

Relations Among the Frequency of Shared Reading and 4-Year-Old Children's Vocabulary, Morphological and Syntax Comprehension, and Narrative Skills

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Books can be a rich source of learning for children and adults alike. In the present study, the contribution of shared reading and parent literacy to a variety of child outcomes was tested. Child outcomes included measures of expressive vocabulary, morphological and syntax comprehension, and narrative ability (story grammar, cohesion, and language complexity) for book stories as well as personal stories. A total of 106 English-speaking 4-year-old children and their parents participated. As predicted, shared reading accounted for unique variance in children's expressive vocabulary and morphological knowledge after controlling for child nonverbal intelligence, parent education, and parent literacy (i.e., book exposure). Although shared reading predicted syntax comprehension, the effect was mediated by parents' own level of literacy. Contrary to expectation, shared reading was not correlated with any of the narrative measures. Interestingly, the narrative measures for telling stories from a book and telling a personal story were not related to each other and were dif-

ferentially related to the other child measures, suggesting that book and personal stories may represent different genres requiring different skills.

Shared reading between a parent and a child has a number of characteristics that can promote language development. First, the language in children's books is much more sophisticated and complex compared to the language typically spoken between parent and child during regular interactions (Crain-Thoreson, Dahlin, & Powell, 2001). Such exposure to more complex sentence structures and novel words should promote learning. Shared reading also facilitates learning by providing opportunities for the parent to use questions, expansions, and definitions that focus on language, stories, world knowledge, and emotional reactions (e.g., Zevenbergen, Whitehurst, & Zevenbergen, 2003). Lastly, the same books can be read over again, thus increasing children's chances of learning from the books (Robbins & Ehri, 1994; Sénéchal, 1997).

Given the potential richness of shared reading for learning, it is not surprising that understanding fully the role of shared reading is of continued interest. A number of studies have reported a stable and robust relation between shared reading and children's vocabulary (Frijters, Barron, & Brunello, 2000; Raikes et al., 2006; Sénéchal, 2006; Sénéchal & LeFevre, 2002), although not all studies have reported a statistically significant relation (Aram, 2006; Deckner, Adamson, & Bakeman, 2006; Weigel, Martin, & Bennett, 2006). What is less well known, however, is whether exposure to the increased linguistic complexity in books also benefits other aspects of children's language such as their comprehension of morphologically and syntactically complex sentences. It has been proposed that shared reading exposes children to the written language register and subsequently to the complex syntax elements found in written language (Bus, van IJzendoorn, & Pellegrini, 1995). Written language may introduce elements of sentence structure and word formation typically not found in oral language. Such elements include the use of inflections to identify past or present tense and an emphasis on the order of words in a sentence to enhance comprehension of the text (Mokhtari & Thompson, 2006). For instance, Crain-Thoreson and Dale (1992) found that the frequency of shared reading reported by parents when their child was 24 months predicted children's comprehension of syntactically complex sentences 6 months later. The sample size in that study was small, at 30 participants. In the present study, we examined the relation between the occurrence of shared reading and syntax comprehension in a larger and older sample of children. The present study also extends the extant research by assessing whether there is a robust relation between the frequency of shared reading and children's comprehension of morphologically complex words.

The selection of morphology (i.e., combining meanings into words) and syntax (i.e., combining words into sentences) is of particular interest because between the

ages of 2 and 5 years children make rapid progress in these aspects of language. During this period, children produce words that are more complex morphologically and that are embedded in more syntactically complex sentences (Brandone, Salkind, Golinkoff, & Hirsh-Pasek, 2006; Hoff, 2006b). Most important, the process and rate of acquisition of these components are sensitive to environmental input. For instance, child-directed speech seems to play a role in children's acquisition of syntax (Hoff, 2006a). Finally, individual differences in these dimensions are linked to subsequent literacy skills. For example, children's knowledge of morphology is associated with eventual success in reading (Sénéchal & Kearns, 2007).

