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MOTHER-CHILD CONVERSATIONS AND CHILD MEMORY NARRATIVES: THE ROLES OF CHILD GENDER AND ATTACHMENT

This study examined the roles of child gender and attachment in mother-child narrative conversations and child independent narratives. Children ($M_{\text{age}} = 56$ months) told personal narratives independently and while engaged in narrative conversations with their mothers. The Attachment Story Completion Task-Revised (Verschuere & Marcoen, 1994) measured child attachment representations. Results indicated that attachment was linked to maternal conversational style and child independent narratives. Mothers with secure sons continued their topics more than mothers of secure daughters, and secure boys' independent narratives were less elaborative than those of secure girls. However, no gender differences were found among insecure dyads. We argue that mothers of secure boys sensitively recognize their sons' cues within the conversational context and respond to the need for further verbal assistance, thus providing more on-topic replies in narrative conversations.

Key words: attachment, gender, narratives, mother-child conversations, autobiographical memory

Narrative is a linguistic tool that is vital to the way children make sense of their personal experiences (Gee, 1985). During the preschool years, parent-child narrative conversations provide a socialization context in which children learn about the typical content and structure for stories about past experiences (Fivush, 2013; Peterson & McCabe, 1992) and are critical in the development of autobiographical memory (see Fivush, 2013; Nelson & Fivush, 2004, for review). That differences in children's personal narratives mirror the way mothers structure and organize their memory conversations likely indicates differential

organization of the way memories of past experiences are represented (Fivush, 1993; Ontai & Thompson, 2002). Grounded in the work of Vygotsky (1978), this literature suggests the social processes that determine the content and structure of memory conversations are internalized, and thus appropriated by children, shaping the content and structure of the child's memory representations. A detailed examination of these processes therefore necessitates consideration of demographic, socio-emotional, and interactive factors that impact parent-child memory conversations and child independent narratives. The current study contributes to the relatively sparse extant literature examining the extent to which attachment moderates gender differences in maternal conversational style and in child independent memory narratives.

As a socially mediated skill, narrative ability develops as a consequence of socialization within parent-guided conversations (e.g., Fivush, 1991; Peterson & McCabe, 1992), during which an account of past events is co-constructed by conversational partners. Bauman (1986) contends that storytellers must simultaneously recall the details of the story while also participating in the storytelling event itself. We extend this notion to memory conversations, a complex linguistic and interactive activity. The parent and child must simultaneously employ narrative skills to provide *content* (e.g., evaluations of events and contextual elements of the event setting) by recalling details of past memories, and they must also employ conversational skills to provide *structure* to the co-narrative by competently participating in the conversational exchange within which the memory is co-constructed (Kelly & Bailey, 2013b). Melzi, Schick, and Kennedy (2011) have made similar differentiations in the content and structure of personal narratives, demonstrating differential relationships between the two constructs and child narrative outcomes within and across cultures.

Within narrative conversations, the mother's role in shaping her child's memory narrative production is well documented (Haden, Ornstein, Rudek, & Cameron, 2009; McCabe & Peterson, 1991; Reese, Haden, & Fivush, 1993). Mothers who use a more elaborative style during memory conversations tend to have children who are more elaborative in their independent narrative productions as compared to mothers who use a more repetitive or topic-switching style (Haden et al., 2009; Peterson & McCabe, 1992; Peterson, Sales, Rees, & Fivush, 2007). However, maternal elaborative style has been variously conceptualized and measured across studies, including codes focused primarily on maternal expansion of the child's topic (McCabe & Peterson, 1991; Peterson & McCabe, 1992), use of statements, questions, and evaluations to provide new information (Bost, Choi, & Wong, 2010; Haden et al., 2009; Reese et al., 1993), and a range of emotion-related utterances (Ontai & Thompson, 2002).

To a large extent, maternal elaboration has been treated as a multidimensional construct. However, to understand fully how maternal elaboration impacts child language and memory development its constituent parts must be examined. One

such approach is to parse the *content* provided to the narrative from the *structure* provided to the conversation (Melzi et al., 2011). Structure that adults provide may also be in the form of questions, praise, repetition of the child's content, and on-topic replies that adhere to Grice's (1975) conversational maxims. Cleveland and Reese (2005) have demonstrated that maternal continuation of the child's topic, which supports the child's autonomy, is a construct independent from maternal narrative elaboration and uniquely influences the child's participation in memory conversations. Taking a strict conversational analysis approach, we extended this idea to the conversational exchange. Specifically, we examined the extent to which mothers adhere to Grice's (1975) conversational rule of relevance (i.e., topic continuation), regardless of the narrative details contributed by the continuation, to elucidate how mothers structure the conversation in which the co-constructed memory narrative takes place.

Support for this approach is found in appeals for maternal elaboration to be further deconstructed (Fivush et al., 2006), particularly at the utterance-by-utterance level (Zaman & Fivush, 2013). Taking a micro-analytic approach to the conversational exchange can reveal the structure provided by the mother at each conversational turn (Kelly & Bailey, 2013b) and illuminates vital interactive factors within the socialization process (Haden & Hoffman, 2013). Kelly and Bailey (2013b) argue that a child's ability to co-construct narratives in conversation depends heavily on their conversational competence and the structure provided by the mother at the turn-by-turn level. Their findings revealed that maternal replies, which continue the topic of the child's previous utterance (especially when the child switches topics in the memory conversation), are integral to the successful forward movement of the co-constructed narrative. This underscores the importance of using a micro-analytic approach to investigating maternal conversational style.

