



Book sharing and reminiscing: Caregivers' conversational style and children's language and literacy development in low-income Costa Rican families

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ABSTRACT

Parent-child book sharing and reminiscing conversations are two important home activities that promote young children's early language and literacy skills. Yet extant research has focused on middle-class Anglo-European families, with relatively little attention given to styles of book sharing and reminiscing in other cultural contexts. To further explore home practices and children's development in Latin America, we examined the relationships between caregiver's conversational style while reminiscing and book sharing and children's emerging language and literacy skills. The sample included 108 low-income, Costa Rican caregivers and their preschool-aged children. Results from cluster analyses identified two types of caregiver book sharing styles, the story builder and the story teller; and two types of reminiscing styles, the high elicitor and the low elicitor. These styles uncovered different links to child participation in conversation and emerging language and literacy skills. Findings are discussed in light of furthering culturally appropriate research, practices, and policy to support early childhood and family literacy for young children and their caregivers in Costa Rica.

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1. Introduction

From a social-interactionist account of child development, every day experiences in the home are a vital source for early language learning (Vygotsky, 1986). A robust set of research findings demonstrates that the home environment makes a critical contribution to children's cognitive-linguistic development (Bornstein et al., 2020; Tamis-LeMonda et al., 2019). One component of home practices, engaging children in rich and meaningful conversations during day-to-day family routines, has been the subject of many studies. A consistent finding is that participation in elaborative conversations facilitates a developmental pathway for children's acquisition of language, literacy, and school success (Dickinson & Tabors, 2001). In particular, talk during shared reading and reminiscing are two conversational contexts that play a special role in children's language development. This study examines the associations between caregiver's contributions while reminiscing and book sharing and preschoolers' language and early literacy devel-

opment in a sample of Costa Rican families from low-income backgrounds.

1.2. Book sharing and early literacy development

Book sharing is widely acknowledged as an effective family practice to promote language and early literacy development in young children (Wasik et al., 2016). Meta-analytic evidence for the impact of book sharing frequency (Bus et al., 1995), print exposure (Mol & Bus, 2011), and caregivers' use of an interactive, dialogic reading style (Mol et al., 2008) on children's oral language and early literacy revealed medium to strong effect sizes. However, these results were somewhat tempered by Mol et al.'s (2008) finding that dialogic reading was less effective for children from low-income backgrounds and older preschoolers, and their results were borne out again by meta-analyses that suggest more modest effects for shared reading interventions (Dowdall et al., 2020; Noble et al., 2019).

Research with families from diverse backgrounds suggests that conversational styles during shared reading vary across cultures (Heath, 1983). Given these differences, it is important to examine book sharing outside of mainstream populations commonly represented in the literature and to determine whether the associations

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between book sharing and child outcomes are consistent or differ across cultural groups (for detail, see Manz et al., 2010). Latinos are an interesting population to explore because they place less emphasis on book sharing than other cultural groups. For example, Latino parents in the United States reported owning fewer children's books and lower levels of book sharing frequency than caregivers from other ethnic groups (Brooks-Gunn & Markman, 2005; Cooper et al., 2010). Instead, they emphasize oral literacy practices such as telling fantasy and personal stories (Arzubiaga et al., 2002). However, it is important to recognize that these attitudes and practices appear to change as a result of immigration experience (L. Reese & Gallimore, 2000). Thus, Latin America is an intriguing alternative for exploring the links between book sharing and child outcomes, especially because children in these countries are less frequently exposed to literacy experiences at home and at school than are children in developed countries (Strasser & Lissi, 2009).

Melzi et al. (2011) found differences between the book sharing styles of middle-class mothers from United States and Latin American mothers from Peru. They observed mothers reading a wordless picture book and found that most Anglo mothers used a *story builder* book sharing style that combined an equivalent number of questions and maternal provisions of information, and balanced mother and child's participation during shared reading. In contrast, most Peruvian mothers used a *story teller* style, in which they did not deviate from the book content, acted as the main narrator and encouraged the child to take the role of the audience (see also Melzi & Caspe, 2005). The storyteller style was observed in a sample of Mayan parents in Guatemala as well (Nieto et al., 2019) and Stein and Rosemberg (2012) found a similar style among caregivers from low-income households in Argentina while reading a traditional storybook. They modified the story only occasionally to clarify unfamiliar words or to explain the characters' motivations and internal states to the child, without interrupting the reading.

Two studies conducted with low-income Latino immigrant families in the United States provided evidence for the links between shared reading of a wordless picture book and children's language and literacy outcomes. Caspe (2009) found stronger print-related skills for children of story teller mothers than children of story builder mothers, while the narrative skills of children from story builders were higher than the narrative skills of children from story tellers. Schick et al. (2017) found that a more elaborate maternal participation during book sharing, characterized by expanding on information previously introduced with additional details, positively predicted preschoolers' expressive language skills six months later. However, mothers' use of new provisions of information negatively predicted preschoolers' vocabulary and complex language skills.

Together, these studies provide evidence for cultural differences in the quality of maternal participation during book sharing. Nevertheless, extant research has yet to examine links between caregivers' book sharing styles and independent measures of child language and literacy in diverse cultural contexts (Nieto et al., 2019). Our study adds to the investigations of home practices in Latin America by including children's outcomes, and particularly as they are observed in Costa Rican families from low-income backgrounds.

Costa Rica is an interesting context for exploring these links for at least two reasons. First, children's exposure to books at home is very limited, especially in low-income families. By 2018, only 13.5% of the overall children population under the age of 5 had access to 10 or more children's books at home, with notably less exposure among children in low-income households (5.2%) than among children from middle- and high-income households (14.5% and 28.8%, respectively) (Ministerio de Salud et al., 2018). These figures present a stark contrast to the realities of preschoolers from Anglo, middle-class families typically represented in the literature, whose

parents report owning between 61 to 80 (Sénéchal et al., 1998) or even 100–199 children's books (Stephenson et al., 2008), and who are frequently read to at home (Scholastic, 2019). This provides a unique opportunity to evaluate whether the links between book sharing and children's outcomes previously documented in the literature from developed countries are similarly observed in a context with limited literacy opportunities for children.

Second, previous evidence has revealed depressed levels of language and literacy development in Costa Rican kindergarteners (Rolla-San Francisco et al., 2005), with the most significant delays in children from low-income households (Verdisco et al., 2015). These findings led to reforms of the preschool curricula (Meneses et al., 2017; Ministerio de Educación Pública de Costa Rica, 2014) and to the development of policies to promote family literacy (Ministerio de Educación Pública de Costa Rica, 2013). So far, policies have been based on a limited number of empirical studies of book sharing in Costa Rican families. We are aware of only one study that analyzed book sharing interactions between Costa Rican caregivers and their preschoolers. Romero-Contreras et al. (2007) observed 20 caregivers and their preschoolers while reading a children's book. They found that exchanges were brief; text was not always read; extra-textual comments and questions were sparse; and when used, they focused on information already known to the child or available in the book. The current study attempts to provide more specific evidence for the defining features of book sharing styles in Costa Rican caregivers and links to children's language and literacy.

1.3. Reminiscing and early literacy development

Reminiscing, or talk about past personal experiences, also promotes the development of child language and literacy skills (Fivush et al., 2006). Reminiscing is a daily and familiar form of conversation practiced by people from different cultures throughout the world (Miller et al., 1990). Moreover, participation in personal story telling may be a more proximal and ecologically valid conversational context than is shared reading for some cultural groups (Leyva & Smith, 2016), but particularly in Latin America where there is a strong oral tradition (Schieffelin & Eisenberg, 1984).