Just as shared reading provides exposure to novel word forms promoting vocabulary expansion, it also provides models of contextually clear morphology together with a variety of complex sentence patterns. Given that such structural elements of a language appear to be learned in development at least in part through exposure to adult speech (Hoff-Ginsberg, 1998), it would seem a reasonable hypothesis that shared reading may benefit syntactical and morphological processing. Further, the repetitive nature of shared reading (i.e., rereading the same books over and over again) may provide increased exposure to specific morphological and syntactical structures. This feature of shared reading may be important, given that the frequency of exposure to specific structural elements of a language has been associated with gains in typical morphological and syntactical development (Valian & Lyman, 2003).

In addition to enhancing child language, shared reading also exposes children to a variety of story structures that, in turn, may promote children's narrative ability. When telling stories, children sequence events, utilize their vocabulary, and show some understanding of cause and effect (Harkins, Koch, & Michel, 2001; Paul & Smith, 1993). It has been argued that narrative skills bridge the gap between oral language and literacy by providing the child with examples of decontextualized and extended units of language typically encountered in written text (Paul & Smith, 1993; Peterson & McCabe, 1992). A study conducted by Harkins et al. illustrated the role of shared reading on children's use of evaluative devices such as making explicit references to the character's frame of mind or emotional state, quoting the characters, using emphasizing comments, and commenting on one's own emotional reaction to the story. In essence, elaborative devices act to emphasize story action and direct the listener's attention to what the narrator believes is important in the story. Harkins et al. found that listening to their mother's storytelling had a significant impact on children's use of evaluative devices in their narrative, leading the researchers to propose that shared reading is an important source of narrative acquisition for children. Similar positive influences of shared reading on narrative ability were reported by Zevenbergen et al. (2003). These studies lend support to the idea that shared reading plays a role in the development of narrative skill.

The research on narrative abilities has examined two types of narratives, namely fictional storytelling with books and autobiographical storytelling. Purcell-Gates (1988) claimed that children acquire knowledge of oral language and written language separately. Children learn how to construct nonbook narratives through social interaction and everyday language, leading to more informal and less structured narratives. Alternatively, children learn *book talk* through shared reading, leading to book narratives that include more decontextualized language and are more structured than typical written language. Purcell-Gates's study on kindergarten and second-grade children supported this, as she found children produced a greater frequency of participles, attributive adjectives, adverbs, literary words and phrases, direct quotes, sound effects, and formulaic openings in their picture book narratives than in their personal event narratives. As well, both groups of children used a greater variety of verbs in the picture book narratives than in the personal event narratives.

One of the goals of the present study was to further investigate Purcell-Gates's claim that book and personal narratives are acquired differently. If this is the case, then the frequency of shared reading should be linked to children's production of book narratives, but not personal narratives. In the present study, the quality of both types of children's narrative productions was analyzed using measures of language complexity, story cohesion, and story structure.

Language complexity refers to the variety of vocabulary used by the child as well as the mean length of the utterances spoken by the child. Purcell-Gates (1988) used similar measures of varied language. Also, connectives establish cohesion within a narrative by semantically relating clauses together in a temporal or causal manner (Cain, 2003). Higher quality narratives do not necessarily differ in the number, but variety, of connectives used; younger children use the connective *and* almost exclusively, whereas older children also include temporal and causal connectives such as *then* and *because* in their more complex narratives (Cain, 2003; McKeough, Davis, Forgeron, Marini, & Fung, 2005). Finally, children who produce well-structured stories must organize the events that occurred in a sequential, meaningful way (Stein & Albro, 1997). Hence, children must have some knowledge of the importance of including in their story key elements such as an introduction, details about the setting, character descriptions, thematic information, reactive events, and conclusions (Applebee, 1978).

Our focus on language complexity, cohesion, and structure was in accord with work conducted by Schneider and Winship (2002) that showed that naïve judges assess story quality along similar dimensions. Schneider and Winship asked untrained judges to rank from best to worst stories that were written to vary on dimensions of quality (descriptions, structural elements such as inclusion of events and conclusions, and connectives). The untrained judges generally rated stories that were highly descriptive, highly connected with interclausal connectives, and highly structured as better quality narratives.

