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Maternal Attachment is Differentially Associated with Mother-Child Reminiscing Among Maltreating and Nonmaltreating Families

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Abstract

In the current investigation, we examined associations between maternal attachment and the way that mothers and children discuss past emotional experiences (i.e., reminiscing) among 146 maltreating and 73 nonmaltreating mothers and their 3- to 6-year-old children. Recent reports demonstrate that maltreating mothers engage in less elaborative reminiscing compared to nonmaltreating mothers. To further explicate the nature of reminiscing among maltreating families, we examined maternal *and* child contributions to reminiscing, their interrelations, and associations with maternal attachment among dyads from maltreating and nonmaltreating families. Maternal attachment is theoretically and empirically associated with mother-child reminiscing, and an insecure maternal attachment style was hypothesized to exacerbate poor elaborative reminiscing among maltreating families. Mothers and children reminisced about four emotional experiences. Maternal attachment was measured with the Experience in Close Relationships-Revised questionnaire. Mothers and children from maltreating families engaged in less elaborative and emotion-rich reminiscing compared to nonmaltreating dyads. Maternal attachment anxiety was negatively associated with maternal elaborative reminiscing, but only among nonmaltreating mothers. Mother-child reminiscing among dyads with nonmaltreating and low attachment anxiety mothers was highly collaborative; whereas, reminiscing among dyads with maltreating and high attachment anxiety mothers was less reciprocal. Our findings largely support communicative perspectives of attachment theory, and also indicate that maternal attachment is differentially associated with mother-child reminiscing among maltreating and nonmaltreating families.

Keywords

maltreatment; mother-child reminiscing; elaboration; maternal attachment

Substantial theoretical and empirical evidence demonstrates that discussions between mothers and their children about past emotional experiences (i.e., reminiscing) are crucial for facilitating children's development in cognitive and socioemotional domains, such as

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autobiographical memory and emotional knowledge (Fivush, 2011; Fivush, Haden, & Reese, 2006; Nelson & Fivush, 2004). Sociocultural perspectives of autobiographical memory and socioemotional development posit that how mothers reminisce with their children is critical for fostering children's understanding of the form and the function of narratives, and how to label, explain, and eventually manage their emotions (Fivush et al., 2006; Nelson & Fivush, 2004). Evidence from cross-sectional, longitudinal, and experimental studies suggests that when mothers engage their children in highly elaborative and emotion-rich reminiscing by embellishing upon details, asking open-ended questions, confirming child responses, and discussing emotions, children have more detailed, coherent, and accurate accounts of their experiences (Haden, Ornstein, Rudek, & Cameron, 2009; Leichtman et al., 2017; Newcombe & Reese, 2004; Reese, Haden, & Fivush, 1993) and greater emotional knowledge (Dunn, Brown, & Beardsall, 1991; Laible, 2004, 2011; Van Bergen, Salmon, Dadds, & Allen, 2009) compared to children with mothers who reminisce in a less elaborative and emotion-rich manner. Reminiscing about negative experiences (as opposed to reminiscing about positive experiences) tends to be richer in emotional content and is particularly important for children's socioemotional development (Laible, 2011; Sales, Fivush, & Peterson, 2003).

Although extensive empirical evidence supports sociocultural perspectives of cognitive and socioemotional development (Fivush, 2011 for review), many gaps in the literature remain. More contemporary empirical questions include examining why mothers adopt certain reminiscing styles and whether children are socialized to recount experiences and to discuss emotions differentially in diverse family contexts (Fivush & Sales, 2006; Laible, 2011). Because reminiscing about the past is a social activity that generally serves the purpose of fostering and maintaining relationships between children and their mothers (Kulkofsky & Koh, 2009), the quality of the parent-child relationship, the emotional climate of the family, and maternal internal representations of relationships should influence how mothers and their children reminisce (Fivush et al., 2006; Laible & Panfile, 2009; Sales, 2009). Indeed, dyads with disturbed parent-child relationships and families engulfed in conflict often have difficulty reminiscing in coherent, collaborative, and emotion-rich ways compared to dyads with supportive and warm relationships (Dunn & Brown, 1994; Laible, 2011; Oppenheim & Koren-Karie, 2009). Additionally, mothers with insecure internal representations of relationships often engage in less elaborative (Fivush & Sales, 2006; McDonnell, Valentino, Comas, & Nuttall, 2016; Reese, 2008) and emotion-rich reminiscing (Bost et al., 2006; Coppola, Pozetti, & Vaughn, 2014) compared to mothers with more secure attachment styles.

However, because the majority of the extant reminiscing research is conducted among average to high functioning, middle-class families (see Fivush, 2011), there is a critical need to evaluate mother-child reminiscing among families with pathogenic relationships, and within poverty more generally, and to identify individual differences that are associated with mother-child reminiscing among high-risk families. Child maltreatment is perhaps the most pathogenic relationship experience that can occur between children and their caregivers, and often transpires within chaotic family contexts where caregiving severely deviates from expected and acceptable child rearing standards (Cicchetti & Valentino, 2006). Approximately 700,000 substantiated cases of child maltreatment occur every year in the

United States, and the majority of maltreated children (approximately 90%) are victimized by one or both of their parents (U.S. Department of Health and Human Services, 2017). Although child maltreatment occurs across the socioeconomic spectrum, child maltreatment occurs more frequently among low-income families (Brown, Cohen, Johnson, & Salzinger, 1998). Child maltreatment is often devastating to children's development in cognitive, socioemotional, psychological, and physiological domains (Cicchetti & Valentino, 2006).

Parent-child interactions among maltreating families often lack the sensitivity and the support necessary for fostering development (van Ijzendoorn, Schuengel, Bakermans-Kranenburg, 1999). Reminiscing about emotional experiences may be particularly challenging for maltreating mothers who often have impairments in their own emotional knowledge and regulation strategies. For example, compared to nonmaltreating mothers, maltreating mothers have elevated levels of negative affect (Trickett & Susman, 1998), and have difficulty expressing emotions (Shackman et al., 2010) and identifying emotional expressions in others (Camras, Sachs-Alter, & Ribordy, 1996). Furthermore, in addition to electing fewer effective coping strategies to help their children manage their emotions compared to nonmaltreating mothers, physically abusive mothers are often less understanding of the causes of their children's emotions and are less appreciative of the mother-child relationship as an arena for their children to express emotions (Shipman & Zeman, 2001).

Specific to verbal interactions, physically abusive mothers (Shipman et al., 2007; Shipman & Zeman, 1999) and mothers from abusive families (Valentino, Cicchetti, Toth, & Rogosch, 2006) talk to their children less frequently and have particular difficulty discussing emotions with their children in a sensitive manner compared to nonmaltreating mothers (also see Alessandri, 1992). For example, physically abusive mothers are more likely to invalidate their children's emotional expressions than nonmaltreating mothers (Shipman et al., 2007). Recently, Valentino and colleagues (2015) demonstrated that mothers who have perpetrated at least one instance of physical or sexual abuse, physical neglect, or emotional abuse engage in less elaborative reminiscing (defined as a composite of wh- questions, yes/no questions, elaborative statements, and confirmations) compared to nonmaltreating mothers. Physically abused children (Shipman & Zeman, 1999) and maltreated children with a variety of abusive experiences (Valentino, Comas, Nuttall, & Thomas, 2013) also have difficulty discussing emotional events with their mothers. However, no previous studies have directly compared reminiscing among maltreated and nonmaltreated children.

A comprehensive evaluation comparing mother-child reminiscing among maltreating and nonmaltreating families is necessary to advance our understanding of whether and how maltreated children are differentially socialized to recount experiences and to discuss emotions when reminiscing with their mothers. From a developmental psychopathology perspective, which emphasizes the interface of typical and atypical development, conducting such "experiments of nature" is essential for theoretical progression (Cicchetti, 2003). Additionally, because the elaborative and emotion-rich nature of mother-child reminiscing can be improved among maltreating and nonmaltreating families with brief training interventions (Valentino et al., 2013; Van Bergen et al., 2009), evaluating individual differences that are associated with mother-child reminiscing with this high-risk context may

critically identify individuals for whom reminiscing interventions may be the most advantageous (see Corsano & Guidotti, 2017 for a review of reminiscing interventions).