Evidence from Anglo, middle-class samples shows important individual differences in the discursive styles caregivers use while reminiscing with children (Fivush, 2019). Some parents use an *elaborative* style, as they facilitate children's participation in the reconstruction of the past event by asking open-ended questions and adding confirmations to children's contributions. Others use a *low-elaborative* style of talk with their children by probing for specific parts of a memory, asking just a few questions, probing for a yes-no response, or repeating questions so that the child will provide the parent's notion of a specific answer.

Findings from this body of research have documented relations between maternal elaborative style and child's early language and literacy in White, middle-class, Anglo families. E. Reese (1995) found that elaboration during reminiscing enhanced children's narrative skills and was a stronger predictor of print skills than talk during book sharing. Sparks and Reese (2013) found that mother's elaborative style while reminiscing predicted child language and literacy skills in a diverse sample of families from low-income backgrounds in the United States. However, only a few studies have looked at elaborative reminiscing cross-culturally, including Latino populations in the United States (e.g., Melzi, 2000), or in their Latin American country of origin (e.g., Leyva & Nollivos, 2015; Schröder et al., 2013).

Extant evidence indicates that, unlike Anglo caregivers, Latino adults emphasize the conversational function of storytelling while reminiscing with young children (Carmiol & Sparks, 2014). Melzi et al. (2011) analyzed *elaboration*, defined as the extent to which

mothers encouraged their children to produce detailed and lengthy narratives during reminiscing, and *participation*, the kind of conversational role mothers adopted during narrative interactions, and the role they encouraged their children to assume. Their results revealed that, in contrast to middle-class, Anglo-American mothers, middle-class mothers in Peru used an *elicitor* style of conversation while reminiscing with their preschoolers (Melzi et al., 2011). They used child-directed questions to promote child participation in the conversation but provided little information themselves. In contrast, Anglo-American mothers used a *constructor* style, characterized by the use of direct questions to children (though less often than elicitors) and provision of more spontaneous narrative contributions than elicitors. The Peruvian mothers emphasized the conversational dimension of personal storytelling while the Anglo Americans used storytelling to model the construction of narrative for their children (see also Carmiol et al., 2020; Melzi, 2000, for similar results).

The limited evidence available demonstrating relations between maternal elaboration during reminiscing and children's language and literacy among Latinos has replicated the positive relations observed in Anglo samples. Sparks (2008) found that maternal elaboration was linked to children's narrative abilities in a sample of low-income, immigrant Latino dyads in the United States (see also Thierry & Sparks, 2019); and Schröder et al. (2013) found evidence of this link in a culturally diverse sample that included middle-class, Costa Rican dyads. Our study extends this line of research by exploring the links between maternal reminiscing and independent measures of child language and literacy in Costa Rican families from low-income backgrounds. While evidence for these links is currently available for middle-class children (Sparks et al., 2013), little is known about children from low-income backgrounds, despite the fact that they represent 60.1% of the population (Programa Estado de la Nación, 2013). Further research with this group will amplify our understanding of the differences in the structure and content of conversations between Costa Rican mother-child dyads from different socioeconomic status. Moreover, it will contribute to delineating distinct patterns of relationships between linguistic input and early language and literacy development for Costa Rican children from low-income backgrounds.

1.4. The Present Study

The aim of this study was twofold. First, we sought to identify the conversational styles used by low-income Costa Rican caregivers while discussing past events and sharing a book with their preschool aged children. Second, we examined the links between conversational style during reminiscing and book sharing and children's early language and literacy skills. Given previous findings linking children's oral language and code-related skills with caregivers' conversational style during reminiscing (Sparks, 2008; Sparks et al., 2013; Sparks & Reese, 2013) and book sharing styles (Caspe, 2009; Schick et al., 2017), we included assessments of oral language (story comprehension and narrative quality) and code-related skills (decoding and print concepts) as child outcome measures. To our knowledge, this is the first study to examine the role of caregiver elaboration in two conversation contexts, reminiscing and book sharing, with independent measures of both child language and literacy in Latin American and Latino families. The study addressed the following three research questions:

- 1 Do Costa Rican caregivers use an elicitor style during reminiscing conversations with their children? With previous evidence from research on Latino conversational styles during reminiscing in mind (Leyva & Nolivios, 2015; Melzi et al., 2011; Thierry & Sparks, 2019), we predicted most Costa Rican caregivers would use an elicitor style during reminiscing conversations, charac-

terized by the use of many open-ended questions and a limited use of provisions of information.

- 2 Do Costa Rican caregivers use a story teller style while sharing books with their children? In line with prior research on conversational styles observed during book sharing in Latino samples (Caspe, 2009; Melzi & Caspe, 2005; Melzi et al., 2011; Nieto et al., 2019; Stein & Rosemberg, 2012), we predicted that most Costa Rican caregivers in our sample would use a story teller book sharing style. This style is characterized by close adherence to the text while reading, the inclusion of descriptions of the book contents, and a limited amount of child-directed questions.
- 3 Will caregivers' conversational style during book sharing or reminiscing predict children's language and literacy development? Given prior evidence for low levels of story book exposure (Strasser & Lissi, 2009) and a known preference for oral story telling within Latino cultural groups (Billings, 2009; Riojas-Cortez et al., 2003), we expected caregivers' reminiscing style to be a stronger predictor of children's language and literacy development than caregivers' book sharing style. Based on previous findings, we expected to find a link between caregiver's use of an elicitor style of conversation during reminiscing and children's oral language (Sparks, 2008) and code-related skills (Sparks & Reese, 2013). This is predicted because the elicitor style includes the use of one of the hallmarks of elaboration: open-ended questions.

2. Method

2.1. Participants

The sample was drawn from the baseline of an intervention study testing the effectiveness of a home intervention, via reminiscing or book sharing, on children's language and literacy development in Costa Rica. The sample included 108 children and their caregivers. Most dyads included the mother as the caregiver, but grandmothers and fathers also participated (Table 1). All children were Costa Rican, native Spanish speakers. Most of the children came from families where both parents were Costa Ricans as well, with just a few parents originally from Nicaragua or other Latin American countries. All children were enrolled in four public prekindergarten institutions located in the Greater Metropolitan Area of San José, the capital of the country.

2.2. Procedure

Data were collected during the 2015 academic year. Families were contacted and invited to participate in the study through the welcoming family session organized by institutions at the beginning of the year. Interested families provided their contact information and were later contacted by phone to hear about the details of the study. Children who met the inclusion criteria (no diagnosis of developmental delays or learning difficulties) were sent consent forms. Children with approved consent forms were visited twice at school and once at home, for a total of three sessions with each child.

The two sessions at the institutions took place within the same week, one month after the school year began. Testing in institutions was conducted on a separate room or corner, where children were administered a language and literacy assessment. The same research assistant visited the home for a third session with the caregiver and the child. Caregivers provided sociodemographic information, discussed past events and read a book with their child.

Table 1
Descriptive statistics for sociodemographic variables.

Variable	<i>M</i>	<i>SD</i>	<i>Range</i>
Maternal education (in years)	10.43	3.19	4 – 20
Child's age (in months)	59.67	3.60	53–66
Percentage of girls (freq, %)	58 (53.7%)		
Both parents were Costa Rican (freq, %) ^a	90 (83.3%)		
Children participated with mother (freq, %) ^b	99 (91.7%)		

Note. *N* = 108.

^a The rest of the sample included 7 (6.5%) children with both Nicaraguan parents, 8 (7.4%) children with 1 parent from Costa Rica and 1 parent from another Latin American country and 3 (2.8%) children with both parents from any other Latin American country.

^b The rest of the sample included 5 (4.6%) children who participated with their grandmother, 2 (1.9%) with the father and 2 (1.9%) with their father and mother together.