Attachment theory posits that communicative and interactive exchanges are primary mechanisms determining the development and maintenance of the child's attachment organization (e.g., Bretherton, 1993). A hallmark of security is open parent-child communication characterized by parental behavior that is sensitive to the child's communicative needs (Thompson, 2008). In particular, maternal narrative style is thought to play a key role in the consolidation of child attachment representations (Bretherton & Munholland, 2008). Memory conversations produced by European-American mother-child pairs require a dyadic give-and-take wherein mothers must appropriately balance assistance in co-constructing the narrative with promotion of the child's autonomy (Kelly & Bailey, 2013a). It follows that the extent to which mothers continue, as opposed to change, the child's topic may indicate greater sensitivity within the mother-child memory conversation and thus would be expected to be related to child attachment security.

A growing number of investigations linking maternal elaboration (variously termed narrative style and conversational style) to child attachment supports

this idea. During memory conversations, mothers of secure children displayed a more elaborative style, adding new information through open-ended questioning, than mothers of insecure children (Bost et al., 2006; Coppola, Ponzetti, & Vaughn, 2014; Fivush & Vasudeva, 2002; Laible, 2004; Ontai & Thompson, 2002; Reese & Farrant, 2003). Also, longitudinal associations between maternal narrative style and child memory talk are found among secure dyads but less so among insecure dyads (Newcombe & Reese, 2004; Reese & Farrant, 2003). These findings suggest mothers of secure children may socialize their children differently and may be more flexible in adjusting their narrative style to their children's needs than mothers of insecure children (Reese & Farrant, 2003; Fivush et al., 2006).

Much of this prior research focuses primarily on the *content* of maternal elaborations (e.g., addition of new information). Given that the story is co-constructed in the context of a conversation, it is important to consider whether attachment is related to the conversation *structure*. Findings from Oppenheim and colleagues demonstrating the link between attachment security in infancy and later maternal conversational style support this idea. Mothers of secure children provided more balanced narrative structure, whereas mothers of insecure children either dominated the conversation by usurping the narrative or failed to provide the necessary scaffolding to match the child's needs (e.g., Gini, Oppenheim, & Sagi-Schwartz, 2007; Hsiao, Koren-Karie, Bailey, & Moran, 2015; Oppenheim, Koren-Karie, & Sagi-Schwartz, 2007). However, this line of work focuses specifically on how mothers scaffold affective aspects of the narrative. Also essential is determining whether mothers of secure children co-construct the narrative by participating in the conversation in a way that is supportive of the child's topic, regardless of emotional content.

In terms of independent narrative skill, children typically first make reference to the past between 18-24 months old (Eisenberg, 1985), and their acquisition of a fully developed narrative progresses primarily during the preschool years (Peterson & McCabe, 1983). While the content and structure of children's autobiographical memory narratives vary cross-culturally (Schröder et al., 2013), the focus of the current study is on the Western, canonical form of autobiographical memory narrative. Integrating the narrative work of Labov and Waletzky (1967) and the memory work of Nelson and Fivush (2004), we define canonical autobiographical memory narratives as structured forms of extended discourse that recall a specific personally experienced event in the temporal sequence in which the event logically occurred, provide a context for and explain how the events unfolded, and express the meaningfulness of the event for self and others. According to Labov and Waletzky, personal narratives are comprised of *orientation* or contextualizing information about the time, location, and persons in the story, *complicating action* or referential information about the events that occurred, *evaluation* of the events in the story, and *resolution*.

The findings on attachment and mother-child narrative conversations reviewed above suggest that mothers of secure children provide a socialization experience that is more elaborative and supportive than mothers of insecure children, at least in terms of narrative content and emotion talk. Given the substantial influence of mother-child memory conversations on child independent narrative production, differences in the socialization experiences of secure and insecure children may be internalized and reflected in children's own independent memory narratives. However, this area has been largely unstudied. One exception examined attachment and the overall elaboration of independent memory narratives by creating a composite variable to include orientation and evaluation details among others (McCabe, Peterson, & Connors, 2006). The findings revealed that secure children's narratives were more elaborative in general than those of insecure children. The current study extended this line of work by exploring three types of memory details (orientation, complicating action, and evaluation). We excluded resolution from analysis, as children typically begin contributing this memory detail later in their narrative development (Peterson & McCabe, 1983). Moreover, resolution occurs infrequently in mother-assisted conversations of 3- to 5-year-olds (Kelly & Bailey, 2013b) and, as such, is expected to be all the more unlikely in young children's independent narratives.

Child gender has also been found to account for variance in mother-child memory conversations, although findings of gender differences have been inconsistent. Some studies on maternal narrative style suggest that mothers are more elaborative with their daughters during memory conversations (e.g., Fivush, Berlin, McDermott Sales, Mennuti-Washburn, & Cassidy, 2003; Reese & Fivush, 1993; Reese, Haden, Fivush, 1996), whereas others report no gender differences (e.g., Bost, Choi, & Wong, 2010; Fivush & Vasudeva, 2002; Laible, 2004, 2011; Melzi et al., 2011). Although Zaman and Fivush (2013) found that mothers were comparably elaborative with their daughters and sons, gender differences in joint engagement were revealed, such that son-mother dyads showed greater joint engagement than daughter-mother dyads when discussing negative events. Findings from the scant investigations of gender differences in child independent narratives have been similarly inconsistent. Although Reese and Fivush (1993) found that girls produced more elaborative narratives than boys, McCabe et al. (2006) found no gender differences in narrative length or elaboration. Driving such discrepancies could be that the effect of gender on child outcomes, especially those with social origins, depends on other child characteristics such as attachment security. To date, no studies have considered whether gender differences in child independent narratives vary by attachment security. The sparse extant literature that considered the interaction between gender and attachment in mother-child memory conversations supports this idea. Findings from Farrar, Fasig, and Welch-Ross (1997) showed that mothers elaborated positive emotion talk more with their secure daughters than with secure sons; whereas, mothers

elaborated positive and negative emotion talk more with insecure sons than insecure daughters. However, whether these findings hold beyond maternal emotion talk needs to be explored by extending this line of inquiry to maternal conversational style.