Maternal attachment is theoretically and empirically associated with maternal reminiscing (Sales, 2009 for review), and may be critically linked with mother-child reminiscing among maltreating families where internal representations of relationships are often impaired (Reijman et al., 2016; Stronach et al., 2011; Toth, Cicchetti, Macfie, & Emde, 1997). Adult attachment is classified on two continuous dimensions: attachment avoidance (i.e., discomfort with close relationships) and attachment anxiety (i.e., fear of losing others or abandonment) (Fraley & Shaver, 2000). Attachment avoidance is a deactivation strategy that prohibits or attenuates the processing of potentially psychologically painful stimuli and is associated with withdrawal from relationships. Attachment anxiety is an activation strategy that leads to hypervigilant processing of attachment-relevant information and is associated with increased efforts to maintain close relationships for the individuals' own attachment needs rather than to support or care for others. Mothers who are high in attachment avoidance are posited to engage in less elaborative and emotion-rich reminiscing, especially when discussing stressful experiences; whereas, mothers with elevated levels of attachment anxiety may engage in highly elaborative and emotion-rich reminiscing (Sales, 2009). Consistent with theoretical predictions, McDonnell and colleagues (2016) found a negative association between maternal attachment avoidance and maternal elaborative reminiscing when dyads discussed a time that they were separated. Additionally, Fivush and Sales (2006) reported that mothers with elevated levels of attachment anxiety engaged in highly elaborative, but not particularly sensitive reminiscing when discussing life-threatening emergency room visits with their children.

Maternal attachment should also influence the dyadic interplay of how mothers and children respond to each other when reminiscing (Oppenheim & Koren-Karie, 2009; Sales, 2009). According to communicative perspectives of attachment theory (Bretherton, 1990, 1996; Thompson, 2000), dyads with secure attachment orientations engage in more open and reciprocal communication about their thoughts, desires, and emotions, compared to dyads with less secure attachment quality. Mothers with more secure attachment orientations should be able and willing to validate, label, and openly discuss emotions with their children, which fosters children's verbal abilities and engagement in reminiscing. In contrast, mothers with insecure attachment orientations may stunt children's enthusiasm and capacity to reminisce by creating memory sharing environments that are less encouraging, or even dismissive, of their children's emotional expressions (Laible & Panfile, 2009; Sales, 2009). When mothers who are frequently unsupportive of their children's emotional expressions attempt to engage in mother-child reminiscing, their children may be uninterested in reminiscing and/or ill-equipped to discuss emotional experiences. Compared to mothers with secure attachment orientations, mothers with elevated levels of attachment avoidance or attachment anxiety engage in fewer discussions about stressful experiences with their children and more often report that they do not have time to talk to their children about their emotions (Goodman, Quas, Batterman-Faunce, Riddlesberger, & Kuhn, 1997). Furthermore, preliminary empirical evidence supports the notion that insecure maternal attachment is negatively associated with the flow, fluidity, and the extent to which mothers and children co-construct narratives while reminiscing (Sales, 2009).

Collectively, the theoretical and empirical evidence suggests that maltreating families engage in less elaborative reminiscing and may talk in less emotion-rich ways compared to nonmaltreating families and that an insecure maternal attachment style may exacerbate poor reminiscing among maltreating families. In the current investigation, we evaluated the potential moderating role of maternal attachment on associations between maltreatment and mother-child reminiscing. We had three primary hypotheses. First, we anticipated that maltreating mothers would engage in less emotion-rich reminiscing compared to nonmaltreating mothers and that maltreated children would provide fewer narrative contributions and emotion references compared to nonmaltreated children. A hypothesis regarding the association between maltreatment and maternal elaborative reminiscing was not made because a previous report using a subsample of participants from the current study demonstrated that maltreating mothers were less elaborative than nonmaltreating mothers (Valentino et al., 2015). Second, we predicted that maternal attachment avoidance would be negatively associated with maternal elaborative and emotion-rich reminiscing, and that maltreating mothers with avoidant attachment orientations would be particularly low in elaborative and emotion-rich reminiscing compared to nonmaltreating mothers and maltreating mothers with less avoidant attachment orientations. Mothers with elevated levels of attachment anxiety were hypothesized to engage in more elaborative and emotion-rich reminiscing. Lastly, because mother-child reminiscing is a collaborative process (Reese et al., 1993), we examined whether associations among maternal and child reminiscing variables were differentiated according to maltreatment status and maternal attachment orientation. We expected that associations between maternal and child reminiscing would be the strongest among dyads with nonmaltreating and more securely attached mothers, and that these associations would be the weakest among dyads with maltreating and less securely attached mothers.

Method

Participants

Participants included 232 mothers and their preschool aged children (3- to 6-year-olds). The preschool period is a critical time for the development of cognitive and socioemotional skills that are associated with mother-child reminiscing (Nelson & Fivush, 2004). Therefore, examining mother-child reminiscing during this developmental period may be especially informative. The maltreating group consisted of 153 families that had substantiated child maltreatment where the mother was the perpetrator of at least one instance of abuse. Maltreating families were recruited through the Department of Child Services (DCS). Family Case Workers initially introduced the project to qualifying families and provided contact information to project staff with maternal permission. Nonmaltreating families ($n = 79$) were recruited within the community at locations that typically serve demographically similar families, such as the Special Supplemental Nutrition Program for Women, Infants, and Children office, the housing authority, and Head Start. All families provided informed consent and a release form granting access to their DCS records. DCS records and maternal reports were used to verify the maltreatment status of the families. Nonmaltreating families did not have a history of child maltreatment nor previous involvement with DCS. All mothers retained custody of their children while enrolled in research activities.

Maltreatment Classifications

To further understand the nature of maltreatment within our sample, DCS records of maltreating families were coded to identify maltreatment subtypes and maltreatment severity following the Maltreatment Classification System (MCS; Barnett, Manly, & Cicchetti, 1993; see Table 1). *Sexual abuse* was coded when records indicated attempted or actual sexual contact between the child and an adult. *Physical abuse* was coded if the child sustained nonaccidental injuries. *Physical neglect* was coded when the primary caregiver failed to meet the child's basic needs for food, clothing, shelter, health care, education, hygiene, and/or safety. Physical neglect included both failure to provide and lack of supervision. *Emotional maltreatment* was coded when records indicated chronic or extreme neglect and/or disregard of children's emotional needs (e.g., witnessing domestic violence). The severity of each type of abuse children experienced was rated on a 5-point scale with higher values indicating more severe forms of maltreatment. Thirty-two DCS records of maltreating families (21% of the maltreating sample) were double coded by researchers. Reliability was established ($\kappa = 0.81 - 1.00$). Consistent with previous research (Manly, Kim, Rogosch, & Cicchetti, 2001), the majority of children (61.7%) experienced multiple forms of abuse. Maltreatment subtype and severity was collapsed to form a single maltreatment group in the current study because of limited sample sizes in some of the maltreatment subtypes (e.g., sexual abuse and physical abuse), high subtype comorbidity, and lack of established best-practice methods for distinguishing between subtype categorization and maltreatment severity (Litrownik et al., 2005).

Procedure

Data used in the current study were drawn from a larger longitudinal randomized clinical trial aimed to improve maternal sensitivity and associated child outcomes among maltreating families. All families participated in a two-hour laboratory baseline assessment during which children and their mothers independently completed several measures in separate rooms with two different researchers. Approximately half way through the session, participants took a break, and then were reunited for the reminiscing task. Children and their mothers reminisced without the presence of either researcher in a room equipped with video recording equipment and a couch. After reminiscing, mothers and their children completed the remaining assessments in separate rooms. Approximately half of the maltreating families ($n = 74$) were randomly assigned to participate in a 6-week intervention as part of the randomized clinical trial. All families returned to the laboratory 8-weeks after the baseline assessment. Mothers completed an attachment questionnaire at this time. Families were still being enrolled in the baseline assessment at the time of writing. Detailed descriptions of the measures relevant to the current report are provided below.

