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The Power of Dialogue: Understanding Developmental Origins and Processes Underlying Mother-Child Conversations About Past Emotional Events

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THE POWER OF DIALOGUE:
UNDERSTANDING DEVELOPMENTAL ORIGINS AND PROCESSES
UNDERLYING MOTHER-CHILD CONVERSATIONS
ABOUT EMOTIONAL EVENTS

(Spine title: Mother-Child Emotion Dialogues)

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Understanding Developmental Origins and Processes Underlying
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Abstract

Mother-child emotion dialogues represent an integral medium through which children's autobiography develops. This study sought to understand the developmental origins and processes underlying this co-construction process by examining the inter-relations between: mother-infant attachment relationships, maternal attachment representations, maternal sensitivity during interactions in infancy, maternal affective mindset during toddlerhood, and mother-child emotion dialogues.

Our findings are consistent with past research on the links between the three organized categories of mother-infant attachment relationships and later mother-child emotion dialogues. Children in disorganized attachment relationships were found to display a lack of consistent and coherent strategy during emotion communication with their mothers. Our results also emphasize the important role of maternal state of mind with regards to attachment in shaping emotion dialogues. Autonomous mothers co-constructed emotionally integrated and coherent narratives with their children, while non-autonomous mothers created stories that were less emotionally attuned and narratively organized; furthermore, the unresolved/ disoriented classification was found to be unrelated to mother-child emotion discourse. Finally, a mismatch in infant attachment and maternal attachment representation was associated with a mismatch in communication style during dyads' shared conversations.

While we failed to find support for the suggestion of maternal sensitivity and affective mindset as mediating the link between maternal attachment representation and affective mindset, we did find preliminary evidence of a moderating process. That is,

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autonomous mothers exhibiting unexpectedly low levels of sensitivity during infancy tended to engage in dialogues that were less emotionally integrated and coherent.

This study highlights the importance of maternal attachment representation in how emotion-laden memories are recalled, interpreted, and verbalized. Results are discussed in light of their implications for future work.

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Introduction

Talking about emotional aspects of past experiences is a quintessentially human activity. As we recount past events to others the emotional meaning of that event emerges, allowing us to represent and understand our personal history. This process of reminiscing about the past begins early in development and unfolds within a Vygotzkian framework (Vygotsky, 1978) with younger children depending on the assistance and insight of a more experienced adult in shaping the dialogue and guiding them through the discussion. Although much research has focused on identifying the different ways in which mothers structure the conversation and scaffold their children when talking about a past event and on the influence of discourse styles on children's development, there is a paucity of research examining the developmental origins and processes through which mothers and children establish a pattern of communicating about past emotional events. The overarching goal of this dissertation is twofold: first, to examine the origins of mother-child emotion dialogues, with a specific focus on mothers' attachment representations, as assessed by the manner in which she reflects upon her own childhood experiences; and second, to elucidate the developmental mechanisms by which maternal attachment influences mothers and children's co-creation of narratives surrounding children's emotional past.

This introduction will be divided into four major sections. I will begin with an overview of the significance of recounting past experiences to children's development; the different styles that mothers adopt when engaged in conversations with their children about past events, and how maternal discourse styles have been found to be linked to various aspects of children's social cognitive and emotional development. Next, I will

discuss the importance of attachment theory as a framework for understanding the antecedents of mother-child emotion conversations. This will be bolstered by empirical findings that have focused on the quality of early mother-child attachment as a precursor to the way mothers and children communicate about emotions and emotional experiences. The third section will introduce the current research project. First, I will address the need to examine the influential role of the mother's attachment representation, in addition to the quality of mother-infant attachment relationship, in shaping the way she assists her child to verbally organize past emotional experiences. I will then discuss possible developmental mechanisms by which maternal attachment representations might impact mother-child conversations with particular emphasis on maternal sensitivity during interactions in infancy and maternal affective mindset in toddlerhood. In the final section, I will review the various study hypotheses.

Mother-Child Conversations About Past Emotional Events

   Contributions to children's development. Talking about an ongoing emotion is fundamentally different from talking about a past emotional state. For very young children, the discussion of an ongoing emotion mostly involves expressing an emotion that the child is currently experiencing (Harris, 1999). On the other hand, talking about a past emotional experience requires that the child not only recall the past event and his emotional reactions but also reflect on and interpret that past experience (Dunn, Brown, & Beardsall, 1991).