2.2.1. Children's language and early literacy assessment

2.2.1.1. Vocabulary. To test children's expressive and receptive vocabulary, we used the Picture Vocabulary Subtest of the Bateria III Woodcock-Muñoz (Woodcock et al., 2005), which was adapted from the Woodcock-Johnson III (Woodcock et al., 2001). For the Picture Vocabulary Subtest, a series of images of objects were shown to the child. For each image, the child was asked to name ("What is this?") or to point ("Where is the fork?") to a specific object. Children's correct answers were added up and raw scores were used, with a minimum score of 1 and a maximum possible score of 46.

2.2.1.2. Decoding. The Letter-word Identification Subtest of the Bateria III Woodcock-Muñoz (Woodcock et al., 2005) was used. Vowels, letters and words were presented to the child and followed by questions such as "What letter is this?" or "What does it say here?" Correct answers were added and raw scores were used, with a minimum score of 0 and a maximum possible score of 71. Both Subtests of the Bateria III Woodcock-Muñoz were used because they have high levels of internal reliability for Spanish-speaking preschoolers (Schrank et al., 2005), and they have been used in previous studies with Costa Rican (Rolla-San Francisco et al., 2005; 2006; Sparks et al., 2013) and Latin American samples (Yoshikawa et al., 2015), as well as in samples of English-Spanish Latino children in the United States (Lewis et al., 2016; Leyva et al., 2021).

2.2.1.3. Print concepts. The adapted Spanish version of Clay's Concepts about Print (Clay, 1979) was used to measure the child's conceptual knowledge about print. Questions 1–9 and 11 were used because those items did not require decoding skills (Sénéchal et al., 1998). On this assessment, children were first shown the children's book *La Silla de Pedro* (Keats & Fiol, 1999) and asked questions such as "Show me a letter", "Show me a word", or "Show me where I should start reading the story." Children's correct answers were added up and raw scores were used, with a minimum score of 0 and a maximum possible score of 10. This task was selected because it has been previously used in Costa Rican samples, and showed relations with other early language and literacy measures (Carmiol et al., 2013).

2.2.1.4. Story comprehension. The measure of story comprehension and narrative quality from E. Reese (1995) was previously adapted for Costa Rican children (Carmiol et al., 2013; Sparks et al., 2013). This measure has been shown to be sensitive to language outcomes in Anglo and Latino samples (E. Reese et al., 2010; 2012). The experimenter read the book *La Silla de Pedro* (Keats & Fiol, 1999). This book was chosen because it was unknown to the participants, it has been previously used with studies that include diverse populations (Curenton et al., 2008), and because it contains a classic narrative storyline. After listening, children were asked six questions ranging from facts about the story like name a character (e.g., "What is the name of the child in the story?"), to questions

that required simple inferences about character motivations and story plot ("Why did Pedro want to run away from home?"). For five of the questions, children received 1 point for a correct answer. For the question "What were some of the things Pedro took when he ran away?", children received 0.5 for each item they mentioned, for up to 1 point. Answers were scored at the time of presentation, and scores ranged from 0 to 6.

2.2.1.5. Narrative Quality. After completing the story comprehension questions, a doll, not previously visible, was introduced and the child was asked to retell the storybook to the doll. The experimenter assisted the children in retelling the story by turning the pages of the book and encouraging the child with generic questions or supportive comments ("What's happening here?"). The retelling was recorded and transcribed verbatim. Narratives were coded for memory units and narrative quality (Carmiol et al., 2013; E. Reese et al., 2010; Sparks et al., 2013).

To begin, the storybook text was initially divided into the 42 propositions, each including a verb (e.g., "Pedro stretched as high as he could. There!" "His tall building was finished."). To calculate memory units, propositions from the text were identified in the child's story retelling transcript. Each matched proposition from the child's transcript was scored as one memory unit. The number of memory units in the sample ranged from 3 to 26. Each proposition found in the child transcript was then coded for narrative quality, which included the following features of narrative: 1) markers of evaluation, 2) cohesion, and 3) literary language that were child embellishments to the story text (see Appendix A for further details on coding for narrative quality). Children received 1 point for each example of narrative quality in each proposition or memory unit, for a maximum of 9 points per proposition. The number of narrative features was totalled for an overall narrative quality score. Coding of memory units and narrative quality was completed by two independent judges for 20% of randomly selected transcripts. Inter-rater agreements were calculated for memory units and narrative quality (Cohen's κ = .90 and .87, respectively). Disagreements were resolved and the remaining narratives were coded by one of the judges.

2.2.2. Caregiver-child conversations

2.2.2.1. Reminiscing conversations. Mothers nominated recent past events (within the past 6 months) that were unique and salient in the child's life. A list was created that included: 1) an event where the child felt happy; 2) an event where the child did not feel happy; and 3) a shared event (one that the parent and child had experienced). We expected these three events to represent a range of contexts for reminiscing that have been observed in similar samples (Leyva et al., 2014). The order of the discussion of the positive and negative emotional experiences was counterbalanced. For ethical reasons, the shared event was not counterbalanced but located at the end of the task for all dyads. Our design explicitly avoided finishing the reminiscing task with a conversation about negative emotions.

2.2.2.2. *Book-reading conversations.* Caregivers read *De compras con mamá* (Mayer, 1989) with their child. Participants were unacquainted with the book. They were told to interact as they normally do while engaging in shared reading. For both tasks, dyads were left alone in the room with no time restriction for completion. Conversations were audiotaped and subsequently transcribed using the CHAT transcription format (MacWhinney, 2000).

2.3. Coding

Thus far, the task of integrating research findings has been limited by differing views of the constituents of elaboration (Wu & Jobson, 2019). For this reason, we decided to use a coding system based on the fine-grained codes from the earliest work on elaboration (E. Reese et al., 1993; E. Reese & Fivush, 1993) with the complement of additional categories derived from previous studies conducted with Latinos (Eisenberg, 1985; Melzi, 2000; Melzi et al., 2011) and studies on book sharing (Riordan et al., 2018; Son & Tineo, 2016). This allowed us to observe the contributions of a range of narrative constituents to parent's conversational style. The coding system included 15 mutually exclusive categories used to code for caregiver's elaborative talk during reminiscing and 16 mutually exclusive categories to code for caregiver's elaborative talk during book sharing. As in previous elaboration coding systems (E. Reese et al., 1993; E. Reese & Fivush, 1993), units of analysis varied as a function of coding categories. Some coding categories used the proposition (defined as a unique or implied noun and verb in an independent clause) as their unit of analysis. Other categories used the instance of the type of talk within the utterance as their unit of analysis (for details, see Appendix 2).

Ten coding categories were used in both conversational contexts. These categories derived from E. Reese and Fivush (1993) and E. Reese et al. (1993), and included *elaborations and repetitions* in the form of *open-ended questions, forced-choice questions and statements; off-topic comments; evaluations and fill-in-the-blank questions or statements. Conversational strategies* adapted from Melzi et al. (2011) were also coded in both conversational contexts. The five remaining reminiscing categories were *associative talk* and *metamemory comments* (E. Reese et al., 1993), *memory prompts, clarification requests* (E. Reese & Fivush, 1993) and *global open-ended questions* (Eisenberg, 1985; Melzi, 2000). The six remaining book sharing categories included *book-related comments, meta-comments, corrections* of the child's utterances and *clarifications* (Riordan et al., 2018). *Attention getters* (Son & Tineo, 2016) and *unclassifiable comments* were also included. Appendix B describes all of the categories with examples, specifies their unit of analysis, and the conversational context in which each of the codes was used.

