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
<td>51</td>
<td>117</td>
<td>114</td>
<td>83</td>
<td>16</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>53</td>
<td>119</td>
<td>106</td>
<td>75</td>
<td>12</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>55.3</td>
<td>110.1</td>
<td>101.7</td>
<td>81.9</td>
<td>14.7</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>6.3</td>
<td>7.7</td>
<td>11.3</td>
<td>6.8</td>
<td>1.9</td>
</tr>
</tbody>
</table>

*Note: PPVT = Peabody Picture Vocabulary Test; SPELT = Structured Photographic Expressive Language Test.*

3.2.1. Narratives

The same female experimenter collected narratives from each child. Children were already familiar with the experimenter from testing sessions done at their preschool. Mother–child and experimenter–child dyads were audio taped and videotaped while they engaged in AM and book narratives. Although the sample size did not allow for complete counterbalancing, no two participants completed these four narrative tasks in the same order.

**Autobiographical memory narratives:** Mothers were instructed to identify 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). Mothers were instructed to discuss three of these events with her child as she normally would. The experimenter elicited the other three events with minimal scaffolding in order to determine how much information the child could recall without being cued. Thus, the experimenter elicited children’s participation by prompting with phrases 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?

**Storybook narratives:** Children provided narratives from two wordless storybooks of equal length (24 pictures). Frog Where Are You? (Mayer, 1969) is about a boy who loses his pet frog and his subsequent quest to find the missing frog, and has been used in other studies of independent narrative abilities of children with SLI (e.g., Botting, 2002; Reilly et al., 2004). Frog Goes to Dinner (Mayer, 1974) 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. The books used by mothers and the experimenter were counterbalanced—that is, some mothers shared Frog Where Are You? with her child and some shared Frog Goes to Dinner with her child while the experimenter shared the book that was not read by the mother. As with the experimenter-elicited AM narrative, the experimenter used open-ended prompts to elicit information from children.
3.2.2. Narrative coding

AM and book narratives were transcribed following the CHILDES system (MacWhinney, 2000). The most common AM events discussed were everyday activities like going to the pool and family vacations such as camping trips, and almost all narratives were positive in valence. For the mother–child AM narratives and mother–child book narratives, we coded mothers’ and children’s utterances for conversational style (i.e., elaborations and repetitions) using a coding scheme adapted from Farrant and Reese (2000), and for topic control using a coding scheme from the SLI literature (Justice & Kaderavek, 2003). Mothers’ and children’s narratives were coded for each independent clause (i.e., subject + verb + complement structures). Codes within each type of scoring were mutually exclusive in a given clause (e.g., a clause was only given one code for style and one code for topic control).

3.2.2.1. Mothers’ style. Elaborative wh-questions: Wh-questions that requested new information from the child (e.g., What did we do at the pool?).

Elaborative yes–no questions: Questions that required the child to confirm or deny a new piece of information (e.g., Do you remember when we went camping?). Tag questions were included as yes–no questions (e.g., You were cold, weren’t you?).

Elaborative statements: Statements that provided the child with new information, but did not require a response (e.g., We had pancakes for breakfast).

Repetitions: Utterances that requested the exact same content or the gist of a previous utterance. Repetitions could be in the form of wh-questions, yes–no questions, or statements.

3.2.2.2. Children’s style. Elaborations: Children’s utterances that provided new information to the narrative (e.g., Mother: What did we do while were there? Child: We swimmmed!). Children’s elaborations were not further divided into questions and statements.

3.2.2.3. Topic control.

Control:
• New Topic (NTO): A partner introduced a new topic that was not the focus of either partner’s most recent utterance.
• Own topic (OTO): A partner produced an utterance that continued their own NTO.

Contingency:
• Partner topic (PTO): A partner joined in on the conversation by responding to a previous new topic initiation (NTO) or own topic continuation (OTO) of the other partner.
• Joint topic (JT): A partner responded to the same topic of her partner’s turn (PTO). Brief comments were included (e.g., yes, no).

Extension of topic (EXT): A partner expanded on her own joint topic (JT).

Reinforcement (REI): Mother produced an utterance that provided verbal reinforcement to the child (e.g., very good) [coded for mothers’ utterances only].

Any comments made by children or mothers that were not directly relevant to the event being discussed were not coded and will not be discussed further. Two coders independently coded approximately 30% of the transcripts for reliability in terms of style coding. The average agreement was 86% for style coding and 84% for control coding.

4. Results

The majority of our analyses concern correlations between the frequencies of mothers’ and children’s variables. Descriptive data for each style variable in both contexts are provided in Table 2. For the AM context, children recalled 3 events. Thus, descriptive data is given for the total across all 3 events. Any comparisons between the AM and the storybook context, however, were examined using proportions as the different contexts may present different task demands. Thus, proportions are also reported in Table 2. Mothers’ total elaborations and repetitions (i.e., wh-questions, yes–no questions, and statements) were also compared to determine if, as a group, mothers tended to produce more of either type of utterance. A paired-samples t-test showed that mothers provided significantly more
elaborations compared to repetitions in the AM context, $t(6) = 3.11, p < .05$, and in the book context, $t(6) = 4.17, p < .01$.