   This difference between these two situations has particular significance for children's cognitive, emotional, and self-concept development. Cognitively reflecting on past events with a parent guides the emergence of the child's autobiographical memory

(Nelson, 1996) by enabling it to become more narratively organized (Fivush, 1991; 1993; 1994). In their conversations about past events, the parent assists the child to create a coherent structure for recounting the past by guiding the child toward the necessary information for setting the event in context (Fivush, 1991). For example, the child learns to include information regarding not only what happened, but when and where the event occurred, and who was involved. Furthermore, the child is taught that actions within an experience must follow a temporal sequence. Through this process, the child learns that earlier events in a sequence lead to and often are the cause of events occurring later. As a result, the child begins to learn how to organize his personal memories in a structured and coherent manner (Fivush, 1993).

Another important aspect of creating a coherent structure for representing one's personal memories is the evaluative framework within which this process occurs (Fivush, 1991). While recalling contextual information about a past event (i.e., what happened) enables the child to organize and structure his[1] memories in a coherent manner, the evaluative framework takes into account the subjective and emotional tone of the event, thereby assisting the child to interpret and understand the emotional significance of the event being discussed (Haden, Haine, & Fivush, 1997). In order to help the child understand the experienced emotions, parents often discuss the cause of the emotional reaction to the event, what the child felt and experienced during a specific scenario, and what the child can do to resolve or cope with the negative emotion experienced. Through this process of reminiscing and discussing openly about past experiences, the child is able to attribute meaning and emotional significance to the events (Fivush, 1994).

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[1] For convenience and to avoid ambiguity, I will use "he" to refer to the child, and "she" to refer to the mother.

Many researchers argue that as personal memories accumulate, they contribute to one's evolving self-concept (e.g., Neisser & Fivush, 1994). The argument is that memories of past experiences are the foundation of each person's notion of the kind of person that they are and these memories provide individuals with a continuous sense of self over time. They also provide us with information about the kinds of events that are important to the self. By evaluating past emotions, children learn what kind of emotional being they are, whether they are someone who tends to be happy, or someone whose anger is easily provoked; it also allows them to establish what meaning the event has for the self (Fivush, 1994).

In sum, by participating in adult-guided conversations about past emotional events, mothers re-present the experience to their children in a way that allows them to integrate the event into their sense of self. The child not only acquires the ability to create a coherent structure for representing his personal memories, but also learns to evaluate, interpret, and understand his emotions and experiences. Over time, these lessons are internalized by the child and contribute toward his emerging self-concept.

Researchers interested in the contributions of talking about past emotional events to children's development have found that the ways mothers scaffold understanding and re-construction of past events through conversation vary dramatically. In the next section, I will discuss in detail the different styles mothers adopt when reminiscing about past events with their children.

Maternal reminiscing styles. Over the past two decades, a substantial body of research has amassed on the different ways mothers structure past event conversations with their young children (e.g., Fivush, 1991; Fivush & Fromhoff, 1988; Fivush & Reese,

2002; Reese & Fivush, 1993; Reese, Haden, & Fivush, 1993). Mothers adopt one of two reminiscing styles in such discussions. Some mothers are highly elaborative as they encourage their children to provide more details and support their children's contributions during their discussions. These mothers achieve this goal by enlisting their children's participation and asking them many open-ended questions (e.g., "What did we see at the zoo?"), and frequently providing evaluative feedback to their children's responses by praising or confirming their answers (e.g., "Yeah, that's right, we saw a monkey!") Furthermore, if their children are unable to respond to their probing, highly elaborative mothers are likely to adjust their questions by elaborating further and providing additional information so that the child is better able to respond (Fivush, Haden, & Reese, 2006).

In contrast, mothers with a low elaborative reminiscing style are less likely to probe their children for new information during their discussions of past events. These mothers are more likely to ask their children questions that involve a yes/no response (e.g., "Did we see a monkey at the zoo?"), thus resulting in shorter conversations and less opportunity for the child to participate in the discussion. In response to their children's "empty" conversational turn (e.g., "I don't know"), less elaborative mothers are more likely to repeat the question without giving the child additional information, thus limiting the child's contributions to the dialogue (Reese et al., 1993).