Three categories were used to code for children's participation during both conversational contexts. From E. Reese and Fivush (1993), we included 1) *elaborations (ELAB)*, defined as propositions through which children provided new information about the event or asked their mothers for new information (e.g., "M: And what did we see? C: Starfish and crabs" for reminiscing. "C: Why can't they buy what they want?" for book sharing); and 2) *placeholders (PLACEHOLD)*, which consisted of instances where children repeated their own or their caregiver's previous utterances, or they took a legitimate turn without adding any information (e.g., "I don't know"). Additionally, we coded for children's use of 3) *conversational strategies (CONV)* as described above or as replies to maternal conversational strategies (e.g., "M: How does the store manager look? C: Yelling. M: He is yelling. M: Right? C: Yes").

Two judges independently coded 20% of randomly selected transcripts. Adequate levels of agreement were obtained for reminiscing (Cohen's $\kappa = .89$) and book sharing (Cohen's $\kappa = .85$). Disagreements were resolved and the remaining narratives were

Table 2

Descriptive statistics for children's language and literacy assessment.

Children's variables	M	SD	Range
Vocabulary	20.48	2.86	13–27
Decoding	2.54	1.87	0 - 10
Print concepts	4.32	1.84	0 - 10
Story comprehension	3.01	1.29	0 - 5.5
Narrative quality	5.98	5.09	0 - 16

Note. $N = 108$.

coded by one of the judges. Mean frequencies for each coding category across the three reminiscing events were calculated for each dyad. Raw frequencies were used for book sharing. For both contexts, frequencies were used instead of ratios because they are a stronger predictor of child language (Waters et al., 2019).

3. Results

3.1. Children's language and early literacy assessment

Table 2 shows the descriptive statistics for children's language and literacy measures. All variables were normally distributed except decoding. This variable showed a positive skewness, explained by the fact that 65.74% of the sample obtained scores of 0 ($n = 1$), 1 ($n = 31$) or 2 ($n = 39$), with a median of 2. For subsequent analyses, a median split was used to group decoding scores.

3.2. Identification of caregivers' conversational styles

Table 3 shows the mean, standard deviation and range of length for each type of conversation. To identify the different conversational styles, we conducted two-step cluster analyses on the raw frequencies for book sharing and the mean raw frequencies for reminiscing across the three events each dyad discussed. Cluster analyses are person-centered techniques that allow researchers to classify people with similar characteristics into groups, according to some attributes that are of interest for the phenomenon to be analyzed (Clatworthy et al., 2005). Two-step cluster analysis was chosen over other kinds of cluster analysis for two reasons. First, the correct number of clusters for the data was unknown. The two-step cluster analysis determines this number by first calculating a Bayesian Information Criterion (BIC) for each number of clusters and then finding the smallest change in distance between adjacent number of clusters. Second, previous studies have found two-step cluster analysis to be fairly robust for non-normally distributed variables (Norušis, 2012) and variables used to identify caregivers' conversational styles were not normally distributed.

To evaluate the appropriateness of the cluster solutions, we used the Silhouette measure of cohesion and separation. This measure indicates whether the records within each cluster are similar to the other elements in its group (cohesion), and if the clusters are different enough from each other (separation)¹ (Rousseeuw, 1987).

3.2.1. Reminiscing conversations

A 2-cluster solution for caregivers' reminiscing styles was optimal, with a fair Silhouette measure of 0.40. Cluster definition relied mostly on the caregivers' use of open-ended questions inviting children to participate in the reconstruction of the event, confirmations of children's participations, statements about the events and

¹ A silhouette measure of less than 0.20 suggests that the solution is poor, a silhouette measure between 0.20 and 0.50 indicates a fair solution, and coefficients greater than 0.50 indicate a good cluster solution (Sarstedt & Mooi, 2014).

Table 3
Descriptive statistics for length of each type of conversation.

Conversation	M (SD)	Mother Mdn	Range	M (SD)	Child Mdn	Range
Reminiscing						
Happy event	28.58 (19.23)	24	2 – 112	10.77 (7.97)	9	0 – 53
Unhappy event	23.97 (13.85)	23	4 – 73	8.38 (5.62)	7	0 – 28
Shared event	32.22 (19.65)	29	6 – 104	12.33 (9.25)	10	0 – 52
Mean across events	28.21 (14.21)	24.83	5.67 – 71.67	10.45 (6.09)	9.33	0 – 33
Book sharing	68.87 (56.94)	45.50	1 – 232	18.19 (17.83)	12.50	0 – 88

Notes. $N = 108$.

Length specifies the total number of units of analysis, either the proposition or the instance of type of talk within the utterance.

conversational strategies to encourage children to continue with the conversation. More structured invitations to the child such as forced-choice questions (either as elaborations or repetitions) were found to be less important in defining the two clusters.

Cluster 1 included 33.3% of the sample ($n = 36$). Caregivers in this cluster used high frequencies of conversational strategies ($Mdn = 6.50$), elaborate open-ended questions ($Mdn = 6.17$), elaborate statements ($Mdn = 5.67$), elaborate forced-choice questions ($Mdn = 4.33$), off-topic comments ($Mdn = 4.33$) and evaluations ($Mdn = 4.17$). They promoted child participation through a balance of conversational strategies and open-ended questions aimed at keeping the conversation in motion, while inquiring further about the event with forced-choice questions, in addition to new information and evaluative comments (Table 4). We refer to this style as the *high-elicitation* style.

Cluster 2 was composed by 66.7% of the sample ($n = 72$). Similar to Cluster 1, Cluster 2 mainly used conversational strategies ($Mdn = 3.33$), elaborate statements ($Mdn = 2.67$), off-topic comments ($Mdn = 2.67$), elaborate open-ended ($Mdn = 2.33$) and forced-choice questions ($Mdn = 2.33$), as well as evaluations ($Mdn = 1.67$). Man-Whitney U non-parametric tests in Table 4 showed differences between the clusters, with all variables except associative talk presenting higher medians for cluster 1 over cluster 2. For this reason, we refer to cluster 2 as the *low-elicitation* style. Table S1 in supplementary online materials shows excerpts of both reminiscing styles, and Figure S1 describes the distribution of scores for each style identified in this sample.

3.2.2. Book sharing conversations

A 2-cluster solution for caregivers' book sharing styles was optimal, with a fair Silhouette measure of 0.50. Cluster definition relied mostly on caregivers' use of open-ended questions to invite the child to talk about the book, encouragement for continuing the conversation, confirmations for children's participation and statements about the book. Interestingly, the most important predictors to identify clusters in reminiscing were also the most important predictors to identify clusters in book sharing. Moreover, the more structured invitations to the child, such as forced-choice questions (as elaborations or repetitions) were found to be less important.

Cluster 1 was composed by 33.3% of the sample ($n = 36$). Caregivers on this cluster used many elaborate statements ($Mdn = 47.00$), high frequencies of elaborate open-ended questions ($Mdn = 18$), evaluations ($Mdn = 13$), conversational strategies ($Mdn = 10.50$) and attention getters ($Mdn = 9.50$) (see Table 5). Their style combined provisions and elicitation of information. This style corresponded to what has been previously labeled in other Latin American samples as the *story builder* style (Casper, 2009; Melzi & Caspe, 2005; Melzi et al., 2011).

Cluster 2 was composed by 66.7% ($n = 72$) of the sample. Similar to cluster 1, the most frequent category on this cluster 2 was elaborate statements ($Mdn = 13.50$), followed by a lower use of attention getters ($Mdn = 3.50$), unclassifiable comments ($Mdn = 2.00$) and evaluations ($Mdn = 1.50$). Altogether, the use of

these strategies accompanied the literal reading of the text. Given the similarities with previous styles identified in other Latino and Latin American samples, we labeled this style the *story teller* (Casper, 2009; Melzi & Caspe, 2005; Melzi et al., 2011) or *recitation* style.

