

Emotion talk during mother-child reminiscing and book sharing and children's socioemotional competence: Evidence from Costa Rica and Germany

Ana M. Carmiol*

Universidad de Costa Rica

Lisa Schröder*

University of Applied Sciences Magdeburg-Stendal

Correspondence should be addressed to:

Ana M. Carmiol

Instituto de Investigaciones Psicológicas, Universidad de Costa Rica

Código Postal 2060, San José, Costa Rica

Contact: ana.carmiol@ucr.ac.cr

Orcid: 0000-0002-3508-0333

This is a post-peer-review, pre-copyedit version of an article published in *Culture and Brain*. The final authenticated version is available online at: <http://dx.doi.org/10.1007/s40167-019-00078-x>

Authors' Note:

* Shared leading authorship.

We would like to thank the participating mothers and children. This research was supported by a grant from Vicerrectoría de Investigación, Universidad de Costa Rica (N° 723-B7-219) to Ana M. Carmiol and by a grant from the Kompetenzzentrum frühe Bildung in Stendal to Lisa Schröder.

Abstract

This paper examined cross-cultural differences in emotion talk during reminiscing and book sharing and its link with children's social problem-solving skills. Twenty-six Costa Rican mothers, representing the cultural model of autonomy-relatedness, and 26 German mothers, representing the cultural model of autonomy, discussed a negative past event and read a book with their four-year-old children. Children's social problem-solving skills were also assessed. Results indicated that cultural contexts did not differ in complexity of emotion talk but Costa Rican dyads talked overall more about emotions than German dyads. Costa Rican dyads marked others as the agents of emotions more often than German dyads, but groups did not differ in the frequency of emotions referring to the child as the agent. Across cultural contexts, mother-child dyads provided significantly more emotional attributions than emotion explanations during book sharing, but not during reminiscing. Emotion talk was related to children's social problem-solving skills for the Costa Rican group, but not for the German group. The higher the amount of emotion talk in Costa Rican dyads during reminiscing, the lower the child's social problem-solving skills. Results are discussed in light of the culture-specific nature of emotion socialization and its relation to children's socioemotional development.

Keywords: emotions, reminiscing, book sharing, Costa Rica, Germany, cross-cultural differences.

Emotion talk during mother-child reminiscing and book sharing and children's socioemotional competence: Evidence from Costa Rica and Germany

Socioemotional competence includes a series of developmental tasks influenced by maturing neurobiological structures and environmental elements. These tasks include recognizing, labeling, and regulating emotions. They have been found to be positively linked to children's prosocial behavior (Garner, Dunsmore, & Southam-Gerrow, 2008) and their academic success (Graziano, Reavis, Keane, & Calkins, 2007), and negatively linked to behavioral problems (e.g., Compas et al., 2017).

Parental talk about emotions during conversations is important for the development of emotion-related competencies (e.g., Dunn, Brown, & Beardsalt, 1991; Denham, Zoller, & Couchoud, 1994b). However, parents vary in the frequency and complexity of their emotion talk, and culture plays a special role on this variability (e.g., Wang & Fivush, 2005). This study investigated mother-child emotion talk across two contexts that differ in their underlying cultural model: urban, middle- to highly- educated families from Costa Rica representing the model of autonomy-relatedness, and urban, middle- to highly- educated families from Germany, representing the model of autonomy. We aimed at investigating cultural differences in the complexity and the agency marked in mother-child emotion talk during reminiscing about an event when the child did not feel good and during a conversation about a children's book, and whether these differences would reflect the contexts' underlying cultural models. We analyzed two different conversational situations because they could shed light on cross-cultural differences that otherwise could not be observed when only considering a single conversational context. We were furthermore interested in the culture-specific relations of mother-child emotion

talk and children's socioemotional competencies as measured through their responses to hypothetical provocative situations with peers.

Cross-cultural differences in emotion talk during reminiscing and book sharing

Reminiscing and book sharing conversations between caregivers and children are rich contexts for emotion talk, where speakers attribute emotions to others and themselves and discuss the causes and consequences of emotions, as well as the strategies to regulate negative emotions. Reminiscing is a common practice across different cultural contexts (Leichtman, Wang, & Pillemer, 2003; Melzi, Schick, & Kennedy, 2011; Reese, Hayne, & MacDonald, 2008; Schröder, Keller, & Kleis, 2013b; Sparks, Carmiol, & Ríos, 2013; Wang, 2007). Cultural differences in emotion talk during reminiscing with preschoolers are related to different cultural orientations. Formally educated families from urban Western contexts, like North-America or Germany, value socialization goals related to psychological autonomy. Parents want their children to become independent, self-confident and assertive (Keller et al., 2006; Keller & Kärtner, 2013). The emotion talk of Euro-American mothers has been described as reflecting a *cognitive* or *explaining* approach (Wang, 2001; Wang & Fivush, 2005). In this context, caregivers discuss personal themes with their children and talk about causes and explanations of emotions by which they foster to express and understand one's own emotions (Wang, 2006). Euro-American mother-child dyads also discuss about different emotional experiences, demonstrating that mothers allow children to stand up for their individual perspective (Fivush & Wang, 2005). This emotion-explaining style is related to children's self-esteem in these contexts (Reese, Bird, & Tripp, 2007), indicating that this approach to emotion talk successfully supports the socialization goals these parents value the most.

In other cultural contexts, namely educated and non-Western like Asia or Latin America, parents put great emphasis on hierarchical relatedness besides psychological autonomy (Keller & Kärtner, 2013). They want their children to become interdependent and to take over responsibilities in the group. In Asian contexts, this leads to the subordination of one's own needs, including emotions (Wang, 2013). In Latin American contexts, this leads to the promotion of a self for which family relations are deemed especially important (Halgunseth, Ipsa, & Rudy, 2006), and values such as good demeanor, respect and obedience are encouraged (Harwood, Leyendecker, Carlson, Asencio, & Miller, 2002; Harwood, Schölmerich, & Schulze, 2000). These contexts have been referred to as autonomous-related (Kağitcibaşı, 2007).

In East Asian contexts, mothers engage in an *emotion-criticizing* or *behavioral* style during reminiscing (Wang, 2001; Wang & Fivush, 2005). This approach is less explaining but mothers focus on discussing proper behavior of the child and social themes. Similar findings were revealed for Mexican-American mothers on conversations during car rides. Compared to Euro-American mothers, Mexican-Americans used less causal explanations when talking about emotions, and discussed others' emotions more often than the child's emotions (Eisenberg, 1999). These results also fit with the cultural models of these contexts and foster their respective socialization goals.

However, there is greater variability among autonomous-related contexts with respect to parental behavior and child development compared to the prototypical autonomous contexts (Keller, 2007), and this can be reflected in emotion talk. Whereas talking about one's own emotions is generally not desirable in Asian cultures, this does not seem to be the case in Latin-America (see Melzi & Fernández, 2004; Leyva, Berrocal & Nolivós, 2014). Thus, it is especially revealing to investigate autonomous-related cultural contexts as the way to realize how the

underlying socialization goals might differ among them, as has been previously shown for reminiscing styles (e.g., Schröder et al., 2013a). Despite these cross-cultural findings, most of the previous work on emotion talk during reminiscing has focused on English-speaking dyads (Ackil, Van Abbema, & Bauer, 2003; Fivush, Berlin, McDermott, Mennuti-Washburn, & Cassidy, 2003; Laible, 2004a, 2004b; Sales, Fivush, & Peterson, 2003; Van Bergen & Salmon, 2010) and East Asian groups (Wang, 2001; 2006; Wang & Fivush, 2005).