Because of our small sample size, we plotted each correlation to ensure that there was a linear relationship between variables. Unless otherwise noted, the relations we examined were linear. We mainly used Pearson product-moment correlations in our analyses. However, in cases in which the relations did not appear to be linear we also examined Spearman rho correlations, as the latter allows for the examination of the relationship between variables without making assumptions about the frequency distribution of variables. Also because of our small sample size and the exploratory nature of the study, we did not correct for multiple comparisons (e.g., Bonferroni correction). Reducing our level of statistical significance would greatly reduce our ability to discuss relevant patterns in the data.

Table 2
Descriptive data for mothers’ and children’s narrative style in the AM and book context.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Proportions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers’ AM total propositions</td>
<td>81.14</td>
<td>1.6</td>
</tr>
<tr>
<td>Children’s AM total propositions</td>
<td>48.29</td>
<td>0.8</td>
</tr>
<tr>
<td>Mothers’ AM wh-question elaborations</td>
<td>13.14</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ AM yes–no question elaborations</td>
<td>20.71</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ AM statement elaborations</td>
<td>9.43</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ AM wh-question repetitions</td>
<td>5.86</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ AM yes/no question repetitions</td>
<td>8.29</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ AM statement repetitions</td>
<td>3.86</td>
<td>0.2</td>
</tr>
<tr>
<td>Children’s AM elaborations</td>
<td>21.14</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ book total propositions</td>
<td>105.00</td>
<td>0.4</td>
</tr>
<tr>
<td>Children’s book total propositions</td>
<td>50.86</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ book wh-question elaborations</td>
<td>19.71</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ book yes–no question elaborations</td>
<td>14.57</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ book statement elaborations</td>
<td>26.14</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ book wh-question repetitions</td>
<td>4.71</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ book yes/no question repetitions</td>
<td>7.57</td>
<td>0.2</td>
</tr>
<tr>
<td>Mothers’ book statement repetitions</td>
<td>6.57</td>
<td>0.2</td>
</tr>
<tr>
<td>Children’s book elaborations</td>
<td>32.14</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Because of our small sample size, we plotted each correlation to ensure that there was a linear relationship between variables. Unless otherwise noted, the relations we examined were linear. We mainly used Pearson product-moment correlations in our analyses. However, in cases in which the relations did not appear to be linear we also examined Spearman rho correlations, as the latter allows for the examination of the relationship between variables without making assumptions about the frequency distribution of variables. Also because of our small sample size and the exploratory nature of the study, we did not correct for multiple comparisons (e.g., Bonferroni correction). Reducing our level of statistical significance would greatly reduce our ability to discuss relevant patterns in the data.

Another consideration based on the small sample size was the calculation of effect sizes for Pearson product-moment correlations and $t$-tests. For correlational results, the correlations themselves were used as estimates of the effect size; for $t$-tests, Cohen’s $d$ was calculated (Cohen, 1988). Effect sizes were reported for all analyses that were not significant, as well as the sample size needed for the finding to be considered significant at a power of .80 with an alpha of .05, which is a widely accepted criterion for power analyses (Cohen, 1992). To simplify interpretations, only effect sizes that were considered large ($r = .5$ or Cohen’s $d = .8$) were considered further (Cohen, 1988; 1992).

4.1. AM narratives

Because of our small sample size, we first examined dyads individually for comparison. Fig. 1 shows descriptive data on the mean number of elaborations across the three AM events for mothers and children. Mothers’ elaborations of different types were combined for the purposes of this figure. The figure shows that mothers consistently provided more information compared to children. Furthermore, there was a great deal of variability in the amount of unique information provided by mothers and children, and two of the children provided very little memory information.

4.1.1. Relationship between mothers’ and children’s AM style

The first aim of this study was to assess mothers’ AM style and how it is related to children’s elaborations. Using Pearson product-moment correlations, we found that mothers’ elaborative wh-questions and elaborative yes–no questions were significantly related to children’s elaborations (Table 3). Mothers’ repetitive wh-questions were also related to children’s elaborations. Thus, mothers’ wh-questions were related to children’s elaborations regardless of whether questions were elaborative or repetitive. These results support our hypothesis that mothers’ elaborative wh-questions are related to children’s elaborations. Contrary to research with typically developing children however
mothers’ repetitive wh-questions were also related to children’s elaborations. Furthermore, mothers’ statements were unrelated to children’s elaborations. These results suggest that wh-questions specifically (whether elaborative or repetitive) as well as elaborative yes–no questions help children to participate in AM narratives with mothers more so than mothers’ statements.

Examining the correlations in terms of effect sizes, however, suggests that mothers’ repetitive yes–no questions may also be related to children’s utterances in the AM context as $r = .73$, which is considered a large effect size (Cohen, 1992). Furthermore, the sample size needed for this correlation to be considered significant would be approximately 10 participants (Cohen, 1988). Thus, although not significant in the current study, there is good reason to believe that mothers’ repetitive yes–no questions are related to children’s utterances. This suggests that mothers’ questions of any type (whether elaborative or repetitive), but not mothers’ statements in the AM context are related to children’s provision of unique information.

The following example from Dyad 7 illustrates how repetitive questions of a mother of a child with SLI may encourage the child’s participation in the conversation.