Man-Whitney U non-parametric tests showed significant differences between both book sharing clusters across all variables except off-topics comments, repetitions as forced-choice questions and meta-comments, with consistently higher medians across categories for story builders over story tellers. Table S2 in supplementary online materials shows excerpts of both book-sharing styles, and Figure S2 describes the distribution of scores for each style identified in this sample.

3.3. Children's participation across contexts and conversational styles

In order to understand the link between children's participation and caregivers' conversational styles, we compared child participation across the caregiver conversational styles during reminiscing and book sharing. For reminiscing, Mann-Whitney tests indicated that elaborations, placeholders and conversational strategies scores were significantly higher for children of high elicitors than for children of low elicitors (Table 6). For book sharing, Mann-Whitney tests indicated that children of story builder caregivers had significantly higher scores on elaborations, placeholders and conversational strategies than children of story tellers (Table 6).

3.4. Hierarchical regression models predicting children's literacy and language from caregivers' conversational styles

We conducted a series of hierarchical regressions to examine whether parental elaboration contributed to explain unique variance in children's language and literacy measures. For all regressions, two models were tested. Model 1 included child age, child's vocabulary and maternal education as predictors. Model 2 included child age, child's vocabulary, maternal education and caregiver's conversational style during reminiscing (0 = low elicitors, 1 = high elicitors) and book sharing (0 = story tellers, 1 = story builders) as categorical predictors.

Table 7 displays the results from the hierarchical linear regressions for children's print concepts, story comprehension and narrative quality scores. For print concepts, Model 1 predicted 7% of the variance, $F(3, 104) = 2.72, p = .048, r^2 = .07$; while Model 2 predicted 14% of the variance, $F(5, 102) = 3.20, p = .010, r^2 = .14$. Children's print concepts scores were positively and significantly predicted by children's vocabulary and caregiver's reminiscing style. For story comprehension, Model 1 ($F(3, 104) = 12.12, p < .001, r^2 = .26$) and Model 2 ($F(5, 102) = 7.23, p < .001, r^2 = .26$) predicted 26% of the variance. Children's story comprehension scores were positively and significantly predicted by children's vocabulary. For narrative quality, Model 1 predicted 5% of the variance, $F(3, 104) = 1.76, p = .16, r^2 = .05$; while Model 2 predicted 12% of the variance, ($F(5, 102) = 2.66, p = .026, r^2 = .12$).

Table 4
Descriptive statistics for caregivers' conversational strategies during reminiscing.

Category	Predictor importance	Total			Low elicitors			High elicitors			U
		M (SD)	Mdn	Range	M (SD)	Mdn	Range	M (SD)	Mdn	Range	
Elab: Open-ended questions	1	3.77 (2.33)	3.33	0 – 9.67	2.68 (1.63)	2.33	0 – 8	5.97 (1.93)	6.17	2 – 9.67	255***
Evaluations	2	2.62 (2.07)	2	0 – 10.33	1.71 (1.23)	1.67	0 – 5.67	4.44 (2.22)	4.17	0.33 – 10.33	355***
Rep: Statements	3	0.30 (0.41)	0	0 – 1.67	0.13 (0.22)	0	0 – 1	0.66 (0.48)	0.67	0 – 1.67	424.50***
Conversational strategies	4	4.61 (3.07)	3.67	0 – 17.67	3.39 (2.13)	3.33	0 – 9.67	7.05 (3.24)	6.50	1 – 17.67	390***
Rep: Open-ended questions	5	0.85 (0.99)	0.33	0 – 5.67	0.46 (0.57)	0.33	0 – 3	1.63 (1.17)	1.67	0 – 5.67	432.50***
Elab: Statements	6	4.29 (3.12)	3.33	0 – 14.33	3.13 (1.98)	2.67	0 – 8.67	6.61 (3.68)	5.67	1.33 – 14.33	541.50***
Fill-in-the-blank questions and comments	7	0.12 (0.30)	0	0 – 2	0.01 (0.07)	0	0 – 0.33	0.32 (0.45)	0	0 – 2	723***
Elab: Forced-choice questions	8	3.24 (1.97)	3	0 – 9.33	2.61 (1.48)	2.33	0 – 7.67	4.50 (2.22)	4.33	1.33 – 9.33	643***
Memory prompts	9	0.37 (0.64)	0	0 – 3	0.16 (0.27)	0	0 – 1	0.78 (0.92)	0.50	0 – 3	765***
Global open-ended questions	10	0.46 (0.54)	0.33	0 – 2.33	0.31 (0.40)	0.17	0 – 1.67	0.77 (0.65)	0.67	0 – 2.33	724.50***
Rep: Forced-choice questions	11	0.27 (0.44)	0	0 – 2.33	0.15 (0.26)	0	0 – 1	0.51 (0.62)	0.33	0 – 2.33	840**
Meta-memory comments	12	1.01 (1.15)	0.67	0 – 5.33	0.71 (0.93)	0.33	0 – 4.33	1.62 (1.30)	1	0 – 5.33	675.50***
Off-topic comments	13	3.80 (2.83)	3	0 – 11.67	3.26 (2.74)	2.67	0 – 11.33	4.90 (2.73)	4.33	0.67 – 11.67	755***
Clarification requests	14	0.35 (0.67)	0.33	0 – 6	0.24 (0.32)	0	0 – 1.33	0.57 (1.04)	0.33	0 – 6	983.50*
Associative talk	15	2.15 (3.33)	0.67	0 – 16.67	1.87 (2.85)	0.67	0 – 12.67	2.70 (4.12)	0.67	0 – 16.67	1218

Notes. N = 108.

Categories are ranked according to their importance in defining the clusters.

* p < .05.

** p < .01.

*** p < .001.

Table 5
Descriptive statistics for caregivers' conversational strategies during book sharing.

Category	Predictor importance	Total			Story tellers			Story builders			U
		M (SD)	Mdn	Range	M (SD)	Mdn	Range	M (SD)	Mdn	Range	
Elab: Open-ended questions	1	7.24 (9.81)	2	0 – 42	1.83 (2.24)	1	0 – 10	18.06 (10.17)	18	3 – 42	65.50***
Conversational strategies	2	4.24 (5.11)	2	0 – 21	1.65 (1.88)	1	0 – 9	9.42 (5.59)	10.50	1 – 21	162***
Evaluations	3	6.27 (6.97)	4	0 – 30	2.81 (3.21)	1.50	0 – 15	13.19 (7.33)	13	3 – 30	191***
Elab: Statements	4	29.96 (27.73)	19	1 – 122	17.33 (16.14)	13.50	1 – 80	55.22 (28.95)	47	15 – 122	234***
Rep: Open-ended questions	5	0.72 (1.25)	0	0 – 5	0.19 (0.52)	0	0 – 3	1.78 (1.59)	2	0 – 5	443.50***
Corrections	6	0.93 (1.55)	0	0 – 8	0.31 (0.66)	0	0 – 3	2.17 (2.02)	2	0 – 8	465***
Elab: Forced-choice questions	7	2.55 (3.27)	1.5	0 – 18	1.26 (1.62)	1	0 – 7	5.11 (4.16)	4	0 – 18	414***
Unclassifiable comments	8	4.53 (4.84)	3	0 – 25	2.88 (3.04)	2	0 – 13	7.83 (6.00)	6	0 – 25	509***
Book-related comments	9	2.44 (2.83)	1	0 – 12	1.53 (1.80)	1	0 – 7	4.25 (3.58)	3	0 – 12	676***
Fill-in-the-blank questions and comments	10	0.62 (1.69)	0	0 – 11	0.08 (0.33)	0	0 – 2	1.69 (2.60)	1	0 – 11	505***
Attention getters	11	7.04 (7.11)	4	0 – 31	4.85 (5.44)	3.5	0 – 25	11.42 (8.06)	9.50	2 – 31	560***
Clarifications	12	0.44 (1.09)	0	0 – 8	0.13 (0.37)	0	0 – 2	1.06 (1.66)	0	0 – 8	797.50***
Rep: Statements	13	0.10 (0.41)	0	0 – 3	0.00 (0.00)	0	0 – 0	0.31 (0.67)	0	0 – 3	1008***
Off-topic comments	14	1.61 (2.90)	1	0 – 18	1.10 (1.60)	0	0 – 7	2.64 (4.34)	1	0 – 18	1014.50
Rep: Forced-choice questions	15	0.09 (0.35)	0	0 – 2	0.06 (0.23)	0	0 – 1	0.17 (0.51)	0	0 – 2	1220
Meta-comments	16	0.10 (0.47)	0	0 – 4	0.06 (0.29)	0	0 – 2	0.19 (0.71)	0	0 – 4	1206