Studies that have linked attachment with memory conversations and child narratives primarily assessed attachment using the Attachment Q-Sort, an observational measure of maternal and/or child attachment behaviors. However, relying on Q-sort measures limits the extent to which one can argue that child or mother behaviors are a result of the attachment relationship, given that the behaviors observed as an outcome of attachment security may be the same as those observed to determine attachment security (e.g., open communication). Utilizing the development of symbolic play in early childhood, attachment research has undergone a methodological shift from measuring attachment behaviors in infancy to tapping into Bowlby's (1969/1982) theoretical attachment construct, the *internal working model*, using representational measures that access the child's internalized attachment relationship expectations (Solomon & George, 2008). Such a shift underscores the need to replicate prior findings using representational measures. Story-stem instruments, such as the Attachment Story Completion Task (Bretherton, Ridgeway, & Cassidy, 1990), Attachment Doll Play Assessment (George & Solomon, 1990/1996/2000) and Attachment Story Completion Task-Revised (Verschueren, Marcoen, & Schoefs, 1996), that utilize figurine play and projective scenarios to access children's mental representations of attachment are developmentally appropriate for preschool-age children in that young children are willing to engage in and cognitively able to complete the assessment. Attachment security is determined by coding the child's verbal responses and nonverbal actions (i.e., played out with figurines) in terms of the nature of the caregiver-child interactions and the child's willingness to tell the story. Importantly, assessing nonverbal responses and controlling for the child's language abilities bolsters the validity of story-stem research by preventing the potential confounding of attachment measures with linguistic fluency.

The current study

To summarize, we examined the roles of child gender and attachment in mother-child narrative conversations and child independent narratives. In response to the need to measure the attachment construct notwithstanding maternal-child verbal interactions, we used the Attachment Story Completion Task-Revised (Verschueren et al., 1996) to access the child's internal representations of the attachment relationship with the mother. A primary goal of the study was to determine whether differences in how mothers structure memory conversations are associated with differences in child attachment. Based on studies linking attachment security with maternal narrative style and structure (e.g., Coppola et al., 2014; Fivush & Vasudeva,

2002; Oppenheim et al., 2007), we predicted mothers of secure children would have a conversational style that continues, as opposed to changes, the child's topic more than mothers of insecure children. To address the relative dearth of research on the relation between attachment and child independent memory narratives, we examined differences in the memory details children provided in their independent memory narratives as a function of attachment. From McCabe et al.'s (2006) findings, we expected secure children would provide more memory details, especially orientation and evaluation, than insecure children.

An additional goal of the study was to examine the extent to which attachment moderates gender differences in maternal conversational style and in child independent memory narratives. Following findings from Farrar et al. (1997), we predicted gender differences in maternal conversational style would vary by attachment, such that mothers would have a more topic-continuing conversational style with their secure daughters than with their secure sons. However, we expected mothers to have a more topic-continuing style with insecure sons as compared to insecure daughters. Given discrepancies in the literature reviewed above, a priori hypotheses predicting the effects of gender and attachment in the context of child independent narratives could not be drawn, and analyses were considered exploratory.

Method

Participants

The present study was conducted as part of a larger study investigating children's autobiographical memory narratives. Sixty-five children (33 girls) and their mothers participated. Mothers and children were recruited from early childhood education centers in a large metropolitan area in southern California. Children's ages ranged from 39 months to 76 months ($M = 56$ months, $SD = 7.8$ months). The sample of children was 61% European-American, 26% multi-ethnic, 6% African-American, 5% Asian-American, and 2% Latino/a. English was reported by the mother as the primary language for all children in the sample.

Mothers were 26 to 50 years old ($M = 39.6$ years, $SD = 4.6$). Reported maternal highest education level indicated 55% had a graduate or professional degree, 39% had a bachelor's degree, 4% had taken some college courses, and 2% (1 mother) had a high school diploma only. Thirty-six percent of mothers worked part-time, 33% worked full-time, 29% were students, and 2% did not work. A majority of mothers (73%) reported family income was "greater than \$150,000." Families received two storybooks for participating in the study.

Measures

Background survey. Mothers were asked to report their highest level of education (i.e., maternal education), age, partner status, number of children in

the family, employment status of mother and father, family income, as well as the child's age in months, gender, primary language, language used in the home, and time spent each week in childcare.

Child expressive language. Child expressive language ability was measured using the Expressive One-Word Picture Vocabulary Test-Revised (EOWPVT-R, Gardner, 1990), a standardized measure of productive vocabulary and word retrieval, appropriate for children two to six years old. EOWPVT-R reliability analyses have shown a high degree of internal consistency ($\alpha = .90-.98$, $M = .95$) and strong test score stability with reliability coefficients ranging from .77 to .90. Standardized scores were used as the final measure of child expressive language in analyses.

Child attachment representations. Security of child attachment representations to the mother was assessed using the Attachment Story Completion Task – Revised Classification System (ASCT-R; Verschueren & Marcoen, 1994). Used with 4- to 6-year-olds, the ASCT-R is a revision of Cassidy's Incomplete Stories with Doll Family (1988). Because children as young as three years old are able to produce narratives in response to story-stem tasks (Bretherton & Oppenheim, 2003), we extended the use of the ASCT-R to the three-year-olds in the current study. The ASCT-R consisted of five attachment-related story stems that were narrated and acted out for the child by the researcher using small figures that resemble family members and other actors (e.g., child, mother, stranger). The child was asked to show what happens next following the researcher's prompted story stem.