MOM: What were those big animals that we saw?
MOM: What were they?
MOM: Remember we went up that big tram and we saw? In the cage?
MOM: And they would bite you if you got too close.
MOM: Remember what they were?
CHILD: Lions.
MOM: No, they weren’t the lions.
CHILD: Baby lions.
MOM: Were they bears?

The mother of Dyad 7 produced many repetitive questions. However, she likely did so because her child was not readily able to participate in remembering the event. It was only after numerous attempts at asking a question that her child provided a response.

4.2. Storybook narratives

The second aim of this study was to compare mothers’ and children’s AM narratives to their wordless storybook narratives. We first examined mothers’ and children’s codes in terms of proportions between contexts. Pearson product-moment correlations between contexts for each style variable were as follows: mothers’ elaborative wh-questions ($r = .56, p = .20$), elaborative yes–no questions ($r = .75, p = .05$), elaborative statements ($r = .85, p = .02$),
repetitive wh-questions \( (r = .19, p = .68) \), repetitive yes–no questions \( (r = .80, p = .03) \), and repetitive statements \( (r = .32, p = .48) \). The Pearson product-moment correlations between contexts for children’s elaborations was \( r = .75, p = .05 \). Thus, mothers’ elaborative statements and repetitive yes–no questions were significantly related between contexts, suggesting consistency in these types of utterances.

However, examining the correlations in terms of effect sizes suggests that mothers’ elaborative wh-questions and yes–no questions, and children’s elaborations may also be consistent between contexts, as these correlations are considered to be large effect sizes (Cohen, 1992). Furthermore, the sample size needed for the correlation for mothers’ elaborative wh-questions to be considered significant would be approximately 22 participants; for mothers’ elaborative yes–no questions, the estimated sample size would be approximately 10 participants; and for children’s elaborations, the estimated sample size would be 10 participants (Cohen, 1988). On the other hand, the effect sizes for mothers’ repetitive wh-questions and mothers’ repetitive statements are considered small to medium (Cohen, 1988). Thus, with the exception of mothers’ repetitive wh-questions and statements, mothers may be very consistent between AM and book contexts given a slightly larger sample size.

We were also interested in individual differences in the book context. Fig. 2 shows mothers’ and children’s elaborations per dyad. Similar to the AM narratives, there was considerable variability across dyads in terms of how much mothers and children contributed to the storybook narratives. Unlike the AM context, however, in the book context two children provided more information compared to mothers.

4.2.1. Relationship between mothers’ and children’s storybook style

We examined whether the relations among mothers’ and children’s style variables for the storybook narratives were similar to results of the AM narratives. Similar to the AM context, mothers’ elaborative wh-questions and repetitive

![Fig. 2. Total frequency of mothers’ elaborations and children’s elaborations per dyad for the book context.](image-url)
wh-questions were related to children’s elaborations (Table 4). Also, similar to the AM context, mothers’ elaborative and repetitive statements were not related to children’s elaborations. In terms of mothers’ yes–no questions, mothers’ elaborative and repetitive questions were not significantly related to children’s elaborations. However, the effect size of both correlations was large (Cohen, 1992). The sample size needed to be considered significant for the correlation between mothers’ elaborative yes–no questions and children elaborations would be approximately 15 participants; the sample size needed to be considered significant for the correlation between mothers’ repetitive yes–no questions and children elaborations would be approximately 22 participants (Cohen, 1988).

These results again support our hypothesis that wh-questions are related to children’s elaborations (whether elaborative or repetitive). Similar to the AM context, yes–no questions may also play a role in children’s elaborations; however, mothers’ statements clearly do not. There is some suggestion that mothers’ statements in the book context may even be negatively related to children’s elaborations in that this correlation had a large effect size ($r = -.55$), although it was not significant. The sample size needed for this correlation to be considered significant would be approximately 22 participants (Cohen, 1988).

In both contexts, mothers’ elaborative statements were not related to children’s elaborations. The following example from the storybook narrative of Dyad 2 illustrates how although a mother can provide many elaborations, she may not necessarily elicit much information from her child if her elaborations are statements.

MOM: They were getting ready to go to dinner.
MOM: And the driver dropped them off.
MOM: And they’re at the restaurant.
MOM: And they waited in line.
MOM: And now they’re sitting at the table.

Much of this dyad’s book narrative involved the mother describing the events of the story without eliciting information from the child.

### 4.2.2. Topic control

We also compared the topic control of mothers’ and children’s narratives between contexts, which assesses whether participants control the conversation or produce utterances that are contingent on his or her partner. Tables 5 and 6 provide descriptive data on mothers’ and children’s frequency of topic control as well as proportions of topic control in the AM context and the book context, respectively. The descriptive data show that mothers appear to be controlling most of the interaction in both the AM and the book context.