THE PRESENT STUDY

There were two main objectives to the current study. The first objective was to assess whether the frequency of shared book reading predicts skills other than vocabulary. Four additional measures were included, namely children's comprehension of morphologically complex words and syntactically complex sentences, as well as two measures of narrative production. It was hypothesized that the frequency of shared reading would be linked to children's knowledge of morphology and syntax. The prediction for narrative abilities was more nuanced. Presumably, frequency of shared reading should facilitate the construction of book stories, but not necessarily the retelling of personal anecdotes such as a birthday party. Hence, it was predicted that the frequency of shared reading would predict book stories, but not personal stories. The present study is, therefore, novel in directly comparing the two types of story genres. As a consequence, a second objective of the present study was to examine whether the two types of narrative genres were related to each other. Given the correlational nature of the present research, more stringent tests of the association among key constructs were conducted by controlling for potential confounds such as children's nonverbal intelligence, parents' own print exposure, as well as parents' education level.

METHOD

Participants

Four-year-old children and one of their parents participated in this study. All children were recruited from the kindergarten classes they attended in a large Canadian city. In the public schools where recruitment took place, kindergarten begins at age 4 and is half-days for two consecutive years. The final sample included 106 children with a mean age of 4 years 8 months ($SD = 3.5$ months). There were 49 boys and 57 girls. All children included spoke English most often according to parent reports, with 69% of the families reporting speaking English exclusively. The remaining families reported differing levels of bilingualism: 3% reported that their child spoke two languages, but the parents did not; 9% reported having one bilingual parent; 9% having two bilingual parents and a monolingual child; and a final 9% having one parent and the child speaking two languages. Six families in which both parents and child were bilingual were excluded from the final sample because preliminary analyses revealed that their inclusion produced a level-of-bilingualism effect that distorted the pattern of findings. That is, the six fully bilingual families reported reading as frequently or more often than the other families, but their children had lower language scores, which raised the possibility that shared reading in these six families occurred in a language other than English. No such effect was

found for the other family language profiles. One additional child was omitted from the final sample because of vision problems.

We asked the parent who was most knowledgeable about the home literacy activities to complete a questionnaire. In 91% of cases the respondent was the mother, and in 9% it was the father. The respondents indicated the number of years of high school, college, and university they had completed. On average, parents from this sample had completed 3 years of postsecondary education either at universities or colleges ($SD = 2$ years). In Canada, colleges are postsecondary institutions that offer instruction in professional or technical subjects and that sometimes offer courses that can be credited toward a bachelor's degree in a university. More specifically, 23% of respondents had completed 5 to 8 years of university, 31% had completed 1 to 4 years of university, and another 31% had completed 1 to 4 years of college. Only 15% of the respondents had not pursued any studies after completing high school. Therefore, 85% of the sample had pursued some level of postsecondary education, and that is higher than the national average of 62% for Canadians (Statistics Canada, 2001). The number of years of postsecondary education without distinction between college or university was used in subsequent analyses, because preliminary analyses revealed that it was a better predictor of child outcomes than was a weighted index that differentiated between college and university.

Materials: Parent Measures

Questionnaire on child literacy experiences. Shared literacy experiences between parent and child were measured using a questionnaire. Parents indicated the frequency with which they read to their child at bedtime and at other times on an 8-point scale, where 0 indicated *never* and 7 indicated *seven times a week*. For these frequency questions, parents could specify the frequency of shared reading if it was more than seven times a week. Responses on these two frequency questions were added. In addition, parents were also asked to estimate on a 5-point scale (0 = *never*, 4 = *very often*) the frequency of library visits with their child to borrow children's books. The frequency questions were selected because they are typically used in the shared-reading literature, whereas the question about library visits has been shown to be a unique predictor of child vocabulary after the entering of key controls such as parent education, parent literacy, and child analytic intelligence (Sénéchal, LeFevre, Hudson, & Lawson, 1996).

Checklists on child storybook exposure. Storybook exposure was also measured using two checklists completed by parents. The checklists required that parents indicate the children's book titles and authors they recognized from a list that included foils. The assumption underlying the checklists was that parents who read more often to their child should be more knowledgeable about children's literature than parents who do not. The first checklist, the Children's Book Title Check-

list, was used to assess parents' familiarity with popular children's books; the second, the Children's Book Author Checklist, was used to assess their familiarity with children's storybook authors (Sénéchal & LeFevre, 2002; Sénéchal et al., 1996). Each checklist included 40 real items and 20 foils. Only popular book titles and authors were included that represented a variety of genres, were inexpensive or readily available in a library, and were not available on video. Parents were asked to select only the titles or authors that they recognized and were discouraged from guessing by being informed that the list included foils. For each checklist, a corrected score was obtained by subtracting the proportion of foils wrongly selected from the proportion of correctly identified items. Sénéchal et al. (1996) reported reliability coefficients of .86 and .88 for the Children's Book Title Checklist and Children's Book Author Checklist, respectively.