Coding of attachment-related stories. Each child was given a categorical rating of either secure or insecure, which is consistent with assignment of attachment scores in prior research (Farrant & Reese, 2000; Farrar et al. 1997). We used the categorical rating system devised by Verschueren and Marcoen (1994), which was based on the stories and coding criteria from Cassidy (1988) and Bretherton et al. (1990). Each of the five stories was placed in one of three attachment classification categories: secure, secure/insecure, or insecure. Secure stories depicted positive and harmonious interactions between child and mother *and* were told without hesitation. Stories that depicted minimal child-mother interaction, bizarre, hostile, or angry interactions between child and mother, helpless behavior on the part of the mother, *or* wherein the child was unwilling to respond were classified as insecure. Stories that were classified as secure/insecure satisfied neither all secure nor all insecure criteria.

To obtain a single attachment classification for each child, a global attachment categorization was determined based on the attachment categories assigned to the five stories. Children received a *secure* or *insecure* global categorization if the majority of their stories received secure ratings or insecure ratings, respectively. In the case of an equal number of secure and insecure stories (e.g., 2 secure, 2 insecure, and 1 secure/insecure), a decision about the categorization was made

by referring to the complementary remarks made by coders with regard to the presence of secure and insecure elements in the stories. Cronbach's alpha was .80 for the attachment categorization assigned to each story, and a confirmatory factor analysis revealed unidimensional factor loadings, $c^2(10) = 101.45$, $p < .001$, which indicated that the five stories represented a single latent variable. Standardized factor loadings ranged from .64 to .83. Interrater reliability using 20% of the ASCT-R transcripts was assessed between the author and a research assistant. Discrepancies were discussed and resolved by consensus. The author coded the remaining data. Simple percent agreement across the five stories averaged .78 and average Cohen's kappa was .69, which is considered good according to Fleiss (1981).

Narrative elicitation and coding protocols. For the *mother-child narrative conversation*, mothers were asked out of earshot of the child to nominate recent past events to be used as prompts. Mothers were instructed to choose events that they had shared with the child, had occurred only once, and did not have an inherent plot (e.g., a movie viewing). Mothers were invited to sit where most comfortable and help their children tell the stories as they normally would. The researcher then prompted mother and child to talk with each other about the mother-nominated topics. The researcher elicited three narrative conversations from the dyad.

For the *child independent narratives*, children were asked to tell independent memory narratives about recent past events. The researcher began by using McCabe and Rollins' (1994) *give-a-story, get-a-story* elicitation protocol, wherein the researcher told the child a standardized model past event narrative and then asked, "Has anything exciting ever happened to you?" After the prompt, the researcher paused to allow the child to narrate the story. Standard responses and general prompts (e.g., "Mhmm" and "Anything else?") were used to avoid giving specific story prompts and to encourage the child. The researcher elicited three narratives from the child.

Transcripts of the narratives were used in coding and analysis. Using a micro-analytic approach, all transcripts were parsed at the utterance level. Mother and child utterances were identified by interruption by another speaker, grammatical closure (e.g., question mark), or a definite pause. Maternal conversational turns were identified as the maternal proposition immediately following a child utterance or following a placeholder (definite pause) for the child's turn, similar to previous conversation research (Bloom, Rocissano, & Hood, 1976; Kelly & Bailey, 2013b).

Mother-child narrative conversation length was calculated by summing the total number of maternal and child utterances in the co-constructed narrative. *Maternal conversational style* was conceptualized as the extent to which mothers structured the conversation to continue the child's topic at the turn-by-turn level. Grounded theoretically in Grice's (1975) maxim of relevance, coding

categories were derived from previous literature on maternal narrative style (Fivush & Fromhoff, 1988; Oppenheim et al., 2007; Peterson & McCabe, 1992) and conversation analysis (Bloom et al., 1976; , 2013b). Maternal *continuations* of the child's topic are those maternal utterances that (1) sustain the topic of the child's immediately preceding utterance through yes/no on-topic questioning (child: He was crying. mother: Yeah, and did he keep crying?), (2) support the current topic of conversation by adding more on-topic information (child: He was crying. mother: That's right, he was crying because he was sad.), or (3) allow the child to continue the current topic or choose the next topic through open-ended questioning (child: He got the bee stinger in his foot. mother: Yes, and then what happened?). Maternal *topic changes* are those maternal utterances that (1) change or shift the topic of conversation through off-topic questioning (child: So then we got popcorn chips. mother: Let's see, what else?), or (2) redirect or usurp the topic of the story rather than elaborate on the child's topic (child: I had to go to the doctor. mother: Well, you came upstairs, right? And daddy said that you hurt your arm, but we didn't know what was wrong.).

Following prior research on narrative co-construction (Fivush & Vasudeva, 2003; Peterson et al., 2006), maternal conversational style was calculated as the ratio of instances of topic continuations divided by the instances of topic changes. Thus, a continuous maternal conversational style variable was created in which mothers with higher scores continued the child's topic relatively more and those with lower scores changed the topic relatively more. Interrater reliability using 20% of the narrative conversation transcripts was assessed between the author and a research assistant. Discrepancies were discussed and resolved by consensus. The author coded the remaining data. Simple percent agreement was .86 and Cohen's kappa was .77, which is considered excellent according to Fleiss (1981).

Independent narrative length was calculated by summing the total number of child utterances in the narrative. Additionally, *child memory details* were identified in the independent narratives based on Labov and Waletzky's (1967) macrostructural elements of classic narrative structure. Each child utterance was coded for provision of three memory details: orientation, complicating action, and evaluation. Orientation added important contextual details about setting, time, and primary actors (e.g., It was on *Wednesday night*). Complicating action introduced or described the action or events in the story (e.g., And then I *fell* on the step.). Evaluation revealed the child's attitude or opinion about the events through reference to affect modifiers (e.g., I *love* Shamu!), reported speech (e.g., She *said* they would think it's neat.), cognition (e.g., Because he *thinks* I am Will.), internal states (e.g., I *felt scared*.), intensifiers (e.g., It was the coolest *ever!*), and emphasis through repetition (e.g., And I went *up and up and up*.) (compiled from McCabe et al., 2006, and Newcombe & Reese, 2004). Codes were mutually exclusive. Interrater reliability using 20% of the independent narrative transcripts was assessed between the author and a research assistant. Discrepancies were

discussed and resolved by consensus. The author coded the remaining data. Simple percent agreement averaged .85 and Cohen's kappa averaged .81, which is considered excellent agreement by Fleiss (1981).