For each measure of topic control, we also conducted a 2 (speaker: mother vs. child) x 2 (context: book vs. AM) repeated measures ANOVA using proportions. There were main effects of speaker for new topics (NTO), $F(1,6) = 158.27, p < .01$, own topic continuations (OTO), $F(1,6) = 43.61, p < .01$, partner comments (PTO), $F(1,6) = 127.59, p < .01$, and joint topics (JT), $F(1,6) = 19.60, p < .01$. Follow-up paired-samples $t$-tests showed that mothers produced significantly more topic-controlling utterances in the form of new topics, $t(6) = 12.58, p < .001$, and own topic continuations, $t(6) = 6.60, p < .01$. Children produced significantly more partner comments, $t(6) = 6.60, p < .01$. Children produced significantly more partner comments.
and joint topics than mothers, \( t(6) = 4.43, p < .01 \). The main effect was not significant for extensions, \( F(1,6) = 1.59, p = .26 \). Because of our small sample size, we also calculated Cohen’s \( d \) for extensions, which was .77 and is considered a medium effect size (Cohen, 1988), and was not considered further.

There were also main effects of context for new topics (NTO), \( F(1,6) = 5.65, p < .05 \), partner topics (PTO), \( F(1,6) = 35.86, p = < .01 \), and joint topics (JT), \( F(1,6) = 6.35, p < .05 \). Follow-up \( t \)-tests showed that mothers and children produced significantly more new topics utterances, \( t(6) = 3.46, p < .05 \) in the book context.² Additionally, follow-up \( t \)-tests showed that mothers and children produced significantly more partner topics utterances, \( t(6) = 5.99, p < .01 \) in the book context. In terms of joint topics, however, follow-up \( t \)-tests showed that mothers and children produced significantly more of these utterances in the AM context, \( t(6) = 2.52, p < .05 \). The main effects were not significant for own topic continuations (OTO), \( F(1,6) = 3.44, p = .11 \), and extensions (EXT), \( F(1,6) = 2.15, p = .19 \).

Because of our small sample size, we also calculated Cohen’s \( d \) for own topic continuations and extensions. For own topic continuations, Cohen’s \( d \) was 1.13, which is considered a large effect size (Cohen, 1988). Furthermore, the sample size needed for this \( t \)-test to be considered significant would be approximately 13 participants (Cohen, 1988). The current means suggest that mothers and children were producing proportionally more own topic continuations in

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¹ Wilcoxon Signed Ranks Tests confirmed these results. Mothers produced significantly more topic controlling utterances in the form of new topics (NTO), \( z = 2.37, p = .02 \), and own topic continuations, \( z = 2.37, p = .02 \). Children produced significantly more partner comments (PTO) than mothers, \( z = 2.37, p = .02 \).

² A Wilcoxon Signed Ranks Test confirmed this result. Mothers and children produced significantly more new topics (NTO) utterances in the book context, \( z = 2.37, p = .02 \).
the AM context \((M = .46, SD = .17)\) than in the book context \((M = .28, SD = .15)\). For extensions, Cohen’s \(d\) was .61, which is considered a medium effect size (Cohen, 1988), and was not considered further.

Finally, there were significant interactions for speaker and context for partner topics, \(F (1,6) = 17.05, p < .01\), and joint topic utterances, \(F (1,6) = 9.40, p < .05\). In terms of partner topics, mothers increased their use of these comments in the book context more so than did children. For joint topics, children increased their use of joint topic utterances in the AM context more so than did mothers, suggesting that children were producing more for mothers to respond to in an interactive way. There was no significant interaction for new topics, \(F (1,6) = 1.02, p = .35\); own topic continuations, \(F (1,6) = 3.86, p = .10\); or extensions, \(F (1,6) = 0.03, p = .88\).

Taken together, these results suggest that although mothers seemed to be controlling most of the conversations, children were better able to participate in the book narratives compared to the AM narratives. Although mothers provided significantly more topic-controlling utterances across contexts, children and mothers together produced more new topic initiations in the book context. This is likely due to the fact that the book context provides more opportunity for topic initiations as each page presents a new event. Additionally, children with SLI may be better able to contribute to this type of narrative because they have both the scaffolding of mothers and the support of a visual stimulus, compared to AM narratives in which children must rely on a mental representation of an event.

The following examples from Dyad 4 illustrate how narratives of children with SLI may differ based on the context. This dyad had relatively short AM narratives (see Fig. 1) and this child produced no topic-controlling utterances in the AM context. However, their storybook narrative was much more interactive. Thus, these examples illustrate how some children in this sample had more difficulty in the AM context compared to the storybook context. The following is from the AM narrative of Dyad 4.

MOM: Remember we went camping in the big tent?
MOM: Or the little, the pop up.
MOM: Remember our camper we went in?
CHILD: No.
MOM: Remember we made fires?
CHILD: No.
MOM: You don’t remember the fires?
MOM: And you got to carry a walkie-talkie.
CHILD: Yeah.
MOM: Yeah?
CHILD: I get to hold the black walkie talkie.
MOM: And you got to hold the black walkie talkie.

Despite the fact that this mother asked the child about several details of the events they discussed, the child rarely responded with any unique information. However, the storybook narrative of this dyad was much more elaborative and balanced in terms of topic control compared to their AM narratives. In the following excerpt, Dyad 4 discusses Frog Goes to Dinner.