Mother-child reminiscing—During the baseline assessment, mothers and their children reminisced about four one-time occurrences that they experienced together. Because reminiscing about negative experiences is critical for children's socioemotional development (Laible, 2011; Sales et al., 2003) and because attachment systems are primarily activated when encountering stressful or threatening situations (Bowlby, 1969), we were interested in mother-child reminiscing about negative emotional experiences. Therefore, we followed the Autobiographical Emotional Events Dialogue (AEED) procedure, which predominately

focuses on mother-child reminiscing about mildly-stressful and negative events (Koren-Karie, Oppenheim, Haimovich, & Etzion-Carasso, 2003). Following the AEED protocol, mothers were instructed to reminisce with their children about times that their child felt happy, sad, scared, and angry. Before reuniting with their children, mothers elected the four events that were to be discussed and wrote a brief description of each event on an index card that the mothers kept with them during the reminiscing task and could reference as a reminder of the events to discuss if necessary. Mothers were instructed to select past shared events that the child would remember. If mothers selected experiences that may have been traumatic to the child, or had occurred too early in development for the child to be able to recall (i.e., during infancy), the researcher encouraged mothers to select another event to discuss. Researchers instructed mothers to talk with their children as they normally would at home. Discussions about the happy experience served as a warm-up conversation and always occurred first. The order of the remaining events was counterbalanced across participants. The entire reminiscing task lasted approximately 5- to 15-minutes and was video recorded. Examples of the events discussed include: going to the beach (happy), losing a pet (sad), being chased by a dog (scared), and fighting with siblings/friends (angry).

Experience in Close Relationships-Revised Questionnaire (ECR-R)—The ECR-R is a self-report measure of adult attachment anxiety and attachment avoidance within the context of romantic relationships (Fraley, Waller, & Brennan, 2000). Mothers indicated the degree to which they personally endorsed 36 attachment-relevant statements, such as “I worry a lot about my relationships” (anxiety item) and “I tell my partner just about everything” (avoidance item). Each item was rated on a 7-point scale, with higher values indicating a stronger endorsement. Mothers were instructed to reference their *general* experiences in relationships, rather than to exclusively focus on any current relationship when completing the questionnaire. The ECR-R and previous versions of this measure have been administered in studies with similar reminiscing paradigms (Fivush & Sales, 2006; McDonnell et al., 2016). Furthermore, although self-report measures of adult attachment and interviewing assessments such as the Adult Attachment Interview may capture different aspects of adult attachment, evidence suggests that there is convergence among these measures (Roisman et al., 2007; Shaver, Belsky, & Brennan, 2000).

Peabody Picture Vocabulary Test (PPVT-4)—Maternal and child receptive language was measured using the PPVT-4 (Dunn & Dunn, 2007). The PPVT-4 is validated for use among 2- to 90-year-olds. Standard scores were used in the current analysis. The PPVT has been used as a language measure in similar studies assessing mother-child reminiscing (McDonnell et al., 2016; Reese, 2008).

Coding

Maternal reminiscing—Video recordings of mother-child reminiscing were transcribed verbatim. Statements were partitioned into utterances, defined as subject-verb propositions. Maternal utterances were coded for style and emotional content following previous coding schemes (e.g., Fivush & Sales, 2006; Valentino et al., 2013, 2015; Van Bergen et al., 2009). Maternal utterances were coded for the presence or absence of wh- questions (open-ended elaborations), yes/no questions (closed-ended elaborations), elaborative statements, and

confirmations. Elaborative statements were utterances where the mother provided new information about the event. Confirmations were utterances where mothers provided positive affirmations of their children's narrative contributions (e.g., "You're right"). Repetitions of maternal utterances were also coded, but were not included in the current analysis. The number of non-repetitive wh- questions, yes/no questions, elaborations, and confirmations was summed across all four reminiscing conversations. All variables were square-root transformed to address significant skewness prior to forming the elaborative reminiscing composite, which was a summation of all non-repetitive wh- questions, yes/no questions, elaborations, and confirmations stated by the mother during the entire reminiscing task. There was a moderate degree of intercorrelations among the four reminiscing variables (r 's = .21 – .59, p 's < .01). The maternal elaborative reminiscing composite had adequate internal consistency (α = .69).

Maternal utterances were also coded for emotional content. Utterances where mothers asked their children about emotions, labeled emotions, and provided explanations and causes for emotions were identified, tallied, and summed across the four conversations (see Valentino et al., 2013; Van Bergen et al., 2009 for similar schemes). All variables were square-root transformed to alleviate significant skewness. Mothers rarely provided explanations and causes of emotions, and this variable was not considered further. Non-repetitive positive and negative emotion attributions (e.g., "You felt sad") were combined to form the maternal emotion-rich reminiscing composite, which had adequate internal consistency (α = .72). Emotion questions were not included in this composite because it had low internal consistency with positive and negative emotion attributions. The maternal elaboration and emotion-rich codes were not mutually exclusive. For example, the question, "Did that make you happy?" was coded as both a yes/no question and a positive emotion attribution.

Child reminiscing—Following established coding schemes (e.g., Fivush & Vasudeva, 2002; Valentino et al., 2013), utterances where children provided new information about the event that was not previously recalled by their mothers were coded as narrative contributions. In addition to child narrative contributions, utterances where children referenced positive and negative emotions were also identified, tallied across the four conversations, and square-root transformed. Negative and positive emotion references were summed to form the child emotion reference composite to be comparable to the maternal emotion-rich composite. Similar to the coding of maternal reminiscing, repetitive child utterances were identified, but were not included in our analysis.

Reliability—Transcripts were double coded (n = 31, 13% of the total sample) by research assistants who were naïve to the study hypotheses and to participants' maltreatment status. Intraclass correlation coefficients ranged from .77 to 1.00, indicating excellent reliability among the coders. Mean reliability across all of the coded variables was excellent (M = .94, SD = .06).

Analytic Strategy

There were three main objectives of the current study. First, we examined whether maternal and child reminiscing varied as a function of maltreatment status. Second, we examined

predictors of maternal reminiscing, including the potential moderating effect of maternal attachment on the association between maltreatment and maternal reminiscing. Lastly, we evaluated concurrent correlations among maternal and child reminiscing variables by maltreatment status and maternal attachment style. Because of our interest in mother-child reminiscing about negative emotional experiences, preliminary analyses were conducted to determine whether excluding the happy conversation from the reminiscing composites altered the pattern of results that emerged from analyses that evaluated mother-child reminiscing across the entire reminiscing task. The pattern of results did not change when including or excluding the happy conversations from the reminiscing composites. Therefore, the following analyses were evaluated with composites comprised of mother-child reminiscing during the entire reminiscing task. This approach is consistent with previous studies that have used the AEED paradigm (e.g., Koren-Karie, Oppenheim, & Getzler-Yosef, 2008; Valentino et al., 2015) and also increases the amount of data available to analyze.

All dyads in the final database participated in the reminiscing task. However, ECR-R data was missing for 31 mothers (25 maltreating) who had not completed the questionnaire or had not completed the 8-week assessment in which the ECR-R was administered at the time of writing. Additionally, six maltreating mothers and seven children (six maltreated) did not complete the PPVT-4. Multiple imputation using the expectation-maximization method in SPSS was conducted over 25 iterations to handle missing data. Child gender, child ethnicity, family income, maternal education, maternal marital status, maltreatment status, maltreatment subtype, maltreatment comorbidity, and the reminiscing composites were included as auxiliary variables to impute the missing ECR-R, maternal PPVT-4, and child PPVT-4 data. Substantive analyses were conducted in Mplus (Mplus version 8; Muthén, & Muthén, 1998-2017).