Overall, by being more supportive and accepting of their children's point of view in their conversations about past events, highly elaborative mothers both encourage their children's participation and convey to them that this involvement is valued. Through their collaborative reminiscing and embellishment of memory details, these mothers and their

children are able to co-construct narratives that are lengthy and rich in detail. Low

elaborative mothers, on the other hand, provide less structure and scaffolding during

conversations with their children about past events. This results in shorter and more

impoverished conversations with children participating less in the dialogue (Reese &

Fivush, 2002).

Over the past two decades, empirical research has focused on establishing mother

child past event conversation as an integral medium through which children's

autobiographical memory develops. A host of studies have demonstrated that mothers

who are highly elaborative when discussing past events with their preschoolers have

children who develop more sophisticated autobiographical memory skills (Cleveland &

Reese, 2006; Nelson & Fivush, 2004; Reese et al., 1993; Reese & Newcombe, 2007) in

that they later provide more details and elaborated personal memories, and develop more

comprehensive understanding and coherent recollections of their experiences (see Fivush

et al., 2006, for a review).

Over the years, the significance of maternal reminiscing styles has evolved from

its initial theoretical base in autobiographical memory to expand into other facets of the

child's cognitive development; endorsing the theoretical positions of Vygotsky (1978)

and Rogoff (1990) that cognitive skills have their origins in joint social interactions. For

instance, maternal elaborative discourse has been found to be related to preschoolers'

understanding of mind as assessed in various perspective taking and false-belief tasks

(Ontai & Thompson, 2008; Reese & Cleveland, 2006; Welch-Ross, 1997); suggesting

that participating in interactive conversations about a past event serves as an important

avenue by which young children gain an understanding of mental states and their influence on behaviour.

In addition, several studies have demonstrated that maternal elaborative style contributes to conscience development in early childhood (e.g., Laible, 2004; Thompson, Laible, & Ontai, 2003). For example, it was shown that elaborative mothers, who tend to display richer portrayal of the needs and feelings of other people during an emotion-laden discourse (e.g., "He's angry like when you were angry at sissy for hitting you this morning."), and who tend to make moral statements framed in the form of evaluatives (e.g., "That was a nice thing to do!"), had children who exhibited higher resistance in a temptation task. This suggests that within the context of a rich and supportive discourse environment, children learn to connect the challenges of behavioural compliance with the needs and emotions of others, thus contributing to their early conscience development (Thompson et al., 2003).

On a similar note, it has been shown that maternal elaboration in parent-child conversations is also associated with children's enhanced understanding of emotions (see Thompson, 2006, for a review). This suggests that mothers who encourage rich background details and elicit children's participation and memory with supportive and varied questions have children who form strong and accessible memories of their emotional experiences, which in turn, are likely to facilitate children's reflective thinking about emotions and emotional events (Laible, 2004; Laible & Song, 2006). Moreover, it has been argued conceptually (e.g., Harris, 1999) and demonstrated empirically (e.g., Ontai & Thompson, 2002; Thompson, 2009a; Thompson et al., 2003) that secure mother-child attachment relationships form the context within which elaborative maternal

narrative style fosters more advanced emotion understanding in young children. This perspective is consistent with attachment theorists and researchers, who propose that secure mother-child attachment relationships promote emotion communication that is more open, elaborative and fluid, thus enabling children to understand emotional events more coherently (Bowlby, 1969, 1988; Bretherton, 1990).

Taken together, the different ways in which mothers and children converse about prior experiences and how participation in these linguistically scaffolded interactions is internalized by the child and become part of his repertoire, have been well established in the literature. Building from this body of work, there is now growing interest in explaining the origins of the individual differences observed in these memory discussions. To address this issue, many have turned to attachment theory as a framework for exploring the possibility that differences in the quality of early parent-child attachment relationships are related to differences in the way in which mothers and children recount previous emotional experiences. (e.g., Alexander, Quas, & Goodman, 2002; Fivush & Vasudeva, 2002; Koren-Karie, Oppenheim, Haimovich, & Etzion-Carasso, 2003; Newcombe & Reese, 2004).