Checklist on parent print exposure. Parents completed a checklist as a measure of their own exposure to adult literature. The Adult's Book Author Checklist was used to assess parents' familiarity with and recognition of adult book authors. The Adult's Book Author Checklist was adapted for a Canadian population (Sénéchal et al., 1996) from a similar checklist developed by Stanovich and West (1989). Sénéchal et al. (1996) reported excellent reliability for this checklist, with a Spearman–Brown coefficient of .95. Parents were instructed to select only authors they recognized and to refrain from guessing (the measure had 40 true answers and 20 foils). A corrected score was obtained by subtracting the proportion of foils wrongly selected from the proportion of correctly identified items. This measure of parent print exposure served as a proxy measure of parent literacy, and it was used as a control measure for child performance outcomes.

Materials: Child Measures

Expressive vocabulary. Children's expressive vocabulary was assessed using the Expressive Vocabulary Test (Williams, 1997). This is a reliable and standardized measure that reports a mean split-half reliability of .91 and includes a total of 190 test items. The first 38 items are labeling items for which the experimenter points to a picture or a part of the body and asks the child to name the picture or body part. The remaining 152 items are synonym items for which the examiner presents a picture and a word and asks the child to give a synonym for the given word. One point is given for each correct answer, and standardized scores on the Expressive Vocabulary Test were used in the analyses.

Morphological comprehension. Children's comprehension of morphologically complex words in sentences was assessed with the Grammatical Morphemes subtest of the Test for Auditory Comprehension of Language–3rd Edition (TACL-3; Carrow-Woolfolk, 1999). This subtest is a reliable and standardized measure

that reports a reliability coefficient of .94 and includes 46 items. It is an individually administered test that assesses the meaning of grammatical morphemes such as noun number and case, verb number and tense, noun–verb agreement, derivational suffixes, and pronouns presented in sentence contexts. An illustrative item is “Show me the shortest man.” For each test item, the child hears the sentence context and selects from an array of three pictures the one that best captures the sentence.

Syntax comprehension. Children’s comprehension of syntactically complex sentences was measured with the Elaborated Phrases and Sentences subtest of the TACL-3 (Carrow-Woolfolk, 1999). This subtest is a reliable and standardized measure that reports a reliability coefficient of .94 with a total of 48 items. It measures children’s understanding of syntactically complex phrase and sentence constructions achieved by embedding phrases into sentences, as well as partially or completely conjoining sentences. For instance, children hear the following sentence: “She danced while the cat looked at the mirror.” Children are required to select from an array of three pictures the one that best corresponds to the phrase or sentence read by the examiner.

Book narratives. Children’s storytelling based on a picture book was assessed with the Edmonton Narrative Norms Instrument (ENNI; Schneider, Dubé, & Hayward, 2002) because it provides a standardized manner of assessing book narratives, and, to our knowledge, the ENNI is the only narrative structure measure that includes a normative sample. The normative sample included 377 ethnically representative children aged 4 through 9 tested in Edmonton, Canada. The ENNI was designed to assess children’s *story grammars* by asking children to tell a story from picture books consisting of simple black-and-white drawings. Two picture books were used in the present study: A1 and A3. Picture Book A1 included five drawings, two characters, and one episode, whereas Picture Book A3 included 13 drawings, four characters, and three episodes. The procedure was such that the experimenter held the picture book facing the child so that only the child saw the pictures. The child was informed that he or she would first look at the pictures in the book and then would have to tell a story based on the pictures. The child was also informed that he or she would need to tell the story really well in order for the experimenter to understand because the experimenter could not see the pictures.