MOM: Uh oh, look at that.
CHILD: Frog!
CHILD: He going to jump into that.
MOM: Yeah, that’s not going to be good, is it?
CHILD: No.
MOM: Not uh.
CHILD: I know that the frog would do it.
MOM: Yeah, what’s he looking for?
CHILD: A frog.
MOM: He’s looking for a frog?
MOM: Do you think the frog is going to jump on his face?
MOM: Oh!
CHILD: I know the frog going to jump on his face too.
In the book context, the child was able to be actively involved in the storytelling by contributing unique information. This storybook narrative interaction seemed to be less effortful than the AM narrative interaction in which the child had to rely on his own memory of an event. Additionally, although narrative content was not examined specifically, mother and child discussed narrative elements such as predicting what will happen next (He going to jump into that), evaluations (That’s not going to be good, is it?), and goals (What’s he looking for?).

It should not be surprising that mothers produced significantly more topic-controlling utterances considering that children with typically developing language skills of this age need scaffolding from parents. Perhaps more informative is how mothers respond to children when children do provide a topic-controlling utterance. Thus, we also examined mothers’ responses to children’s topic-controlling utterances to determine how often mothers follow their children’s lead. We created a composite variable for mothers’ topic-controlling responses (NTO and OTO) as well as mothers’ contingent responses (PTO, JT, and EXT). We found that in the AM context mothers responded with a contingent response to children’s topic-controlling utterance 65% of the time; in the book context mothers responded contingently 78% of the time. Paired-samples \( t \)-tests showed that mothers provided significantly more contingent utterances, \( t(6) = 3.59, p < .05 \), compared to utterances that did not follow up children’s utterances. Thus, it seems that for the most part mothers were responding to children’s utterances in a contingent way rather than redirecting the conversation. However, some children never gave mothers the opportunity to follow their lead as three children in the AM context and one child in the book context never produced a topic-controlling utterance.

We also examined correlations among mothers’ contingent and topic-controlling utterances and children’s elaborations as researchers have shown that children with SLI provide more information when mothers follow children’s lead (e.g., Dale et al., 1996). In the AM context, children’s elaborations were related to mothers’ contingent comments, \( r(7) = .80, p = .03 \), and to mothers’ topic-controlling comments, \( r(7) = .88, p < .01 \). In the book context, children’s elaborations were marginally related to mothers’ contingent comments, \( r(7) = .75, p = .05 \), but not to mothers’ topic-controlling comments, \( r(7) = .13, p = .79 \). However, when we plotted mothers’ contingent comments and children’s elaborations for the book context, the relationship did not appear linear. Thus, we conducted a Spearman \( \rho \) correlation, which failed to reach significance, \( p = .23 \). Thus, whereas in the book context, children’s elaborations appeared unrelated to mothers’ level of topic control, in the AM context, children’s elaborations were related to both mothers’ contingent and topic-controlling utterances. This suggests that in the AM context, children’s contribution of unique information was not differentiated by whether mothers’ utterances were contingent or topic controlling.

4.3. Children’s narratives with different conversational partners

The third aim of this study was to examine whether children would provide more unique information in narratives that were scaffolded by mothers versus an unscaffolded context. First, we examined proportions of elaborations in a series of 2 (partner: mother vs. experimenter) × 2 (context: AM vs. book) repeated measures ANOVA. There were significant main effects for children’s elaborations in terms of partner, \( F(1,6) = 12.54, p < .05 \), and context, \( F(1,6) = 20.08, p < .01 \). Children provided proportionally more elaborations with mothers, and proportionally more elaborations in the book context.\(^3\) There was no interaction between partner and context. These results suggest that children did benefit from a scaffolded context with their mothers in that they provided proportionally more elaborations with mothers than with the experimenter.

5. Discussion

The purpose of this study was to examine the co-construction of AM narratives of mothers and their children with SLI, to compare AM narratives to book narratives in terms of style and topic control, and to compare scaffolded and unscaffolded child narratives. This study provided a first step in examining what the mother–scaffolded AM narratives

\(^3\) Because of our small sample size, we also conducted Wilcoxon Signed Ranks Tests, which is a non-parametric test used to determine the magnitude of differences between groups similar to a paired-samples t-test. These comparisons confirmed our ANOVA results. Mothers provided proportionally more elaborations than children (\( z = 2.37, p = .02 \)), and children provided proportionally more elaborations in the book context compared to the AM context (\( z = 2.37, p = .02 \)).
of children with SLI are like. Although our results are preliminary, they provide valuable information regarding the behaviors that may support this narrative context that can guide future research or interventions.

5.1. AM narratives of children with SLI

The first aim of this study addressed mothers’ AM style with children with SLI. Consistent with our hypothesis and previous research, mothers’ elaborative wh-questions and elaborative yes–no questions were significantly related to children’s elaborations (Farrant & Reese, 2000; Reese & Fivush, 1993; Reese et al., 1993). Researchers have argued that elaborative questions, particularly open-ended questions, are facilitative of typically developing children’s AM development because these questions function to provide children with new information about the event, but also to elicit children’s participation in the recall (Fivush et al., 2006).