Attachment Theory as a Framework for Understanding Developmental Origins of Quality of Mother-Child Emotion Dialogues

Emotion dialogues as a reflection of quality of attachment relationship. In recent years, researchers have integrated ideas from attachment theory to yield new perspectives on parent-child emotion communication as stemming from the quality of the early parent-child attachment relationship (e.g., Bretherton & Munholland, 1999; Fivush & Sales, 2006; Oppenheim & Waters, 1995; Thompson, 2000). The basic premise of

attachment theory is that experiences with the emotional availability of caregivers shape children's feelings of felt security and trust in others (Bowlby, 1973, 1980, 1988). As a result of the quality of these early experiences, children construct "internal working models" of themselves, others, and ultimately relationships. These representational structures consolidate over development and enable children to anticipate, interpret, and guide interactions with caregivers and others. Secure children, who are recipients of consistent and sensitive caregiving, develop coherent working models of the self as loved and valued, and the world as a safe place in which others can be trusted. Insecure children, on the other hand, who repeatedly experience insensitive or inconsistently responsive caregiving develop a less coherent and consistent view of themselves as incompetent and unloved, the world as unsafe, and others as unloving and untrustworthy. Elaborating on these formulations, Bretherton (1990, 1991) proposed that the development of working models is shaped by the quality of a young child's shared communication with the caregiver, and that patterns of communication begin early in the child's development.

During infancy, before the advent of language, communication is manifest through non-verbal emotional signaling; at this stage, Ainsworth's concept of sensitivity is intricately tied to mother-infant communication (Bretherton, 1990). Mothers who are sensitive and emotionally available are attuned to their infant's emotional signals, they interpret the signals accurately, and respond to them promptly and appropriately (Ainsworth, 1969). As a result of their experience, children of sensitive mothers anticipate that their mothers will be available and are expected to feel comfortable in expressing their emotional needs openly because they anticipate that their mothers will be accepting and respond effectively. Mothers who are insensitive and emotionally

unavailable, on the other hand, are less aware of their children's emotional signals; they

selectively ignore certain signals and may interpret them inaccurately. As a result of this

quite distinct experience, children of insensitive mothers are hypothesized to mask or

restrict their range of emotional expressiveness (Cassidy, 1994).

      As portrayed by Oppenheim & Koren-Karie (2009), the developmental

implications of these communication patterns can be illustrated within the context of the

secure base concept, a notion that is at the core of attachment theory (Waters &

Cummings, 2000). This concept refers to a dynamic system in which the child uses his

parent as a secure base from which to explore the external environment, and to which the

child returns as a haven of safety during times of emotional needs and distress. In order

for this system to operate optimally, it requires a level of well-coordinated

communication between mother and child (Oppenheim & Koren-Karie, 2009). As the

child engages in exploratory behaviour, the mother is expected to match the child's

emotional signals and attachment behaviour by supporting and encouraging his

exploration. The child thus feels confident to explore his environment because he knows

that his mother is physically and emotionally available. When the child encounters

distress and his sense of security is threatened, he displays a range of emotional signals

and attachment behaviour that communicate to the mother his need for closeness, comfort,

and protection. The mother picks up on these signals and responds accordingly in order to

help her child regain a feeling of security.

      The dynamic system of the secure base is considered to extend beyond infancy,

although its manifestations change with development (Ainsworth, 1989). The mother's

role in supporting the infant's non-verbal exploration of the external physical world, as

well as the non-verbal primitive exploration of emotions, evolves during the years to support her role in promoting the child's more advanced exploration of the internal emotional world through language. That is to say, open communication within a secure dyad during infancy, primarily involving non-verbal signals, provides the basis for a more open and fluid communication style in the toddler and preschool years. The secure child thus feels confident in exploring and sharing his thoughts and feelings with his mother because he knows that she will be emotionally available. The mother expresses support to her child by encouraging him to elaborate on his emotions, by facilitating an open and free discussion, and by validating and accepting his contributions. When the child encounters difficulty in recalling certain events or in understanding his emotions, the mother is able to interpret his signals accurately and respond in a sensitive manner. She achieves this by imputing labels to her child's emotional state, by helping him to structure and organize his experiences in a manner that he can comprehend, and by assisting him to understand and resolve his negative experiences, thereby helping him regain a sense of security (Oppenheim & Koren-Karie, 2009; Oppenheim & Waters, 1995).