Results

Descriptive Analyses

Dyads were excluded from our analysis if they did not discuss all four of the reminiscing conversations ($n = 6$; 3 maltreating and 3 nonmaltreating) and if mothers had standardized language scores lower than two standard deviations below the sample mean (i.e., PPVT-4 60; $M = 85.36$, $SD = 12.49$). This standard has been used in previous investigations of maternal reminiscing with at-risk populations (e.g., McDonnell et al., 2016), and was employed in the current study to minimize the influence of potential maternal language disabilities on the study results rather than as a method for controlling individual variability in maternal language in our substantive analyses. Seven dyads (4 maltreating and 3 nonmaltreating) were excluded for this reason. In total, 219 dyads (146 maltreating and 73 nonmaltreating) were included in the final dataset. The maltreating and nonmaltreating dyads were matched on several characteristics, but significantly differed on maternal marital status, $\chi^2(1) = 16.04$, $p < .001$ and child language, $t(217) = -4.60$, $p < .001$, $d = 0.67$. See Table 2.

Additionally, because the ECR-R questionnaire was administered after 74 of the maltreating families underwent a brief intervention as part of the larger randomized clinical trial that is not of interest in the current report, possible effects of the intervention on maternal

attachment were evaluated. The intervention was not anticipated to effect maternal attachment orientations because adult attachment is a stable construct (Sibley, Fischer, & Liu, 2005), and mothers were instructed to reference their general experiences in relationships rather than relationships that may have been ongoing during the intervention. Maltreating mothers who received the intervention did not significantly differ on attachment avoidance ($M = 3.71$, $SD = 1.21$) nor attachment anxiety ($M = 3.41$, $SD = 1.24$) compared to maltreating mothers who did not receive the intervention ($M_{\text{avoidance}} = 3.89$, $SD = 1.36$; $M_{\text{anxiety}} = 3.13$, $SD = 1.37$), $t(144) = 0.81$, $p = .41$ for attachment avoidance, and $t(144) = -1.26$, $p = .21$ for attachment anxiety. Whether maltreating mothers received the intervention was not included as a covariate in the following analysis.

To address our first hypothesis, we examined whether maternal and child reminiscing significantly differed by maltreatment status (Table 3). Maltreating mothers engaged in significantly less elaborative, $t(217) = -3.25$, $p = .001$, $d = 0.46$, and emotion-rich reminiscing, $t(217) = -1.99$, $p = .048$, $d = 0.29$, compared to nonmaltreating mothers. Additionally, maltreated children provided significantly fewer narrative contributions, $t(217) = -3.06$, $p < .01$, $d = 0.43$, and emotion references, $t(217) = -2.42$, $p = .02$, $d = 0.34$, compared to nonmaltreated children. Maltreating mothers had elevated levels of attachment avoidance compared to nonmaltreating mothers, $t(217) = 2.14$, $p = .03$, $d = 0.31$. However, maltreating mothers did not significantly differ from nonmaltreating mothers on attachment anxiety, $t(217) = .74$, $p = .46$.

Bivariate correlations among the primary study variables and sample characteristic are presented in Table 4. The reminiscing composites were significantly interrelated. Additionally, maternal education, maternal marital status, maternal language, child language, and child age were significantly associated with several of the reminiscing variables. Therefore, these variables were included as covariates in the substantive analyses. Maternal education was dichotomized into two groups: high school or less versus more than high school. None of the bivariate associations among the reminiscing variables and maternal attachment avoidance nor maternal attachment anxiety were significant. However, maternal ethnicity was significantly associated with maternal attachment avoidance. Consistent with previous research (Wei, Russell, Mallinckrodt, & Zakalik, 2004), Bonferroni adjusted t -tests (with alpha set at .017) revealed that African American mothers had significantly higher levels of attachment avoidance ($M = 3.94$, $SD = 1.19$) compared to Caucasian mothers ($M = 3.45$, $SD = 1.18$), $t(176) = 2.79$, $p < .01$, $d = 0.41$. Neither African American mothers nor Caucasian mothers significantly differed from Hispanic/Other mothers on attachment avoidance ($M = 3.54$, $SD = 1.57$), p 's $> .15$. Maternal ethnicity was controlled for in the following analysis using two dummy coded variables. One dummy coded variable (i.e., African American) indicates African American mothers versus Caucasian and Hispanic/other mothers. The second dummy coded variable (i.e., Caucasian), represents Caucasian mothers versus African American and Hispanic/other mothers.

Main Analyses

First, we present results from analyses investigating the moderating effect of maternal attachment on associations between maltreatment and maternal reminiscing. Then, results

from correlational analyses examining concurrent associations among maternal and child reminiscing variables within maltreating and nonmaltreating families at high and low levels of maternal attachment insecurity are presented.

Maternal attachment as a moderator of the association between maltreatment and maternal reminiscing—

Two separate models were conducted to evaluate the moderating role of maternal attachment on the association between maltreatment and maternal elaborative and emotion-rich reminiscing. The three-way interaction among maltreatment, maternal attachment anxiety, and maternal attachment avoidance, and all lower-ordered interactions were examined in both models. All continuous covariates and predictors were mean centered prior to creating interactions and before entering them into the models.

The model examining maternal elaborative reminiscing explained a significant proportion of variance, $R^2 = .18$, $p < .001$. Maternal attachment anxiety negatively predicted maternal elaborative reminiscing ($\beta = -.41$, $SE = .15$, $p < .01$), although this association was qualified by a significant interaction between maltreating and maternal attachment anxiety ($\beta = .35$, $SE = .14$, $p = .01$) (Table 5). Simple slopes analysis revealed that maternal attachment anxiety negatively predicted maternal elaborative reminiscing among nonmaltreating mothers, $b = -1.12$, $p < .001$, but this association was nonsignificant among maltreating mothers, $b = 0.01$, $p = .99$. Additionally, when mothers were low in attachment anxiety (one standard deviation below the mean), maltreating mothers were significantly less elaborative than nonmaltreating mothers, $t(215) = -3.07$, $p < .01$. However, maltreating and nonmaltreating mothers did not significantly differ in maternal elaborative reminiscing at high levels of attachment anxiety (one standard deviation above the mean), $t(215) = 0.53$, $p = .60$. See Figure 1. The model examining maternal emotion-rich reminiscing explained a significant amount of variance in this dimension ($R^2 = .07$, $p = .04$), but none of the individual predictors were significant (p 's $> .14$).

Concurrent associations between maternal and child reminiscing by maternal maltreating status and attachment anxiety—

To further explicate the dynamics of mother-child reminiscing, we assessed concurrent associations among maternal and child reminiscing variables at high and low levels of maternal attachment anxiety for the maltreating and nonmaltreating dyads. Attachment avoidance was not examined further because this construct was not significantly associated with mother-child reminiscing. A median split of maternal attachment anxiety was conducted to partition participants into high and low maternal attachment anxiety groups. Mothers who were classified as low in attachment anxiety had significantly lower levels of attachment anxiety ($M = 2.15$, $SD = 0.72$) compared to mothers who were classified as high attachment anxiety ($M = 4.30$, $SD = 0.64$), $t(217) = -23.41$, $p < .001$, $d = -3.16$. Each mother-child dyad was classified into one of four groups based on their maltreatment status and mothers' attachment style: maltreating-low anxiety, maltreating-high anxiety, nonmaltreating-low anxiety, or nonmaltreating-high anxiety. Partial correlations among maternal and child reminiscing variables were computed for each group controlling for maternal and child language, child age, maternal education, and maternal marital status (Table 6). The dummy coded variables for maternal ethnicity

were not included as covariates in this analysis because maternal ethnicity was not significantly associated with the primary variables of interest.

The results revealed several differential associations between maternal and child reminiscing across the groups. First, the significance of the association between maternal elaborative reminiscing and child emotion references differed across the groups. Maltreated children, with mothers both high and low in attachment anxiety, and children of nonmaltreating-high anxiety mothers provided more emotion references as maternal elaborative reminiscing increased. This association was not significant for the nonmaltreating-low anxiety group. Maternal emotion-rich reminiscing was significantly associated with child emotion references in the nonmaltreating-high anxiety group only. Although maternal elaborative reminiscing was significantly associated with child narrative contributions among all of the four groups, Fisher *z*-tests revealed that the magnitude of this association was significantly stronger among the nonmaltreating-low anxiety group compared to the maltreating-high anxiety group, $Z = 2.60, p < .01$. Additionally, maternal emotion-rich reminiscing was significantly associated with child narrative contributions among the low anxiety groups (both nonmaltreating and maltreating). The magnitude of this association was significantly weaker among the maltreating-high anxiety group compared to the nonmaltreating-low anxiety ($Z = 3.30, p < .01$), nonmaltreating-high anxiety ($Z = 2.39, p = .02$), and maltreating-low anxiety groups ($Z = 3.00, p < .01$). Additional Fisher *z*-tests were non-significant.

Discussion

The findings from the current investigation advance our knowledge of the differential dynamics of mother-child reminiscing among maltreating and nonmaltreating families, and also increase our understanding of the associations between maternal attachment and mother-child reminiscing in typical and atypical developmental contexts. First, we extended the finding presented by Valentino and colleagues (2015) who used a subsample of the participants from the present study, that maltreating mothers were less elaborative than nonmaltreating mothers. Novel to the current investigation, our findings indicate that maltreating mothers also engaged in less emotion-rich reminiscing compared to nonmaltreating mothers. However, because mothers were low in emotion-rich reminiscing regardless of their maltreating status, our findings suggest that in the context of poverty more generally, mothers have difficulty discussing experiences with their children in emotion-rich ways. Additionally, floor effects may have precluded our ability to detect significant associations among maltreating status, maternal attachment orientations, and emotion-rich reminiscing in our moderation analysis.

A particularly important finding from the current study was that maternal attachment anxiety negatively predicted maternal elaborative reminiscing, but only among nonmaltreating mothers. In the context of extremely disturbed and pathogenic parent-child relationships that are characteristic of maltreating families, additional maternal factors such as attachment anxiety do not further predict maternal elaborative reminiscing. However, maternal attachment anxiety negatively predicted maternal elaborative reminiscing among families who were devoid of such extreme deviations in parent-child relationships. Although this finding contradicts previous empirical research showing that maternal elaborative

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remiscing was positively associated with maternal attachment anxiety when mothers discussed life-threatening asthma attacks with their preadolescent children (Fivush & Sales, 2006), this finding is in accordance with theoretical accounts positing that mothers with insecure attachment orientations should be less elaborative than mothers with secure attachment orientations when discussing everyday events with their children (Sales, 2009 for review). Additionally, because attachment anxiety may “lower the threshold” for attachment system activation (Chae, Goodman, & Edelstein, 2011; Fraley & Shaver, 2000), maternal attachment anxiety, as opposed to maternal attachment avoidance, may have emerged as a significant predictor of maternal elaborative reminiscing among the nonmaltreating mothers given the negative, but non-traumatic nature of the experiences discussed during the reminiscing task.

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Furthermore, our finding that maternal elaborative reminiscing did not significantly differ among maltreating and nonmaltreating mothers who had high levels of attachment anxiety further qualifies the association between maltreatment and maternal elaborative reminiscing. This finding suggests that among nonmaltreating mothers, those high in attachment anxiety reminisce in ways that are similar to maltreating mothers. Future studies should examine whether nonmaltreated children of mothers who are high in attachment anxiety are similarly at-risk in developmental domains that are facilitated by an elaborative maternal reminiscing style (e.g., autobiographical memory and emotional knowledge) compared to maltreated children.

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Although maternal elaborative and emotion-rich reminiscing often predicts child functioning above child reminiscing (Laible & Thompson, 2000), examining how children reminisce advances our knowledge of children’s emotional competence, autobiographical memory development, and the intersubjectivity of mother-child reminiscing. Maltreated children often have impaired autobiographical memory specificity and emotional knowledge compared to their nonmaltreated peers (Cicchetti & Valentino, 2006). Our findings that maltreated children provided significantly fewer narrative contributions and emotion references compared to nonmaltreated children further supports theoretical and empirical evidence identifying deficits in autobiographical memory and socioemotional development among maltreated children.

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Additionally, the intersubjectivity of mother-child reminiscing varied according to mothers’ maltreating and attachment anxiety status. Maternal elaborative reminiscing was moderately associated with child emotion references among the groups, except among the nonmaltreating-low anxiety dyads. Maltreated children and nonmaltreated children with mothers who have elevated levels of attachment anxiety may follow their mothers’ lead and may rely on maternal elaborative reminiscing to a greater extent than children with nonmaltreating-low anxiety mothers when discussing emotions. This interpretation complements previous investigations demonstrating that maltreated infants and toddlers engage in fewer child-initiated behaviors and more imitation when interacting with their mothers compared to nonmaltreated children (Valentino et al., 2006; Valentino, Cicchetti, Toth, & Rogosch, 2011). Additionally, because maltreated children anticipate that their emotional expressions will be met with less maternal support and more conflict compared to their nonmaltreated peers (Shipman & Zeman, 1999, 2001; Shipman, Zeman, Penza, &

Champion, 2000), allowing mothers to “set the stage” for discussing emotions may be adaptive in maltreating families where mothers often invalidate their children’s emotional expressions (Shipman et al., 2000, 2007). Such an approach may also be advantageous among nonmaltreating-high anxiety families because mothers with elevated levels of attachment anxiety may elaborate in non-sensitive ways that are ineffective in fostering children’s ability to cope with their emotions (Fivush & Sales, 2006). Although this pattern may be beneficial within present interactions, this interaction style could have negative consequences for children’s developing emotional regulation strategies, which are often impaired among maltreated children (Cicchetti & Valentino, 2006) and nonmaltreated children of mothers with elevated levels of attachment anxiety (Fivush & Sales, 2006).

Furthermore, although maternal elaborative reminiscing was positively associated with child narrative contributions among all groups, children with nonmaltreating-low attachment anxiety mothers responded to their mothers’ comments and questions by providing new event details to a greater extent than children of maltreating-high attachment anxiety mothers. This finding advances communicative perspectives of attachment theory (Bretherton, 1990, 1996; Thompson, 2000) by demonstrating that the pathogenic nature of the mother-child relationship in combination with maternal attachment influences the extent to which mothers and children co-construct narratives. Furthermore, the emotion-rich nature of maternal reminiscing largely facilitated child narrative contributions, except among the maltreating-high anxiety dyads. This finding provides further evidence that maltreated children of mothers with elevated levels of attachment anxiety are less responsive to their mothers attempts to discuss emotions compared to nonmaltreated children and maltreated children with less anxiously attached mothers.

Although future research will be necessary to determine the directionality of the concurrent associations observed in the current study, our results indicate that maltreatment and maternal attachment anxiety are associated with how children are socialized to discuss emotional experiences during the preschool years. Research evaluating whether such differential socializing influences children’s cognitive and socioemotional development will be critical. A particularly important direction for future research will be evaluating the mediating role of mother-child reminiscing on the association between maltreatment and child attachment security. The MacArthur Story Stem Battery is commonly used to assess attachment representations among preschoolers, including maltreated children (Stronach et al., 2011; Toth et al., 1997), and can provide important insight regarding how child attachment is both shaped by and influences mother-child reminiscing within this at-risk context. Longitudinal assessments investigating the intergenerational transmission of attachment from mothers to their children through mother-child reminiscing among dyads from maltreating and nonmaltreating families would be particularly informative for improving interventions aimed to bolster attachment relationships among maltreating families (Dubois-Comtois, Cyr, & Moss, 2011; Valentino, 2017).

Limitations and Future Directions

There are limitations of the current study that should be addressed in future research. First, whether the severity, chronicity, developmental timing, and the particular subtype of

maltreatment influences mother-child reminiscing among maltreating families should be evaluated. Although the current sample was considerably larger than samples in comparable reminiscing studies, a larger and more diverse maltreating sample would allow for a more detailed analysis of the influence of maltreatment characteristics on mother-child reminiscing. Similar to the distribution of maltreatment subtypes in the general population (U.S. Department of Health and Human Services, 2017), maltreated children in the current sample predominately experienced physical neglect and/or emotional maltreatment. Relatively few children were victims of physical or sexual abuse. Given our interest in emotional dialogues and the role of broader emotional processes in mother-child reminiscing, our sample (with a large number of emotionally maltreating families) was especially relevant for studying our research questions. However, this characteristic of our maltreating sample may limit the generalizability of our findings to families with sexual and physical abuse.

Additionally, the results from the current report generated several important theoretical questions that should be addressed in future research. First, identifying mediators that explain why dyads from maltreating families have difficulty reminiscing in an elaborative and emotion-rich manner is crucial. Maltreating mothers frequently have histories of child maltreatment themselves and psychopathology associated with their own traumatic experiences (e.g., posttraumatic stress disorder) may negatively impact the quality of the mother-child relationship and the dyads' ability to converse in elaborative and emotion-rich ways (Koren-Karie et al., 2008). Additionally, child characteristics such as impaired emotional regulation strategies and inhibitory control among maltreated children may also hinder the dyads' capacity to reminisce. Understanding why maltreating families reminisce (or not do reminisce) may highlight the perceived value of reminiscing among maltreating families and obstacles that hinder reminiscing within this population. Perhaps less elaborative and emotion-rich reminiscing is an adaptive form of interpersonal communication in maltreating families where resources (e.g., socioemotional, economic) often differ from that of middle-class, typically developing families. However, because impoverished maternal elaborative reminiscing mediates the association between maltreatment and children's functioning in a manner similar to that of typically developing families (Valentino et al., 2015), the critical importance of reminiscing in facilitating children's cognitive and socioemotional skills within this at-risk context cannot be overlooked.

Together, the findings from our "experiment of nature" indicate that maltreating families engage in less elaborative and emotion-rich reminiscing about past emotional experiences compared to demographically similar nonmaltreating families and also suggest that maternal characteristics that are predictive of maternal elaborative reminiscing in nonmaltreating context may be differentially associated with maternal elaborative reminiscing among maltreating mothers. As researchers continue to investigate maternal reminiscing in at-risk family contexts, including maltreating families, and the efficacy of reminiscing interventions among these populations, it will be important to determine whether maternal and child characteristics are differentially associated with reminiscing within the population of interest and to refine theoretical frameworks and interventions accordingly.

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References

- Alessandri SM. Mother-child interactional correlates of maltreated and nonmaltreated children's play behavior. *Development and Psychopathology*. 1992; 4:257–270.
- Barnett, D., Manly, JT., Cicchetti, D. Defining child maltreatment: The interface between policy and research. In: Cicchetti, D., Toth, SL., editors. *Advances in applied developmental psychology: Child abuse, child development and social policy*. Norwood, NJ: Ablex Publishing Corporation; 1993. p. 7-73.
- Bost KK, Shin N, McBride BA, Brown GL, Vaughn BE, Coopola G, Korth B, et al. Maternal secure base scripts, children's attachment security, and mother-child narrative styles. *Attachment & Human Development*. 2006; 8:241–260. [PubMed: 16938706]
- Bowlby, J. *Attachment and loss; Attachment*. Vol. 1. New York, NJ: Basic Books; 1969.
- Bretherton, I. Open communication and internal working models: Their role in the development of attachment relationships. In: Thompson, RA., editor. *Nebraska symposium on motivation: socioemotional development*. Vol. 36. Lincoln, NB: University of Nebraska Press; 1990. p. 57-113.
- Bretherton, I. Internal working models of attachment relationships as related to resilient coping. In: Noam, GG., Fischer, KW., editors. *Development and vulnerability in close relationships*. Mahwah, NJ: Lawrence Erlbaum Associates; 1996. p. 3-28.
- Brown J, Cohen P, Johnson JG, Salzinger S. A longitudinal analysis of risk factors for child maltreatment: Findings of a 17-year prospective study of officially recorded and self-reported child abuse and neglect. *Child Abuse & Neglect*. 1998; 22:1065–1078. [PubMed: 9827312]
- Camras, LA., Sachs-Alter, R., Ribordy, SC. Emotion understanding in maltreated children: Recognition of facial expressions and integration with other emotion cues. In: Lewis, M., Sullivan, MW., editors. *Emotional development in atypical children*. Hillsdale, NJ: Erlbaum; 1996. p. 203-225.
- Chae Y, Goodman GS, Edelstein RS. Autobiographical memory development from an attachment perspective: The special role of negative events. *Advances in Child Development and Behavior*. 2011; 40:1–49. [PubMed: 21887958]
- Cicchetti D. Editorial: Experiments of nature: Contributions to developmental theory. *Development and Psychopathology*. 2003; 15:833–835. [PubMed: 14984128]
- Cicchetti, D., Valentino, K. An ecological-transactional perspective on child maltreatment: Failure of the average expectable environment and its influence on child development. In: Cicchetti, D., Cohen, DJ., editors. *Developmental psychopathology: Risk, disorder, and adaptation*. 2. Vol. 3. Hoboken, NJ: Wiley; 2006. p. 129-201.
- Coppola G, Pozetti S, Vaughn BE. Reminiscing style during conversations about emotion-laden events and effects of attachment security among Italian mother-child dyads. *Social Development*. 2014; 23:702–718.
- Corsano P, Guidotti L. Parents' reminiscing training in typically developing and 'at-risk' children: A review. *Early Child Development and Care*. 2017 Advanced online publication.
- Dubois-Comtois K, Cyr C, Moss E. Attachment behavior and mother-child conversations as predictors of attachment representations in middle childhood: A longitudinal study. *Attachment & Human Behavior*. 2011; 4:335–357.
- Dunn J, Brown J. Affect expression in the family, children's understanding of emotions, and their interactions with others. *Merrill-Palmer Quarterly*. 1994; 40:120–137.
- Dunn J, Brown J, Beardsall L. Family talk about feeling states and children's later understanding of others' emotions. *Developmental Psychology*. 1991; 27:448–455.
- Dunn, LM., Dunn, DM. *Peabody picture vocabulary test*. 4. Minneapolis, MN: NCS Pearson; 2007.

- Fivush R. The development of autobiographical memory. *Annual Review of Psychology*. 2011; 62:559–582.
- Fivush R, Haden CA, Reese E. Elaborating on elaborations: Role of maternal reminiscing style in cognitive and socioemotional development. *Child Development*. 2006; 77:1568–1588. [PubMed: 17107447]
- Fivush R, Sales JM. Coping, attachment, and mother-child narratives of stressful events. *Merrill-Palmer Quarterly*. 2006; 52:125–150.
- Fivush R, Vasudeva A. Remembering to relate: Socioemotional correlates of mother-child reminiscing. *Journal of Cognition and Development*. 2002; 3:73–90.
- Fraley RC, Shaver PR. Adult romantic attachment: Theoretical developments, emerging controversies, and unanswered questions. *Review of General Psychology*. 2000; 4:132–154.
- Fraley RC, Waller NG, Brennan KA. An item-response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*. 2000; 78:350–365. [PubMed: 10707340]
- Goodman GA, Quas JA, Batterman-Faunce JM, Riddlesberger MM, Kuhn J. Children's reactions to and memory for a stressful event: Influences of age, anatomical dolls, and parental attachment. *Applied Developmental Science*. 1997; 1:54–75.
- Haden CA, Ornstein PA, Rudek DJ, Cameron D. Reminiscing in the early years: Patterns of maternal elaborativeness and children's remembering. *International Journal of Behavioral Development*. 2009; 33:118–130.
- Koren-Karie N, Oppenheim D, Getzler-Yosef R. Shaping children's internal working models through mother-child dialogues: The importance of resolving past maternal trauma. *Attachment & Human Development*. 2008; 10:465–483. [PubMed: 19016053]
- Koren-Karie, N., Oppenheim, D., Haimovich, Z., Etzion-Carasso, A. Dialogues of seven-year-olds with their mothers about emotional events: Development of a typology. In: Emde, RN, Wolf, DP., Oppenheim, D., editors. *Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent-child narratives*. New York, NY: Oxford University Press; 2003. p. 338-354.
- Kulkofsky S, Koh JBK. Why they reminisce: Caregiver report of the functions of joint reminiscence in early childhood. *Memory*. 2009; 17:458–470. [PubMed: 19253157]
- Laible D. Mother-child discourse in two contexts: Links with child temperament, attachment security, and socioemotional competence. *Developmental Psychology*. 2004; 40:979–992. [PubMed: 15535752]
- Laible D. Does it matter if preschool children and mothers discuss positive vs. negative events during reminiscing? Links with mother-reported attachment, family emotional climate, and socioemotional development. *Social Development*. 2011; 20:394–411.
- Laible, D., Panfile, T. Mother-child reminiscing in the context of secure attachment relationships: Lessons in understanding and coping with negative emotions. In: Quas, JA., Fivush, R., editors. *Emotion and memory in development: Biological, cognitive, and social considerations*. New York, NY: Oxford University Press; 2009. p. 166-195.
- Laible DJ, Thompson RA. Mother-child discourse, attachment security, shared positive affect, and early conscience development. *Child Development*. 2000; 71:1424–1440. [PubMed: 11108105]
- Leichtman MD, Camilleri KA, Pillemer DB, Amato-Wierda CC, Hogan JE, Dongo MD. Talking about school: Parents' conversational styles and children's memory for a science lesson. *Journal of Experimental Child Psychology*. 2017; 156:1–15. [PubMed: 28024176]
- Litrownik AJ, Lau A, English DJ, Briggs E, Newton RR, Romney S, Dubowitz H. Measuring the severity of child maltreatment. *Child Abuse & Neglect*. 2005; 29:553–573. [PubMed: 15970325]
- Manly JT, Kim JE, Rogosch FR, Cicchetti D. Dimensions of child maltreatment and children's adjustment: Contributions of developmental timing and subtype. *Development and Psychopathology*. 2001; 13:759–782. [PubMed: 11771907]
- McDonnell CG, Valentino K, Comas M, Nuttall AK. Mother-child reminiscing at risk: Maternal attachment, elaboration, and child autobiographical memory specificity. *Journal of Experimental Child Psychology*. 2016; 143:65–84. [PubMed: 26630033]
- Muthén, LK., Muthén, BO. *Mplus User's Guide*. Eighth Edition. Los Angeles, CA: Muthén & Muthén; 1998-2017.

- Nelson K, Fivush R. The emergence of autobiographical memory: A social cultural developmental theory. *Psychological Review*. 2004; 111:486–511. [PubMed: 15065919]
- Newcombe R, Reese E. Evaluations and orientation in mother-child narratives as a function of attachment security: A longitudinal investigation. *International Journal of Behavioral Development*. 2004; 28:230–245.
- Oppenheim, D., Koren-Karie, N. Mother-child emotion dialogues: A window into the psychological secure base. In: Quas, JA., Fivush, R., editors. *Emotion and memory in development: Biological, cognitive, and social considerations*. New York, NY: Oxford University Press; 2009. p. 142–165.
- Reese E. Maternal coherence in the Adult Attachment Interview is linked to maternal reminiscing and to children's self-concept. *Attachment & Human Development*. 2008; 10:451–464. [PubMed: 19016052]
- Reese E, Haden CA, Fivush R. Mother-child conversations about the past: Relationships of style and memory over time. *Cognitive Development*. 1993; 8:403–430.
- Reijman S, Alink LRA, Compier-De Block LHCG, Werner CD, Maras A, Rijnberk C, Bakermans-Kranenburg MJ. Attachment representations and autonomic regulation in maltreating and nonmaltreating mothers. *Development and Psychopathology*. 2016; 29:1075–1087. [PubMed: 27760578]
- Roisman GI, Holland A, Fortuna K, Fraley RC, Clausell E, Clarke A. The adult attachment interview and self-reports of attachment style: An empirical rapprochement. *Journal of Personality and Social Psychology*. 2007; 92:678–697. [PubMed: 17469952]
- Sales, JM. Creating a context for children's memory: The importance of parental attachment status, coping, and narrative skill for co-constructing meaning following stressful experiences. In: Quas, JA., Fivush, R., editors. *Emotion and memory in development: Biological, cognitive, and social considerations*. New York, NY: Oxford University Press; 2009. p. 196–217.
- Sales JM, Fivush R, Peterson C. Parental reminiscing about positive and negative events. *Journal of Cognition and Development*. 2003; 4:185–209.
- Shackman JE, Fatani S, Camras LA, Berkowitz MJ, Bachorowski J, Pollak SD. Emotion expression among abusive mothers is associated with their children's emotion processing and problem behaviors. *Cognition and Emotion*. 2010; 24:1421–1430. [PubMed: 25125772]
- Shaver PR, Belsky J, Brennan KA. The adult attachment interview and self-reports of romantic attachment: Associations across domains and methods. *Personal Relationships*. 2000; 7:25–43.
- Shipman KL, Schneider R, Fitzgerald MM, Sims C, Swisher L, Edwards A. Maternal emotion socialization in maltreating and non-maltreating families: Implications for children's emotion regulation. *Social Development*. 2007; 16:268–285.
- Shipman KL, Zeman J. Emotional understanding: A comparison of psychically maltreating and nonmaltreating mother-child dyads. *Journal of Clinical Child Psychology*. 1999; 28:407–417. [PubMed: 10446690]
- Shipman KL, Zeman J. Socialization of children's emotion regulation in mother-child dyads: A developmental psychopathology perspective. *Development and Psychopathology*. 2001; 13:317–336. [PubMed: 11393649]
- Shipman KL, Zeman J, Penza S, Champion K. Emotion management skills in sexually maltreated and nonmaltreated girls: A developmental psychopathology perspective. *Development and Psychopathology*. 2000; 12:47–62. [PubMed: 10774595]
- Sibley CG, Fischer R, Liu JH. Reliability and validity of the revised experience in close relationships (ECR-R) self-report measure of adult romantic attachment. *Personality & Social Psychology Bulletin*. 2005; 31:1524–1536. [PubMed: 16207771]
- Stronach EP, Toth SL, Rogosch F, Oshri A, Manly JT, Cicchetti D. Child maltreatment, attachment security, and internal representations of mother and mother-child relationships. *Child Maltreatment*. 2011; 16:137–145. [PubMed: 21339198]
- Thompson RA. The legacy of early attachments. *Child Development*. 2000; 71:145–152. [PubMed: 10836568]
- Toth SL, Cicchetti D, Macfie J, Emde RN. Representations of self and other in the narratives of neglected, physically abused, and sexually abused preschoolers. *Development and Psychopathology*. 1997; 9:781–796. [PubMed: 9449005]

- Trickett PK, Susman EJ. Parental perceptions of child-rearing practices in physically abusive and nonabusive families. *Developmental Psychology*. 1988; 24:270–276.
- U.S. Department of Health and Human Services. *Child maltreatment 2015*. Washington, DC: US Government Printing Office; 2017.
- Valentino K. Relational interventions for maltreated children. *Child Development*. 2017; 88:359–367. [PubMed: 28138967]
- Valentino K, Cicchetti D, Toth SL, Rogosch FA. Mother-child play and emerging social behaviors among infants from maltreating families. *Developmental Psychology*. 2006; 42:474–485. [PubMed: 16756439]
- Valentino K, Cicchetti D, Toth S, Rogosch FA. Mother-child play and maltreatment: A longitudinal analysis of emerging social behavior from infancy to toddlerhood. *Developmental Psychology*. 2011; 47:1280–1294. [PubMed: 21744951]
- Valentino K, Comas M, Nuttall AK, Thomas T. Training maltreating parents in elaborative and emotion-rich reminiscing with their preschool-aged children. *Child Abuse & Neglect*. 2013; 37:585–595. [PubMed: 23548682]
- Valentino K, Hibell LC, Cummings EM, Nuttall AK, Comas M, McDonnell CG. Maternal elaborative reminiscing mediates the effect of child maltreatment on behavioral and physiological functioning. *Development and Psychopathology*. 2015; 27:1515–1526. [PubMed: 26535941]
- Van Bergen P, Salmon K, Dadds MR, Allen J. The effects of mother training in emotion-rich, elaborative reminiscing on children's shared recall and emotion knowledge. *Journal of Cognition and Development*. 2009; 10:162–187.
- van Ijzendoorn MH, Schuengel C, Bakersman-Kranenburg MJ. Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants, and sequelae. *Development and Psychopathology*. 1999; 11:225–249. [PubMed: 16506532]
- Wei M, Russell DW, Mallinckrodt B, Zakalik RA. Cultural equivalence of adult attachment across four ethnic groups: Factor structure, structured means, and associations with negative mood. *Journal of Counseling Psychology*. 2004; 51:408–417.

- Examined associations among maltreatment, maternal attachment, and reminiscing.
- Attachment anxiety predicts elaborative reminiscing among nonmaltreating mothers.
- Mother-child reminiscing is differentiated by maltreatment and attachment status.

Figure 1.

Interaction between maternal maltreating status and attachment anxiety predicting maternal elaborative reminiscing. Error bars represent standard error.

Table 1**Maltreatment Subtype and Severity**

Maltreatment subtype	% of sample	Maltreatment severity				
		Min	Max	Mode (% not at mode)	Severity = 1	Severity = 5
Sexual abuse	4.9	1	4	4 (42.9)	Exposure to sexually explicit materials or activities	Forced intercourse or prostitution
Physical abuse	12.7	1	4	1 (33.3)	Infliction of minor marks below the neck	Infliction of an injury that required hospitalization and/or was permanently physically damaging
Emotional maltreatment	58.5	1	5	3 (39.8)	Caregiver ignores child's bids for attention	Caregiver abandons the child, confines the child to an enclosed space
Physical neglect: Failure to provide	31.0	1	4	3 (65.9)	Occasional missed meals, inadequate clothing	Severe malnutrition, nonorganic failure to thrive, congenital drug addiction
Physical neglect: Lack of supervision	47.9	1	5	4 (66.2)	Inadequate supervision for less than three hours	Inadequate supervision for more than 12 hours, caregiver places child in life threatening situations

Note. Severity definitions are from the Maltreatment Classification System (MCS; Barnett, Manly, & Cicchetti, 1993).

Table 2

Sample Characteristics by Maltreatment Group

Variable	Nonmaltreating (<i>n</i> = 73)		Maltreating (<i>n</i> = 146)	
	<i>M</i> (<i>SD</i>)	%	<i>M</i> (<i>SD</i>)	%
Maternal age	30.40 (6.10)		29.48 (4.41)	
Child age	4.87 (1.11)		4.95 (1.15)	
Child gender				
Male		49.3		50.0
Maternal ethnicity				
African American		41.1		41.8
Caucasian		32.9		43.1
Hispanic/Other		26.0		15.1
Family income				
\$12,000/year		50.7		56.2
Marital status ***				
Married		34.3		11.6
Maternal education				
Some high school		21.9		32.8
High school/GED		26.0		33.6
Some trade/college		34.2		24.0
Completed trade/college		15.1		8.9
Master's degree		2.8		0.7
Language (PPVT-4)				
Maternal	88.04 (11.52)		85.46 (11.32)	
Child ***	98.20 (14.29)		88.42 (15.08)	

Note. PPVT-4 = Peabody Picture Vocabulary Test Version 4.

*
 $p < .05$

**
 $p < .01$

***
 $p < .001$

Table 3

Sample Means and Standard Deviations for Primary Study Variables by Maltreatment Group

	Nonmaltreating (<i>n</i> = 73)	Maltreating (<i>n</i> = 146)
Maternal elaborative reminiscing **	12.40 (3.64)	10.81 (3.29)
Maternal emotion-rich reminiscing *	4.80 (1.43)	4.38 (1.49)
Child narrative contributions **	3.05 (1.46)	2.43 (1.41)
Child emotion references *	2.13 (1.32)	1.67 (1.35)
Maternal attachment avoidance *	3.41 (1.25)	3.80 (1.28)
Maternal attachment anxiety	3.14 (1.21)	3.27 (1.31)

Note. Square-root transformed reminiscing variables are presented in the table.

*
 $p < .05$

**
 $p < .01$

***
 $p < .001$

Table 4
Bivariate Correlations Among Primary Study Variables and Sample Characteristics

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Maternal elaborative reminiscing	—											
2. Maternal emotion-rich reminiscing	.54**	—										
3. Child narrative contributions	.59**	.25**	—									
4. Child emotion references	.35**	.27**	.56**	—								
5. Maternal attachment avoidance	-.08	-.04	.07	.02	—							
6. Maternal attachment anxiety	-.07	-.09	-.07	-.09	.51**	—						
7. Maternal education	.25**	.07	.19**	.20**	.07	.08	—					
8. Maternal ethnicity	-.01	-.11	-.04	-.05	-.15*	.03	-.05	—				
9. Maternal marital status	.15*	.11 [†]	.11	.08	-.26**	-.14*	.10	.15*	—			
10. Maternal PPVT-4	.22**	.04	.14*	.06	-.06	.19**	.35**	.18*	.18**	—		
11. Child PPVT-4	.26**	.03	.33**	.23**	-.05	-.05	.28**	.15*	.13 [†]	.24**	—	
12. Child age	-.03	.06	.31**	.24**	.06	-.05	.11	-.05	.01	-.04	.10	—

Note. PPVT-4 = Peabody Picture Vocabulary Test Version 4.

[†]
p < .10

*
p < .05

**
p < .01

Table 5

Interaction Between Maternal Maltreating Status and Attachment Anxiety Predicting Maternal Elaborative Reminiscing

Maternal Elaborative Reminiscing		
	Unstandardized coefficients (SE)	Standardized coefficients (SE)
Child PPVT-4	0.03 (0.02) *	.14 (.07) *
Maternal PPVT-4	0.04 (0.02) †	.14 (.07) †
Child age	-0.24 (0.19)	-.08 (.06)
Maternal marital status	0.41 (0.60)	.05 (.07)
Maternal education	1.23 (0.50) *	.17 (.07) *
African American	0.72 (0.63)	.10 (.09)
Caucasian	0.40 (0.67)	.06 (.09)
Maltreating	-0.10 (0.56) †	-.14 (.08) †
Attachment Avoidance	0.34 (0.37)	.13 (.14)
Attachment Anxiety	-1.12 (0.40) **	-.41 (.15) **
Maltreating * Avoidance	-0.43 (0.44)	-.13 (.13)
Maltreating * Anxiety	1.13 (0.46) *	.35 (.14) *
Avoidance * Anxiety	-0.05 (0.25)	-.02 (.13)
Maltreating * Avoidance * Anxiety	0.16 (0.29)	.07 (.13)

† $p < .10$

* $p < .05$

** $p < .01$

Table 6
Partial Correlations Between Maternal and Child Reminiscing by Maternal Maltreating Status and Attachment Anxiety

Maternal Attachment Anxiety	Maltreatment Group			
	Nonmaltreating (<i>n</i> = 38)		Maltreating (<i>n</i> = 71)	
Low				
Child Contributions	Elaborative Rem	Emotion Rem	Elaborative Rem	Emotion Rem
	.75 ***	<u>.50</u> **	.62***	<u>.36</u> **
Child Emotion References		.28	.30*	.23 [†]
High				
	Nonmaltreating (<i>n</i> = 35)		Maltreating (<i>n</i> = 75)	
Child Contributions	Elaborative Rem	Emotion Rem	Elaborative Rem	Emotion Rem
	.64***	<u>.36</u> [†]	.41 ***	-.13
Child Emotion References	.47**	.40*	.29*	.13

Partial Correlations Between Maternal and Child Reminiscing by Maternal Maltreating Status and Attachment Anxiety

Note. Rem refers to maternal reminiscing. Bolded values indicate significant differences in the magnitude of the correlations between dyads in the nonmaltreating-low anxiety and maltreating-high anxiety groups at $p < .05$. Underlined values indicate significantly stronger correlations compared to the maltreating-high anxiety group at $p < .05$. The correlations between maternal elaborative reminiscing and child narrative contributions for all four groups remained significant after adjusting alpha for multiple correlations.

[†] $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$