Evidence about emotion talk during book sharing revealed that English-speaking parents frequently label and explain emotions when sharing books with their children (Brownell, Svetlova, Anderson, Nichols and Drummond, 2013) and that they do so more often than during other kinds of interactions (Drummond, Paul, Waugh, Hammond & Brownell, 2014). Previous evidence from English-speaking dyads in the United States also indicate distinct links between children's socioemotional development and mother-child emotion talk as a function of conversational context (Laible, 2004b), suggesting that relationships are not straightforward and therefore require further exploration.

Cross-cultural evidence of the differences in emotion talk as a function of conversational context is also available. Wang (2013) found that native Chinese mothers from Beijing and immigrant Chinese mothers in the United States differed with respect to how much they attributed emotions to the child during reminiscing and to the character during book sharing. These results provide preliminary findings that justify the need to explore both conversational contexts in the same sample. The present study analyzed total amount of emotion talk, emotion talk complexity as well as emotion agency during reminiscing and book sharing. However, given the lack of evidence of how the context of discourse might influence emotion talk in the samples

explored here, no a priori hypotheses about the pattern of results concerning differences in emotion talk as a function of conversational contexts were made.

Emotion talk and children's socioemotional development

Preschoolers' participation in discussions about the nature, causes, and regulation of emotions is positively linked to their use of emotion labels (Van Bergen, Salmon, Dadds, & Allen, 2009), their knowledge about causes of emotions (Ornaghi, Grazzani, Cherubin, Conte, & Piralli, 2015; Salmon, Evans, Moskowitz, Grouden, Parkes, & Miller, 2013) and their prosocial behavior (Brownell et al., 2013; Drummond et al., 2014).

Parental explanatory talk about negative emotions during reminiscing is especially relevant for children's socioemotional development, and this has been observed to be the case in different cultural contexts (e.g., Laible, 2004b; Leyva et al., 2014). When conversing with their children about negative events, mothers talk more about the causal relations, including the causes of emotions, are more likely to talk about other people and to ask open-ended questions to their children than when discussing positive events (Ackil et al., 2003; Fivush & Wang, 2005; Lagattuta & Wellman, 2002; Sales et al., 2003). These findings generally suggest that it is not the frequency of emotion labeling what predicts children's socioemotional development, but the complexity of the talk, i.e., whether causes, consequences and strategies to regulate emotions are mentioned during conversations.

When children enter childcare outside the home, play interactions with peers become a daily routine. During the preschool years, the complexity of play among peers increases by becoming more reciprocal and then cooperative (e.g., Howes & Matheson, 1992). At the same time, this leads to an increase in social negotiations and consequently a higher conflict potential. Looking at social problem-solving skills during challenging peer situations is thus a central area

in socioemotional development during the preschool age, and is related to other developmental outcomes such as academic readiness and school adjustment (Denham, Way, Kalb, Warren-Khot, & Bassett, 2013).

Moreover, individual differences in children's ability to deal with challenging situation tasks with peers are closely related to how caregivers talk about emotions with children. For example, Leyva et al. (2014) found that Chilean parents who referred to strategies to solve and regulate negative emotions during reminiscing, had children who provided more competent strategies to solve hypothetical, challenging situations with peers. However, recent meta-analytic evidence indicated that the link between explanatory emotion talk and preschoolers' socioemotional competence is not stronger than the link between emotion labeling and preschoolers' competence (Tompkins, Benigno, Kiger Lee, & Wright, 2018). Based on this contradictory evidence, this study investigated the relationships between preschoolers' social problem-solving skills and different aspects of mother-child emotion talk during two conversational situations, reminiscing and book sharing.

The Present Study

The aim of this study was twofold. First, we explored cross-cultural differences in emotion talk during two different conversational situations (book sharing and reminiscing) between Costa Rican and German dyads. Second, we analyzed the links between mother-child dyads' emotion talk and children's social problem-solving skills in Costa Rican and German dyads. We expected to find the following results:

1. Total amount and complexity of emotion talk: Based on previous findings, we expected total amount of emotion talk not to vary as a function of cultural context, as emotion talk is equally important for both of them. However, we expected German dyads to talk more about

explanations than Costa Rican dyads, which would talk more about attributions. This is expected due to autonomous-oriented cultures taking a more cognitive approach to talk about emotions, whereas focus on the emotional behavior is more common in autonomous-related-oriented cultures.

2. Agency of emotions: German and Costa Rican dyads would refer to self/child agency emotions similarly (as both value autonomy), but Costa Rican dyads would talk more about emotions in the context of social agency, as they value relatedness more than German dyads.

3. Relation between emotion talk and socioemotional competence: Emotion talk would be positively related to children's socioemotional development within both cultural contexts, as this relation has been reported cross-culturally.

Due to the limited amount of studies that have analyzed emotion talk in two conversational contexts (reminiscing and book sharing) and two cultural contexts at the same time (cf. Wang, 2013), it is not possible to provide hypotheses about cross-cultural differences for each of the two conversational situations separately. Moreover, the exploration of our hypotheses in two different conversational contexts attempted to shed light on cross-cultural differences that otherwise could not be observed when only considering a single conversational context.

Method

Participants

Fifty-two Costa Rican and German preschoolers and their mothers participated. The Costa Rican subsample included 26 monolingual, Spanish-speaking dyads from a large metropolitan area of Costa Rica (18 girls, $M_{\text{age}} = 4$ years and 9 months). The German subsample included 26 monolingual, German-speaking dyads from households located in a Western

metropolitan city (18 girls, $M_{\text{age}} = 4$ years and 9 months). Maternal education was middle to high in both contexts (see Table 1).

Costa Rican and German dyads were matched according to children's sex, age in months and maternal education. Costa Rican children from the same sex with the closest age in months and maternal years of education were drawn from a bigger sample in order to match, as much as possible, the German sample. No significant differences were observed between the two samples in child's sex ($\chi^2 = 0.00, p = .62$), child's age ($t(50) = -0.57, p = .57$) or maternal education ($t(50) = 0.73, p = .47$).

Procedure and Materials

Data were collected in 2015 in both locations. Participants were recruited through preschools. After reading and signing the consent form with an experimenter, mother and child completed a series of different tasks, but the focus of this paper is only on mother-child reminiscing and book sharing conversations and children's socioemotional competence. In Costa Rica, a researcher met individually with children at preschool and visited their households to meet with each dyad. Children's socioemotional competence was tested at preschool. Reminiscing, book sharing conversations and sociodemographic information were collected during the home visit. In Germany, all dyads completed all tasks in preschools.

General expressive language ability. In Costa Rica, children took the Woodcock-Muñoz Subprueba de Vocabulario basado en Dibujos (Woodcock et al., 2005). In Germany, children took the revised version of the Aktiver Wortschatztest für 3- bis 5-jährige Kinder (AWST-R; Kiese-Himmerl, 2005). Raw scores were used for analyses within both samples.

Reminiscing conversations. Mothers were asked to nominate three recent past events that were unique and salient in the child's life: 1) a shared event (one that the parent and child

had experienced together); 2) an event when the child was unhappy; and 3) an event when the child was happy. Considering evidence described above about characteristics of emotion talk during negative events, this study only analyzed conversations about the unhappy event.

Book sharing conversations. Mothers were provided with the Spanish and German versions of the children's book *Shopping with mom* (Mayer, 1989) to read with their child. This book was chosen because it was likely to be unfamiliar for both populations, yet the story develops around a familiar topic for children from different cultural backgrounds (i.e., grocery shopping with the family). All mothers were instructed to interact with their child as they normally do while engaging in past event and book sharing conversations. Dyads were left alone in the room to complete the task and no time restriction was placed for the interactions. Conversations were audiotaped and subsequently transcribed verbatim.