Note. N = 108.
Categories are ranked according to their importance in defining the clusters.
*** p < .001.

Table 6
Descriptive statistics for children's participation as a function of context and caregivers' conversational style.

Category	M (SD)	Mdn	Range	M (SD)	Mdn	Range	M (SD)	Mdn	Range	U
	Reminiscing									
	Total			Low elicitors			High elicitors			
Elaborations	7.74 (4.60)	7	0 – 25	5.74 (2.98)	5.67	0 – 13.33	11.74 (4.69)	11	1 – 25	328***
Placeholders	1.19 (1.09)	1	0 – 5	0.82 (0.73)	0.67	0 – 4	1.93 (1.31)	2	0 – 5	609.50***
Conv strategies	1.52 (1.21)	1.33	0 – 5.67	1.15 (0.89)	1	0 – 4.67	2.28 (1.44)	2	0 – 5.67	657***
Book sharing										
	Total			Story tellers			Story builders			
Elaborations	16.82 (16.65)	12	0 – 86	8.33 (7.42)	6	0 – 29	33.81 (17.05)	29.50	7 – 86	132***
Placeholders	0.46 (1.20)	0	0 – 7	0.22 (0.65)	0	0 – 4	0.94 (1.77)	0	0 – 7	966.50**
Conv strategies	0.91 (1.68)	0	0 – 9	0.39 (0.68)	0	0 – 3	1.94 (2.46)	1	0 – 9	741.50***

Note. N = 108.

** p < .01.

*** p < .001.

Table 7
Hierarchical multiple regressions predicting children's scores on print concepts, story comprehension and narrative quality.

Model	B	95 % CI		SE B	β
		LL	UL		
Print concepts					
Step 1					
Constant	-0.57			3.02	
Maternal education	0.01	-0.11	0.13	0.06	.01
Child's age	0.03	-0.07	0.13	0.05	.05
Child's vocabulary	0.17	0.06	0.29	0.06	.26**
Step 2					
Constant	-1.05			2.95	
Maternal education	-0.02	-0.12	0.08	0.05	-.03
Child's age	0.03	-0.07	0.13	0.05	.06
Child's vocabulary	0.17	0.05	0.29	0.06	.26**
Conversational style during book sharing	0.38	-0.35	1.11	0.37	.10
Conversational style during reminiscing	0.82	0.09	1.55	0.37	.21*
Story Comprehension					
Step 1					
Constant	-4.69			1.90	
Maternal education	0.03	-0.05	0.11	0.04	.08
Child's age	0.05	-0.05	0.15	0.03	.15
Child's vocabulary	0.20	0.12	0.28	0.04	.45***
Step 2					
Constant	-4.73			1.92	
Maternal education	0.03	-0.05	0.11	0.04	.08
Child's age	0.05	-0.01	0.11	0.03	.15
Child's vocabulary	0.20	0.12	0.28	0.04	.45***
Conversational style during book sharing	0.11	-0.37	0.59	0.24	.04
Conversational style during reminiscing	0.07	-0.41	0.55	0.24	.02
Narrative Quality					
Step 1					
Constant	4.03			8.46	
Maternal education	-0.14	-0.43	0.16	0.15	-.09
Child's age	-0.07	-0.35	0.21	0.14	-.05
Child's vocabulary	0.38	0.10	0.66	0.17	.21*
Step 2					
Constant	4.26			8.25	
Maternal education	-0.09	-0.39	0.20	0.15	-.06
Child's age	-0.08	-0.34	0.18	0.13	-.06
Child's vocabulary	0.37	0.03	0.71	0.17	.21*
Conversational style during book sharing	1.89	-0.13	3.91	1.02	.18
Conversational style during reminiscing	-2.56	-4.62	-0.50	1.04	-.24*

Note. N = 108.

* p < .05.

** p < .01.

*** p < .001.

Table 8
Hierarchical logistic regression predicting children's scores on decoding.

Outcome variable: Decoding	B (SE)	exp b	95% CI	
			LL	UL
Step 1 a				
Constant	-2.50 (3.76)	0.08		
Maternal education	0.14 (0.07)	1.15	1.03	1.31
Child's age	-0.06 (0.06)	0.95	0.84	1.06
Child's vocabulary	0.18 (0.08) *	1.20	1.03	1.41
Step 2 b				
Constant	-2.13 (3.77)	0.12		
Maternal education	0.13 (0.07)	1.14	1.00	1.31
Child's age	-0.06 (0.06)	0.94	0.84	1.06
Child's vocabulary	0.18 (0.08) *	1.21	1.03	1.41
Conversational style during book sharing	-0.44 (0.46)	0.65	0.26	1.58
Conversational style during reminiscing	-0.06 (0.47)	0.94	0.37	2.36

Note. $N = 108$.

* $p < .05$.

^a $R^2 = .10$ (Cox & Snell), .14 (Nagelkerke). Model $\chi^2(3) = 11.45$, $p = .01$.

^b $R^2 = .11$ (Cox & Snell), .15 (Nagelkerke). Model $\chi^2(5) = 12.50$, $p = .029$.

Children's vocabulary scores positively and significantly predicted narrative quality, while caregiver's reminiscing style was found to negatively and significantly predict narrative quality scores.

Due to the categorical nature of the decoding data, a multiple logistic regression was used to test the importance of different predictors on children's decoding scores (see Table 8). The two models described above were also used for this regression. Cox and Snell and Nagelkerke tests indicated both models explained a similar amount of the variance, with child's vocabulary positively and significantly predicting decoding scores.

4. Discussion

The first two research questions probed the conversational styles used by low-income Costa Rican caregivers while talking about the past and sharing books with their preschoolers. Our first hypothesis stated that most Costa Rican caregivers would use an elicitor style while reminiscing, which includes many open-ended questions and a limited amount of provisions of information. The results supported this hypothesis. We identified two different styles of reminiscing: the high elicitor and the low elicitor, with most caregivers using the latter in this sample. Both styles significantly differed in the frequency of the categories (except associative talk), with higher frequencies in the high-elicitor than in the low-elicitor style. Moreover, questions, both elaborative or repetitive, and conversational strategies, were important features of both styles. The most frequent dimension used in both styles, conversational strategies, served to promote the child's participation in reminiscing with the caregiver. These results support previous cross-cultural evidence (Melzi, 2000; Melzi et al., 2011) and reflect Latin American caregivers' socialization goal of promoting participation in conversation, a skill that is deemed important for building and maintaining social relationships. In this cultural context, personal story telling appears to be used as a platform to prepare children to become pragmatically competent social actors. The goal of building and maintaining social relationships is consistent with the thematic emphasis on the value of relationships and social engagement observed in Latino and Latin American narratives (Carmiol & Schröder, 2019; Noliivos & Leyva, 2013; Silva & McCabe, 1996).

