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From reminiscing to reading: Home contributions to children's developing language and literacy in low-income families

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Abstract

In this study, the relations among a range of literacy-related home practices and children's acquisition of language and literacy at the outset of preschool are examined in a sample of linguistically diverse children from low-income families in the United States. Specifically, the study focuses on sources of variation found in mother–child conversations while reminiscing and book sharing, in frequency of book reading, in parent use of strategies to teach print skills, and in the child's interest in shared book reading. Mothers' elaborative forms of talk during reminiscing about behavior-related events were linked to children's semantic and print knowledge. Child interest in storybook reading was related to their emerging literacy skills but not to language.

Keywords

Book reading, conversations, emergent literacy, language, literacy, parent–child interactions, reminiscing

From the perspective of emergent literacy, the process of learning to read begins at home in the social world of caregivers and children, years before formal instruction begins at school (Beals, DeTemple, & Dickinson, 1994; Heath, 1983; Whitehurst & Lonigan,

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1998, 2001). Vygotsky's (1978) sociocultural theory, in which social interactions with more competent members of a culture are the context in which children acquire the knowledge and skills they need to become a member of their community, provides a theoretical framework for understanding the emergent literacy approach. For Vygotsky, parent–child interaction is a vital locus of development such that variations in the quantity and quality of communication will result in differences in child outcomes. Thus, we use sociocultural theory, and subsequent reformulations of Vygotsky's work, as a framework for examining the relationships between home literacy practices and children's emerging psycholinguistic knowledge. Specifically, parent–child conversations while reminiscing and during book reading, parent teaching practices, and children's interest in storybook reading are singled out as potential contributors to children's early language and literacy learning.

Psycholinguistic precursors to literacy

Researchers agree on what constitutes the psycholinguistic precursors for early literacy development (Whitehurst & Lonigan, 1998, 2001), though there is some contention about the relations among these precursors and how they relate to each other over time (Bracken, 2005; Dickinson, McCabe, Anastasopoulos, Peisner-Feinberg, & Poe, 2003; NICHD Early Child Care Research Network, 2005; Storch & Whitehurst, 2002). Two broad sets of skills have been identified – language skills and code-related skills. Together they facilitate the process of learning to read. Language skills include vocabulary, both receptive and expressive lexical knowledge; semantics, the capacity to make use of meaning at both the level of single words and in complex forms of language such as story comprehension; syntax, the set of rules that makes it possible to formulate complex phrases and sentences; and narrative discourse, the extended forms of talk that connect smaller units of meaning together to provide accounts of events in the world and explicate ideas. Code-related skills are comprised of knowledge that is related to print, for instance, understanding the conventions of the printed word on a page, or print concepts, identifying letters, and the alphabetic principal, i.e. the ability to relate individual letters to the sounds they represent and to connect letters with sounds to form words, and emergent writing. In order to map sounds onto print, children must also have a sense of phonological awareness; they must be aware of the smaller units of sound from which words are constructed. In this study we examine the emergence of both language and print skills as a function of variation in home practices.

Adding social interaction to the study of literacy acquisition

Before investigators charted the psycholinguistic pathways to early literacy, research from the sociocultural perspective pointed to the critical role of the home context in language learning (Heath, 1983; Michaels, 1981), with the claim that differences in the home environment are related to child language and literacy development. Michaels and Heath introduced the idea that conversational practices between parents and children, or teachers and children, have an impact on early developing language as well as upon

children's literacy skills. They began a line of research that has now established strong links between children's early narrative production and later literacy achievement and academic success (Dickinson & Tabors, 2001; Griffin, Hemphill, Camp, & Wolf, 2004; O'Neill, Pearce, & Pick, 2004; Reese, 1995).

At about the same time, while observing developing language and literacy in middle-class families, Snow (1983) made the observation that as children increase their ability to use abstract forms of language, they are also developing knowledge that will help them to understand the world of print. Snow suggested that decontextualized language, the use of language to construct the world without the support of the ongoing environment, is linked to the conceptual knowledge needed for early reading. She also observed that parent–child conversations about past events were a rich context for children to practice using decontextualized forms of language.

Meanwhile, an extensive body of literature on children's memory development had begun to document the ways middle-class caregivers talk with their children about past events, conversations which are by definition decontextualized (Fivush & Fromhoff, 1988; McCabe and Peterson, 1991; Reese, 1995; Reese & Fivush, 1993; Reese, Haden, & Fivush, 1993). These studies revealed that some parents used an elaborative style of reminiscing characterized by many open-ended questions and meeting the child's responses with confirmations to facilitate the child's reconstruction of past events. Others used a low-elaborative style in which caregivers talked about the past by probing for specific parts of a memory by using just a few questions or repeating questions so that the child would provide the answer the parent had in mind. A highly elaborative reminiscing style facilitates children's memory narratives (Reese & Newcombe, 2007) and is linked to children's print skills (Leyva, Reese, & Wiser, 2012; Reese, 1995). Thus, this research has established a critical link between maternal elaborative style and children's memory, language, and literacy development in white, middle-class, western families (for a review, see Fivush, Haden, & Reese, 2006). These studies have focused almost exclusively on mainstream populations.

Reminiscing and reading

Reese (1995) examined the relationships between early parent–child conversation and children's language and literacy in a longitudinal study of middle-class families. The results revealed qualitative differences in parent–child conversations about past events and during book-reading that positively predicted children's developing language and literacy by the end of preschool. Families were visited at home over three time points (40, 46, and 58 months) and parents and children were filmed talking about past events and reading storybooks together. At 70 months, a final assessment of children's language and literacy skills was completed. An especially interesting finding in this study was that past event conversations, more than the book reading context, were the strongest predictor of early language and literacy. Overall, Reese found that mothers' use of decontextualized language during past event conversations throughout the preschool years predicted both print and semantic skills, including print concepts, vocabulary, and story comprehension. Another study, also with middle-class families, found that mothers' elaborative past event talk was associated with preschool children's emergent writing skills (Leyva et al., 2012).

The connections between parent elaboration and child language and literacy have yet to be explored in a sample of low-income, culturally and linguistically diverse families. The present study was meant to fill this gap. Our primary goal was to examine the role of maternal elaboration in past event talk and book reading in children's developing language and literacy in a sample of families enrolled in Head Start preschool classrooms. Specifically, we asked whether similar patterns of relationships among maternal elaboration and children's language and literacy would be present in this sample of children from diverse backgrounds. Would reminiscing, as an everyday activity practiced by parents in many cultures (see Miller, Potts, Fung, Hoogstra, & Mintz, 1990), predict language and literacy for these children as it does for middle-class children? Given the lower levels of shared book reading observed in this population of families (Federal Interagency Forum on Child and Family Statistics, 2007), we thought that reminiscing might be an even stronger predictor of language and literacy than it was for middle-class children. One limitation of Reese's (1995) study was the use of different coding schemes in the analysis of book reading and conversational contexts. In the present work, we focus on parent-provided structure, in the form of elaborative open-ended questions, across the two contexts as correlates of children's language and literacy.

Storybook reading with young children

There is an abundance of research that focuses on adult interactions with young children in the context of reading storybooks and children's language and literacy outcomes. For instance, researchers who examined book reading as a predictor of children's language and literacy have shown that shared book reading accounts for a significant 8% of the variance in children's literacy outcomes (Bus, van IJzendoorn, & Pellegini, 1995) and the same for children's language and literacy (Scarborough & Dobrich, 1994) in an earlier review of research. Studies comparing book reading across classes and ethnic groups have demonstrated that children from low-income backgrounds are exposed to less book reading than are their middle-class peers (Yarosz & Barnett, 2001) and that Hispanic and African American parents, across social classes, engage in less book reading with their children than do white and non-Hispanic parents (Raikes at al., 2006; Yarosz & Barnett, 2001).

Sénéchal and her colleagues have examined the role of different kinds of home literacy experiences and children's language and literacy achievement. According to their Home Literacy Model (Sénéchal, 2006), storybook exposure and parent teaching about print are two distinct activities that take place at home that are differentially related to the psycholinguistic precursors to literacy. In samples of middle-class Canadian families, they found that story book exposure was unrelated to reports of teaching their 4- and 5-year-old children about print (Sénéchal & LeFevre, 2002; Sénéchal, LeFevre, Thomas, & Daley, 1998). Moreover, they found that storybook exposure promoted language acquisition, and parent teaching facilitated early literacy skills, but not language. The present study was designed to test Sénéchal's findings in a low-income, linguistically and culturally diverse sample of children. We expected to find the same set of independent relations between parent report of reading and teaching with child language and literacy, i.e. parent report of book reading and teaching will be differentially related to child language and literacy.

The child as an agent in the acquisition of literacy

Finally, we wanted to consider the child's singular role in learning to read. Very few studies have considered the impact of child motivation on early language and literacy learning. In a comprehensive review of studies focusing on the contributions of book reading to the acquisition of literacy, Scarborough and Dobrich (1994) noted the absence of measures of child interest in the literature and the need to include the child's motivation as a contributing factor in the process of becoming literate. Nelson's (2007) reformulation of sociocultural theory integrates the child's perspective as a critical component of the developmental process. Her theory of the Experiencing Child is based on the sociocultural assumption that children develop in social interactions with caregivers; however, Nelson adds the child's perspective – their specific needs and interests – as the fuel that drives development. From the perspective of the experiencing child, a measure of child interest in reading should be linked to the child's acquisition of language and literacy.

A few studies, all with middle-class children, have included measures of child interest in literacy with some interesting results. Sénéchal, LeFevre, Hudson, and Lawson (1996) found that child interest in storybook reading, as measured by child requests for storybook reading, produced unique variance in children's concurrent vocabulary scores in preschool-age children, but the researchers did not include an assessment of children's print skills. Another study found that child engagement in storybook reading at 2 years predicted later language and print-related skills at age 4;6 (Crain-Thoreson & Dale, 1992). Frijters, Barron, and Brunello (2000) used a measure in which 5-year-old children reported on their feelings related to literacy-related activities and they found a significant relationship to children's concurrent print skills. In another study of middle-class families, children who participated more in early memory conversations with parents scored higher on later measures of language and literacy (Reese, 1995). To add to the few studies that acknowledge the importance of considering child motivation in literacy, we included a measure of child interest in shared storybook reading here.

Current study

The aim of this study was to examine sources of variation found within children's home life that contribute to their developing language and literacy in a sample of low-income, linguistically diverse children. In particular, we focused on parent–child conversations about past events and during storybook reading, frequency of shared book reading, specific strategies parents use to teach their children early literacy-related skills, and the child's interest in book reading. We expected to find the following significant relationships:

1. Following Sénéchal and LeFevre (2002), we predicted that parent report of book reading and literacy-related teaching practices would be independent.
2. We expected to find a differential relationship between report of book reading and report of literacy-related teaching practices with child language and literacy, such that book reading would be related to child language and teaching practices would be related to literacy (Sénéchal & LeFevre, 2002).

3. Child interest in storybook reading would be significantly related to both language and literacy (an extension of Sénéchal et al., 1996).
4. Parent elaboration in past event conversations would be uniquely related to child knowledge of print concepts and story comprehension (Reese, 1995);
5. Parent elaboration in the book reading context would be significantly related to children's story comprehension skills, similar to the link between parents' high-level comments during book reading and children's comprehension skills (Reese, 1995).

Method

Participants

The sample was drawn from the baseline phase of the Preschool Language Project, a longitudinal intervention study of language and literacy development in low-income children (Reese, Leyva, Sparks, & Grolnick, 2010). The 60 children (31 boys and 29 girls) included here attended preschool at one of seven Head Start centers in Worcester, Massachusetts. Families were recruited to participate in three cohorts during the 2003–2004, 2004–2005, and 2005–2006 school years. Children's mean age upon entry in the study was 4;10 (range of 3;10 to 5;2). The ethnic composition of the children in the sample was reported by their parents as follows: 37.7% Latino; 23% mixed heritage; 16.4% White; 14.8% African; 6.6% African American; 1.6% Native American. Participants were enrolled in the study only if they were comfortable talking and reading to their children in English. Nevertheless, half of the children spoke more than one language at home (n = 30). The languages reported were Spanish, Albanian, Portuguese, French, Arabic, and three African languages: Twi, Shona, and Fante. Primary caregivers (59 mothers and 1 grandmother; from now on we refer to them as mothers) reported the number of years of formal education they had completed and this was used as a measure of maternal education. A wide range was reported with a mean of 12.6 years of formal schooling; 31 of the mothers reported having completed their high school education.

All participating families qualified for admission to Head Start, which is based on poverty guidelines set by the Department of Health and Human Services. In 2006, a family of four with an income of less than US$20,650 was eligible to attend Head Start (Department of Health and Human Services, 2007).

Design

Children in the larger study were tested at three time points: the outset of Head Start, the end of Head Start, and the end of kindergarten; a home visit was completed just after the initial assessment in the preschool classroom. The data presented here are from the initial time point during which children completed a comprehensive assessment of language and literacy that began in their preschool classroom and was completed at the home visit. Parents were given the choice to be visited at home or to come to a university lab; only three families completed the study in the lab and the other 57 were visited at their home.

Children's language and literacy assessment

To minimize test fatigue, each child completed the testing in three sessions. During the first classroom session vocabulary was assessed, in the second classroom session phonological awareness, and in the final home session the children completed the story and narrative measures. This protocol varied for children in the first cohort ($n = 20$), in which all of the testing was completed during the home visit.

Formal language and literacy measures. The Peabody Picture Vocabulary Test III, Form A (PPVT-IIIA; Dunn & Dunn, 1997) was administered to assess receptive vocabulary for single words in English; children also completed the Expressive Vocabulary Test (EVT; Williams, 1997) to measure children's ability to name single words. Clay's Concepts about Print (Clay, 1979) was adapted to measure the child's conceptual knowledge of print. Questions 1–9 and 11 were used because these items did not require decoding skills (Sénéchal et al., 1998). Decoding of individual letters and single words was measured with the letter and word recognition subtest of the Wide Range Achievement Test-Revised (Jastak & Jastak, 1984). The blending subtest from the Preschool Comprehensive Test of Phonological and Print Processing (Pre-CTOPP; Lonigan, Wagner, Torgesen, & Rashotte, 2002) was used to assess the children's phonological awareness. As a measure of story comprehension (adapted from Reese, 1995), researchers read children an unfamiliar story (*Peter's Chair*, Keats, 1967) and then asked six comprehension questions; they were asked to recall facts about the characters and setting and to make simple inferences about character motivation and story plot.

Parent report measures

Home literacy practices questionnaire. For the second and third cohorts of the study, a questionnaire regarding frequency and interest in engaging in home literacy practices was added (adapted from Sénéchal et al., 1998) to the home visit. Thus, all of the analyses using parent report measures are based on reduced sample sizes. Parents were interviewed about their beliefs and practices in the home regarding language/literacy by answering the following: (1) How often do you, or other members of the family, read to your child in a typical week? (2) During a typical week how often does your child ask to be read to? (as a measure of child interest in reading) (3) During a typical week how often do you teach your child to print words? (4) During a typical week how often do you teach your child to read words? Mothers reported frequency of reading as the number of times per week that they read to their child, which resulted in a scale of 1-8. Answers on the other questions about home practices were scored on a five-point scale from 1 (never) to 5 (very often). We included these questions in order to test Sénéchal and colleagues' findings with middle-class families in a low-income, culturally diverse sample.

Demographic questionnaire. Mothers were asked to fill out a questionnaire designed to obtain information about family characteristics such as maternal education, ethnicity, child age, and primary language spoken at home. The questionnaire used the US Census categories for race and Hispanic origin. Maternal education was reported in the number of years of formal education they had completed.

Parent–child interaction

In the course of the interview, mothers were asked whether talking about past events with their children was part of their everyday family practices, and if so, to estimate the frequency with which they engaged in this kind of talk with their children. All of the mothers reported that past event conversations were part of their family practices, and more than half of all mothers reported often or very often talking about special past events with their children during a typical week (Leyva, Reese, Grolnick, & Price, 2009; Leyva, Reese, & Sparks, 2006). These results were interpreted to reflect that reminiscing with children was a typical family practice in our sample.

In addition, mothers were asked to recall recently experienced past events to discuss with their child. They created a list which consisted of the following: (1) a shared event (one that parent and child had experienced together); (2) an unshared event (one in which the child had recently participated without the parent); (3) a misbehavior event; and (4) a good behavior event. The parents were asked to select events that were unique or salient in the child's life. We chose these four events to represent a range of contexts for reminiscing that have been observed across class and culture in other studies. Shared and unshared events have been examined extensively in studies of Anglo European, middle-class families (for a review of this research, see Fivush et al., 2006) and talk about behavior has been the focus of investigation in studies with families from a broader range of backgrounds, from working-class children in Baltimore (Miller et al., 1990) to middle-class families from Taiwan and China (Miller, Wiley, Fung, & Liang, 1997; Wang, 2001).

Parent and child were then videotaped while reminiscing about the four selected events and reading an unfamiliar and familiar book together. Videotaping took place in the lab for three families and in the home for the remaining families. We coded both the familiar and an unfamiliar book for parent elaboration. Parent elaboration was moderately correlated across the two books (.40; $p < .01$), and the familiar book had the same set of correlations with child language and literacy, so we decided to use the unfamiliar book here. In Haden, Reese, and Fivush (1996), which used both a familiar and unfamiliar book, maternal style for the familiar book contained more error variance due to the wide range of books that mothers selected. In that study, Haden et al. concluded the advantages of using an unfamiliar book for testing maternal book reading style.

Mothers were instructed to interact with their child as though they were home alone engaging in the same activity without the presence of others. The families were left alone in the room to complete the task. The order of the book reading and past event talk was counterbalanced across families.

Shared book reading. Parents were provided with an unfamiliar book, *Just shopping with Mom* (Mayer, 1989), to read with their child.

Past event narratives. The mother and child talked about four past events from the list of parent-nominated events in the following order: shared, unshared, misbehavior, and good behavior.

Coding

Elaboration in past event talk and book reading. Parents' provision of elaboration was measured using a five-point scale (Leyva et al., 2009; Sparks, 2008). This scale ranges from a conversational style based on yes/no questions, repetitions, very little introduction of new information, and no wh-questions (a 1 on the scale), to a conversational style centered on open-ended wh-questions, few repetitions, and yes/no questions (a 5 on the scale). All four contexts for reminiscing were coded independently of each other as well as parent comments during book reading. Two raters independently coded 25% of the interactions from videotape. Reliability was assessed with Shrout–Fleiss intraclass correlations (.88 for past event conversations and .94 for book reading). One of the raters coded the remaining videotapes.

Results

Missing data

A small percentage (1%) of the data from the language and literacy assessment was missing due to experimenter error or child absence from preschool. There was one data point missing for each of the story comprehension, decoding, and print concepts tasks, and two data points missing for phonological awareness. The conversation contexts had a greater portion of missing data, which were sometimes the result of technical problems with the audio/videotaping, but largely due to participation issues (e.g. the mother talked about a past event that did not qualify as a specific one-time past event, such as going to a familiar restaurant; the child was not engaged in the task long enough to be coded; or the mother did not discuss one of the four past events). The percentages of missing data were as follows: 15% for shared conversation; 10% for unshared conversation; 12% for misbehavior conversation; 32% for good behavior; and 5% for the book reading. We did not make substitutions for missing data points, so the number of participants in each analysis varies.

Preliminary analysis

Given the large number of children in this sample who came from multilingual homes, we examined differences between monolingual and bilingual children on all of the language, literacy, parent report, and observed data variables. First we ran independent *t*-tests to see whether these two groups differed in terms of maternal education and the children's age, but no differences emerged between the groups on these two variables. Then, another set of independent *t*-tests revealed that there were no significant differences between the monolingual and the bilingual children on any of the language, literacy, and parent measures (all $ps > .13$).

Descriptive statistics

Table 1 displays the descriptive statistics for the children's language and literacy assessment for the entire sample. The mean standard score on receptive vocabulary fell within

Table 1. Descriptive statistics: assessment of language and literacy.

	N	*M*	SD	Range
Oral language				
PPVT standard score	60	94.03	15.28	53–125
EVT standard score	60	92.25	10.71	66–123
Story comprehension	59	1.63	1.40	0–5
Phonological awareness				
P-CTOPP/blending	58	12.10	4.60	2–20
Print-related skills				
Decoding	59	5.00	4.70	0–13
Clay's print concepts	59	5.05	2.15	0–9

Notes: PPVT = Peabody Picture Vocabulary Test-III; EVT= Expressive Vocabulary Test; P-CTOPP = Comprehensive Test of Phonological and Print Processing.

the average for the normative sample, with a broad array of scores for individual children, some of whom were placed in the exceptionally high range. Similarly, the measure of expressive language, the EVT, was within the average range for the normative sample. On the other hand, children's scores on the measure of story comprehension were quite low, although not at floor, with most children able to name a character or recall a story event. Most children could not answer the higher-order questions requiring predictions or inferences, with only one child achieving a score of 5 out of 6 possible points.

Intercorrelations among language and literacy scores

Mothers' level of education and child age were correlated with several of the language and literacy measures, so we controlled for these variables in all of the correlations presented here. Raw scores for the PPVT and the EVT were used in partial correlations instead of standard scores, which are corrected for age. Table 2 presents results of the partial correlations for the language and literacy measures. Moderate correlations were observed among the language variables (receptive and expressive vocabulary and story comprehension). Phonological awareness was also closely related to the language measures, with moderate correlations with receptive and expressive language, but not to measures of print. Children's decoding skills displayed the most robust pattern of associations, with moderate links to all of the language and literacy variables except for phonological awareness, which was, however, approaching significance ($p = .07$). The print concepts variable was correlated only with decoding, but there were no relations between print concepts and any of the language measures.

Partial correlations among parent report on book reading and teaching practices

In order to test Sénéchal's (2006) Home Literacy Model, in which book reading and teaching practices related to print are distinct, unrelated activities, we examined the links

Table 2. Partial correlations among assessments of language, literacy, and maternal elaboration (controlling for child age and maternal education).

Language/literacy measures	1	2	3	4	5	6
1. PPVT raw		.49**	.33*	.52**	.36**	.17
2. EVT raw			.50**	.35**	.49**	.22
3. Story comprehension				.27	.45**	.18
4. Blending					.24	.03
5. Decoding						.42**
6. Print concepts						
Maternal elaboration						
Shared (n = 51)	.02	−.17	.06	.13	.06	.12
Unshared (n = 54)	.22	.07	.24	.05	.14	.15
Misbehavior (n = 47)	−.03	−.05	.01	−.09	.03	.30*
Good behavior (n = 41)	.13	.11	.36*	−.01	.32*	.40**
Book reading (n = 57)	.00	−.17	−.23	−.07	−.13	.01

*p < .05; ** p < .01.

between parents' book reading and teaching practices. Partial correlations were conducted among parent report on frequency of book reading, teaching children to print words, and teaching children to read words. There were no correlations between parent report of book reading and parent report of teaching children to print or read words. However, there was a strong correlation between parent report of teaching children to read words and teaching children to print words (r (39) = .67; p < .00).

Partial correlations among language, literacy, and parent report of book reading and teaching practices

To explore associations between parent home literacy practices and children's language and literacy learning, partial correlations were run between all of the language and literacy measures and the parent report variables (see Table 3). Parent report of book reading was related to literacy, but not to language. The two parent teaching variables were unrelated to any of the child language or literacy measures. The measure of child interest in reading, i.e. the frequency of child requests for storybook reading, was moderately related to both decoding and print concepts.

Partial correlations among language, literacy, and maternal elaboration

We were especially interested in examining whether mothers' elaborations were related to children's emerging language and literacy. Toward this end, partial correlations were run among language, literacy, and maternal elaboration (see Table 2). All significant relationships were observed in the context of talk about past behavior. There were no links to language or literacy in the shared and unshared reminiscing contexts or in the book reading context. Similar to the patterns of relationships we observed in the parent

Table 3. Partial correlations among language, literacy, and frequency of book reading, parent teaching practices, and child request to read (controlling for child age and maternal education).

Language/literacy measures	1	2	3	4	5	6
Frequency/book reading	−.04	.16	.12	.02	.29*	.12
Frequency/teaching print	−.08	−.06	.04	−.11	.03	−.14
Frequency/teaching reading	−.05	−.08	−.13	−.03	−.13	−.14
Frequency child request	.10	.09	−.07	.10	.36*	.33*

Notes: 1 = PPVT-R, raw score; 2 = EVT, raw score; 3 = Story comprehension; 4 = Phonological awareness/blending; 5 = Decoding; 6 = Print concepts.
*$p < .05$; ** $p < .01$.

report variables, there were no correlations among maternal elaboration and receptive and expressive language measures and phonological awareness. The only connection to measures of language was through story comprehension, which was moderately related to elaboration in the good behavior context. However, expected links were observed between maternal elaboration and literacy in the context of talk about behavior. Maternal elaboration in the misbehavior and the good behavior condition were moderately correlated with print concepts and elaboration in the good behavior conversation was linked to children's decoding skills as well.

Hierarchical regression models predicting children's literacy and language from home variables

We conducted a series of hierarchical regressions to examine whether parental elaboration contributed unique variance to children's print knowledge and their story comprehension (see Table 4). Child age and maternal education were used as covariates in these analyses, but only in the equations for which they were significantly correlated with the predictors and outcome measures. Thus, child age was excluded in all of the regression models that used literacy as an outcome because age was not correlated with any of the variables except language, for which a standard score that accounts for child age was used. Child age was included as a covariate in Model 2 because child age was correlated with story comprehension.

The first two regression models tested our prediction that maternal elaboration would contribute unique variance to children's print concepts and story comprehension. In Model 1, the dependent variable was the child's score on the assessment of print concepts. Maternal elaboration in the two behavior contexts were collapsed into a single variable, given that both were moderately correlated with print concepts. The combined variable consisted of a total for maternal elaboration from the two behavior contexts and captured mothers' use of elaborative comments in talk about behavior. Only those cases with data from both contexts were included in this variable. Maternal education was entered first; and then child language (PPVT standard score), and then maternal elaboration in the context of talk about behavior. A significant model emerged, $F(3, 34) = 4.10$, $p < .01$, explaining 20% of the variance in children's print concepts. It was also possible

Table 4. Hierarchical regressions predicting children's semantic and literacy skills.

Model	B	SE B	β
Model 1 (dependent variable: print concepts)			
Maternal education	.26	.40	.10
PPVT R standard score	.03	.02	.20
Maternal elaboration/behavior	.53	.18	.43**
Model 2 (dependent variable: story comprehension)			
Maternal education	.04	.24	.02
Child age	.96	.47	.31
PPVT-R raw score	.02	.01	.23
Maternal elaboration/good behavior	.40	.20	.30*
Model 3 (dependent variable: print concepts)			
Maternal education	−.14	.41	−.06
PPVT-R standard score	.03	.02	.29
Child interest in reading	.79	.35	.36*
Model 4 (dependent variable: print concepts)			
Maternal education	.08	.50	.03
PPVT-R standard score	.03	.03	.20
Maternal elaboration/behavior	.58	.22	.44**
Child interest in reading	.60	.39	.27
Model 5 (dependent variable: decoding)			
Maternal education	−.07	.79	−.01
PPVT-R standard score	.12	.04	.37*
Child interest in reading	1.43	.66	.32*

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

to run separate regressions for good behavior and misbehavior with the same significant results.

Given our finding that maternal elaboration in the context of talk about good behavior was correlated with children's story comprehension, in addition to their literacy, it seemed important to test whether parent talk about good behavior contributed unique variance to children's story comprehension. For this regression model, the dependent variable was story comprehension. Maternal education and child age were entered as covariates and then child language (PPVT raw score) and maternal elaboration in the good behavior context were entered as predictors. The model was significant, F (4, 36) = 3.00, $p < .05$, explaining 17% of the variance in children's story comprehension.

Our third prediction, that child interest would be related to children's language and literacy, was partially supported in the correlation between child interest in reading and print concepts. To further examine this link between child interest and children's literacy, a third model was tested. Again, in this analysis the dependent variable was print concepts. Mother's level of education was entered as a covariate; then child language (PPVT standard score) and child interest in reading were entered as the predictors. A significant model emerged, $F(3, 37) = 2.96$, $p < .05$, explaining 13% of the variance in children's print concepts (see Model 3).

An additional regression model was added to examine the unique contributions of both maternal elaboration in the context of talk about behavior and child interest in reading to children's print knowledge. In Model 4 we controlled for maternal education and then we entered child language (PPVT-R standard score), maternal elaboration in talk about behavior, and child interest in reading. A significant model ($F(4, 22) = 4.00$, $p < .01$) explained 31% of the variance in children's print concepts. With both parent and child variables entered in the final step, only maternal elaboration contributed significant variance to children's print concepts.

Finally, given that child interest in reading was correlated with decoding, as well as print concepts, a regression was completed to see whether child interest was uniquely related to decoding (see Model 5). For the final regression model, decoding was the dependent variable; mothers' level of education and child language were entered as covariates and then child interest in book reading. The resulting model was significant, $F(3, 37) = 5.03$, $p < .01$, accounting for 23% of the variance in children's decoding skills. In the final model, child language and child interest in reading were both significantly related to decoding skill.

Discussion

As predicted, the results of the correlations among parent report of book reading and teaching practices were similar to those reported by Sénéchal et al. (1998) and Sénéchal and LeFevre (2002). According to their Home Literacy Model, book reading and teaching practices appear to be distinct behaviors, as demonstrated here by the lack of correlation between reported book reading and literacy-related teaching practices. Thus, some parents reported reading storybooks more often to their children while others reported the practice of teaching print skills more often; some reported high or low levels of both practices, but there was no consistent link between the two types of practices. Sénéchal's results are replicated here, extending this finding from samples of middle-class, monolingual children to this linguistically diverse, low-income sample.

In our second prediction, we expected to find a differential pattern of relations between measures of child language and literacy with parent report of book reading and teaching practices so that book reading would be related to language, and teaching practices to literacy, as in Sénéchal and LeFevre (2002). However, our results differed substantially from those observed in Sénéchal's work (see Table 3). Parent report of storybook reading was not related to child language, but to literacy, and specifically to decoding. These results suggest that the role of book reading in children's developing language and literacy may vary in different populations. The correlation between frequency of book reading and decoding could mean that children are learning print skills as a function of the quantity of parent–child book reading, not necessarily from explicit teaching, or that parents are reading more with children who have advanced print skills. Longitudinal work will help us explore these different possibilities. The coding scheme used here was not designed to look at the content of parent comments during book reading, so we cannot say for certain if parents made references to print when reading. However, other studies have found no relationships between print-focused talk during reading and children's print concepts or their decoding (Reese, 1995), and in general,

children pay little attention to print during shared book reading (Evans & Saint-Aubin, 2005). Our finding, that reported book reading and teaching practices are unrelated, could mean that child acquisition of print skills may be a result of incidental learning in the context of book sharing rather than via direct instruction.

Child interest in reading, in contrast, was related to both children's print concepts and their decoding skills (see Table 3). Our finding is strikingly similar to the results of Frijters et al., who also found that a measure of child interest in print was uniquely related to children's concurrent print skills and not to their phonological awareness or language skills in a sample of 5-year-old children. Our findings are also in line with a longitudinal study by Crain-Thoreson and Dale (1992), who found that child engagement in book reading at age 2 was a significant predictor of child language at age 2;6 and 4;6 and knowledge about print concepts at 4;6. It seems noteworthy that parent report of book reading and child interest in reading are related exclusively to measures of children's literacy, not language, in the present research. We speculate that parents' frequency of book reading and children's interest in book reading have a bidirectional relationship with each other.

The main purpose of this study was to extend research findings on maternal elaborative reminiscing and children's emerging language and literacy beyond mainstream samples to include low-income families from linguistically and culturally diverse backgrounds. Indeed, the results of the analyses examining parent elaboration, language, and literacy revealed specific links between parent elaborative talk about past events and children's story comprehension and print concepts. Mothers' use of elaboration in the context of talk about behavior predicted children's print concepts. This finding adds to a growing body of research that has found strong links between parents' elaborative reminiscing and children's cognitive development (for a review see Fivush et al., 2006). Overall, the results from these studies highlight the importance of parent–child conversation not just for children's language and memory but also for emerging literacy skills; and they illustrate the Vygotskian notion that daily participation in specific kinds of social interactions is linked to both social and psychological benefits for the child. In this case, by partaking in reminiscing with their mothers, children may be acquiring the complex rules of participation in personal story telling conversations as they develop the psycholinguistic tools needed for literacy learning.

Mothers' elaborative comments during talk about good behavior produced the most robust set of relationships and was the only context with links to not only literacy but to child language as well. Mothers' talk about good behavior was uniquely related to children's story comprehension in addition to their literacy skills. It may be that children find this kind of talk with their mothers highly engaging and are more attentive, which could in turn translate into a range of benefits for them. Although we are speculating here, it is not hard to imagine that children are energized by hearing stories told about their good deeds and this, in turn, may help them to incorporate the positive language they learn from their mothers into their emerging psycholinguistic skills.

Our findings replicated Reese's (1995) study of middle-class families, but with some interesting twists and variations in the patterns of relationships observed between elaboration and emerging language and literacy. In Reese's work, maternal elaboration in reminiscing about shared events predicted children's print and semantic skills. However,

in the present study, maternal elaboration in the context of talk about behavior produced unique variance in children's print and semantic knowledge. The difference in contexts for talk about past events may reflect cultural preferences or class differences in reminiscing. It may be that for mothers in this culturally diverse and low-income sample, talk about behavior is a more salient context for conversation with their children than is discussing shared and unshared past events. Researchers who have studied parents' child rearing goals in diverse cultures have noted that talk about behavior plays an important role in socializing children into the values of the community (Harwood, Miller, & Irizarry, 1995). For example, Miller et al. (1997) found that middle-class Chinese mothers introduced discussions of past misbehavior to explicitly instruct children about normative behavior in social interaction. In related work comparing American middle-class parents with parents from China (Wang, 2001), the Chinese mothers placed more emphasis on social norms and behavioral expectations than did their American counterparts. Thus, the link between elaborative reminiscing in talk about behavior and children's language and literacy may reflect a cultural or class preference for talking about behavior as a way of educating children in proper conduct, with potential spinoffs for children's cognitive development. Further study of reminiscing among diverse groups should yield a more nuanced understanding of this narrative practice.

Surprisingly, mothers' provision of elaboration in book reading was unrelated to children's language and literacy – though it seems important to recall here that frequency of book reading, a measure of the quantity of book reading, was correlated with decoding. Nevertheless, the impact of book reading on children's developing literacy is not explained by maternal elaboration in this sample. In Reese (1995), parent–child reminiscing was a stronger predictor of children's literacy than was the book reading context, even when the content and not simply the structure of book reading was assessed. In a meta-analysis of the effects of book reading on child language and literacy (Scarborough & Dobrich, 1994), the authors found that 8% of the variance in child reading outcomes was attributed to parent–child book reading. In the analyses presented here, an even larger percent of the variance in children's literacy was accounted for by mother–child conversation. Our results add to a mounting body of evidence on the relations between reminiscing and emergent literacy which supports the view that parent–child conversation is no less an important contributor to child language and literacy learning than is storybook reading (Reese, 1995; Reese et al., 2010). The research suggests that training parents in elaborative reminiscing should be at least as effective as training parents in book reading for children's developing language and literacy, perhaps especially for low-income parents who are not as likely to practice shared book reading.

In our final model, parent contributions to children's print concepts was the single best predictor of children's literacy, above and beyond children's initial levels of language, and child interest in reading. Our method for measuring child interest was part of a larger set of questions about home literacy practices that were included in order to test Sénéchal's Home Literacy Model in a more diverse sample of children. In future models of child interest and motivation, however, it will be important to take into account children's interest in other language and literacy-related activities that are not book-focused. Moreover, we acknowledge that parent report of requests for storybook reading as a measure of child interest in reading could also be tapping other motives; for instance,

a child who shows persistent interest in storybook reading may simply be seeking parental attention. Nevertheless, the view of early language and literacy acquisition from our data suggests a differential role for child and parent contributions to development, with the child's motivation fueling the acquisition of discrete print and decoding skills and the parent's elaborative reminiscing building children's conceptual knowledge.

The larger question, however, is why would maternal elaborative reminiscing uniquely predict children's knowledge about print? As a purely language-based activity, reminiscing with parents affords the child the opportunity to articulate thoughts based solely on personal memory; this kind of language use is often referred to as decontextualized because it requires the child to formulate conversation about things that are not present in the immediate moment (Reese, 1995; Snow, 1983). Snow (1983) suggested that as children learn to use language to construct the world without the support of the present environment, they develop knowledge that will help them to understand the world of print. Others have observed that talking about the past is a practice that engages the child in building internal representations of those events through language (Schieffelin & Eisenberg, 1984; Sigel, 2002). The question remains, however, does parents' use of elaborative forms of talk about displaced events cultivate the development of children's representational thought? Leyva et al. (2012) proposed that parents' elaborative talk may promote children's abstract thinking, which may then generalize beyond conversation to a variety of domains, including print skills, as well as memory, theory of mind, and metalinguistic awareness. Perhaps children who are more advanced in their abstract thinking are able to capitalize on incidental learning to more readily acquire print skills. However, further experimental research into the causal mechanisms of elaborative reminiscing for children's understanding of the intentional and referential functions of language is needed. In addition, we are aware that future research may uncover other mediating factors in the relationship between elaborative forms of language and children's print knowledge that we have not included here.

The findings presented here suggest that the effects of highly elaborative forms of parent talk, which have been shown to predict child language, literacy, and memory in middle-class samples, may be mediated by cultural practices that organize social interactions with children. Our results point to the importance of considering the varied forms of elaborative language parents use in a range of conversational contexts. This is something that can be further explored in future research, especially in designing coding schemes that capture the diverse ways in which parents are elaborative in a variety of conversational contexts.

Another related and distinct finding of our study is that there were almost no significant relationships between the maternal elaboration variables and children's vocabulary. This absence of effect was not explained by the high number of bilingual children in the sample, because we did not find significant differences between the monolingual and bilingual children on measures of language and literacy. This finding contrasts sharply with middle-class samples. It may be indicative of class differences in early language development and/or it may be the result of the inadequacies of extant standardized tests for this population of children. Many standardized language tests, which measure the products of children's learning (in this case, the amount of English vocabulary children have acquired), may not be valid measures for samples of children from diverse

economic and cultural backgrounds (de Villiers & de Villiers, 2010; Hirsh-Pasek, Kochanoff, Newcombe, & de Villiers, 2005). The need to develop more complex measures of children's language competence has been noted by many researchers (Dickinson et al., 2003; NICHD, 2005).

Limitations

The analyses and interpretation presented here are considered exploratory given the small sample size and the amount of missing data. However, the amount of missing data is not unusual in research with samples from low-income backgrounds. In one study of book reading practices in low-income families, which included only questionnaire data, less than 50% of the sample completed all tasks (Raikes et al., 2006). In this study, we visited homes to collect observational data, which culminates in a richer picture of parent–child interaction, but is harder to collect than questionnaire data. We are attempting to test our findings in other samples of children from diverse cultural and socioeconomic backgrounds and with larger sample sizes; this will provide greater power to look at differences among subgroups that are found in samples of culturally and linguistically diverse families.

Finally, we would like to note that it is important to consider that these parents may use different strategies to engage their children in conversation about past events that were not detected with the coding used in our analysis; moreover, elaboration may not be the only dimension for characterizing their reminiscing style (for further discussion, see Sparks, 2008). Nevertheless, the results presented here demonstrate that mothers' elaborative comments in talk about the past uniquely predicted children's literacy. In this sample, talk about behavior is the context in which that relationship occurs.

Conclusions

Our results fit well with Nelson's (2007) narrative view of development in which the experiencing child is guided by individual interests that stimulate their learning, and by caregivers who engage their children in talk that reflects cultural goals and values specific to their community. The developmental process is conceived as a spiral of mutual accommodation and influence (Fivush et al., 2006) in which caregivers' guidance in conversation about past events and children's motivation to participate in story reading enact the process through which the child acquires the linguistic and cognitive skills essential for learning to read.

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