Procedures

After obtaining permission from early childhood education center directors, information packets containing the study description, informed consent documents, and a background survey were distributed to parents of children who were three years and older. All children for whom English was a primary language and for whom parents reported no cognitive or linguistic delays were selected for the study.

Data were collected in two sessions (at early childhood education center and at home) 2-4 weeks apart. At the early childhood education center, child assent was obtained prior to beginning the research session with each child. Female researchers conducted a warm-up activity (i.e., playing with an Etch-A-Sketch for 5 minutes), measured child expressive language and attachment, and elicited the *child independent narratives* about recent past events. During the subsequent home visit, female researchers conducted a warm-up activity (i.e., playing with an Etch-E-Sketch for 5 minutes) with the mother and child and elicited *mother-child narrative conversations* about recent past events. The attachment interview, child independent narratives, and mother-child narrative conversations were video-recorded and transcribed verbatim. All transcripts were checked for accuracy by the author or by a research assistant. Because narrative length is considered a reasonable proxy for narrative complexity (McCabe & Peterson, 1990), the longest narrative conversation and longest independent narrative were identified and coded for each dyad. As children's narrative skills are consolidating during the early childhood years, narrative length is strongly related to linguistic complexity and narrative structure (Justice et al., 2006; Peterson & McCabe, 1983), such that their longer narratives have more cohesive devices, better organization in terms of logical and temporal sequencing, and greater completeness. Because we were interested in the upper bounds of the children's independent and collaborative narrative abilities, we coded and analyzed the longest narrative conversation for narrative conversation length and maternal conversational style and independent narrative for length and child memory details.

Variables and indices

The explanatory variables were child gender and child attachment. The index of child gender was parent-reported child gender. The indices of child attachment were categorical ratings (secure or insecure) on the Attachment Story Completion Task-Revised. The explained variables were maternal conversational style and child memory details. The index for maternal conversational style was the ratio of instances of maternal continuations to the instances of maternal topic changes

in the narrative conversation. The indices for child memory details were instances of orientation, complicating action, and evaluation in the independent narrative.

Results

Preliminary analysis

We calculated mean frequencies for each of the three child memory details in each independent memory narrative, and we computed the mean ratio score of maternal conversational style in each memory conversation. Table 1 displays means and standard deviations for all mother and child variables in the memory conversations and independent narratives by child gender and attachment security. Child memory detail codes were positively skewed and were, therefore, transformed using logarithmic transformations. Transformed variables were used in all analyses.

Attachment security and gender. Distribution of the global attachment categorizations was 65% secure (20 girls, 22 boys) and 35% insecure (13 girls, 10 boys), which is consistent with the distribution of attachment security in normative populations (van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). To determine potential control variables, a series of independent samples t-test and chi-square analyses were performed to examine differences in child and mother variables (child age, time spent in childcare, maternal age, education, employment status, family income, narrative length, and conversation length) by gender and attachment separately. No significant differences were found. With regard to child expressive language, a significant difference in child standardized EOWPVT-R scores by attachment security was found; secure children ($M = 117.40$, $SD = 10.62$) had higher standardized language scores than insecure children ($M = 109.22$, $SD = 14.76$), $t(63) = 2.58$, $p = .012$. Thus, expressive language was controlled in all primary analyses of child outcomes.

Main analyses

We tested the main effect of gender, main effect of attachment, and the interaction between gender and attachment on (1) maternal conversational style in the mother-child narrative conversations and (2) child memory details in the independent narratives. All post hoc analyses were adjusted for multiple comparisons.

Differences in maternal conversational style during autobiographical memory conversations. Figure 1 presents the mean maternal conversational style ratios with daughters versus sons as a function of attachment. The pattern of results in Figure 1 indicates that mothers of secure children displayed a conversational style that was characterized by more topic-continuations relative to topic-changes than mothers of insecure children, and gender differences in

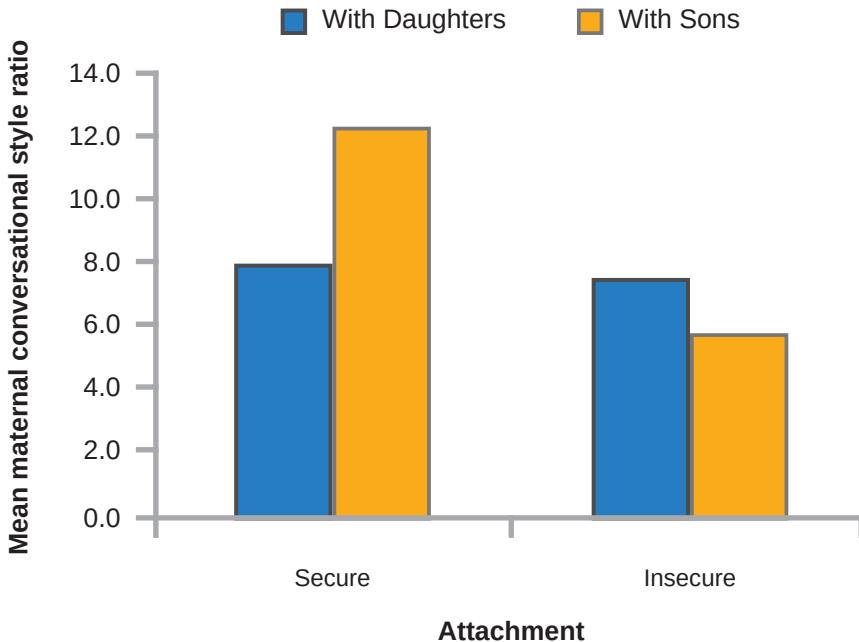
Table 1. Means (and standard deviations) for mother and child variables in memory conversations and in independent narratives by child gender and attachment

	Girls			Boys		
	Secure	Insecure	Total	Secure	Insecure	Total
	<i>n</i> = 20	<i>n</i> = 13	<i>n</i> = 33	<i>n</i> = 22	<i>n</i> = 10	<i>n</i> = 32
Control variables						
Age in months	57.95 (7.08)	55.00 (8.19)	56.79 (7.55)	56.45 (8.39)	56.40 (8.09)	56.44 (8.16)
Expressive language	119.25 (12.83)	103.92 (13.77)	113.21 (15.06)	115.73 (8.05)	116.10 (13.65)	115.84 (9.90)
Narrative conversation length	79.65 (44.33)	110.62 (59.22)	91.85 (52.14)	92.69 (41.66)	79.60 (47.13)	88.60 (43.11)
Independent narrative length	16.20 (9.88)	9.38 (4.79)	13.52 (8.83)	11.55 (4.77)	10.40 (4.58)	11.19 (4.67)
Outcome variables						
Maternal conversational style ratio	7.85 (5.98)	7.44 (3.87)	7.69 (5.19)	12.15 (6.79)	5.67 (5.49)	10.13 (7.02)
Child orientation	5.95 (4.27)	2.77 (1.74)	4.70 (3.80)	2.91 (2.65)	2.50 (2.37)	2.78 (2.53)
Child complicating action	6.50 (4.95)	5.08 (2.84)	5.94 (4.25)	5.09 (2.72)	5.70 (2.83)	5.28 (2.73)
Child evaluation	4.05 (3.33)	2.38 (2.50)	3.39 (3.10)	2.00 (1.77)	2.20 (2.45)	2.06 (1.93)
Child total memory details	16.90 (10.04)	10.77 (5.59)	14.48 (8.99)	10.14 (5.05)	10.50 (6.80)	10.25 (5.54)

maternal conversational style appeared to depend on attachment security. To address predictions about the role of gender and attachment in maternal conversational style, we conducted a 2 (gender) x 2 (attachment security) ANCOVA with maternal conversational style as the dependent variable, controlling for

child age, expressive language, and narrative conversation length. Narrative conversation length was included to control for variation in dyadic talkativeness. The main effect of gender was found to be non-significant, $F(1, 58) = .30$, $p = .50$, $\eta^2 = .01$. A significant main effect of attachment security on maternal conversational style was revealed, $F(1, 58) = 4.05$, $p = .049$, $\eta^2 = .07$, regardless of child gender. Mothers of secure children ($M = 10.10$, $SD = 6.70$) continued their child's topic relatively more than mothers of insecure children ($M = 6.67$, $SD = 4.62$). The apparent interaction between gender and attachment security in Figure 1 approached significance, $F(1, 58) = 3.55$, $p = .065$, $\eta^2 = .06$. Given that the interaction effect approached significance, exploratory post-hoc analyses using GLM pairwise comparisons were conducted. Results revealed that mothers continued their secure sons' topics relatively more than mothers of secure daughters ($p = .021$), whereas no gender differences were found between mothers of insecure daughters and sons ($p = .474$).

Figure 1. Mean maternal conversational style ratios with daughters versus sons as a function of attachment



Differences in child autobiographical memory details in independent narratives. We first explored gender differences in the three types of details (orientation, complicating action, and evaluation) in the independent narratives separately. Table 1 displays the means and standard deviations for each of the three child memory details. A one-way MANOVA revealed a significant main effect of gender when controlling for child age and expressive language, $F(3, 59) = 3.00, p = .05, \eta^2 = .12$, such that girls provided significantly more orientation ($p = .013, \eta^2 = .10$) and marginally more evaluation ($p = .057, \eta^2 = .06$) than did boys.

To facilitate comparison with prior research (e.g., McCabe et al., 2006), we collapsed the three memory details in our analysis in order to explore the moderating effect of attachment on gender differences in overall memory detail elaboration. We conducted a 2 (gender) \times 2 (attachment security) \times 3 (memory detail type) ANCOVA, controlling for child age and expressive language. Following existing memory narrative research (e.g., Fivush, Hazzard, Sales, Sarfati, & Brown, 2003; Han, Leichtman, & Wang, 1998; Peterson et al., 2007), narrative length was not included as a control because we are interested in the total amount of memory details that the children provided. Results revealed a significant main effect of gender, such that, on average, girls provided more memory details than boys, $F(1, 242) = 5.21, p = .023, \eta^2 = .02$. Attachment security was also revealed to be significant, such that, on average, secure children ($M = 13.36, SD = 8.45$) provided more memory details than insecure children ($M = 10.65, SD = 6.0$), $F(1, 242) = 5.28, p = .022, \eta^2 = .02$. Additionally, an interaction effect of gender and attachment security was significant, $F(1, 242) = 4.85, p = .029, \eta^2 = .02$. Post-hoc analyses using GLM pairwise comparisons showed that when memory details were collapsed, secure girls provided significantly more memory details than secure boys ($p = .005$); whereas, no difference in the amount of memory details was found between insecure girls and boys ($p = .746$). Also, a marginally significant difference in the amount of memory details was found between secure girls and insecure girls ($p = .034$) and no difference was found between secure boys and insecure boys ($p = .953$) when corrected for multiple comparisons.

Discussion

Microanalysis of conversational exchanges allows insight into interactional patterns and interactive exchanges within the mother-child relationship that are windows into the socialization process (Haden & Hoffman, 2013), are central to the formation of autobiographical memory (Fivush, 2013) and are determinants of the attachment relationship (Bowlby, 1969/1982). Existing research has linked attachment with the content and style of maternal elaborations during memory conversations. A primary goal of the current study was to extend this literature to the structure of memory conversations by characterizing maternal conversational style at the utterance-by-utterance level. As predicted, on average mothers of

secure children displayed a conversational style in which their relative continuations of the children's topic were greater than mothers of insecure children over and above narrative length. Consistent with previous research that showed attachment security was related to maternal narrative elaboration (e.g., Coppola et al., 2014; Fivush & Vasudeva, 2002; Ontai & Thompson, 2002), our findings demonstrate that attachment security was related to how mothers structure the conversation within which the co-constructed narrative takes place. Mothers of secure children adhered to Grice's (1975) conversational rule of relevance to a greater extent than mothers of insecure children by structuring her turns in the conversation around the child's topic. On the other hand, mothers of insecure boys and girls appeared to change the topic relatively more often compared to the secure dyads. This behavior suggests less sensitivity to the child's autonomy and is characteristic of the interactions of insecure dyads (Fagot, Gauvin, & Davanagh, 1996; Frosh, Cox, & Goldman, 2001). The structure that mothers utilize to scaffold the co-constructed narrative within the conversational exchange is particularly important during the developmental period when the child's narrative skills and autobiographical memory are consolidating. Maternal conversational style has a socializing force on the child's organization, interpretation, and evaluation of life events (Fivush et al., 2003; Nelson, 1993). As such, continuing the child's topic with an array of supportive maternal utterances validates the child's version of the recalled memory.

Moreover, within these conversations, mothers and children actively co-construct autobiographical memories (Fivush, 2013). Our results suggest that mothers of secure children create a socialization context in which autobiographical memories are co-constructed collaboratively. This finding is in concert with attachment theory, which posits that maternal contingency is an important determinate of secure child attachment (Wolff & van IJzendoorn, 1997) and interactions between secure parent-child dyads are characterized by cooperativity and harmony (Bus & van IJzendoorn, 1988; Thompson, 2008). Validity of these observed differences in conversational style is further strengthened by our measure of attachment. Accessing the child's internal representations allows for measurement of the attachment construct separate from observation of interactions between mother and child, which often includes communication patterns. Doing so extends prior studies that used observational measures of attachment by reducing the potential confounding of predictive behaviors and outcome behaviors.

Second, we tested whether differences in child attachment were related to the memory details children provided in their independent narratives. As expected, secure children told independent narratives with more memory details than insecure children even when controlling for child age and expressive language. Consistent with McCabe et al. (2006), secure children told independent narratives that were more elaborative than their insecure counterparts. Importantly, measuring child attachment by accessing the child's internal attachment repre-

sentations using a story-stem assessment extends prior study linking attachment and child independent narration. That differences in child independent narratives by attachment representations mirror variation in the social-interactive context in which the skill is learned supports McCabe et al.'s (2006) proposition that the co-construction process is internalized and applied when telling independent memory narratives.

Additionally, we investigated child gender differences in maternal conversational style and in child memory details in the independent narratives and the possible moderation of attachment. First, in the context of memory conversations, as predicted, maternal conversational style did not vary by child gender alone. Instead, gender differences in maternal conversational style depended on child attachment, but not wholly in the predicted direction. Mothers displayed a conversational style that was characterized by more topic-continuations relative to topic-changes with secure sons as compared to secure daughters. Also, no gender differences in maternal conversational style were found between insecure sons and daughters. The discrepancy between these results and prior findings could be straightforwardly explained by differences in narrative measures across the studies. Farrar et al. (1997) investigated maternal elaborations of positive and negative emotional content in the narrative conversations. In other words, their study focused on *what* the mothers were contributing to the co-constructed narrative. Our focus, in contrast, was on *how* the mother structured her conversational turns around the child's topic, regardless of content. Our data are at least somewhat consistent with Zaman and Fivush's (2013) finding for joint engagement, a similar aspect of narrative structure. That is, their results showed that parents were more engaged with their sons than daughters, particularly when talking about negative past experiences. Importantly, they defined engagement as the extent to which parent and child were "on the same page" and "established shared meaning" (Zaman & Fivush, 2013; pp. 596-597). Our finding that mothers continued their secure sons' topics relatively more than mothers of secure daughters may indicate that, within the context of a secure attachment relationship, mothers are more likely to take their son's lead to establish shared meaning; whereas, for insecure dyads, mother and child may struggle to maintain contingency, regardless of child gender. Perhaps our findings in conjunction with Zaman and Fivush's (2013) study suggest that even in these earliest conversations boys may be socialized to take the lead in conversation, particularly within a secure attachment relationship.

Fivush et al. (2006) argue that mothers use a more elaborative narrative style with their daughters, which in turn accounts for girls' narrative advantage over boys, thus indicating the gendered socialization of narrative practices. However, not all studies examining maternal narrative style have found child gender differences (e.g., Fivush & Vasudeva, 2002; Laible, 2004, 2011; Melzi et al., 2011). That our results revealed a significant moderating effect of attachment might

help explain why some prior studies have shown no child gender differences in maternal narrative style. These past null findings are perhaps a result of the absence of a measure and statistical control for attachment when an uneven distribution of attachment categories existed across boy-girl comparison groups. Our results are consistent with other studies indicating that attachment is an important moderator of the memory narrative socialization process (Reese & Farrant, 2003; Newcombe & Reese, 2004). However, this is the first study to demonstrate that the manner in which mothers structure memory conversations with their daughters and sons differs depending on the security of the child's attachment representations.

In the context of independent memory narratives, our prediction that on average girls would provide more memory details than boys was supported by our results even when holding child age and expressive language constant. These findings support prior research indicating that, on average, girls tell more elaborative independent narratives than do boys (e.g., Reese & Fivush, 1993). Our descriptive results suggest that girls remember and tell more about the situational context of the memory than do boys. Importantly, girls' narratives had greater variation in the number of memory details than boys' narratives. Our study indicated that such within-group variation could be attributed, at least in part, to child attachment representations. Secure girls' independent narratives were significantly more elaborative when compared to secure boys and somewhat more elaborative when compared to insecure girls. Contrary to our prediction that secure boys would provide more memory details in their independent narratives than insecure boys, no significant differences in memory details were found. However, insecure girls' independent narratives were comparable to both the insecure and secure boys' narratives. This is the first study to demonstrate that attachment appears to moderate gender differences in child independent memory narratives. Again, it appears that large within-group variation, especially in girls' narratives, attributable to child attachment may have obscured gender differences in prior study of child independent memory narratives (e.g., McCabe et al., 2006).

Looking across the two narrative contexts, our findings reveal the moderating role of attachment in the gendered socialization of narrative. Gender differences were found among secure but not insecure dyads in both maternal conversational style and child independent narratives. Surprisingly, mothers were most elaborative with their secure sons; yet secure boys told independent narratives that were much less descriptive and elaborative than secure girls. One explanation for these findings might be that mothers of secure sons may be picking up on cues in their sons' independent memory talk that suggest the child requires more scaffolding to provide a fully elaborated narrative. Thus, when mothers and their secure sons talk about memories together, mothers continue and expand their sons' topics more relative to changing the topic. In contrast, mothers of insecure sons and insecure daughters appeared not to display such sensitivity

to their child's communicative needs, providing far less topic elaboration within the memory conversations. This idea is supported by prior studies that suggest mothers of secure children may be more flexible in adjusting their narrative style to their children's needs than mothers of insecure children (Fivush et al., 2006; Reese & Farrant, 2003).

Support for this explanation can also be drawn from a key tenet of attachment theory, which holds that attachment security is linked with greater maternal sensitivity and flexibility to her child's changing needs. Mothers of secure children characterized themselves as being aware of and evaluating their children's cues (George & Solomon, 1989). When scaffolding children's acquisition of cognitive skills, mothers of secure children adjust their assistance to their child's needs (Meins, 1997; Mulvaney, McCartney, Bub, & Marshall, 2006). They are in tune with their children's cues, able to recognize when their children are struggling, and provide sensitive interventions when needed. Moreover, Bretherton and Munholland (2008) argue that the types of interactions characteristic of maternal elaborative style are reminiscent of sensitive maternal behaviors that are strongly related to infant-mother attachment. We propose then that mothers may also be sensitively attuned to their children's cues within the immediate conversational context and potentially better able to work within the child's zone of proximal development (Meins, 1997; Vygotsky, 1978). Mothers may be recognizing that their secure sons' attempts at independent memory narratives require *something more* to be full-fledged narratives, and these mothers may use the memory conversation context to scaffold their sons' talk about memories. This stands in contrast to mothers of insecure daughters. Although insecure girls' independent narratives were comparable to that of the boys in the study (i.e., less elaborated in terms of memory details), their mothers did not provide greater support in the memory conversation. Given Kelly and Bailey's (2013b) findings that indicate the vital role of mothers' topic-continuing replies in the successful co-construction of memory narratives, secure dyads appear to be better able to foster a collaborative and elaborative conversational context.

A notable strength of the current study is that it provides a snapshot of children's ability to talk about memories with assistance and independently. Examining memory talk and structure in two memory contexts, mother-child conversations and child independent narratives, reveals potential mechanisms that account for links between maternal behaviors during interactions with their children and the child's acquisition of linguistic and cognitive skills. Other strengths include the diversity in ethnic background, micro-analytic method of language interactions and outcomes, and inclusion of child language ability as a control. Additionally, the investigation of social and socio-emotional (i.e., child attachment) aspects of child-mother narrative interactions as well as cognitive aspects of child independent narratives (i.e., memories for personal experiences) adds to the strength of the study.

Despite these strengths, a discussion of the limits to the interpretation of our results is warranted. Although our sample is large compared to similar published works (e.g., Newcombe & Reese, 2004; McCabe et al., 2006), individual cell sizes, once divided by gender and attachment, are modest. Thus, our findings must be considered tentative and should be replicated. Also, the median income for families in this study was relatively high. While this background characteristic somewhat limits the extent to which the results can be generalized to populations from low-income and perhaps middle-income, backgrounds, the homogeneity of the sample lends to interpretation of study results free from issues raised with regard to potential confounds with income and class. Also, given the correlational nature of this study, it is not clear whether attachment security affects the quality of interaction between a mother and child or if it is the interaction during these types of storytelling events that maintains the child's attachment to his/her mother. Further longitudinal research is needed to examine the direction of influence.

Despite these limitations, our findings suggest the integral role of the attachment relationship in the socialization of a vitally important linguistic and cognitive skill. Our findings contribute to the literature by corroborating and extending prior studies that have investigated separately the relation of attachment to maternal elaborative style during memory conversations and to children's independent memory narratives. To the author's knowledge, this is the first study to investigate the roles of gender and child attachment representations in the context of both mother-child memory narrative co-construction and child independent memory narratives. Furthermore, this study adds to the sparse extant literature that has examined attachment and gender in the socialization of child autobiographical memory narratives. Our findings indicate that child attachment moderated the gendered socialization of autobiographical memory narratives. Furthermore, that the degree of elaboration in child independent memory narratives reflected differences in attachment, demonstrates that the internalization of a secure-base script is related to the process of narration (McCabe et al., 2006), and our study's utilization of a representational measure of attachment further supports the internalization hypothesis. While our findings showed that the child's internal working model of attachment is significantly predictive of both the social interactions in which mothers and children co-construct memory conversations and the memory stories children tell on their own, further study to determine the contribution of maternal sensitivity and the mother's representations of attachment is warranted.

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