Child social problem-solving skills. Children took the Bierman and colleagues' (2008) variation of the Challenging Situations Task (Denham, Bouril, & Belouad, 1994a), which included four peer provocation scenarios: 1) a peer knocked down a tower built by a child; 2) a child was hit by a peer; 3) a peer stole a toy from a child; and 4) a peer refused to play with a child. In each scenario, the experimenter: a) presented the child with a drawing depicting the situation, b) provided a short description of the situation and c) asked the child what s/he would do in each specific situation when being harmed like that. The experimenter prompted the child to give two answers (i.e., "What would you do?"; "What else would you do?"). In case children answered 'I don't know' to the first question, they were asked a second time such that all children received two questions. Child's answers were recorded and transcribed verbatim. We chose this task because it recreates some of the most typical challenging peer situations children might face in preschool and kindergarten contexts.

Coding

Mother-child reminiscing and book sharing conversations. We used an adapted version of coding systems previously used (Fivush et al., 2003; Goodvin & Romdall, 2013; Lagattuta & Wellman, 2002; Leyva et al., 2014) to classify mothers and children's emotion talk during reminiscing conversations and extra-textual comments during book sharing. Propositions including a noun and a verb were the unit of analysis. For both conversational situations, mother and child propositions were coded on three different levels: 1) type of talk; 2) complexity of emotion talk and 3) emotion agency.

Type of talk included two different categories: emotion talk or other talk. Emotion talk comprised *emotional states* (e.g., happy, sad), *emotional behaviors* (e.g., to smile, to throw a tantrum), *emotional-evaluative references* (e.g., to like, to dislike), and *moral appraisals* (e.g., to misbehave, to be good). Other talk included off-topic talk, talk about facts, mental-state talk and associative talk. We focused on emotion talk in the present study.

For complexity of emotion talk, propositions coded as emotion talk were subsequently classified as a) *attributions*, when the emotion was only mentioned (e.g., 'You were crying'); b) *causes*, when the reason of the emotion was explained (e.g., 'Did you feel good for helping others?'); c) *consequences*, when the consequence of the emotion was described (e.g., I got very upset so we went back home); and d) *resolutions*, when the proposition attempted to solve the negative emotional experience coded (e.g., Child: 'I missed my truck. Mother: 'But you had more toys to play with'). Frequencies for causes, consequences and resolutions were very low. Given that discussing them is far more complex than just attributing an emotion (Goodvin & Romdall, 2013; Leyva et al., 2014), we grouped them into a single category called *explanatory*

emotion talk. Therefore, emotional exchanges included only two categories: emotion attributions and explanatory emotion talk.

For emotion agency, propositions coded as emotion talk were subsequently classified for the agent of the emotion according to the following categories: a) *child- or self-agency*, when the child was the agent of the emotion mentioned by the speaker (e.g. ‘You were sad when your ice-cream dropped’); b) *social-agency*, when the agent of the emotion was a person different than the child, including the mother (e.g., ‘The store manager was angry’), or when the agent of the emotion was the child together with someone else (e.g., ‘You both were unhappy then’); or c) *unspecific-agency*, where the agent of the emotion was not specified (e.g., ‘It was sad.’)

Child social problem-solving skills. Authors coded children’s open-ended responses to the scenarios of the Challenging Situations Task. Possible scores for each scenario ranged from -1 to 2. Responses received a score of -1 when the answer referred to aggressive behaviors such as responding with verbal or physical force, intimidation, or antagonism (e.g. ‘I would hit him’); 0 when no answer was provided (e.g., ‘I don’t know’), when it mentioned an emotional behavior or state (e.g., ‘I would cry.’ ‘I would get sad.’) or when it did not include a concrete behavior but made a general comment about the appropriateness of the situation (e.g., ‘Hitting is not nice.’ ‘He should not do that.’); 1 when the answer referred to avoidant behaviors (e.g., ‘I would build the tower again.’ ‘I would play with something else.’) or when children proposed the use of authority/adult interventions to solve the situation (e.g., ‘I would tell my mom/his mom.’); and 2 when strategies referred to socially competent behaviors such as calmly negotiating a solution or appropriately asserting oneself (e.g., ‘I would ask him with love not to do it again.’ ‘I would tell him not to throw my tower’).

Previous studies used a dichotomous system to code children's responses on this task, where all kinds of non-competent replies received the same score (e.g., Leyva et al., 2014). We used a continuous coding system because we wanted to differentiate non-competent replies, as they could represent different competence levels at this early age. Moreover, responses referring to aggressive behaviors received the lowest score because evidence suggests their frequency is negatively linked to social and academic developmental outcomes (Denham et al., 2013). The final score for this task was based on the sum of all answers across scenarios, and ranged from -8 (when all answers were scored as aggressive) to 16 (when all answers were scored as competent). Raw frequencies were used for the analyses.

For reliability, transcripts were randomly selected and first translated to English by Spanish-English and German-English bilingual research assistants. Half of the transcripts were Costa Rican and the other half were German. Authors independently coded 15% ($n = 8$) of reminiscing and 15% of book sharing transcripts. Cohen's kappa and percentage of agreement indexes showed excellent levels of agreement for type of talk (Cohen's $\kappa = .88$, 91%), and fair to good levels of agreement for complexity of emotion talk (Cohen's $\kappa = .55$, 75%) and emotion agency (Cohen's $\kappa = .52$, 87%) for reminiscing¹. Excellent levels of agreement were obtained for type of talk (Cohen's $\kappa = .87$, 91%), complexity of emotion talk (Cohen's $\kappa = .95$, 98%) and emotion agency (Cohen's $\kappa = .86$, 94%) for book sharing. Authors independently coded 19% ($n = 10$) of the transcripts for the Challenging Situations Task. Excellent levels of agreement were reached between the coders (Cohen's $\kappa = .87$, 90%). For all cases, disagreements were discussed and resolved before the first author coded the remaining Costa Rican transcripts and the second author coded the remaining German transcripts.

¹ Guidelines to define appropriateness in levels of agreements were taken from Fleiss, Levin, and Paik (2013) and Haden and Hoffman (2013).

Results

Table 2 provides descriptive statistics for mothers and children's emotion talk during reminiscing and book sharing. We first report preliminary results in order to determine potential covariates. For the main analyses, we conducted repeated-measures multivariate analyses of variance (MANOVAs), with conversational situation (reminiscing and book sharing) as a within-subjects factor and cultural context (Costa Rican and German dyads) as a between-subjects factor. We used a significance level of $p < .05$ and report partial eta-squared (η_p^2) and Cohen's d as indicators of effect size. Significant main effects and interaction effects were followed up with t -tests.

Preliminary results

Children's variables in book sharing and reminiscing were not correlated with children's vocabulary, neither in the Costa Rican nor in the German sample. However, bivariate correlations indicated a significantly positive relation between vocabulary and children's scores in the Challenging Situations Task for the Costa Rican sample, $r(26) = .43, p = .029$, and a marginally significant correlation between vocabulary and children's scores in the Challenging Situations Task for the German sample, $r(26) = .33, p = .097$. Therefore, subsequent analyses including children's scores on the Challenging Situations Task considered vocabulary as a covariate.