Insecure dyads, on the other hand, develop a different pattern of communicating about emotions. For instance, children in insecure-avoidant relationships whose bids for care during infancy may have been rejected or belittled may learn to eschew emotion-related elaborations as a way of keeping the attachment system from being strongly activated. Such "defensive exclusion" (Bowlby, 1980) results from children's experience of rejection and distress from their mothers in response to their emotional signals during infancy. Over time, these children learn to suppress or defend against materials with

emotional or attachment-related themes in order to reduce psychological pain or discomfort. Thus, conversations of insecure-avoidant dyads about past emotional events may be more restricted and lacking in substance because these children are uncomfortable in expressing their emotions to their mothers. In contrast, children in insecure-anxious attachment relationships represent their mothers as inconsistently available or inconsistently supportive which lead them to be hypervigilant to attachment-related stressors (Ainsworth, Blehar, Waters, & Wall, 1978). As a result, when talking about previously experienced emotional or stressful events with their mothers, these children may excessively focus on negative themes because they may have more difficulty in coping with negative emotions.

Empirical evidence for quality of attachment relationship as precursor to emotion dialogues. Results from numerous studies provide support for these theoretical suggestions. For instance, Laible and Thompson (2000) examined the concurrent link between attachment security, as assessed by the Attachment Behavior Q-Sort (AQS; Waters, 1987), and conversations of mothers and their four-year-old children surrounding one past event when the child was well-behaved and another in which the child misbehaved. Results indicated that the discourse between dyads in secure attachment relationships was more emotionally open. Compared to dyads in insecure attachment relationships, these dyads were more likely to make references to feelings as well as evaluatives (e.g., "good boy", "that was a nice thing to do"). These findings suggest that securely attached children and their mothers are able to discuss potentially negative topics (i.e., past misbehaviours) with more emotional openness because the negative themes are less threatening than for insecurely attached dyads (Pillemer, 1998). In

another study, Fivush and Vasudeva (2002) found that maternal reminiscing style was a function of the concurrent mother-child emotional relationship. Mothers who rated their four-year-old preschoolers as more secure using the AQS, also tended to be highly elaborative when reminiscing with their children about a shared past experience.

In recent longitudinal studies, Koren-Karie and her colleagues examined the association between 12 month attachment security, as measured by the Strange Situation Procedure (SSP; Ainsworth, Bell, & Stayton, 1971), and mother-child emotion discussions when children were 4.5 and 7.5 years of age (e.g., Koren-Karie, Oppenheim, Haimovich, & Etzion-Carasso, 2003; Oppenheim, Koren-Karie, & Sagi-Schwartz, 2007). Results indicated that dyads who were securely attached during infancy were later better able to work together in co-constructing coherent and emotionally attuned accounts of past emotional experiences than insecurely attached dyads. To examine the details of how mothers and children interacted with each other in constructing a coherent narrative about past arousing experiences, the authors developed a coding scheme called the Autobiographical Emotional Events Dialogue (AEED; Koren-Karie, Oppenheim, Haimovich, & Etzion-Carasso, 2000). Using this coding tool, the authors were able to demonstrate that children who were classified as being in secure attachment relationships at 12 months of age had mothers who were more emotionally attuned to their children when discussing a wide range of emotions. During their conversations, these mothers maintained their children's involvement and scaffolded their exploration of emotions by providing appropriate levels of probing and structuring, and by accepting their children's expressions of thoughts and feelings. These mothers also tended to be more emotionally available to their children in that they were more likely to contain their own negative

feelings, provide comfort to their children and help them bring the memory of a negative experience to a positive resolution. In turn, the children were more cooperative and tolerant of their mothers' suggestions, and were more willing to elaborate on their thoughts and feelings. This resulted in narratives that were jointly constructed and that were characterized by coherence and emotional openness. On the other hand, children that were classified as insecure at 12 months had mothers who were less emotionally attuned to their children's expressions. During their conversations, mothers may have displayed some level of hostility towards their children; they may have criticized and not been as supportive and accepting of their children's contributions. When discussing past events in which the child experienced a negative emotion, mothers of insecure children were less likely to assist the child in resolving the negative emotion. Instead, mothers either ended the discussion abruptly by changing the topic, or they enhanced the negative emotion by focusing and elaborating on negative aspects of the experience. In turn, children tended to be less cooperative and were either less willing to explore and express their thoughts and feelings or did so in an overly dramatic and exaggerated manner. As such, insecure children and their mothers tended to create narratives that were less coherent and less emotionally organized.