Our second hypothesis, that most Costa Rican caregivers would use a story teller or recitation style of conversation during book sharing, was supported by the results. This style includes reading the text, describing the pictures, and a limited amount of child-directed questions. We identified two different styles of book shar-

ing conversation: the story builder and the story teller styles, with the latter comprising the majority of the sample. Both styles differed in the frequency of categories (except repetitions as forced-choice questions and meta-comments), with significantly higher frequencies in the story builder than in the story teller style. Provision of information in the form of elaborate statements was the most common category in both styles. However, story builders also used many elaborate open-ended questions and conversational strategies during shared reading. In contrast, story tellers used a limited amount of elaborate open-ended questions and conversational strategies and primarily focused on reading the text, as observed in the example on Table S2 (Supplementary Online Materials). The preponderance of story tellers in the sample may reflect the lack of exposure and familiarity with shared reading that is well documented in prior research conducted with Latino and Latin American samples (Strasser & Lissi, 2009). The high incidence of story tellers may also be explained by a cultural preference of caregivers for taking the role of narrator while children take the role of an attentive audience (Melzi & Caspe, 2005; Melzi et al., 2011). However, these two explanations need not be mutually exclusive. Limited access to children's books and the cultural enactment of roles during family conversations could both play a part in understanding the story teller style. Families less accustomed to shared reading may adopt a story telling style that expresses familiar cultural roles, with adults as experts giving a close reading of the text and children as watchful observers.

In both, the reminiscing and the book sharing contexts, adult use of higher levels of elaborative strategies was associated with increased child participation in the conversation (see also Melzi & Caspe, 2005). During reminiscing, children of high elicitors provided more elaborations, placeholders and conversational strategies than children of low elicitors. Furthermore, children of caregivers using the story builder style during shared reading produced significantly more elaborations, placeholders and conversational strategies than children of story tellers. These findings replicate prior work that found links between parent elaboration and child responsiveness in conversation (Fivush et al., 2006; Melzi et al., 2011).

Our third research question examined the links between conversational style during reminiscing and book sharing and children's language and early literacy development. We hypothesized that caregivers' reminiscing style would be a more robust predictor of children's language and literacy development than caregivers' book sharing style. A series of significant results partially supported this hypothesis. First, we found that a high-elicitor style

during reminiscing positively predicted children's print concepts scores, replicating the link between maternal reminiscing style and early literacy development previously identified in middle-class Anglo families (E. Reese, 1995) and low-income immigrant families in the United States (Sparks & Reese, 2013). It has been suggested that children's ability to use abstract forms of language, also known as decontextualized language, develops through participation in talk about the past. Familiarity with increasingly complex forms of language may nurture the knowledge and skills that help children understand the world of print (Leyva et al., 2012; E. Reese, 1995; Sparks & Reese, 2013). More specifically, children who are advanced in their abstract thinking may be able to capitalize on incidental learning to more readily acquire print skills (Sparks & Reese, 2013). According to Snow (1983), decontextualized language, which is used to construct a world independent of the present context, is linked to the conceptual knowledge needed for early reading. Parent-child conversations about the past and the future are some of the most common ways for children to practice decontextualized language (Fivush et al., 2006; Rowe, 2013).

We were surprised to find that the high-elicitor style during reminiscing negatively predicted children's narrative quality. One possible explanation for this unexpected result is that, in this sample, asking questions during reminiscing did not necessarily afford children the opportunity to articulate their stories. In fact, some high elicitor caregivers in our sample did not encourage children to produce independent units of discourse with a clear organizational focus. These reminiscing conversations consisted of a collection of queries about a single topic, with little connection among questions. While discussing an event where the child felt happy, one caregiver asked a barrage of questions: "Do you remember when your cousin was born?", "How did you feel?", "What did he look like?", "Do you remember when we came to the hospital to pick him up?", "What size was he?", "How did you feel?" All these questions revolve around the same topic, but emphasize many different aspects of the event without elaborating on any of them.

Schick et al. (2017) observed similar results in a Latino sample of caregivers and children during book sharing. They found that caregivers' introduction of new elaborations, where the speaker introduced a new episode, or new information within the episode, was negatively linked to child language six months later. However, in the same study, language skills were enhanced when caregivers expanded on information previously introduced by contributing additional details (see also Strasser et al., 2013). Another investigation found strong links between narrative coherence in dyadic reconstructions of past, personal experiences and children's early language and literacy skills in middle-class families in Costa Rica (Sparks et al., 2013). In the current study, the lack of elaboration as a tool for expanding on the elements involved in an event, and the preference for new information, may explain the negative relationship between children's narrative skills and parents' use of the high-elicitor reminiscing style. Further research examining the difference between propositions aimed at obtaining new information and propositions aimed at embellishing the details of an event could contribute to our understanding of cultural differences in caregiver elaboration and its link to child outcomes (e.g., Kelly, 2018).

Our data further elucidates the important role of modeling social interaction during personal story telling with children and the strong value placed on the conversational function of storytelling for Latin American families. It is important to note that while frequent use of conversational strategies during talk about the past may enhance child participation and engagement, the same strategies do not contribute to the development of narrative structure or coherence. The lack of any positive link between caregiver contri-

butions during reminiscing and child language, especially narrative, may reflect this cultural emphasis on participation over a concern for building elaborated narratives around a single event (Carmiol & Sparks, 2014; Silva & McCabe, 1996).

The links between family conversations and children's language and literacy observed here suggest that the practice of reminiscing conversations at home has a place in interventions targeting school readiness skills of Latin American children. However, the negative associations with narrative skills found in the reminiscing context expose the need for further investigation into the role of elaborative conversations with young children, in order to provide more definitive evidence for the communicative repertoires that promote child language and literacy. This research is necessary to provide policy makers with the information needed to scale up programs designed to support at risk children in Costa Rica.

Taken together, our study provides further evidence for the essential role of the home environment for children's early cognitive and linguistic development. Moreover, the findings illustrate the Vygotskian notion that daily participation in specific kinds of social interactions are linked to both social and psychological benefits for the child (Vygotsky, 1986). Our results highlight the importance of parent-child conversation not just for children's language and memory but also for early literacy skills.

4.1. Limitations and future directions

Some caution should be taken when considering the results presented here: while our work contributes to understanding links between family interaction and children's language and literacy outside mainstream samples, our analyses were based on a single time point. Considering the rapid changes in children's language and literacy development throughout the preschool years, it is important to include multiple time points with samples from non-mainstream contexts. Moreover, understanding the trajectories from diverse cultural contexts will enrich developmental theories about the role of family conversations in early child development.

There were many interesting findings and future directions that we could not touch upon here given the limits of space. For instance, our data included a considerable amount of off-topic comments and associative talk in the reminiscing conversations. Further investigations are needed to explore the content of these comments. This is especially relevant in light of previous evidence from other Latin American samples that found school-age children use off-topic comments to emphasize certain aspects of their personal narratives (Uccelli, 2008). Also, there is an abundant use of evaluation in the four conversational styles defined here. Prior research has singled out evaluation as a frequently used dimension of Latino narratives (Thierry & Sparks, 2019; Silva & McCabe, 1996). An exploration of the forms and functions of evaluation in these conversations would contribute to understanding culturally specific constituents of personal story telling. Caregivers also used repetitions frequently across conversation contexts and styles in our sample. A study examining the home literacy environment of Maori children in New Zealand, a culture with rich oral traditions, found that mothers who used repetition during reminiscing had children with enhanced school readiness skills (Neha et al., 2020). Future work in this sample could add to our understanding of the function and impact of repetition in conversations with children.