In order to determine whether cultural contexts differed in conversational length in the two conversational situations, we computed two repeated-measures MANOVAs with *conversational length* of mothers and children as dependent variables, respectively. There was a significant main effect of conversational situation for mothers' length of talk, Wilks' $\lambda = .53, F(1, 50) = 44.36, p < .001, \eta_p^2 = .47$, as well as children's length of talk, Wilks' $\lambda = .65, F(1, 50)$

= 27.28, $p < .001$, $\eta_p^2 = .35$. Post-hoc tests demonstrated that extra-textual talk during book sharing ($M = 61.81$, $SD = 48.17$) was significantly longer than talk about the negative past event ($M = 20.92$, $SD = 10.34$) for mothers, $t(51) = 6.70$, $p < .001$. Also in children, extra-textual talk ($M = 26.31$, $SD = 21.20$) was significantly longer compared to talk about the negative past event ($M = 11.94$, $SD = 6.72$), $t(51) = 5.27$, $p < .001$. There was no effect for culture nor any interaction effect, meaning that the situational differences in length were similar across cultural contexts.

Main Analyses

Amount and complexity of emotion talk. In order to explore whether Costa Rican and German mothers and children differed with respect to the amount and the complexity of emotion talk, we conducted two repeated-measures MANOVAs (for mothers and children, respectively), with cultural context as the between-subjects factor, conversational situation as the within-subjects factor and emotional attributions and explanatory emotion talk as dependent variables. Given that each emotional reference was coded for complexity (attribution or explanatory emotion talk), the total amount of these two categories reflects the total amount of emotion talk. Therefore, we could investigate both aspects within one analysis.

For mothers, results revealed a significant main effect for conversational situation, Wilks' $\lambda = .83$, $F(1, 50) = 10.56$, $p = .002$, $\eta_p^2 = .17$, a significant main effect for complexity of emotion talk, Wilks' $\lambda = .51$, $F(1, 50) = 47.95$, $p < .001$, $\eta_p^2 = .49$, and a significant Conversational Situation x Complexity of Emotion Talk interaction effect, Wilks' $\lambda = .53$, $F(1, 50) = 10.54$, $p < .001$, $\eta_p^2 = .47$. There was also a marginal significant effect for cultural context, $F(1,50) = 3.17$, $p = .081$, $\eta_p^2 = .06$. As the effect size was medium, we yet report this result.

Post-hoc comparisons demonstrated that the significant main effect for conversational situation was due to emotion talk in mothers being significantly higher during book sharing ($M = 9.63$, $SD = 10.25$) than during reminiscing ($M = 5.15$, $SD = 3.44$), $t(51) = 3.21$, $p = .002$. Across situations, references to emotion attributions ($M = 10.04$, $SD = 7.54$) were significantly higher than references to explanatory emotion talk ($M = 4.75$, $SD = 4.95$), $t(51) = 6.96$, $p < .001$. The effect of the Conversational Situation x Complexity of Emotion Talk interaction was due to mothers referring to attributions ($M = 2.65$, $SD = 1.96$) and explanatory emotion talk ($M = 2.5$, $SD = 2.32$) similarly often during reminiscing ($p = .67$). In contrast, mothers' references to emotion attributions ($M = 7.39$, $SD = 7.05$) were significantly higher than references to explanatory emotion talk ($M = 2.25$, $SD = 3.78$) during book sharing, $t(51) = 7.73$, $p < .001$. The marginal significant effect for cultural context was due to Costa Rican mothers talking generally more about emotions (attributions and explanatory emotion talk; $M = 17.58$, $SD = 15.20$) than German mothers ($M = 12.00$, $SD = 4.85$) across situations, $t(51) = 1.78$, $p = .09$, Cohen's $d = .49$.

For children, analyses revealed a similar pattern of results. Specifically, results indicated a significant main effect for complexity of emotion talk, Wilks' $\lambda = .65$, $F(1, 50) = 26.92$, $p < .001$, $\eta_p^2 = .35$. and a significant Conversational Situation x Complexity of Emotion Talk interaction effect, Wilks' $\lambda = .79$, $F(1, 50) = 13.54$, $p = .001$, $\eta_p^2 = .21$. Additionally, a significant main effect for cultural context was found, $F(1, 50) = 6.65$, $p = .013$, $\eta_p^2 = .12$.

For the main effect of complexity of emotion talk, post-hoc t tests demonstrated that, across conversational situations, children referred to emotion attributions ($M = 4.56$, $SD = 3.44$) significantly more often than to explanatory emotion talk ($M = 2.40$, $SD = 2.48$), $t(51) = 5.24$, $p < .001$. Like mothers, the Conversational Situation x Complexity of Emotion Talk interaction effect was due to children referring to emotion attributions ($M = 1.65$, $SD = 1.85$) as often as to

explanatory emotion talk ($M = 1.46$, $SD = 1.63$) during reminiscing ($p = .49$). In contrast, references to emotion attributions ($M = 2.9$, $SD = .272$) were significantly higher than explanatory emotion talk ($M = .94$, $SD = 1.79$) during book sharing, $t(51) = 5.53$, $p < .001$. The effect of cultural context was due to Costa Rican children referring to emotion talk ($M = 8.73$, $SD = 6.05$) more often than German children ($M = 5.19$, $SD = 3.51$) across situations, $t(50) = 2.58$, $p = .014$.

Emotion agency. We conducted a repeated-measures MANOVA for mothers and children separately with cultural context as the between-subjects factor, conversational situation as the within-subjects factor and *child agency*, *social agency*, and *unspecific agency* as dependent variables. For mothers, results showed significant main effects for situation, Wilks' $\lambda = .79$, $F(1, 50) = 13.07$, $p = .001$, $\eta_p^2 = .21$, and agency, Wilks' $\lambda = .51$, $F(2, 49) = 23.40$, $p < .001$, $\eta_p^2 = .49$. Significant interaction effects were revealed for Agency x Conversational Situation, Wilks' $\lambda = .41$, $F(2, 49) = 35.15$, $p < .001$, $\eta_p^2 = .59$, and for Agency x Cultural Context, Wilks' $\lambda = .88$, $F(2, 49) = 3.36$, $p = .043$, $\eta_p^2 = .12$.

The significant main effect for situation indicated once again that, when considering all agency categories together, mothers talked more about emotions during book sharing than during reminiscing. The significant effect for emotion agency was due to mothers referring significantly less often to unspecific emotion terms ($M = 2.00$, $SD = 2.89$) compared to both child-agency emotions ($M = 4.52$, $SD = 3.63$), $t(51) = -4.09$, $p < .001$, and social-agency emotions ($M = 7.77$, $SD = 8.28$), $t(51) = -5.62$, $p < .001$, across situations and cultural contexts. References to social-agency emotions were furthermore significantly higher than references to child-agency emotions, $t(51) = 2.91$, $p = .005$.

Post-hoc t tests for the Agency x Conversational Situation interaction effect revealed that mothers referred to child-agency emotions significantly more often during reminiscing than during book sharing, $t(51) = 6.69, p < .001$, and they referred to social-agency emotions, $t(51) = 6.44, p < .001$ and unspecific emotions, $t(51) = 2.10, p = .041$ significantly more often during book sharing than during reminiscing. The significant Agency x Cultural Context interaction effect was due to Costa Rican and German mothers referring to child-agency emotions as well as unspecific emotions similarly often ($ps > .41$), but Costa Rican mothers referred to social-agency emotions more often than German mothers, even though this difference was only marginally significant, $t(50) = 1.85, p = .070$, Cohen's $d = .51$.

For children, there was a significant main effect for agency, Wilks' $\lambda = .55, F(2, 49) = 20.44, p < .001, \eta_p^2 = .46$, a significant Agency x Conversational Situation interaction effect, Wilks' $\lambda = .40, F(2, 49) = 36.73, p < .001, \eta_p^2 = .60$, and a significant between-subject effect for culture, $F(1, 50) = 5.51, p = .023, \eta_p^2 = .10$.