We made no predictions about the relations between repetitive questions and children’s elaborations as researchers do not typically examine this link in AM narratives. In one of a few studies to do so, Reese and Fivush (1993) found that mothers’ repetitions were not related to children’s participation in AM talk. Furthermore, Leichtman, Pillemer, Wang, Koreishi, and Han (2000) found that a composite of repetitive questions and statements was negatively related to number of correct details children reported about a staged event, suggesting that mothers’ repetitive questions did not facilitate children’s recall. Thus, repetitions are typically viewed negatively; however, we argued that repetitions may serve a different function with language impaired preschoolers who are less likely to provide information to narratives compared to typically developing preschoolers (Marvin & Wright, 1997; van Kleeck & Vander Woude, 2003). Contrary to findings from studies with typically developing children, we found that mothers’ repetitive questions were related to children’s elaborations in the AM context. Mothers’ repetitive wh-questions were significantly related to children’s elaborations; mothers’ repetitive yes–no questions were not significantly related to children’s elaborations, but had a large effect size. For children with SLI, it may be that these questions are facilitative because they allow mothers to elicit information from a child who is less responsive. Children’s passivity may lead parents to use more repetitions to keep the conversation going and to elicit information from their child. Thus, this strategy may result in more information provided by the SLI child than it does for a child with typically developing language. Examining the individual conversation from Dyad 7 allowed us to see how mothers’ repetitive questions may have functioned to encourage participation from children.

Mothers’ elaborative statements, on the other hand, were not related to children’s elaborations. Previous results have been mixed in terms of whether elaborative statements are related to children’s elaborations (e.g., Farrant & Reese, 2000; Reese & Brown, 2000). Statements may not elicit information from children with SLI because of their limited language skills; thus, children with SLI may rely more heavily on mothers’ information eliciting questions. When mothers make statements rather than asking questions, it may lessen the demand on children with SLI, which results in lower participation. The example from Dyad 2 demonstrated how a mother can be highly elaborative without eliciting information from the child as she described the events of the story rather than asking the child questions about the story.

The current results suggest then that during AM narratives, mothers can facilitate children’s participation by asking questions, even if questions are repetitive. An alternative may be for parents to allow children more time to respond to elaborative questions. In a book reading intervention with parents and their language delayed children, Crain-Thoreson and Dale (1999) found that children whose parents allowed them more time to respond to questions provided more information after the intervention. The current results also suggest that mothers’ questions may play different roles compared to mothers’ statements. The fact that we found that mothers’ questions regardless of whether they were elaborative or repetitive, but not mothers’ statements, were related to children’s elaborations, suggests that for children with SLI it is beneficial to draw attention to what is important to attend to by asking questions.

5.1.1. Clinical implications

Examining the AM style of mothers with children with SLI is important because typically developing children of high-elaborative mothers tend to recall more information than children of low-elaborative mothers (Reese et al., 1993; Reese & Fivush, 1993). Also important is that researchers have shown that mothers are consistent in their use of elaborations over time, and that mothers’ earlier elaborations are predictive of children’s later ability to participate in AM narratives (Farrant & Reese, 2000; Reese et al., 1993). Thus, these relationships between the elaborativeness of mothers and their children with SLI may be more than just static representations of narrative interaction. Mother–
scaffolded AM narratives may be an important contributor to the later narrative skills of SLI children in addition to children’s immediate outcomes.

Also relevant is that children with SLI may be less able to participate in and benefit from AM conversations because of their limited language skills, which is supported by comparisons of book narratives of children with SLI and their age-matched peers (e.g., Bishop & Donlan, 2005). Fivush (1998) claims that language is a very influential tool that allows us to encode, organize, and retrieve memories. Thus, the ability to express AM, as well as the actual representation of memories, may be delayed in children with language delays. Research on both AM and book narratives show that encoding an event is important for later recall (Bishop & Donlan, 2005), and if the required language skills at time of encoding are absent, later recall will be difficult (Simcock & Hayne, 2002). Additionally, children with SLI may not have as much practical experience participating in rich, coherent narratives because of the difficulty they have with narrative production, which may make it harder for them to maintain conversations about their past with others.

Understanding what facilitates AM memory narratives in SLI children is important because talking about our personal past serves an important social function in terms of forming and maintaining relationships (Bluck, Alea, Habermas, & Rubin, 2005). Previous research shows that narrative production and social interaction is more difficult for children with SLI even into adolescence (McCabe & Marshall, 2006; Wetherell, Botting, & Conti-Ramsden, 2007). Craig (1993) pointed out that children must have good communication skills in order to experience positive social interactions, and sharing an AM event can make contributions to conversations more believable and persuasive (Pillemer, 1992). Thus, it is important to understand what facilitates children’s ability to tell an elaborative AM narrative as this ability emerges. Parent–child narrative interactions are particularly important because of the role that scaffolding plays for both typically developing and language impaired children.

5.2. AM narratives compared to book narratives

The second aim of this study was to compare mothers’ and children’s AM and storybook narratives. The relationships between mothers’ style variables and children’s elaborations were very similar for the book context in that both elaborative and repetitive wh-questions were related to children’s elaborations. Although elaborative and repetitive yes–no questions were not significantly related to children’s elaborations, these correlations had large effect sizes. Additionally, mothers’ statements were not related to children’s elaborations. These results suggest that the ways in which parents promote the participation of children with SLI in AM and book contexts may be very similar.

We found that mothers and children were also fairly consistent between contexts in terms of style. Mothers’ elaborative statements and repetitive yes–no questions were significantly related between contexts. Although not statistically significant, other correlations between contexts that had large effect sizes included mothers’ elaborative wh-questions and elaborative yes–no questions, and children’s elaborations. Thus, with the exception of mothers’ repetitive wh-questions and statements, which had small to medium effect sizes and were not statistically significant between contexts, mothers may be very consistent between AM and book contexts given a slightly larger sample size. This seems to be particularly true of mothers’ elaborative utterances.