Finally, most of the caregivers in our sample used a story teller book reading style. Although this is consistent with previous findings (Caspe, 2009; Melzi & Caspe, 2005; Melzi et al., 2011; Nieto et al., 2019), the reasons for the prevalence of this style in Latin American samples, and its link with caregivers' socialization goals, remain unclear. Future exploration is important, especially in light

Appendix A

Story retelling: Narrative quality coding system.

Narrative features	Description	Original story text and examples from children's retellings
Evaluations: Child's additions to the story text	Description	Use of adjectives and adverbs to describe objects, actions or characters. Text: But he couldn't fit in his chair. He was too big. "Él no cabía en la sillita azul." [He did not fit in the little blue chair.]
	Qualifier	Use of adverbs or adjectives to amplify or intensify the intended meaning. Text: Pedro stretched as much as he could. "Pedro se estiró muy alto." [Pedro stretched very tall.]
	Internal states	Use of words that refer to internal states (e.g., like, think, want). Text: And he decided to sit on his chair for a while. "El chiquito quería sentarse en su silla." [The boy wanted to sit in his chair.]
Cohesion: Cohesive markers for time, location, and causality	Temporal term	In the beginning, first, next, or last, but not <u>and</u> or <u>then</u> . Text: His tall building was finished. "Había una vez un niño que se llamaba Pedro y construyó una torre." [Once upon a time there was a boy named Pedro and he built a tower.]
	Causal terms	Included justifications beginning with because or so that. Text: Remember we have a new baby in the house. "Su mamá le dijo que tuviera cuidado porque su hermanita se estaba durmiendo." [His mom told him to be careful because his sister was falling asleep.]
	Character introduction	1 point is given for specifically delineating a character from the story, for a maximum of 3 points (Susie, baby, dad and mom). Text: Daddy, said Peter, let's paint the little chair pink for Susie. "Y pintemos la silla para Susie." [And let's paint the chair for Susie.]
Literate language	Reported speech	Added dialogue that was not in the story. Text: We have something very special for lunch. "Y luego su mamá le dijo: Pedro hay algo rico para almorzar." [And then his mom told him: Pedro there is something yummy for lunch.]

Appendix B

Coding categories for reminiscing and book sharing.

Coding category ^a	Definition	Context of use ^a	Unit of analysis	Examples	
				Reminiscing	Book sharing
Elaborations (ELAB)	Mother introduced newpieces of information or added information about a particular aspect of the event or the book.				
Open-ended questions (SQ)	A question that required the child to provide more information than a yes/ no answer.	R-BS	Proposition	What did you do at the wedding?	What did she want?
Forced-choice questions (FCQ)	A question that could be answered with a simple yes/no answer or propositions in which parent provided two options (for choice questions).	R-BS	Proposition	Did it hurt?	Is this an elephant or a hippopotamus?
Statements (S)	A proposition in which the mother provided information.	R-BS	Proposition	And then you changed your clothes.	Here is the boy combing his messy hair.
Repetitions (REPET)	Mother repeated the exact content or the gist of her own previous utterance.				
Open-ended questions (SQ)	A question that required the child to provide more information than a yes/ no answer.	R-BS	Proposition	M: And tell me what else did we do? C: This?	M: What did she want? M: <u>What other things did she want?</u>
Forced-choice questions (FCQ)	A question that could be answered with a simple yes/no answer or propositions in which parent provided two options (for choice questions).	R-BS	Proposition	M: <u>What did we do?</u> M: Did you eat the bun or the sausage? C: Uhum. M: <u>Bun or sausage?</u>	M: Is it heavy? M: <u>Does it look heavy?</u>

(continued on next page)

Appendix B (continued)

Coding category ^a	Definition	Context of use ^a	Unit of analysis	Examples	
				Reminiscing	Book sharing
Statements (S)	A proposition in which the mother provided information.	R-BS	Proposition	M: You even cried. C: It ain't so. M: <u>You even cried.</u>	M: Look it has many colors. C: Uhum. M: <u>It has a lot of colors I would say.</u>
Evaluations (EVAL)	Mother confirmed or denied a child's previous utterance. Repetitions of the child's previous utterance along with "Yes", "Right" or "No" were also evaluations. Mother could receive at most one evaluation per utterance.	R-BS	Instance of type of talk	M: Do you remember that there was a peacock? C: The birds that pecked. M: <u>They pecked. Very good.</u>	C: He was very mad. M: <u>Yes, he was very mad.</u>
Fill-in-the-blank questions or statements (FILL)	Mother provided all but a piece of information. These questions or statements included a pause marking mother's expectation for the child to provide the missing piece.	R-BS	Instance of type of talk	M: And then put a? C: <u>Little candle.</u>	M: How many did the little sister want? C: Four. M: <u>But the momsaid?</u> C: Only one.
Conversational strategies (CONV)	Mother's use of interjections or expressions to keep the flow of the conversation about the event or the book (e.g., "Right?" "Uhum?") and repetitions of what the child said with a question intonation.	R-BS	Instance of type of talk	C: And I got dizzy on the boat. M: <u>You got dizzy?</u>	M: He took a bite while in the store. M: You are no supposed to do that until you pay, <u>right?</u>
Off-topic comments (OFF)	Mother's comments not related to the event or book under discussion.	R-BS	Proposition	C: Why do you have that? M: <u>This is for them to listen later.</u>	C: Mommy why is my hair sticky? M: <u>Because I put gel in it.</u>
Associative talk (AT)	Mother's statements or questions not specifically about the particular past event under discussion, but related to the event.	R	Proposition	We also visited La Sabana Park for the Arts Festival.	
Metamemory comments (MEM)	Mother referred to the process of remembering or about her child's memory performance.	R	Proposition	Don't you remember?	
Memory prompts (PROMPT)	Mother asked the child for more information without providing specific details.	R	Proposition	Tell me more.	
Clarification requests (CLAR-REQ)	Mother asked for acoustical clarification.	R	Instance of type of talk	C: A rocket. M: <u>A what?</u> C: A rocket.	
Global open-ended questions (GQ)	Mother asked the child to provide more information without offering guidance regarding the type of information sought.	R	Instance of type of talk	What else?	
Book-related comments (BOOK)	Mother's statements unrelated to the text as such but about the reading of the book.	BS	Proposition		M: Turn the page.
Meta-comments (META)	Mother's higher level abstract comments about the text and expressions of lack of knowledge.	BS	Proposition		M: This is confusing.

(continued on next page)

Appendix B (continued)

Coding category ^a	Definition	Context of use ^a	Unit of analysis	Examples	
				Reminiscing	Book sharing
Corrections (CORRECT)	Mother corrected the child's utterance.	BS	Instance of type of talk		A cow. M: No. It's a hippopotamus.
Clarifications (CLARIF)	Mother requested or provided the correct pronunciation of a word, or requested the child to repeat an utterance that the parent could not hear or understand.	BS	Instance of type of talk		M: What color is the dress? C: Pu-ple. M: Purple.
Attention getters (ATT)	Mother called for child's attention to the book or a specific content in it.	BS	Proposition		Look at this.
Unclassifiable comments (UNCLASS)	Mother's utterance which did not fit into the above categories or an utterance in which it was unclear what the child was talking about.	BS	Instance of type of talk		C: Mommy. M: <u>yes?</u>

Notes. Acronyms are specified for each coding category. BS = book sharing; C = child; M = mother; R = reminiscing.

of divergent results (including ours) about the positive links between book sharing and children's oral language skills in Latin America.

Disclosures

The authors declare that they have no conflict of interest.

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Supplementary materials

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