The main affect for agency was due to children across cultural contexts referring to self- and social-agency emotions similarly often and significantly more often compared to unspecific emotions, respectively. The Agency x Conversational Situation effect was due to children across cultural contexts referring to child/self-agency emotions significantly more often during reminiscing than during book sharing, $t(51) = 5.36, p < .001$, and significantly more often to social-agency emotions during book sharing than during reminiscing, $t(51) = 6.84, p < .001$. The significant main effect for culture indicated once again that, when considering all agency categories together, Costa Rican children talked about emotions more often than German children.

Relations Among Maternal and Child Emotion Talk. In order to investigate the associations between maternal and child emotion talk, we conducted several correlations within each cultural context (see Table 3). For mothers and children, neither references to emotion attributions nor to explanatory emotion talk were correlated across situations ($r_s = .30$ to $-.15$, $p_s > .10$). This result indicates that neither Costa Rican nor German mothers and children had a consistent style of complexity of emotion talk across the two conversational situations.

High correlations were revealed for emotion talk of mothers and children within situations. This was the case for both cultural contexts: The more mothers referred to emotion attributions within reminiscing or book sharing, the more did the children ($r_s = .70$ to $.81$, $p_s < .01$). The same was the case for explanatory emotion talk within both conversational situations ($r_s = .51$ to $.82$, $p_s < .05$).

In the Costa Rican sample, there were positive correlations between maternal references to emotion attributions and explanatory emotion talk within reminiscing ($r = .43$) as well book sharing ($r = .80$). This was also the case for the children of the Costa Rican sample ($r = .35$ and $r = .44$); even though this correlation was only marginally significant for reminiscing. This means that the more mothers and children of the Costa Rican subsample referred to emotion attributions, the more they also referred to explanatory emotion talk. In the German sample, there were no significant correlations between emotion attributions and explanatory emotion talk in the reminiscing situation; neither for mothers, nor for children. There was a significant correlation for maternal references to emotion attributions and explanatory emotion talk in the book sharing situation ($r = .42$), but not for children.

Challenging Situations Task. There was no significant difference between cultural contexts for children's social problem-solving skills, $t(50) = .89$, $p = .37$. Costa Rican children

had a score of $M = 2.54$ ($SD = 4.81$), German children had a score of $M = 3.58$ ($SD = 3.48$). As the high standard deviations indicate, the variance was also high in this measure. In the Costa Rican sample, scores ranged from -8 to 11; in the German sample, scores ranged from -3 to 11.

Relations Among Emotion Talk Variables and Children's Social Problem-Solving Skills. Given that emotion attributions and explanatory emotion talk were highly correlated in both conversational situations for the Costa Rican sample, and in the book sharing conversational situation for the German sample, and in order to reduce the number of correlations, we conducted four partial correlations among children's social problem-solving skills and total emotion talk of mothers and children during reminiscing and book sharing for each cultural context, for a total of eight correlations. We controlled for children's vocabulary scores in all cases. For the Costa Rican sample, results indicated that total emotion talk by mothers ($r = -.45$, $p = .025$) as well as children ($r = -.41$, $p = .042$) during reminiscing was negatively correlated with children's social problem-solving skills. That is, the higher the frequency of maternal and child talk about emotions during reminiscing, the lower the child's score on the Challenging Situations Task. No significant correlations were observed for emotion talk during book sharing in the Costa Rican sample and no significant correlations at all were observed in the German sample.

Discussion

The current study explored cross-cultural differences in emotion talk in Costa Rican and German dyads during reminiscing and book sharing. We also investigated the relationship between emotion talk and children's social problem-solving skills. We found partial support for our hypotheses.

Total Emotion Talk and Complexity of Emotion talk

Contrary to our expectations, no cultural differences with respect to emotion talk complexity were found (hypothesis 1). However, a cultural difference was found for total emotion talk, and Costa Rican dyads talked overall more about emotions than German dyads. This result was only marginally significant for mothers. However, it supports previous findings that talk about emotions in Latin American samples is as common and important as it is in autonomous-oriented Western contexts (Melzi & Fernández, 2004; Leyva et al., 2014). This differs from what has been observed in other autonomous-related contexts, where talk about one's own emotions is generally not desirable (e.g., Wang, 2013).

Overall, mother-child dyads of both cultural contexts talked more about emotions during book sharing than during reminiscing, a pattern that has also been observed in Asian families (Wang, 2013). Different from reminiscing, where speakers need to reconstruct the facts in the event as well as the perspective of the characters, book sharing provides the actions in the plot, the characters and their perspectives. This could facilitate elaboration in general, and emotion talk specifically. Moreover, our study explored how dyads talked about events where children did not feel good. Despite previous evidence indicating emotion talk is more complex during negative than during positive events (e.g., Ackil et al., 2003; Sales et al., 2003), children in our sample might have been less willing to elaborate on the details of disobedience or misbehavior episodes, that were part of the events discussed.

Even though emotion talk during book sharing was overall more frequent, emotion talk during reminiscing was proportionally more complex in both cultural contexts. The frequency of emotion attributions and explanatory emotion talk did not differ in reminiscing. During book sharing, maternal attributions tripled the amount of explanatory emotion talk. Thus, mothers of

both cultural contexts applied a more *cognitive* or *explaining* approach when talking about emotions during reminiscing. In contrast, they used a more *behavioral* approach when talking about emotions during book sharing². Different styles have been revealed between Euro-American and East-Asian contexts before. As our results suggested, these cross-cultural differences did not apply when looking at an autonomous-related Latin American context and an autonomous context. Both cultural contexts did not differ in *how* they talked about emotions, and mothers from both contexts similarly encouraged their children to reflect on and express emotions during conversations. Compared to Asian dyads (see Wang, 2001; Wang & Fivush, 2005), it demonstrates once more the great differences among autonomous-related contexts (Keller & Kärtner, 2013).

Cross-cultural similarities also emerged in the lack of relationships between complexity of emotion talk across conversational situations. Instead of using a *general style* to talk about emotions, Costa Rican and German dyads had specific approaches to talk about emotions in the different conversational situations analyzed here. This has been revealed by other studies before (e.g., Laible; 2004b; Laible & Song, 2006) and supports the importance of considering different conversational situations when investigating emotion talk.

Agency of Emotions

Cultural differences were revealed with respect to *whom* emotions were attributed to. In line with our expectations (hypothesis 2), Costa Rican and German mothers did not differ with respect to how much they referred to the child/self as the agent of an emotion. However, as

² We want to emphasize, however, that the frequency of explanatory talk did not differ between the two conversational situations. Our interpretation applies to the ratios of emotion attributions and explanatory emotion talk for each conversational situation.

similarly observed in other autonomous-related contexts (Wang, 2001; Wang & Fivush, 2005; Eisenberg, 1999), Costa Rican mothers referred to social-agency emotions more often than German mothers. These differences reflect the underlying cultural orientation, with both cultural contexts valuing psychological autonomy to a similar degree, and Costa Rican families valuing relatedness more than German mothers. As previously described, values of relatedness and interdependence are essential in Latin America to a greater degree than the promotion of an independent, contained self (Halgunseth et al., 2006; Harwood et al., 2000). As such, this pattern of differences has also been found for comparable samples from Costa Rica and Germany for maternal socialization goals (see Keller et al., 2006).

Across conversational situations, mothers in our samples talked about emotions in the context of social agency (i.e., the child with somebody else or a person different than the child) more often than they did in the context of self/child agency, and they specified the self/child as the agent of emotions more often than not specifying any agent of the emotions. In contrast, children did not differ with respect to how much they referred to emotions marking social and self/child as the agent. Beyond our hypotheses, results also showed that agency of emotion varied as a function of conversational situation. Mothers and children across cultural contexts were found to talk more about child/self-agency emotions during reminiscing than during book sharing, and they talked more about social-agency emotions during book sharing than during reminiscing (see also, Wang, 2013). This last finding should not come as a surprise, given that reminiscing directs parents and children to talk about an event in which the child is the focus of attention, and therefore, the focal agent of the emotion. In contrast, emotion talk during book sharing revolves around the character or characters feeling the emotions.