Research on the AM narratives of typically developing children does not typically focus on comparisons between AM and book reading, although Laible (2004) found that mothers’ elaborations in these two contexts were not related. However, Laible examined elaborations on a 5-point scale rather than frequency or proportion of use, which may have reduced the specificity of this comparison. Taken together, our results suggest that mothers and children who are elaborative in one context may also be elaborative in another; and between contexts, similar style variables were related to children’s elaborations (i.e., mothers’ elaborative wh-questions, mothers’ repetitive wh-questions).

We also compared topic control for mother–child narratives in both contexts. We found that in both contexts mothers used more topic-controlling utterances (NTO and OTO), whereas children used more contingent utterances (PTO and JT). Mothers of children with SLI may be more topic controlling to establish some amount of involvement from children. In fact, this seemed to be the case for the AM context because both mothers’ contingent and topic-controlling comments were related to children’s elaborations. Thus, mothers’ topic-controlling comments in general may be facilitative of children’s elaborations at least in the AM context. These results suggest that any type of maternal comment is related to children’s elaborations, which is contrary to research on book narratives of mothers and children with SLI that show that following up what the child says results in greater participation. However, children in this sample provided very little memory information for mothers to respond to; in fact, 3 children never provided a topic-
controlling utterance. Thus, mothers did not have the opportunity to follow up children’s lead, which is likely why mothers’ topic-controlling utterances were related to children’s elaborations. When children did provide a topic-controlling utterance, we found that mothers typically responded to children in a contingent way. Thus, it seems that parents were following children’s lead when given the opportunity.

Our results are contrary to those of Justice and Kaderavek (2003), whose topic control coding scheme we used. They found that mothers and their children with SLI were balanced in their proportions of new topic (NTO) comments. Additionally, when they compared total topic control comments (NTO and OTO) to total contingency comments (PTO, JT, and EXT), they found that mothers and children did not significantly differ in proportions of control or contingency utterances. One possible reason for the difference in our results is that they used traditional storybooks with text for their mother–child interactions rather than wordless storybooks. Thus, it may be that different narrative contexts result in different levels of topic control by children with SLI. This is supported by our finding that children seemed to have more difficulty with the AM context relative to the book context. It may also be the case that children also have more difficulty contributing to wordless picture books relative to traditional storybooks.

5.2.1. Clinical Implications

Researchers have established that children with SLI have difficulty with narratives. Thus, comparing a wider range of narrative tasks in children with SLI could demonstrate particular strengths and weaknesses across narrative contexts. Our results also suggest that there may be differences between contexts in that children with SLI may have greater difficulty with AM narratives compared to storybook narratives as children produced proportionally more elaborations in the book context in this study. Dyad 4 provided a good example of how a book narrative was more interactive and detailed compared to an AM narrative, which seemed quite effortful. Our results are consistent with Kaderavek and Sulzby (2000), who found that preschoolers with SLI had greater difficulty than language-matched children in producing AM narratives, but were more comparable in their retellings of a storybook.

One avenue for future research is the implementation of intervention studies designed to facilitate mother–child AM narratives. Previous researchers have trained mothers of children with typical language skills on an elaborative style of talking about the past and have shown that trained mothers were more elaborative than untrained mothers, and that children of trained mothers provided richer AM narratives (Boland, Haden, & Ornstein, 2003; Peterson, Jesso, & McCabe, 1999; Reese & Newcombe, 2007). Particularly relevant to children with SLI is that Boland et al. (2003) separated children into high and low language groups, and found that mothers successfully used the elaborative techniques that were trained regardless of children’s language level. Researchers who have conducted intervention studies with parents and their children with SLI in the context of joint book reading have also shown that they have an effect on mothers’ conversational style and children’s language (Crowe et al., 2000; Dale & Crain-Thoreson, 1996). Results from both types of studies suggest that training mothers to use an elaborative style could potentially benefit the narrative skills of children with SLI. Furthermore, because mothers were consistent between contexts on some variables, future intervention studies could determine if training mothers in a more interactive style in one context (e.g., book reading) leads to transfer to additional narrative contexts (e.g., AM).

Explorations of different types of narrative tasks that vary in terms of their linguistic or representational support (e.g., pictures) may provide further information about how children with SLI may benefit from variations in scaffolding. One possible direction for future intervention studies aimed at promoting the participation of children with SLI during AM narratives is to use photographs of the event in addition to mothers’ scaffolding. Deocampo and Hudson (2003) used photograph reminders in a study of 2-year-olds’ memory for events staged in the laboratory. Children who were shown photographs of the events at a later time point recalled more information compared to children who did not view the pictures. Additionally, in a study of preschoolers with language impairment, Kaderavek and Justice (2005) found that children produced more complex utterances when parents read books with manipulative opportunities (e.g., flaps that lifted) compared to books that did not have manipulatives. These two studies in combination with our finding that children produced proportionally more information in the book context suggest that children with SLI may benefit from multiple sources of support. Getting children actively involved through non-language supports such as photographs of themselves or pictures in a book may be particularly important for language impaired children.
5.3. Children’s independent narratives

The third aim of this study was to examine whether children’s narratives were facilitated by a scaffolded context by comparing children’s elaborations with mothers to their elaborations with the experimenter during AM and storybook narratives. Although the relations between mothers’ and children’s variables suggest that mothers are facilitating children’s participation, the comparison to the experimenter–child narratives provides stronger support for the claim that mothers are facilitating children’s narratives. We found that children provided proportionally more elaborations with mothers in both contexts, which supported our hypothesis and previous findings from the AM literature (Hudson, 1993; McCabe & Peterson, 1991; Peterson & McCabe, 1994). This finding is not surprising as the experimenter deliberately provided only minimal support to children. However, this comparison was important as studies of children with SLI do not typically make this comparison. It could be that children’s impaired language skills lead mothers to not support the narratives of their children; however, this did not seem to be the case as mothers provided significantly more elaborations than repetitions in both contexts, and children contributed significantly more information with mothers compared to an experimenter in both contexts.

5.4. Limitations and future directions

One limitation of the current study is the small sample size, which clearly should be addressed in future studies of this type. However, our study was exploratory and descriptive in nature as it was the first to examine the co-construction of AM in this population. The power analyses for the findings in this study suggested that a larger sample size of 22 participants would likely lead to many of our marginal findings being significant. A benefit of our sample was that all children were receiving services from the same location, had similar language profiles, and were assessed by the same experimenter. Despite our sample size, we found several significant findings. We also have a rich data set because we collected data in two contexts with two conversational partners.

Another limitation is our lack of a control group of typically developing children, which limited our ability to make direct comparisons to children with typically developing language skills. Although the age of the children in this sample corresponds to the same age group in which typically 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 typically developing children. Our results are limited to making comparisons only to the existing literature on AM narratives of typically developing children. Clearly, only a direct comparison to typically developing children could explore these issues. Thus, comparative studies are needed in order to further examine the relationship between the age and language level of children with SLI and their AM narratives.

Another important limitation is that this study relied mostly on correlations between mother and child variables; thus, we cannot determine causality. That is, we cannot be certain whether mothers’ narrative style (e.g., elaborative wh-questions) is causing children’s increased participation, or whether children who are more elaborative are more likely to elicit certain responses from mothers. It seems that this relationship is bidirectional in that children’s language delay clearly impacts mothers’ behaviors. For example, children with language impairments tend to provide more inappropriate responses and are less likely to respond to adults’ conversational solicitations compared to children with typically developing language (e.g., Bishop, Chan, Adams, Hartley, & Weir, 2000). However, our results do suggest that these conversations are largely driven by mothers, especially in the AM context, in that mothers controlled more of the mother–child conversations and that children contributed relatively little information. The issue of causality could be addressed in future studies by examining these variables longitudinally. A longitudinal study could examine how the way mothers structure AM conversations with children change over time, and how maternal style changes depending on children’s narrative development. Additionally, intervention studies designed to test the effectiveness of training mothers in narrative interactional styles could elucidate the direction of this relationship.

5.5. Conclusion

This study was the first step in examining the mother-constructed AM narratives of children with SLI. We found similarities between our sample and findings from previous studies of typically developing children’s AM narratives in that mothers’ elaborative questions were related to children’s elaborations. Contrary to previous studies of AM narratives, we found that mothers’ repetitive questions were also related to children’s elaborations. Our comparison of
AM narratives to book narratives showed that mothers’ use of questions was also related to children’s elaborations in the book context, which is consistent with previous studies of book interactions of mothers and children with SLI. Additionally, children provided proportionally more unique information in book narratives, and in both contexts, mothers controlled most of the narrative. Additionally, children provided more elaborations with mothers compared to an experimenter in both contexts, which supported our hypothesis that children would provide more information when scaffolded by mothers. Further research is clearly needed to support these findings.

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Appendix A. Continuing education questions

1. Which of the following characterizes the participation of children with SLI in book reading interactions with mothers compared to typically developing children?
   (a) They ask more questions.
   (b) They are more likely to ignore mothers’ utterances.
   (c) They initiate new topic more often.
   (d) They produce more complex utterances.

2. Which of the following characterizes the independent narratives of children with SLI compared to typically developing children?
   (a) They make more syntactic errors.
   (b) They provide fewer utterances.
   (c) They provide more inappropriate utterances.
   (d) All of the above.

3. Mothers can encourage the participation of their children with language impairments during book reading interactions by:
   (a) Asking open-ended questions.
   (b) Providing statements about the story.
   (c) Redirecting the child’s focus of attention.
   (d) Not pausing after questions.

4. Children of mothers who are highly elaborative during autobiographical memory (AM) narratives:
   (a) Include more memory information in their AM conversations with others.
   (b) Include more memory information in their AM conversations later in development.
   (c) Include more memory information in their AM conversations with mothers.
   (d) All of the above.

5. According to this study, the AM narratives of mothers and their children with SLI may differ in what way from those of mothers and their typically developing children?
   (a) Repetitive questions may facilitate the participation of children with SLI.
   (b) Elaborative questions may not facilitate the participation of children with SLI.
   (c) Repetitive statements may facilitate the participation of children with SLI.
   (d) Elaborative statements may facilitate the participation of children with SLI.

References