Resulting stories were transcribed from audiotapes and analyzed on three dimensions, namely language complexity, story cohesion, and reliance on story grammars. Language complexity included children’s type–token ratio and mean length utterance. Type–token ratio represented the proportion of different words spoken given the total number of words spoken. Story cohesion was assessed using the number of different connectives produced by the child (e.g., *and*, *because*, *then*). Connectives were measured in the present study because they establish co-

hesion within a narrative by semantically relating clauses together in a temporal or causal manner (Cain, 2003). Measures of language complexity and story cohesion were obtained using the Child Language Analysis program available from the Child Language Data Exchange System (MacWhinney, 2000).

Story grammar units correspond to the basic elements of a story that allow one to organize the events that occurred in a sequential, meaningful way (Stein & Albro, 1997). Children's reliance on story grammars was scored according to the ENNI guidelines, whereby stories received 1 or 2 points for each story grammar unit included among the following units: character, setting, initiating event(s), internal response, internal plan, attempt, outcome(s), and reaction of the character(s). Of these story grammar units, initiating event(s), attempt, and outcome are considered to be *core* units and for this reason they were given a score of 2 points, whereas the others were given a score of 1. Standardized scores were used for story grammars.

Personal narratives. The second narrative task was based on autobiographical experience and was adapted from Purcell-Gates (1988). For this task, children were asked to tell the experimenter about a birthday party that had happened recently in their life or to create an imaginary birthday if they had not attended a party recently. In the present study, only two children invented a story. Children's stories were scored for language complexity, story cohesion, and story grammars in the same manner as the book narratives. A comparable scale to the ENNI was created to account for each story grammar unit included in the personal event narratives.

Nonverbal intelligence. Children's nonverbal intelligence was assessed using the Animal Pegs subtest of the Wechsler Preschool and Primary Scale of Intelligence-Revised (Wechsler, 1989). Children were asked to place differently colored pegs in a board according to a given sequence of pictures of animals. Each animal corresponded to a different peg color. Children's performance was determined by both the length of time taken to complete the task and the number of correctly placed pegs. Testing was discontinued after 5 min or when the child finished the entire board. Standardized scores were used in the analyses. The reported test-retest stability coefficient was .66 (Wechsler, 1989).

Procedure

For each participating child, the parent who read the most to the child completed the questionnaire and three checklists. Testing was conducted over two testing sessions that were less than 1 week apart, with each lasting approximately 30 min. In the first testing session, children completed the morphological and syntax subtests of the TACL-3, the personal story, and the shortest of the two picture book stories.

In the second testing session, children completed the Expressive Vocabulary Test, the longest of the two picture book stories, and the nonverbal intelligence subtest. Children's narratives were audiotaped. Each child was tested by the same examiner at each testing session.

RESULTS

Missing data points were replaced with the sample mean for the appropriate variable because the missing data were randomly distributed across variables and never exceeded more than 3% for any given variable.

Descriptive Statistics

The descriptive results for all measures are reported in Table 1. Parents reported that shared storybook reading occurred frequently with their child. On average, parents reported reading to their child at bedtime five times per week and at other times four times per week. In addition, parents reported that they and their child visited the library occasionally. The percentage of targets correctly recognized on each checklist is also found in Table 1. Parents correctly recognized 31% and 24% of the children's book titles and authors, respectively, and recognized 41% of the adult authors. On average, children's performance on all standardized language measures was slightly higher than the tests' standardized mean scores. Also reported in Table 1 are children's narrative measures for the two book narratives (averaged) as well as for the personal narrative.

Correlations

To reduce the number of variables for the children's home literacy experiences, a principal components factor analysis with varimax rotation was conducted. The analysis included four items: the question about reading frequency (i.e., the sum of reading at bedtime and other times), the reported frequency with which the child visited the library to borrow books, and the children's books checklists (i.e., the average of the children's book titles and book authors checklists). The analysis yielded a single factor that accounted for 50% of the variance and had good structure with factor loadings of .66, .74, and .73 for reading frequency, library visits, and exposure to children's books, respectively. Factor scores, labeled shared reading, were used in all subsequent analyses.

As indicated in Table 2, shared reading was significantly related to children's expressive vocabulary as well as their comprehension of morphologically complex words and syntactically complex sentences. Contrary to expectation, however, shared reading was not positively related to any narrative measure, be it children's

TABLE 1
Descriptive Statistics for Parent and Child Measures

<i>Variable</i>	<i>Median</i>	<i>Range</i>
Literacy experiences		
Reading frequency at bedtime ^a	5	0–7
Reading frequency at other times ^b	4	0–8
Child goes to library to borrow books ^c	2	0–4
	<i>M</i>	<i>SD</i>
Children's Book Title Checklist ^d	30.75	20.45
Children's Book Author Checklist ^d	23.63	17.1
Adult's Book Author Checklist ^d	41.30	22.55
Language		
Expressive vocabulary ^e	110.15	12.73
Morphological knowledge ^e	12.01	2.12
Syntax comprehension ^e	11.51	2.58
Book narrative		
Language: Number of words	82.06	28.61
Language: Number of different words	36.82	10.10
Language: Type–token ratio	0.49	0.08
Language: Mean length utterance	8.22	1.70
Story cohesion: Number of connectives	10.36	6.16
Story cohesion: Number of different connectives	2.30	0.95
Story grammar ^e	10.98	2.33
Personal narrative		
Language: Number of words	69.66	59.39
Language: Number of different words	38.53	22.93
Language: Type–token ratio	0.63	0.14
Language: Mean length utterance	6.35	1.69
Story cohesion: Number of connectives	8.39	9.07
Story cohesion: Number of different connectives	2.21	1.28
Story grammar	7.71	4.16
Control variables		
Child nonverbal intelligence ^e	11.85	2.43
Parent years of postsecondary education	3.04	2.00

^a8-point scale: 0 (*never*), 1 (*one time per week*) ... 7 (*seven times per week*). ^b9-point scale: 0 (*never*), 1 (*one time per week*) ... 8 (*more than seven times per week*). ^c5-point scale: 0 (*never*), 1 (*rarely*), 2 (*sometimes*), 3 (*often*), 4 (*very often*). ^dReported are mean percentages of correct titles selected. ^eStandard scores with means of 100 for the vocabulary measure and 10 for the others.

language complexity when telling stories (i.e., type–token ratio and mean length utterance), story cohesion (i.e., the number of different connectives used), or their reliance on story grammars for either the book or personal narratives. Consequently, the relation between shared reading and narrative ability was not analyzed further. Children's narrative skills were generally related to one another within each genre (book narratives vs. personal narratives) but not across genres. The ob-

TABLE 2
Correlations Among Home Literacy, Child Outcomes, and Control Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Shared reading	—														
Child language															
2. Vocabulary	.40**	—													
3. Morphology	.34**	.58**	—												
4. Syntax	.19*	.40**	.42**	—											
Book narrative															
5. Type-token ratio	.00	-.02	-.17	-.19*	—										
6. MLU	-.09	.18	.26**	.26**	-.45**	—									
7. Cohesion	-.10	.02	-.11	-.06	.41**	-.35**	—								
8. Story grammar	.09	.38**	.42**	.35**	-.49**	.44**	-.22*	—							
Personal narrative															
9. Type-token ratio	.05	.09	.06	-.07	-.03	-.12	.11	.12	—						
10. MLU	-.22*	-.09	-.06	.07	-.15	.18	.09	.10	-.41**	—					
11. Cohesion	-.04	-.00	-.03	-.01	-.02	-.06	.13	.05	.35**	.03	—				
12. Story grammar	-.01	.06	-.00	.01	.04	.14	-.04	.01	-.52**	.28**	-.36**	—			
Controls															
13. Child IQ	.01	.31**	.36**	.08	-.01	.07	.15	.17	.25*	-.14	.01	-.07	—		
14. Parent literacy	.45**	.30**	.26**	.26**	.03	.14	.01	.21*	.01	-.06	.04	.01	.12	—	
15. Parent education	.31**	.19*	.22*	.10	-.06	.08	-.05	.21*	-.02	-.09	-.01	-.12	.06	.41**	—

Note: $N = 106$. MLU = mean length utterance.

* $p = .05$. ** $p = .01$.

tained difference across genres was also apparent in the examination of the correlations with the other child language measures. Specifically, children's vocabulary and morphological and syntax comprehension were positively correlated with children's mean length utterances and story grammar for book narratives, but they were not associated with any measure of personal narratives.

Hierarchical Regression Analyses

A series of fixed-order hierarchical regression analyses was conducted to test whether the relation found among shared reading and the child language measures would hold after controlling for child nonverbal intelligence, parent literacy, as well as parent education. All models presented in Table 3 accounted for a statistically significant amount of variance ($p < .05$). The regression results for expressive vocabulary revealed that shared reading explained 10% of the unique variance in this variable after entering the controls. Examination of the standardized beta weights was also informative because it revealed whether each variable predicted a statistically significant amount of variance once it was entered last in the equation. This examination showed that most of the variance accounted for by parent literacy was shared variance with shared reading; that is, parent literacy was no longer a statistically significant predictor once shared reading was entered into the equation.

TABLE 3
Hierarchical Regression Analyses Predicting Expressive Vocabulary
and Morphological and Syntax Comprehension

<i>Criterion and Predictor Order</i>	<i>R</i> ²	ΔR^2	ΔF	β
Expressive vocabulary				
Child nonverbal intelligence	.09	.09	10.69**	.29**
Parent education level	.12	.03	3.61	.03
Parent literacy	.17	.05	5.75*	.10
Shared reading	.27	.10	13.20**	.35**
Morphological comprehension				
Child nonverbal intelligence	.13	.13	15.48**	.35**
Parent education level	.17	.04	5.08*	.09
Parent literacy	.19	.02	2.72	.05
Shared reading	.26	.07	9.00**	.29**
Syntax comprehension: Model 1				
Shared reading	.04	.04	3.85*	.10
Parent literacy	.07	.04	4.11*	.22
Syntax comprehension: Model 2				
Parent literacy	.07	.07	7.33**	.22
Shared reading	.07	.01		.10

* $p = .05$. ** $p = .01$.

The findings for morphological comprehension showed a similar pattern to those for vocabulary. Shared reading accounted for 7% of the unique variance in morphological comprehension after we entered the control variables. In addition, parent literacy was no longer a statistically significant predictor when entered last into the equation (see betas in Table 3). Finally, the regression results for children's syntax comprehension (Models 1 and 2) showed a reverse pattern: It was parent literacy that explained unique variance in syntax comprehension, but shared reading did not. The analysis for syntax comprehension did not include child intelligence or parent education because these two control variables were not significantly associated with child syntax, as shown in Table 2.

DISCUSSION

The present study examined the relations of storybook exposure with child language outcomes and narrative ability. The obtained results add to current home literacy research in three ways. First, our findings corroborate other research findings revealing a positive relation between the frequency and variety of shared reading and children's expressive vocabulary. Second, we extend current findings by showing that shared reading also has a positive and robust association with children's morphological comprehension, as well as an indirect positive relation with children's syntax comprehension. Third, our study reveals that the frequency of occurrence of shared reading does not significantly predict children's narrative ability. Each of these findings is discussed in turn.

The findings obtained corroborate other research findings that report a robust positive relation between shared reading and children's oral language skills. In the present study, shared reading accounted for 10% of the unique variance in children's expressive vocabulary, which is consistent with the approximately 8% of variance typically found between shared reading and children's vocabulary skills (Bus et al., 1995; Frijters et al., 2000; Scarborough & Dobrich, 1994; Sénéchal, 2006; Sénéchal & LeFevre, 2002; Sénéchal et al., 1996). Exposure to books is sufficient to produce vocabulary growth because books introduce children to novel words that are typically not included in parent-child interactions. In support of this, Hayes and Ahrens (1988) reported that children's books included 50% more rare words than primetime television or conversations by college students. Most important, Crain-Thoreson et al. (2001) observed that parents used richer vocabulary during shared reading than during parent-child conversations or free play.

The present study also extends previous research to other child language variables. The obtained findings reveal a robust and positive relation between shared reading and morphological comprehension. Shared reading explained 7% of the unique variance in children's morphological comprehension after controlling for children's nonverbal intelligence, parent education, and parent literacy. Other re-

searchers have argued that reading aloud to children exposes them to more complex linguistic forms (see the review by Mason & Allen, 1986). For instance, Crain-Thoreson et al. (2001) found that parents' mean length utterances counted in morphemes were longer during shared reading than in other parent-child interactions. To the best of our knowledge, however, the relation between shared reading and morphological knowledge has not been demonstrated previously.

In contrast to the morphological knowledge, syntax comprehension was not predicted by shared reading directly, but rather, by the parents' own print exposure. In other words, the relation between shared reading and children's syntax comprehension was mediated by parent literacy. We can think of two possible explanations for this finding. First, the studies by Stanovich and his colleagues (Stanovich & West, 1989) certainly showed a strong association between print exposure and language in adults. It could be the case that parents who read more themselves speak to their child in a more syntactically complex manner than do parents who read less and that, consequently, parents who read more expose their children to more syntactically complex language than what is afforded by shared reading alone. A second explanation concerns the choice of books read to children. It could be the case that parents who read more themselves select books for their children that are qualitatively different than those selected by parents who read less. Indeed, the language used in some children's books is much more sophisticated than that used in others. For example, selecting books by Beatrix Potter rather than or in addition to those by Robert Munsch provides children with very different language experiences. We know little about how parents select books for their children. A survey of parents conducted by Sénéchal (1988) revealed that parents selected children's books that were entertaining, were of interest to their child, and from which children could learn. The survey, however, did not focus on the texts per se. Future research could examine whether the literary quality of books is a criterion used by some parents to select books.

In addition to child language outcomes, the present study included measures of children's narrative production based on a book as well as based on a personal event. We hypothesized that frequent shared reading introduces children to characters, events, and situations across a variety of books, and that such exposure would help a child produce a cohesive narrative (Harkins et al., 2001). Contrary to prediction, however, no association was found between shared reading and children's narrative skills. We hypothesized that frequent shared reading would expose young children to a variety of storylines, and that this variety of exposure would facilitate the extraction of the key structural elements of narratives. This hypothesis, however, presupposed that children would (a) be able to appreciate the presence of these key elements and (b) be able to use them productively in their own storytelling. The first part of this hypothesis remains to be tested. Our test of the second part revealed that frequent and varied exposure to the stories in children's literature was not related to 4-year-old children's production of their own narratives. It might be

the case that parental support is necessary to provide young children with external prompts that would allow them to gain experience at structuring narratives. If this is the case, the quality of parent–child interactions during shared reading might influence narrative production in 4-year-olds more so than simple exposure. There is some support for this possibility, because intervention studies using picture books have shown positive effects in preschool children’s narrative production based on books and pictures (Harkins et al., 2001; Zevenbergen et al., 2003). It is also possible that frequency of occurrence interacts with the quality of adult reading, a possibility that has never been tested in the correlational research on shared reading.

Children’s book narratives and personal narratives were not related to each other in the present study. In addition, the two types of narratives were differentially related to the other language measures. Specifically, only book narratives were related to children’s vocabulary as well as morphological and syntax comprehension. Taken together, these findings lend some support to the notion that book and personal stories may represent different genres (Purcell-Gates, 1988) and that they may rely on different language skills. The preliminary findings found in the present research raise the possibility that book and personal narratives follow different developmental pathways early on. To examine this hypothesis further, researchers might want to ask children to produce book and personal narratives on the same theme, such as a birthday party. In the present research, the themes differed across narrative genres and rendered difficult in-depth comparisons between the book and personal narratives. Moreover, researchers might want to have children produce more than one story for each genre to obtain more reliable information about 4-year-old children’s narrative production. In the present work, children produced a single personal story but two book narratives. Certainly, the development of narrative abilities across genres warrants more research.

Shared reading is a wonderful occasion for a child to cuddle with a parent, to engage in the pleasure of listening to amusing and dramatic stories, and to follow along by looking at aesthetically pleasing illustrations. Shared reading is also regarded highly by practitioners because it is an activity that can enhance language skills in children. As such, practitioners need accurate information about the contribution of shared reading to a variety of language outcomes. The present research is important because it allows one to have a more nuanced view of the relations that the frequency of occurrence of shared reading holds with child outcomes. We found no relation between shared reading and narrative abilities, a very modest relation with syntax comprehension that could be explained by the parents’ own book exposure, and a direct robust relation with child vocabulary and morphological comprehension. The direct relations found between shared reading and vocabulary as well as morphological knowledge are consistent with the idea that frequent exposure to shared reading may help children acquire important component skills for reading comprehension (Ouellette, 2006; Sénéchal & Kearnan, 2007; Sénéchal, Ouellette, & Rodney, 2006).

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