Relations between Emotion Talk and Children's Social Problem-Solving Skills

Our last hypothesis proposed a positive relationship between emotion talk and children's social problem-solving skills within both cultural contexts (hypothesis 3). Contrary to our expectations, no relationships between emotion talk and children's social problem-solving skills were revealed for the German sample. This is surprising as positive relations have been found for other autonomous-related contexts (e.g., Denham et al., 1994b; Halberstadt et al., 2001; Laible, 2004a; 2004b). For the Costa Rican sample, results indicated a significant relationship, however, a negative one, which was unexpected as well. Total emotion talk by Costa Rican mothers and children during reminiscing were negatively correlated with children's social problem-solving skills. That is, the higher the frequency of maternal and child talk about emotions during reminiscing, the lower the child's social problem-solving skills.

It has to be kept in mind that our data were collected on a single timepoint. Longitudinal evidence might provide a different picture (cf., Leyva et al., 2014). Additionally, early education in Costa Rica starts later than in Germany. While most children in Germany start preschool education at age three or before (Statistisches Bundesamt, 2017), 90% of children in Costa Rica start preschool until age four and they stay at home with their families before that (Programa Estado de la Nación, 2017). Despite the fact that data collection in Costa Rica started a month after the 2015 academic year started, and that children had one month to adjust to school, they could have been facing a particularly challenging transition towards formal education, and this could have played a role on this finding. While gains in self-regulation competencies are observed throughout the preschool years (Eisenberg, 2000), Costa Rican children could be at the same time confronting an increase in challenging situations with peers in external care institutions, when they engage more often in peer play. In this study, Costa Rican mothers with

children who had low levels of socioemotional competencies might be making the extra effort to teach their children to control their own emotions and to understand the emotions of others in this challenging transition time from family to preschool. Future cross-cultural research might want to consider time spent in external care (length and duration) as a potential moderator of the relationship between family emotion talk and children's peer relationships.

It is also interesting that we only found correlations with the emotion talk that takes place during reminiscing and not book reading. This replicates previous findings (Laible & Song, 2006) and highlights the importance of considering reminiscing as a potential tool to be part of interventions aimed at promoting children's socioemotional development.

Limitations and future directions

Our study needs to be considered with some precautions. First, while our results contribute to the progress of the field by exploring and comparing phenomena in two cultural contexts rarely analyzed, our samples were small and some of our results only approached marginal significance. Future studies need to consider bigger samples. The progress of developmental psychology relies not only on the eradication of the persistent sampling bias towards English-speaking, Anglo, white, middle-class participants (Nielsen, Haun, Kärtner, & Legare, 2017), but also requires samples big enough to allow theory building (Bergmann et al., 2018). Second, despite the fact that we achieved fair to good levels of inter-rater reliability for reminiscing and excellent levels of inter-rater reliability for book sharing (see guidelines in Fleiss et al., 2013, Haden & Hoffman, 2013), future studies should strive for achieving excellent levels of inter-rater reliability for the coding of both kinds of conversations.

Third, we observed few instances on the Challenging Situations Task where children provided information about the feelings provoked by the specific hypothetical scenarios instead

of the behaviors to solve it, despite the fact that we asked them to indicate behaviors and not emotions involved in the situation. It is suggested for future studies to collect both kinds of information (emotion attributions and behavior responses) from the children during the different hypothetical scenarios included in the Challenging Situations Task (as in Denham et al., 2013). Exploring the links between children's emotion attribution and behavior responses during this task with mother-child emotion talk would provide more definite answers concerning how emotion talk specifically contributes to children's socioemotional development.

Finally, our study collected reminiscing and book sharing conversations in different settings for both cultural contexts. While German dyads completed conversations in the preschool setting, Costa Rican dyads completed conversations at home. This poses a methodological constraint. However, we still think that the conversational style mothers implement during specific conversational situations (e.g., reminiscing or book sharing) is a rather stable characteristic and does not vary qualitatively when taking place in different locations (e.g., at home, in childcare centers, in the car, etc.). Especially with respect to cross-cultural investigations, the maternal conversational style has been shown to mirror fundamental cultural values (e.g., Schröder et al., 2013; Wang, 2007). Norms and values underlying mothers' conversational styles are expected to be independent of the location where conversations take place. However, more cross-cultural evidence is necessary to determine whether and how these cultural values, as reflected in mother-child interactions, are sensitive to specific contextual situations (e.g., Haden, 1998). Our results suggest that reminiscing and book sharing are two appropriate conversational contexts to explore this and other possible cross-cultural differences in mother-child emotion talk.

Ethical standards

The study reported here was approved by the appropriate ethics committee at the Universidad de Costa Rica and at the University of Applied Sciences Magdeburg-Stendal. The study was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. All persons gave their informed consent prior to their inclusion in the study.

Conflict of interests

The authors declare that they have no conflict of interest.

References

- Ackil, J., Van Abbema, D., & Bauer, P. (2003). After the storm: Enduring differences in mother-child recollections of traumatic and nontraumatic events. *Journal. Experimental Child Psychology*, 84, 286-309. doi: 10.1016/S0022-0965(03)00027-4
- Bergmann, C., Tsuji, S., Piccinini, P. E., Lewis, M. L., Braginsky, M., Frank, M. C., & Cristia, A. (2018). Promoting replicability in developmental research through meta-analyses: Insights from language acquisition research. *Child development*, 89, 1996-2009. doi.org/10.1111/cdev.13079
- Bierman, K. L., Domitrovich, C. E., Nix, R. L., Gest, S. D., Welsh, J. A., Greenberg, M. T., ... & Gill, S. (2008). Promoting academic and social-emotional school readiness: The Head Start REDI program. *Child Development*, 79, 1802-1817. doi:10.1111/j.1467-8624.2008.01227.x
- Brownell, C., Svetlova, M., Anderson, R., Nichols, S., & Drummond, J. (2013). Socialization of early prosocial behavior: Parent's talk about emotions is associated with sharing and helping in toddlers. *Infancy* 18, 91-119. doi:10.1111/j.1532-7078.2012.00125.x
- Compas, B. E., Jaser, S. S., Bettis, A. H., Watson, K. H., Gruhn, M. A., Dunbar, J. P., ...Thigpen, J. C. (2017). Coping, emotion regulation, and psychopathology in childhood and adolescence: A meta-analysis and narrative review. *Psychological Bulletin*, 14, 939-991. doi: 10.1037/bul0000110
- Denham, S. A., Bouril, B., & Belouad, F. (1994a). Preschoolers' affect and cognition about challenging peer situations. *Child Study Journal*, 24, 1-1.