　　　　Role of disorganization. With only a few exceptions, most studies to date have largely focused on the links between the three organized categories of the attachment relationship and mother-child emotion dialogues; as a result, much less is known about the role of the disorganized classification in parent-guided reminiscing. During the Strange Situation, Disorganized infants display odd or disoriented behaviours, such as stilling and freezing for a substantial amount of time. The inability to maintain a coherent

attachment strategy in the face of distress is believed to reflect the infant's dysregulation or disintegration of emotions under such stressful scenarios (Solomon, George, & De Jong, 1995).

In a study examining the links between early infant-mother attachment at 1 year and mother child communication at 4.5 years during a reunion episode, Etzion-Carasso & Oppenheim (2000) found that children classified as insecure/disorganized tended to have non-open communication with their mothers later on. Their conversations were lacking in coherence and fluency, mothers were not attuned to their children but rather displayed poor timing in communication, boredom, and provided poor structure to the dialogues; while children did not co-operate with mothers, ignoring mothers' requests, rejecting them, or showing signs of anger toward them.

Using the AEED described earlier, Oppenheim et al. (2007) further explored this link and found that, like those in other insecure attachment relationships, dyads classified as disorganized were likely to engage in emotion dialogues that were less coherent and emotionally organized. The authors examined sub-classifications of the emotion dialogues to determine whether the disorganized group differed from the other insecure groups. Specifically, the authors examined the link between disorganization and the "Inconsistent" (IN) sub-classification. During this type of dialogue, dyads display a lack of a consistent strategy in communication either across the emotions being discussed or between the two speakers. The authors expected that the lack of a consistent strategy evinced in disorganized behaviour during the Strange Situation Procedure would lead to a lack of a consistent strategy in emotion dialogues, but despite this strong conceptual argument, they did not find such a link (Oppenheim & Koren-Karie, 2009).

The first goal of the current study will be to replicate previous findings by establishing a link between 12 month attachment security, assessed using the Strange Situation Procedure, and later mother child emotion dialogues using Koren-Karie et al.'s (2003) AEED coding scheme. In addition to examining the organized attachment classifications, we will also be investigating the role of disorganization in later mother-child emotion dialogues.

The Impact of Maternal Attachment on Mother-Child Emotion Discourse: Understanding Developmental Origins

Although the body of work just reviewed has established infant attachment as an important precursor to emotion dialogues, the developmental origins of this association have yet to be determined. That is, we still know very little about why some mothers talk more openly and coherently about emotion laden experiences with their children than others. The next section of this paper highlights the influential role of mothers' representations of attachment in determining why some are more equipped than others to foster a more open, collaborative, and organized discussion with their children about their previous emotional experiences.

Maternal attachment representations and quality of mother-child emotion discussions: A missing link in the empirical literature. Past research has demonstrated that mothers are remarkably consistent in their reminiscing style over time (Newcombe & Reese, 2004; Reese, Haden, & Fivush, 1993), across siblings (Haden, 1998), and across children with contrasting levels of difficulty (Koren-Karie, 2011). For instance, using a foster care sample, Koren-Karie (2011) found that mothers engaged in the same type of emotion dialogue with their foster care children regardless of whether the child was

considered to be challenging or not. Similarly, in an early study, Smolak & Winraub (1983) observed that some aspects of mothers' style remained stable regardless of whether she was talking with her own 2 year old child or with an unfamiliar target child.

These findings prompt the question of which maternal characteristics might influence mothers' conversational styles with their children? Recently, maternal attachment style has been identified by many in the field as an important avenue to help explain how mothers may differ in their scaffolding ability during the reconstruction of their children's emotionally-laden memories (Fivush et al., 2006; Fivush & McDermott Sales, 2006; Laible & