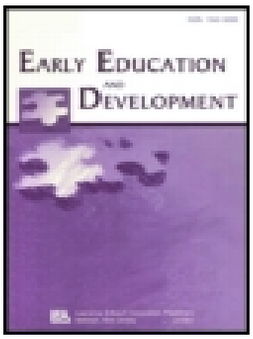

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Maternal Elaborative Reminiscing Increases Low-Income Children's Narrative Skills Relative to Dialogic Reading

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Research Findings: This study compared the unique effects of training low-income mothers in dialogic reading versus elaborative reminiscing on children's oral language and emergent literacy. Thirty-three low-income parents of 4-year-old children attending Head Start were randomly assigned to either dialogic reading, elaborative reminiscing, or a control condition. Parents in the intervention conditions were trained to implement specific and prescribed conversational techniques. Children's vocabulary, narrative, and print skills were assessed at the beginning (pretest) and at the end (posttest) of the school year. Elaborative reminiscing boosted the quality of

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children's narratives in comparison to dialogic reading. Elaborative reminiscing was also effective in supporting children's story comprehension. These training effects were present regardless of the children's ethnic background and whether they were bilingual. *Practice:* Training parents in elaborative reminiscing is a promising alternative to training in shared book reading for enhancing children's narrative development in non-mainstream populations. Parent training programs in elaborative reminiscing may also complement dialogic reading programs that take place in preschool classrooms.

Oral language skills are critical for children's later literacy acquisition (Scarborough, 2001). This pattern is apparent in the early stages of learning to read (Dickinson, McCabe, Anastasopoulos, Peisner-Feinberg, & Poe, 2003 ; NICHD, 2005) as well as in the later elementary years when vocabulary and oral narrative skills aid in fluent reading for understanding (Dickinson & Tabors, 2001; Griffin, Hemphill, Camp, & Wolf, 2004; Reese, Suggate, Long, & Schaughency, 2009; Sénéchal & LeFevre, 2002; Storch & Whitehurst, 2002). Overall, researchers agree that a comprehensive set of oral language skills in preschool is important for later reading skills (Snow, Burns, & Griffin, 1998; Whitehurst & Lonigan, 1998).

Children from low-income families are at risk for both oral language and reading difficulties (Snow et al., 1998; Whitehurst & Lonigan, 1998). In a naturalistic study of children from low-income families, Hart and Risley (1995) noted fewer words in the lexicons of these children compared to children from middle-income backgrounds, as well as lower levels of syntactic complexity. Children from low-income families also begin school with lower levels of print skills compared to middle-income children, and these socioeconomic differences are largely due to differences in the children's home environments (Aikens & Barbarin, 2008). The gap that exists between less and more skilled readers at the beginning of reading instruction widens over the primary school years (Stanovich, 1986). Thus, it is imperative that researchers explore ways to strengthen oral language development in this population of children, preferably prior to and in tandem with formal reading instruction (Paris, 2005).

One avenue for language intervention with low-income children in the United States is through Head Start (a federally funded program for preschool children from low-income families). Several Head Start–based interventions are delivering promising increases in the vocabulary development of low-income children by training teachers in specific book-reading and conversational techniques (e.g., Bierman et al., 2008; Wasik, Bond, & Hindman, 2006). Because of the large amount of language stimulation needed to increase children's language competence, as well as the intensive levels of teacher training needed to achieve these outcomes (Wasik et al., 2006), it is also important to explore the effects of intervention in the home setting. In the present study, parents of children attending Head Start were randomly assigned to receive one of two types of training. One

training program used shared book reading, and the other training program focused on conversations about shared past events. The goal of both interventions was to enhance children's oral language development. In the next section, we review the evidence to support the comparison of these two types of parent training programs.

SHARED BOOK READING AND CHILDREN'S ORAL LANGUAGE DEVELOPMENT

Frequent shared book reading in the home is associated with higher levels of children's oral language development (for a meta-analysis, see Bus, van IJzendoorn, & Pellegrini, 1995). Sénéchal and LeFevre (2002) specified that parents who read with their children more frequently have kindergartners with larger vocabularies, and vocabulary in turn is related to better reading skills by the middle of primary school.

The largest body of experimental research on shared book reading is on *dialogic reading* (Whitehurst et al., 1988), although experimental tests of other book-reading styles also exist (Reese & Cox, 1999). Dialogic reading teaches adults to ask questions on each page to encourage the child to formulate new words and sentences. With older preschoolers, the goal of dialogic reading is to ask higher level questions about story events, called *distancing prompts*, and ultimately to get the child to retell the story independently (Zevenbergen, Whitehurst, & Zevenbergen, 2003). A meta-analysis of 16 dialogic reading studies with over 550 children concluded that parent–child dialogic reading is primarily beneficial for children's expressive rather than receptive vocabulary and that parent-led dialogic reading is more effective with younger and middle-income children than with older and lower-income children (Mol, Bus, de Jong, & Smeets, 2008).

The finding that dialogic reading is more effective with younger children is not surprising given that it typically focuses on lower level requests for labels and picture descriptions (e.g., Whitehurst, Epstein, et al., 1994), even though dialogic reading training advocates the use of higher-level strategies with older children. These higher-level strategies include asking children to predict what will happen in the story and to draw inferences about story events. Correlational research with middle-income children showed that mothers who use more of these higher-level strategies have children with better vocabulary, story comprehension, and print skills upon school entry (Haden, Reese, & Fivush, 1996). Mol et al. (2008) suggested that the disappointingly small effect of parent-led dialogic reading for low-income children may result from the children's inability to understand and build upon adults' questions. Thus, the authors hypothesized that dialogic reading might be more effective with older low-income children with more advanced language skills than with younger low-income children. Although Mol et al.'s

meta-analysis did not test for differences in the effectiveness of dialogic reading with children from different ethnic backgrounds, research suggests that Hispanic mothers read less often to their children (Raikes et al., 2006) and in a less interactive style (Melzi & Caspe, 2005) compared to White mothers of a similar socioeconomic class, so it is also possible that culture moderates some of the effects of dialogic reading with low-income children.

Thus, dialogic reading is an effective way to increase children's language development, especially their expressive vocabulary, but the effects depend upon the quality of book reading in relation to the child's age, language competence, and socioeconomic background. However, most dialogic reading studies limit their oral language outcome measures to vocabulary.

Another important aspect of oral language development for later reading is children's narrative skill. Children who demonstrate a better understanding of story structure are more advanced readers later on, even after controlling for their vocabulary and syntactic skill (Griffin et al., 2004; Reese et al., 2009). Only one dialogic reading study has addressed outcomes for children's narrative skills. Zevenbergen et al. (2003) found that dialogic reading in the classroom improved low-income children's story retell skills and specifically increased their use of higher level narrative devices such as dialogue and internal states. Story retelling is a useful measure of narrative skill because it reveals the narrator's memory for the story as well as the quality of their narrative on evaluative and referential dimensions (Labov & Waletzky, 1967/1997). Evaluations are a higher order narrative device because they illustrate the narrator's perspective on the story plot as well as his or her understanding of characters' motivations or reactions. Orienting references to time, place, and person in the story are another type of higher order narrative device that improves the quality of the story by making it more understandable to the listener. Preschool children typically do not include many orientations in their stories, whereas evaluations are present in children's stories from early childhood (Miller, Potts, Fung, Hoogstra, & Mintz, 1990; Peterson & McCabe, 1983).

In contrast to the sparse focus on narrative outcomes in the dialogic reading research, a large body of research on mothers' conversational storytelling with their children about past events shows a strong connection with children's vocabulary and narrative skills. Past events in the child's life can provide rich material for storytelling, and recounts of past events are the first stories that children tell (Reese, 1999). We turn now to this body of research.

SHARED PAST EVENT NARRATIVES AND CHILDREN'S ORAL LANGUAGE DEVELOPMENT

When parents reminisce with their children, they must find a way to help their children recall and organize lived past events that are not part of the present moment.

This process includes helping children to narrate the action of the story as well as to communicate their subjective experience of the event. Mothers differ in the degree to which they elaborate upon past events in their narratives (Fivush & Fromhoff, 1988; Reese & Fivush, 1993; Reese, Haden, & Fivush, 1993). "High elaborative" mothers ask many open-ended questions in these event narratives, probing for new information (what, where, when, who, why). These mothers also confirm their children's participation in the conversations (e.g., the child says "We went to the park" and the mother replies "Yes, that's right, we went to the park"). Thus, high elaborative mothers tell longer, more responsive, and richer narratives with their children through their cues to include both contextualizing and evaluative information. In contrast, "low elaborative" mothers repeat questions frequently, use more close-ended questions, are less likely to confirm their children's participation, and have shorter conversations about the past. Several studies have shown that children of high elaborative mothers provide richer, more detailed stories when telling past event narratives to a researcher (Haden, Haine, & Fivush, 1997; McCabe & Peterson, 1991; Peterson & McCabe, 1994).

Experimental research supports the assertion that mothers who adopt these elaborative reminiscing techniques strengthen their children's vocabulary skill as well as help their children to tell richer past event narratives. Peterson, Jesso, and McCabe (1999) trained low-income mothers to include topic-extending or elaborative strategies with their preschool children over a year. Another group of mothers were visited by researchers at pretest and posttests but did not receive conversation training. At the end of the intervention, the children of trained mothers had higher vocabulary scores on the Peabody Picture Vocabulary Test (PPVT), and 1 year after the intervention, these children told longer and more complete past event narratives with a researcher.

In a larger-scale study, Reese and colleagues (Reese & Newcombe, 2007; Taumoepeau & Reese, 2010) trained a group of over 50 mothers in elaborative reminiscing with their toddlers. Another group of over 50 families were visited by researchers in the home an equal number of times but did not receive training in conversation techniques. At age 2½, children who began the study with lower language levels demonstrated increases in their expressive vocabulary scores as a result of maternal training (Taumoepeau & Reese, 2010). By age 3½, the children whose mothers received conversational training told more detailed personal narratives to a researcher that also included richer narrative content (e.g., temporal and contextual markers, evaluations such as mental states and judgments; Reese & Newcombe, 2007). In this study, about half of the mothers had only a high school education, whereas the other half of mothers had some tertiary education or a university degree. At both posttests, the less educated mothers had shorter and less elaborative past event narratives with their children than mothers with more education, regardless of training group. As in Hart and Risley (1995), socioeconomic effects were observed in the quality and quantity of parents' talk with their chil-

dren. However, in this study the effects of the intervention on the quality of children's narratives did not differ as a function of mothers' education levels; mothers from all educational levels became more elaborative with their children as a result of the training.

Thus, training mothers in rich conversation styles is a promising means of enhancing preschoolers' vocabulary and narrative skills. Note that the conversational training with mothers in these studies was similar to that provided to Head Start teachers (Wasik et al., 2006), but significant results were achieved with parents with much less intensive training sessions. For example, in Reese and Newcombe's (2007) study, training sessions with mothers were limited to three 15-min sessions when children were toddlers. In these training sessions, mothers were given an instruction sheet and coached on each technique to talk more often and elaboratively about past events with their children (e.g., using open-ended *wh*-questions). To date, however, these conversational interventions have only focused on White mothers from a range of income and education levels. Although the results of conversation training with less educated and lower income mothers are promising, we now need to know if the benefits of this training extend to non-White parents and their children. Leyva, Reese, Grolnick, and Price (2008) found few differences in elaborative reminiscing among White, Black, and Hispanic mothers. Moreover, children from all three racial/ethnic groups demonstrated higher narrative levels with a researcher if their mothers were more elaborative, suggesting that individual variation in mothers' past event styles is linked to children's independent narratives in similar ways as in middle-income samples (e.g., McCabe & Peterson, 1991). The presence of this link may also indicate that talking about the past is a naturally occurring activity in low-income families from a range of ethnic backgrounds. For example, research on sociocultural differences in narratives has shown that African American parents are likely to encourage and praise their children for telling stories (Heath, 1982, 1983). Some researchers find that these stories are more topic-associating (i.e., several related episodes are discussed using multiple temporal and contextual references) than topic centered (i.e., a single chronologically ordered episode; Michaels, 1981; see also Hyon & Sulzby, 1994). Studies with Hispanic families have shown that children are encouraged to participate in multiparty conversations (Eisenberg, 1985). Hispanic parents support their children's storytelling with comments that elicit engagement in talk about the past without necessarily providing cues that shape the overall structure of the narrative (Eisenberg, 1985; Melzi, 2000; see also Sparks, 2008).

THE PRESENT STUDY

Our aim in this study was to compare the effects of training low-income mothers in dialogic reading versus elaborative reminiscing on the oral language and emergent

literacy skills of Head Start children. To date, no study has investigated the shared and/or unique contributions of these training conditions with respect to children's skills at the end of preschool (although see Jordan, Snow, & Porche, 2000, for a combined book reading and conversational intervention with preschoolers). We assessed children's oral language via expressive and receptive vocabulary tests, their narrative skills via a story comprehension task and a story retell task, and their print skills with a test of print concepts at the beginning and the end of preschool. Soon after the pretest, mothers were randomly assigned either to receive training in dialogic reading or elaborative reminiscing or to participate in a no-training control group . Measures of children's vocabulary, narrative, and print skills at pretest and information about maternal education, family language practices, and racial/ethnic background were included as covariates.

In line with prior research (e.g., Peterson et al., 1999; Reese, 1995; Reese et al., 1993; Reese & Newcombe, 2007; Taumoepeau & Reese, 2010), we hypothesized that elaborative reminiscing training would have positive effects on preschoolers' expressive vocabulary and narrative skills. We expected dialogic reading to have similar effects on expressive vocabulary and narrative quality (Whitehurst, Epstein, et al., 1994; Zevenbergen et al., 2003), although these predictions were more exploratory given the small effect sizes of parent-led dialogic reading with low-income children (Mol et al., 2008). Although mothers in neither condition were specifically trained to focus on print, we explored whether children's print skills benefited from interactions with their mothers about books or past events. Mothers' elaborative reminiscing has been linked to children's print concepts in several studies (see Fivush, Haden, & Reese, 2006, for a review), but the mechanism of this link is not yet known. Perhaps it reflects a third variable such that mothers who are more elaborative in reminiscing are also teaching their children print skills, or perhaps the decontextualized nature of past event conversations enhances children's symbolic skills, which in turn aids their concepts of print (Leyva, Reese, & Wiser, 2010). Parent–child book reading has also been linked to children's print skills in several studies (e.g., Caspe, 2009), but again this link may be explained by a third variable. We also explored whether the effects of maternal training were different for mothers who identified themselves as White versus those who identified themselves as Hispanic or Black, and for children who were bilingual versus those who were not.

METHOD

Participants

The data were drawn from a larger study of over 60 children attending Head Start. Families were recruited to participate in three cohorts during the 2003–2004,

2004–2005, and 2005–2006 school years at the annual parent information session at Head Start centers at the beginning of each school year. All mothers reported feeling comfortable talking and reading books to their children in English. Nineteen families from the first cohort participated in a "baseline only" phase so that we could pilot our intervention procedures. In this study, we included only the remaining 41 families whose children were assessed at the beginning of preschool and then randomly assigned to an experimental condition. We were able to follow up with 33 of these children at the preschool posttest in the spring of the same school year. Our final sample consisted of 11 mother–child dyads in the control group, 10 dyads in the dialogic reading group, and 12 dyads in the elaborative reminiscing group. Of the eight dyads that dropped out prior to posttesting, two were in the control condition, four were in the dialogic condition, and two were in the elaborative condition. Directors at the associated Head Start centers informed us that four of these families had moved out of town, but they had not been able to verify why the other four children were no longer attending Head Start.

Table 1 shows descriptive statistics for covariates at pretest for those participants who stayed in the study. Using the categories specified in the National Institutes of Health's race/ethnicity reporting guidelines, 8 mothers identified themselves as non-Hispanic White, 12 as Hispanic, and 13 as non-Hispanic Black. Mothers identifying as non-Hispanic Black were African ($n = 7$) and African American ($n = 6$). Children were classified as bilingual (48%) if their mothers reported that a second language other than English was spoken at home. The second languages reported by mothers were Spanish; Albanian; Portuguese; French; Arabic; and the African languages of Twi, Shona, and Fante.

TABLE 1
Descriptive Statistics and Results of ANOVAs for Differences in Covariates at Pretest as a Function of Maternal Training Group

	Training Group				
Variable	*Elaborative (n = 12)*	*Dialogic (n = 10)*	*Control (n = 11)*	*F(2,30)*	*pη2*
Child PPVT, *M* (*SD*)	98.17 (13.40)	89.70 (12.47)	91.10 (15.92)	1.19	.07
Child age (in months), *M* (*SD*)	50.67 (2.74)	50.80 (3.97)	48.64 (3.96)	1.27	.08
Maternal education (in years), *M* (*SD*)	12.50 (3.49)	13.15 (1.16)	12.90 (1.64)	0.21	.01
Male children, %	50	40	27.3		
Bilingual children, %	41.7	60	45.5		
Hispanic mothers, %	41.7	40	27.3		
Black mothers, %	33.3	50	36.4		

Note. PPVT = Peabody Picture Vocabulary Test.

Procedure

The children were assessed at two time points at the beginning and the end of their final year in Head Start. They were tested on measures of vocabulary, narrative, and print skills at each time point. The vocabulary assessments at pretest were completed during the school day at the child's Head Start center in two sessions. We used an experimental design in which children were first matched on the basis of pretest scores for receptive vocabulary and gender and then randomly assigned to one of three groups: two treatment groups or a control group. Parents assigned to the treatment groups participated in training for either dialogic reading or elaborative conversation during a single home visit after an interview about language and literacy practices. Parents assigned to the control group were also visited at home for an interview.

A pool of eight undergraduate, postgraduate, and doctoral-level researchers (three White, two Hispanic, one Indian, one Albanian, and one African American) completed the preschool assessments and the home visits (in teams of two). During the home visits, the primary researcher conducted an interview with mothers about their book-reading and conversational routines, and then mothers completed a questionnaire about demographic information while a second researcher completed the narrative and print skills pretests with the child. On the questionnaire, mothers identified themselves as White, Hispanic, or Black using race/ethnicity reporting guidelines from the U.S. National Institutes of Health (hereafter referred to as *maternal ethnicity*) and provided other information about their education and language(s) spoken at home. The mothers reported how many times in a typical week they read books with their children and also how often they discussed special past events with their children (on a 5-point scale with anchor points of 1 = *never*, 3 = *sometimes*, and 5 = *very often*). Finally, for mothers assigned to a treatment condition, the primary researcher conducted a training session in the assigned technique that lasted about 45 min. Posttesting took place at the end of the preschool year at the Head Start centers across three sessions for each child. Other early literacy skills (e.g., phonological awareness, letter/word recognition) were assessed at pre- and posttest but were not included in these analyses.

Vocabulary skills. Two standardized measures of vocabulary were administered at both time points. The child's receptive vocabulary for single words was assessed with the PPVT-III (Form A at pretest and B at posttest; Dunn & Dunn, 1997). To complete the PPVT-III, the child points to one from a field of four pictures after the examiner says a word (e.g., "Show me *ball*"). The Expressive Vocabulary Test (EVT; Williams, 1997) was used to measure spoken lexical skills at both time points. This test requires the child to produce single words from picture stimuli or to provide a synonym for a spoken word.

Narrative skills. Two narrative tasks assessed children's story comprehension and story production at each time point. In the story comprehension task, researchers read a storybook to children and then asked six comprehension questions to test recall of characters' names, key plot events, and simple inferences about character motivation and main idea. At pretest the storybook was *Peter's Chair* (Keats, 1967), and at posttest the storybook was *Hemi's Pet* (de Hamel, 1987). Both books were selected because they contain a classic narrative storyline and were likely to be unfamiliar to children from this population (Curenton & Craig, in press; Curenton, Craig, & Flanigan, 2008; Reese & Cox, 1999; and Reese, Cox, Harte, & McAnally, 2003, have also used these books with low-income and culturally diverse populations). Children's story comprehension was scored at the time of presentation. Children received 1 point for each correct answer to the six questions.

After answering the story comprehension questions, the child completed a story retell task (adapted from Reese, 1995; Trionfi & Reese, 2009; cf. O'Neill, Pearce, & Pick, 2004). After answering questions about the storybook, the examiner took a Pooh Bear puppet that had been out of sight and asked the child to retell the story to Pooh because he had not heard the story the first time around. The puppet faced the storybook in the same position as the child, and the book was placed on the desk in front of them with the first page open. The examiner gave general encouragement by repeating all or part of what the child said or by confirming the child's utterances (e.g., "Wow" or "You're telling Pooh a great story"). But no assistance was provided in the form of elaborations on the child's storytelling or questions that would help add detail to the child's retelling.

The children's story retells were transcribed from audiotape, and the narratives were coded for recall and quality. Initially, the text of each storybook was divided into propositions, each containing a unique verb. The pretest storybook that researchers read to children contained 41 propositions, and the posttest storybook contained 39. The total number of propositions children recalled in their retells served as a measure of children's story recall. Each proposition in a child's retell was also coded for component features of narrative quality, with 1 point for each instance of the following features: descriptors, qualifiers, internal states, temporal terms, causal terms, character introduction, and dialogue (see Reese et al., 2009; Trionfi & Reese, 2009). Narrative quality was calculated from the total number of features identified in the transcript. See the Appendix for a description of the story retell coding scheme with examples.

Coding of story recall and quality was completed by two independent coders on 25% of the transcripts at each time point. At pretest, the two coders achieved reliability of Cohen's $\kappa = .96$ for story recall and Cohen's $\kappa = .98$ for narrative quality features. At posttest, the primary coder and one different coder achieved Cohen's $\kappa = .92$ for story recall and Cohen's $\kappa = .94$ for narrative quality. The primary coder coded the remaining transcripts at each time point. All coders were unaware of children's group assignment. The reliability coder

at both time points was also unaware of the design and the hypotheses of the study.

Print skills. The Concepts About Print test (Clay, 1979) was adapted for this age group by using Questions 1–9 and 11 from the original so that the selected items measured children's conceptual knowledge about print and did not require decoding skills (e.g., "Where is the front of the book?" "Where do I start reading?") Children's responses were recorded and scored at the time of administration, with 1 point awarded for each correct response.

Maternal Training

Dialogic reading condition. Christopher Lonigan, one of the creators of the dialogic reading technique (Whitehurst et al., 1988), trained two of the primary researchers in dialogic reading prior to the study (adapted from Whitehurst, Arnold, et al., 1994; Huebner, 2000). The two primary researchers were then responsible for training the research assistants via direct instruction in dialogic reading techniques, watching videotapes, and observing dialogic reading training sessions in the home. Finally, one of the primary researchers observed the trainee conducting the training with mothers. We trained parents to increase their use of open-ended questions with their children during storybook reading. The intervention also taught the parent to follow the child's lead, to expand upon the child's contributions, and to connect talk about the book to real-life events. Table 2 shows the specific conversational strategies taught in the dialogic reading condition.

The training session took place in the home via a laptop computer. The researcher instructed the mother via slides explaining each strategy. After each slide, the researcher modeled the target technique and presented the mother with a short video clip featuring a mother (from a similar socioeconomic and cultural background) using that strategy. The researcher stopped at any point during the training to answer questions. The parent then received a paper copy of the training she had just viewed on the computer and a one-page summary of the strategies taught in the training. We also sent each mother a fridge magnet listing the techniques from Table 2. The families were provided with 5 storybooks at the time of the home visit out of a set of 25 books. We encouraged mothers to read dialogically on a daily basis. New storybooks were exchanged every month at school so that five new books were sent home each month for 5 months. The child received a gift book at the time of each exchange. Each month a researcher phoned the parents to remind them to return the books to school in their child's backpack, to go over the main points of the training, and to answer any questions they might have about the book-reading techniques.

TABLE 2
Strategies Taught to Mothers in the Dialogic Reading and Elaborative Reminiscing Conditions

Dialogic Reading Condition

Parents were taught to use open-ended questions during book reading:

- Ask *wh-* questions that help the child to learn vocabulary, describe whole pages, and eventually narrate the story on his or her own.
- Use open-ended questions such as "What's happening on this page?" or "What did they do next?" and fewer closed-ended questions that demand a specific, correct answer (a yes or no).

Parents were taught to expand upon their children's utterances:

- Add on to the child's answers by repeating what he or she just said and expand upon the response, for example:

  Child: It's eating. Parent: Yes, the ladybug is eating.

  Child: Bird up there. Parent: The bird is hiding.

Parents were taught to increase child participation:

- Follow the child's interests (eye gaze, answering their questions).
- Help the child to connect the conversation about the book with other events related to family life and to the child's daily world.

Elaborative Reminiscing Condition

Parents were taught to use open-ended questions during reminiscing:

- Ask open-ended, *wh-* questions about specific, meaningful events in which the child has participated. For example, choose special events to discuss such as a family trip to the beach, the child's last birthday party, a family gathering at a relative's house, or a class field trip.
- Limit the use of questions that require only a yes or no from the child, and try not to repeat a question.

Parents were taught to expand upon their child's utterances:

- Echo what the child said and add more detail, for example:

  Child: We went to the zoo. Parent: That's right. We went to the Southwick Zoo.

  Child: I saw a bear. Parent: You saw a big fuzzy bear.

Parents were taught to increase child participation:

- Follow the child's lead by asking more questions, such as "What else happened?" or "What did you like best about going to the carnival?"
- Help the child to connect his or her own experience to other events with questions such as "Where else have you seen a clown?" or "What did you like about going to the circus?" or "Where else have we gotten cotton candy?"

Elaborative reminiscing condition. This treatment condition was based on a body of research supporting the benefits of engaging preschoolers in talk about past events for children's language, memory, narrative, and literacy development (Peterson et al., 1999; Reese, 1995; Reese & Newcombe, 2007). The specific strategies taught were based on the same techniques employed in the dialogic reading intervention, including the use of open-ended questions, following the child's lead, expanding on the child's utterances, and linking the past event to other aspects of the child's experience. Parents were encouraged to discuss past events with their children on a daily basis (see Table 2 for the specific strategies used in the elaborative reminiscing condition).

Mothers in the elaborative reminiscing intervention received training in the same format as mothers who were trained in dialogic reading. This included displaying the techniques to mothers via slides on a laptop computer, modeling each technique for the mother, and presenting short video clips featuring mothers (from similar socioeconomic and cultural backgrounds) using the targeted strategies. After the session, parents received a paper copy of the training they had just viewed on the laptop computer, a one-page summary of tips for talking about the past, and a fridge magnet listing the key techniques in Table 2. The families were asked to keep logs of the daily conversations with their children. The completed logs were exchanged at school over a period of 5 months; the children received two movie tickets and a new log each month. Researchers phoned parents each month to remind them to put the log in their child's backpack, to go over the main points of the training, and to answer any questions they might have regarding the new conversational techniques.

Control condition. Families assigned to the control condition were also visited after the vocabulary pretests in their homes, where researchers conducted the interview with the mother and administered the narrative and print skills pretests. These families were not contacted again during the intervention period.

RESULTS

Preliminary Analyses

Missing data. At pretest, there were no missing data for the PPVT, EVT, story comprehension, print skills, or demographic variables. There were five missing data points for story recall and narrative quality at pretest. At posttest, missing data points for the outcome measures were as follows: one for EVT, seven for story recall and quality, three for story comprehension, and four for print skills. Data were normally distributed except for narrative quality at posttest, which was positively skewed (1.37). Square root transformation of this variable was performed and used in subsequent analyses (Singer & Willett, 2001). We did not include the posttest PPVT as an outcome measure because pretest PPVT scores were used for matching prior to random assignment.

Differences in covariates at pretest. Table 1 displays descriptive statistics for receptive language and demographic variables for the sample through posttest ($N = 33$). To ensure that training conditions were similar at pretest in terms of covariates, a series of analyses of variance (ANOVAs) were conducted. These analyses yielded no significant differences in covariates as a function of training condition (see Table 1). We performed separate one-way Child Gender ANOVAs

on the outcomes at pre- and posttest. No significant gender differences were found (all *p*s > .10); thus, this variable was not considered in further analyses.

Differences in reported home practices at pretest. Analyses of the parent interview data revealed no significant differences among the dialogic, elaborative, and control groups during the pretest interview in the reported frequency of mothers' book reading or past event talk with their preschoolers: book reading, $F(2, 29) = 0.30$, $p > .10$; past event talk, $F(2, 29) = 2.03$, $p > .10$. The mean number of times mothers reported reading books with the child during a typical week was 5.10 (*SD* = 1.60) for dialogic, 4.92 (*SD* = 2.61) for elaborative, and 4.35 (*SD* = 2.36) for control. Mean frequency of reported past event talk with the child during a typical week on a 5-point scale (with 5 as *very often*) was 3.90 (*SD* = 0.99) for dialogic, 4.33 (*SD* = 0.99) for elaborative, and 3.30 (*SD* = 1.57) for control. Thus, at the beginning of preschool, the reported frequency with which mothers read books and talked about past events with their children was similar regardless of the condition (intervention or control) to which the dyad was assigned.

Correlations among pre- and posttest variables. Several demographic and pretest variables were correlated with the outcome variables at posttest. Maternal education was related to children's narrative quality ($r = .36$, $p = .07$) and print skills ($r = .42$, $p < .05$) at posttest. Children's expressive vocabulary at pretest was positively associated with all outcome variables at posttest (*r*s = .34 to .69, all *p*s < .08). Story recall at pre- and posttest ($r = .36$, $p = .09$), story comprehension at pre- and posttest ($r = .60$, $p < .001$), and print skills at pre- and posttest were also linked ($r = .58$, $p < .001$). Hence, we used a standard set of pretest covariates (i.e., maternal education, expressive vocabulary, and the outcome measure at pretest) for all analyses of the effects of maternal training on child outcomes. Maternal training condition (dialogic, elaborative, control), maternal ethnicity (White vs. Black or Hispanic), and whether children were bilingual were included as factors in all analyses.

Effects of Maternal Training on Child Outcomes

To examine the effects of maternal training on child outcomes, we conducted a set of three-way (Training × Maternal Ethnicity × Bilingual) ANCOVAs on posttest EVT, narrative, and print skills controlling for maternal education, EVT, narrative, and print skills at pretest. Table 3 shows the results of these analyses; raw scores are reported throughout.

EVT and story recall. No differences in children's expressive vocabulary were found as a function of maternal training (see Table 3); maternal ethnicity, $F(1, 31) = 0.19$, $p > .10$; or bilingual, $F(1, 30) = 2.39$, $p > .10$. Nor did children's

TABLE 3
Descriptive Statistics and Results of Three-Way ANCOVAs (Training × Maternal Ethnicity × Bilingual) for Differences in Children's Posttest Measures Controlling for Covariates

	Training Group							
	Elaborative		*Dialogic*		*Control*			
Variable	*Pretest*	*Posttest*	*Pretest*	*Posttest*	*Pretest*	*Posttest*	*F*	$p\eta^2$
EVT	98.83 (14.7) $n = 12$	101.50 (11.37) $n = 12$	88.70 (8.76) $n = 10$	91.56 (9.00) $n = 9$	91.27 (13.0) $n = 11$	95.73 (13.20) $n = 11$	0.35[a]	.03
Story recall	10.11 (3.22) $n = 9$	9.27 (5.80) $n = 11$	7.80 (3.29) $n = 10$	3.75 (3.33) $n = 8$	8.78 (4.47) $n = 9$	7.29 (3.68) $n = 7$	1.41[b]	.22
Narrative quality	3.11 (1.90) $n = 9$	6.90 (6.12) $n = 11$	2.40 (1.83) $n = 10$	1.75 (3.01) $n = 8$	2.67 (2.60) $n = 9$	4.71 (6.63) $n = 7$	6.74*[c]	.57
Story comprehension	2.08 (1.22) $n = 12$	3.41 (1.43) $n = 11$	0.75 (0.89) $n = 10$	1.67 (1.52) $n = 9$	0.72 (0.65) $n = 11$	1.90 (1.39) $n = 10$	2.73†[d]	.24
Print skills	5.83 (2.21) $n = 12$	7.00 (2.41) $n = 12$	5.20 (2.25) $n = 10$	5.14 (2.19) $n = 7$	4.09 (2.07) $n = 11$	5.00 (2.94) $n = 10$	0.52[e]	.06

Note. EVT = Expressive Vocabulary Test.

Controlling at pretest for [a]maternal education and EVT; [b]maternal education, EVT, and story recall; [c]maternal education, EVT, and narrative quality; [d]maternal education, EVT, and story comprehension; [e]maternal education, EVT, and print skills.

†$p < .10$. *$p < .05$.

story recall differ as a function of maternal training. The effect sizes of differences in expressive vocabulary and story recall as a function of training were small. Children used a similar number of propositions when retelling a story regardless of whether their mothers had received training. However, children of White mothers recalled significantly more propositions than those of mothers who were Hispanic or Black, $F(1, 32) = 5.28$, $p < .05$. No differences in story recall were found as a function of whether children were bilingual, $F(1, 32) = 1.39$, $p > .05$.

Narrative quality. There were significant differences in children's narrative quality at the end of preschool as a function of maternal training (see Table 3). The effect size of these differences was moderate. Post hoc Tukey tests showed that children whose mothers received elaborative reminiscing training had higher narrative quality scores than children whose mothers received dialogic training ($p < .05$). Children in the elaborative reminiscing training group also scored higher in narrative quality than children in the control group, although this difference was not statistically significant (see Table 3). Significant main effects of maternal ethnicity, $F(1, 31) = 43.15$, $p < .01$, $p\eta^2 = .81$; and bilingual, $F(1, 30) = 24.58$, $p < .01$, $p\eta^2 = .71$, were also found in these analyses. Children who were monolingual and those whose mothers identified as Hispanic or Black had better narrative quality at the end of preschool ($p < .05$). A marginally significant interaction between training and bilingual, $F(1, 29) = 3.69$, $p = .06$, $p\eta^2 = .43$; and a significant interaction between maternal ethnicity and bilingual children were also found, $F(1, 28) = 15.94$, $p < .01$, $p\eta^2 = .61$.

To further examine these two-way interaction effects on narrative quality, we conducted a series of nonparametric Mann–Whitney U tests[1] within each training group as a function of bilingual status. There were no significant differences between children who were bilingual and those who were not in the elaborative reminiscing group ($z = -.35$, $p > .10$), the dialogic reading group ($z = -.67$, $p > .10$), or the control group ($z = -.90$, $p > .10$). Thus, we interpret the significant effects of training as indicated in the post hoc Tukey tests as follows: Children of mothers who received elaborative reminiscing training told narratives of higher quality than those of mothers who received dialogic reading training.

Using Mann–Whitney U tests we also explored the two-way interaction effects of Ethnicity × Bilingual on children's narrative quality. Children whose mothers were White performed similarly in terms of narrative quality regardless of whether they were bilingual ($z = 1.21$, $p > .10$). Similarly, children whose mothers were Hispanic or Black performed similarly regardless of whether they were bilingual ($z = 1.20$, $p > .10$). Because we did not find differences in these analyses, we inter-

[1]We conducted nonparametric rather than t tests even though the data were normally distributed because the sample sizes in each group were very small, thus increasing the vulnerability to the t test's assumption violations and decreasing the test power.

pret the significant main effects of each factor as follows: Mothers who were Hispanic or Black ($M = 5.05$, $SD = 6.22$) had children with better narrative quality than those who were White ($M = 3.67$, $SD = 4.03$). More specifically, the pattern was for children of Black mothers ($M = 7.13$, $SD = 6.53$, $n = 8$) to tell stories of better narrative quality than children of Hispanic ($M = 3.67$, $SD = 5.87$, $n = 12$) or White ($M = 3.67$, $SD = 4.03$, $n = 6$) mothers. Monolingual children ($M = 6.33$, $SD = 6.77$) displayed better narrative quality than bilingual children ($M = 3.36$, $SD = 4.50$).

Story comprehension and print skills. There were marginally significant differences in children's story comprehension at the end of preschool as a function of maternal training (see Table 3). Post hoc Tukey tests showed that children whose mothers received training in elaborative reminiscing had significantly better story comprehension than children whose mothers received training in dialogic reading ($p < .05$) or no training (marginally significant, $p = .06$). No significant main effect of maternal ethnicity, $F(1, 31) = 0.02$, $p > .10$; or bilingual children, $F(1, 30) = 0.55$, $p > .10$) on story comprehension was found. Finally, no differences in children's print skills were found as a function of maternal training (see Table 3); maternal ethnicity, $F(1, 31) = 0.20$, $p > .10$; or bilingual, $F(1, 30) = 0.03$, $p > .05$. The effect sizes of differences in story comprehension and print skills as a function of training were small.

Taken together, these findings indicate that maternal elaborative reminiscing training had a significant positive effect on children's narrative quality and a marginally significant effect on their story comprehension, after controlling for covariates. Maternal elaborative reminiscing training did not have an effect on children's expressive vocabulary, story recall, or print skills. No positive effects of dialogic reading training were found for children's expressive vocabulary, narrative, or print skills after controlling for covariates.

DISCUSSION

We have demonstrated that training low-income mothers in elaborative reminiscing increased the quality of children's story retell narratives and their story comprehension relative to training in dialogic reading. Elaborative reminiscing also resulted in marginal increases in children's story comprehension compared to a control condition. However, children whose mothers were trained in elaborative reminiscing did not have better expressive vocabulary skills or tell longer stories than children in the other conditions. The following excerpts illustrate the differences in narrative quality for children in the elaborative reminiscing and dialogic reading conditions. The first story retell at posttest is from a child whose mother participated in the dialogic reading training, and the second story retell is from a child whose mother participated in the elaborative reminiscing training. The two stories are of similar length in

retelling the story of *Hemi's Pet* (de Hamel, 1987), which is about a boy named Hemi who doesn't have a pet to show at his school's pet show-and-tell day, so he decides to take his 3-year-old sister Rata to school as his pet sister. The other children laugh at him, but Hemi wins the prize for the most original pet.

Child 1—Dialogic Reading Training

"They wanted to play. And him said, 'I need a pet.' Brush his hair. And she said, 'Where are you going?' And she won the prize."

Child 2—Elaborative Reminiscing Training

"Remi is brushing her sister's hair. The kids are laughing at him. They are laughing 'cause her little sister is not a pet. And Remi did win the prize."

Both narratives are similarly brief, but the second one is richer in specificity and detail. In the story told by the child whose mother was trained in elaborative reminiscing, the child delineates the two main characters by name or relationship (Remi[2] and sister), uses evaluative verbs (*laughing*) that comment on the perspective of the story characters, and, perhaps most critically, uses a causal term that provides an explanation for the main problem in the story ("They are laughing 'cause her little sister is not a pet"). In contrast, the first narrative from the child in the dialogic reading condition relays some of the plot but does not specify characters or add any evaluative information; however, this child includes dialogue ("she said") as a narrative device to reenact the story, a strategy that indicates that the narrator is familiar with literate forms of language.

In Bruner's (1986) terms, the first narrative conveys only the "landscape of action," or a sequence of actions that build the story plot. But the child whose mother participated in the elaborative reminiscing intervention has begun to invoke the "landscape of consciousness" by making reference to a chain of events as well as the significance of those actions for the story characters. For Bruner, the landscape of action (the events) and the landscape of consciousness (the meaning of those events) are woven together in a well-crafted story.

These results are in line with prior research and theories of the benefits of elaborative reminiscing for children's independent narrative skills (e.g., Fivush et al., 2006; Nelson, 1993; Peterson et al., 1999; Reese & Newcombe, 2007). However, the current study represents a significant extension of prior research in at least three ways. First, we extend findings of the benefits of elaborative reminiscing to a low-income population that was ethnically and linguistically diverse; elaborative reminiscing was equally helpful for children from different ethnic and language backgrounds compared to dialogic reading. Second, we extend the type of narra-

[2]Note that we did not penalize children for mispronouncing the character's name or for confusing gender in their use of pronouns.

tive to a story retell context instead of the past event narrative contexts that have been used in prior research (e.g., Peterson et al., 1999; Reese & Newcombe, 2007). Because children's skill at retelling stories is a strong predictor of their later reading skill (Reese et al., 2009), this extension has practical importance. Finally, we are able to demonstrate the effectiveness of elaborative reminiscing in comparison to dialogic reading, which is an increasingly popular tool for promoting language development among low-income children (Bierman et al., 2008), sometimes with disappointing results when practiced by low-income parents (Mol et al., 2008).

Training low-income mothers in dialogic reading did not result in increases in children's narrative or expressive vocabulary skills as we had anticipated. In fact, the pattern of the means in Table 3 suggests that children in the dialogic reading condition may actually have decreased their narrative quality scores over time, whereas the children in the other two conditions showed increases from pretest to posttest. This finding was unexpected given the benefits of dialogic reading for children's vocabulary and narrative skill identified in prior research (Whitehurst et al., 1988; Zevenbergen et al., 2003), but it is consistent with Mol et al.'s (2008) conclusions that parent training in dialogic reading—without an accompanying preschool component of dialogic reading—is not particularly effective for increasing low-income children's language development. Even the hint of a possibility that dialogic reading depresses children's narrative skills should be a concern for those planning to implement dialogic reading with low-income parents. This possibility should be followed up in further research.

A limitation of our study is that we were unable to make a second home visit to conduct a manipulation check on the way in which mothers were implementing the reading and conversation techniques. This is a limitation shared by many other studies of dialogic reading (see Mol et al., 2008). Thus, mothers may not have implemented the dialogic reading techniques as they were trained (see Janes & Kermani, 2001), and this lack of fidelity may explain the null or potentially negative results for dialogic reading.

Perhaps the low-income mothers in this study perceived the elaborative reminiscing techniques as easier, and thus they used the techniques more often than the mothers instructed in dialogic reading used dialogic reading techniques. In fact, the techniques targeted in the elaborative reminiscing and dialogic reading programs were very similar: Both training programs focused on increasing the number of mothers' open-ended questions, increasing maternal responsiveness to children's utterances, and allowing the child to take a more active role in the interaction. However, mothers may have perceived the dialogic reading intervention as more difficult to implement because it involved reading a new book *and* conversing in a new way about that book at the same time. Several researchers have noted that Hispanic and African American parents ask few open-ended questions during book-reading interactions with their preschoolers (Hammer, Nimmo, Cohen, Draheim, & Johnson, 2005; Vernon-Feagans, Hammer, Miccio, & Manlove,

2001) and that Hispanic parents in particular may not find book-reading interactions enjoyable (Janes & Kermani, 2001). In contrast, mothers may have perceived the same techniques as easier to implement when couched in the context of elaborative reminiscing because they only needed to focus on the conversation. Moreover, mothers can engage in elaborative reminiscing at any time and place, and it does not require any special materials.

Unfortunately, we did not assess parents' perceptions about the program at the end of the study, so we cannot test this hypothesis. Further research should include assessments of parents' perceptions of the programs in order to reach a better understanding of the reasons why one program is more effective than the other, given that both dialogic reading and elaborative reminiscing are based on similar techniques but are implemented in different parent–child interaction settings.

In keeping with this line of reasoning, we note that children whose mothers were trained in elaborative reminiscing were not significantly better storytellers at the end of preschool than children whose mothers received no conversational training, although they were marginally better at comprehending the story. It is illuminating here to focus on the direction of the means and the effect sizes, given our low power to detect significant differences among groups because of the reduced sample size at posttest. For all story measures, the direction of the means is in favor of the elaborative reminiscing condition (see Table 3). In comparison to the no-treatment control condition, however, elaborative reminiscing may initially be more effective for children's story understanding than for their story production. Peterson et al. (1999) noted a similar result in their conversational training study, in that children of trained mothers initially showed an advantage over children whose mothers were not trained only in their language understanding and did not show an advantage in narrative production until 1 year after the intervention had ended. Such "sleeper" effects indicate either that mothers continue to use the technique long after the formal intervention is over and/or that changes in narrative production take longer to appear. Future studies of the benefits of elaborative reminiscing should include a long-term posttest. We attempted to follow these children up at the end of kindergarten but had great difficulty retaining this low-income, at-risk population.

Our results document the fact that children of Black mothers and those who were monolingual told stories of higher narrative quality compared to White, Hispanic, and bilingual children. This finding is in line with some prior research showing that children of African American mothers told stories of higher narrative quality than their White peers in kindergarten (Heath, 1982; Vernon-Feagans et al., 2001). This finding also suggests that storytelling is an important family value and a frequent family practice in non-mainstream communities (e.g., Cho & Miller, 2004; Miller, Cho, & Bracey, 2005). Researchers have noted that African Americans place a high value on the elements of performance in storytelling (Heath, 1983) and that they draw upon an oral style derived from early Hebrew poetry, Greek epics, and West African oral storytelling traditions (Gee, 1985), among others (Champion, 1998). Some researchers point to a mismatch

between the narratives produced by young African American children and the discourse style expected in academic settings (Heath, 1983; Michaels, 1981). The results presented here are all the more encouraging as evidence for Black children's well-developed narrative skills in the form of story retelling, which is a crucial precursor to children's literacy learning (Curenton, 2004, 2006; Reese et al., 2009). This finding is also in line with Curenton et al. (2008), who found that African American children used higher levels of decontextualized language in a story retell task than in two other narrative contexts. Story retelling appears to be a strength for African American children that could be capitalized upon in building their later reading skills.

Regardless of this variation in children's narrative skill among cultures, however, it is important to emphasize that the effects of elaborative reminiscing training on children's narrative skills at the end of preschool were present regardless of mothers' ethnic background and whether children were bilingual. Overall, the positive effects of elaborative reminiscing in boosting children's narratives held despite the demographic characteristics of the participants.

In sum, parent training in elaborative reminiscing is a promising complement to shared book-reading techniques for increasing low-income children's narrative skill. Given the effectiveness of small-group dialogic reading in Head Start classrooms for increasing children's expressive vocabulary (e.g., Bierman et al., 2008), an interesting possibility would be to test the added value of parent training in elaborative reminiscing to preschool-led dialogic reading. In future research with larger samples, we hope to discover the strengths and limitations of elaborative reminiscing with families from a range of social, linguistic, and ethnic backgrounds.

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APPENDIX
Story Retelling: Narrative Coding Scheme

1. *Recall:* Children receive 1 point for each utterance that represents the gist of a proposition from the original text of the story.

2. *Quality:* Each proposition is coded for the following narrative features; a proposition can receive a maximum of 1 point per category/subcategory, for a maximum of 9 points per proposition. The number of narrative features is totaled for an overall quality score.

a) Evaluation: Not a part of original story propositions.
Descriptors: Use of adjectives and adverbs to describe objects, actions, objects, or characters.
Text: "He ran to his room"
Child's Recall: "He ran to his room quick."
Text: "Let's paint the little chair pink."
Child's Recall: "They painted the blue chair pink."
Qualifiers: Use of adverbs or adjectives to amplify or intensify the intended meaning.
Text: "But he couldn't fit in his chair."
Child's Recall: "The chair's way too small."
Internal States: When children use words that refer to internal states, including verbs that refer to intentions or desires (e.g., *like*, *think*, *want*).
The child says: "Then he was mad."
"He decided to take the chair."
"She is thinking he left."

b) *Cohesion:* Cohesive markers for time, location, and causality.
Temporal terms: In the beginning, first, next, or last but not *and* or *then*.
Causal terms: Included justifications beginning with because or so that.
Character Introduction: 1 point is given for specifically delineating a character from the story, for a maximum of 3 points (Susie, or the baby, Dad, and Mom).

c) *Reported Speech:* Created dialogue that was not in the story.
Text: "You have to play more quietly."
Child's Recall: "His mum said, 'Quiet.'"