- Denham, S., Way, E., Kalb, S., Warren-Khot, H., & Bassett, H. (2013). Preschoolers' social information processing and early school success: The challenging situations task. *British Journal of Development Psychology, 31*, 180-197. doi 10.1111/j.2044-835X.2012.0
- Denham, S. A., Zoller, D., & Couchoud, E. A. (1994b). Socialization of preschoolers' emotion understanding. *Developmental Psychology, 30*, 928. doi:10.1037%2F0012-1649
- Drummond, J., Paul, E., Waugh, W., Hammond S., & Brownell, C. (2014). Here, there and everywhere: Emotion and mental state talk in different social contexts predicts empathic helping in toddlers. *Frontiers in Psychology, 5*, 1-11. doi: 10.3389/fpsyg.2014.00361
- Dunn, J., Brown, J., & Beardsalt, L. (1991). Family talk about feelings states and children's later understanding of other's emotions. *Developmental Psychology, 27*, 448-455. doi: 10.1037/0012-1649.27.3.448
- Eisenberg, A. (1999). Emotion talk among Mexican American and Anglo American mothers and children from two social classes. *Merrill-Palmer Quarterly, 45*(2), 267-284.
- Eisenberg, N. (2000). Emotion, regulation and moral development. *Annual Review Psychology, 51*, 665-697. doi:10.1146/annurev.psych.51.1.665
- Fivush, R., Berlin, L., McDermott, J., Mennuti-Washburn, J., & Cassidy, J. (2003). Functions of parent-child reminiscing about emotionally negative events. *Memory, 11*, 179-192. doi: 10.1080/09658210244000351
- Fivush, R., & Wang, Q. (2005). Emotion talk in mother-child conversations of the shared past: The effects of culture, gender, and event Valence. *Journal of Cognition and Development, 6*, 489-506. doi 10.1207/s15327647jcd0
- Fleiss, J. L., Levin, B., & Paik, M. C. (2013). Statistical methods for rates and proportions. John Wiley & Sons.

- Garner, P. W., Dunsmore, J. C., & Southam-Gerrow, M. (2008). Mother–child conversations about emotions: Linkages to child aggression and prosocial behavior. *Social Development*, 17, 259-277. doi:10.1111/j.1467-9507.2007.00424.x
- Graziano, P. A., Reavis, R. D., Keane, S. P., & Calkins, S. D. (2007). The role of emotion regulation in children's early academic success. *Journal of School Psychology*, 45, 3-19. doi: 10.1016/j.jsp.2006.09.002
- Goodvin, R., & Romdall, L. (2013). Associations of mother-child reminiscing about negative past events, coping, and self-concept in early childhood. *Infant and Child Development*, 22, 383-400. doi: 10.1002/icd.1797
- Haden, C. A. (1998). Reminiscing with different children: Relating maternal stylistic consistency and sibling similarity in talk about the past. *Developmental psychology*, 34, 99-114. 10.1037/0012-1649.34.1.99
- Haden, C. A., & Hoffman, P. C. (2013). Cracking the code: Using personal narratives in research. *Journal of Cognition and Development*, 14(3), 361–375. doi: 10.1080/15248372.2013.805135
- Halgunseth, L., Ispa, J., & Rudy, D. (2006). Parental control in Latino families: An integrated review of the literature. *Child Development*, 77, 1282-1297. doi: 10.1111/j.1467-8624.2006.00934.x
- Harwood, R., Leyendecker, B., Carlson, V., Asencio, M., & Miller, A. (2002). Parenting among Latino families in the US. In M.H. Borstein (Ed.), *Handbook of parenting*, 4, 21-46. Mahwah, NJ: Lawrence Erlbaum Associates.

- Harwood, R., Schölmerich, A., & Schulze, P. (2000). Homogeneity and heterogeneity in cultural belief systems. *New Directions for Child and Adolescent Development*, 87, 41-57. doi: 10.1002/cd.23220008705
- Howes, C. & Matheson, C. C. (1992). Sequences in the development of competent play with peers: Social and social pretend play. *Developmental Psychology*, 28(5), 961.
- Kağitcibaşı, C. (2007). *Family, self and human development across cultures: Theory and applications*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Keller, H. (2007). *Cultures of Infancy*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Keller, H., & Kärtner, J. (2013). Development: The cultural solution of universal developmental tasks. In M. J. Gelfand, C.Y. Chiu, & Y.Y. Hong (Eds.), *Advances in culture and psychology* (pp. 63-116). New York, NY, US: Oxford University Press. doi: 10.1093/acprof:oso/9780199930449.003.0002
- Keller, H., Lamm, B., Abels, M., Yovsi, R., Borke, J., Jensen, H., ... & Su, Y. (2006). Cultural models, socialization goals, and parenting ethnotheories: A multicultural analysis. *Journal of Cross-Cultural Psychology*, 37, 155-172. doi:10.1177/0022022105284494
- Kiese-Himmerl, C. (2005). *AWST-R: Aktiver Wortschatztest für 3- bis 5-jährige Kinder - Revision*. Göttingen: Beltz Test, Hogrefe Verlagsgruppe.
- Lagattuta, K., & Wellman, H. (2002). Differences in early parent-child conversations about negative versus positive emotions: implications for the development of psychological understanding. *Developmental Psychology*, 38, 564-580. doi: 10.1037//0012-1649.38.4.564

- Laible, D. (2004a). Mother-Child discourse surrounding a child's past behavior at 30 months: Links to emotional understanding and early conscience development at 36 months. *Merrill-Palmer Quarterly*, 50, 159-180.
- Laible, D. (2004b). Mother-child in two contexts: Links with child temperament, attachment security, and socioemotional competence. *Developmental Psychology*, 40, 979-992. doi: 10.1037/0012-1649.40.6.979
- Laible, D., & Song, J. (2006). Constructing emotional and relational understanding: the role of affect and mother-child discourse. *Merrill-Palmer Quarterly*, 52, 44-69. doi: 10.1353/mpq.2006.0006
- Leyva, D., Berrocal, M., & Nolivós, V. (2014). Spanish-speaking parent-child emotional narratives and children's social skills. *Journal of Cognition and Development*, 15 (1), 22-42 doi:10.1080/15248372.2012.725188
- Leichtman, M. D., Wang, Q., & Pillemer, D. B. (2003). Cultural variations in interdependence and autobiographical memory: Lessons from Korea, China, India, and the United States. In R. Fivush & C. A. Haden (Eds.), *Autobiographical memory and the construction of a narrative self: Developmental and cultural perspectives* (pp. 73-97). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Mayer, M. (1989). *Just shopping with mom*. New York, NY: Golden Books Publishing.
- Melzi, G., & Fernández, C. (2004). Talking about past emotions: Conversations between Peruvian mothers and their preschool children. *Sex Roles*, 50, 641-657. doi: 10.1023/B:SERS.0000027567.55262.10

- Melzi, G., Schick, A., & Kennedy, J. (2011). Narrative elaboration and participation: Two dimensions of maternal elicitation style. *Child Development, 82*, 1282-1296. doi: 10.1111/j.1467-8624.2011.0160
- Nielsen, M., Haun, D., Kärtner, J., & Legare, C. H. (2017). The persistent sampling bias in developmental psychology: A call to action. *Journal of Experimental Child Psychology, 162*, 31-38. doi: 10.1016/j.jecp.2017.04.017
- Ornaghi, V., Grazzani, I., Cherubin, E., Conte, E., & Piralli, F. (2015). 'Let's Talk about Emotions!'. The effect of conversational training on preschoolers' emotion comprehension and prosocial orientation. *Social Development, 24*, 166-183. doi: 10.1111/sode.12091
- Programa Estado de la Nación (2017). Sexto informe del Estado de la Educación. Programa Estado de la Nación en Desarrollo Humano. San José, Costa Rica.
- Reese, E., Bird, A., & Tripp, G. (2007). Children's self-esteem and moral self: Links to parent-child conversations regarding emotion. *Social Development, 16*(3), 460-478. doi: 10.1111/j.1467-9507.2007.00393.x
- Reese, E., Hayne, H., & MacDonald, S. (2008). Looking back to the future: Māori and Pakeha mother-child birth stories. *Child Development, 79*, 114-125. doi: 10.1111/j.1467-8624.2007.01114.x
- Sales, J., Fivush, R., & Peterson, C. (2003). Parental reminiscing about positive and negative events. *Journal of Cognition and Development, 4*, 185-209. doi: 10.1207/515327647JCD0402_03

- Salmon, K., Evans, I., Moskowitz, S., Grouden, M., Parkers, F., & Miller, E. (2013). The components of young children's emotion knowledge: Which are enhanced by adult emotion talk? *Social Development*, 22(1), 94-110. doi: 10.1111/sode.12004
- Schröder, L., Keller, H., Kärtner, J., Kleis, A., Abels, M., Yovsi, R. D., ... & Papaligoura, Z. (2013a). Early reminiscing in cultural contexts: Cultural models, maternal reminiscing styles, and children's memories. *Journal of Cognition and Development*, 14, 10-34. doi:10.1080/15248372.2011.638690
- Schröder, L., Keller, H., & Kleis, A. (2013b). Parent-child conversations in three urban middle-class contexts: Mothers and fathers reminisce with their daughters and sons in Costa Rica, Mexico, and Germany. *Actualidades en Psicología*, 27, 49-73. doi:2010.15517/ap.v27i115.9885
- Sparks, A., Carmiol, A., & Ríos, M. (2013). High point narrative structure in mother-child conversations about the past and children's emergent literacy skills in Costa Rica. *Actualidades en Psicología*, 27(115), 93-111. doi: 10.15517/ap.v27i115.9868
- Statistisches Bundesamt (2017).
https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/Soziales/Sozialleistungen/Kindertagesbetreuung/Tabellen/Tabellen_KitabetreuungMerkmale.html (retrieved at the 3rd of August 2018).
- Tompkins, V., Benigno, J., Kiger, B., & Wright, B. (2018). The relation between parents' mental state talk and children's social understanding: A meta-analysis. *Social Development*, 27, 223-246. doi: : 10.1111/sode.12280
- Van Bergen, P., & Salmon, K. (2010). The association between parent-child reminiscing and children's emotion knowledge. *New Zealand Journal of Psychology*, 39(1), 51-.56.

- Van Bergen, P., Salmon, K., Dadds, M., & Allen, J. (2009). The effects of mother training in emotion-rich, elaborative reminiscing on children's shared recall and emotion knowledge. *Journal of Cognition and Development, 10*, 162-187. doi: 10.1080/15248370903155825
- Wang, Q. (2001). Did you have fun? American and Chinese mother-child conversations about shared emotional experiences. *Cognitive Development, 16*, 693-715. doi: 10.1016/S0885-2014(01)00055-7
- Wang, Q. (2006). Developing emotion knowledge in cultural contexts. *International Journal of Behavioral Development, 30* (Suppl. 1), 8-12.
- Wang, Q. (2007). "Remember when you got the big, big bulldozer?" Mother-child reminiscing over time and across cultures. *Social Cognition, 25*, 455-471. doi: 10.1521/soco.2007.25.4.455
- Wang, Q. (2013). Chinese socialization and emotion talk between mothers and children in native and immigrant Chinese families. *Asian American Journal of Psychology, 4*(3), 185-192. doi: 10.1037/a0030868
- Wang, Q., & Fivush, R. (2005). Mother-child conversations of emotionally salient events: Exploring the functions of emotional reminiscing in European-American and Chinese Families. *Social Development 14*, 473-495. doi:10.1111/j.1467-9507.2005.00312.x
- Woodcock, R. W., Muñoz-Sandoval, A. F., Ruef, M. L., & Alvarado, C. G. (2005). *Batería III Woodcock-Muñoz: pruebas de habilidades cognitivas*. Chicago, IL: Riverside.

Table 1. Descriptive statistics of the sociodemographic variables as a function of cultural group
($N = 52$)

Variables	Costa Rican subsample ($n = 26$)		German subsample ($n = 26$)	
	M (SD)	Range	M (SD)	Range
Maternal education (in years)	11.54 (2.14)	9-17	11.92 (1.65)	10-17
Child's age (in months)	56.77 (2.50)	53-62	57.46 (5.62)	49-68
Raw vocabulary scores	20.96 (3.03)	15-27	42.34 (10.73)	23-61
Percentage of girls (frequency)	69.23 (18)		69.23 (18)	

Note. Costa Rican children took the Woodcock-Muñoz Subprueba de Vocabulario basado en Dibujos (Woodcock, Muñoz-Sandoval, Ruef, & Alvarado, 2005) and German children took the revised version of the Aktiver Wortschatztest für 3- bis 5-jährige Kinder (AWST-R; Kiese-Himmerl, 2005).

Table 2. Means and standard deviations for all variables within situations and cultural contexts for mothers and children respectively
($N = 52$)

	Costa Rica ($n = 26$)				Germany ($n = 26$)			
	Reminiscing		Book sharing		Reminiscing		Book sharing	
	$M (SD)$		$M (SD)$		$M (SD)$		$M (SD)$	
	Mothers	Children	Mothers	Children	Mothers	Children	Mothers	Children
Total emotion talk	5.54(3.73)	3.85(3.21)	12.08 (13.64)	4.92(4.74)	4.77(3.14)	2.38(2.28)	7.23(4.05)	2.81(2.26)
Emotion talk complexity								
Attributions	2.58(1.86)	1.88(2.12)	8.58 (9.32)	3.62(3.32)	2.73(2.08)	1.42(1.52)	6.19(3.39)	2.19(1.74)
Explanatory disc	2.96(2.54)	1.96(1.78)	3.46 (4.97)	1.27(2.24)	2.04(2.03)	0.96(1.31)	1.04(1.22)	0.61(1.13)
Emotion agency								
Child/self	4.38(3.45)	3.15(3.13)	0.88 (1.33)	0.35(0.62)	3.15(2.88)	1.65(1.91)	0.62(1.20)	0.31(0.67)
Social	0.26(0.82)	0.07(0.27)	9.69(10.61)	4.15(3.65)	0.46(1.10)	0.23(0.58)	5.26(3.41)	2.15(2.16)
Unspecific	0.38(0.80)	0.27(0.66)	1.46 (3.27)	0.38(1.38)	0.81(1.55)	0.42 (0.94)	1.35 (1.57)	0.35(0.74)

Note. As indicated by the high standard deviations for some variables, the variance within variables was very high. Some variables were not normally distributed. For this reason, we considered to report results of nonparametric tests. However, results with nonparametric tests revealed the same differences between situations and cultural contexts as with the parametric repeated-measures analyses. This is why we decided to yet

report results of the parametric tests as they are also easier to compare with results from previous studies, mostly using comparable parametric analyses.

Table 3. Simple correlations (two-tailed) of maternal and child emotion talk variables across and within situations in the Costa Rican and German sample ($N = 52$)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Mothers, rem. emotion attribution		.16	.70**	.26	-.15	.05	-.21	.02
(2) Mothers, rem. explanatory emotion talk	.43*		.11	.60**	-.05	-.03	.15	-.06
(3) Children, rem. emotion attribution	.77**	.26		.29	-.08	.34 [†]	.07	.38 [†]
(4) Children, rem. explanatory emotion talk	.48*	.81**	.35 [†]		-.08	.00	.00	.10
(5) Mothers, bs. emotion attribution	.27	.11	.15	.11		.42*	.70**	.24
(6) Mothers, bs. explanatory emotion talk	.49*	.30	.46*	.25	.80**		.39*	.82**
(7) Children, bs. emotion attribution	.17	-.07	.07	-.04	.81**	.46*		.20
(8) Children, bs. explanatory emotion talk	.29	.01	.37 [†]	-.04	.46*	.51*	.44*	

Notes. Correlations within the Costa Rican sample are presented below the diagonal, correlations within the German sample are presented above the diagonal. rem = reminiscing, bs = book sharing.

[†] $p < .10$, * $p < .05$, ** $p < .01$, two-tailed.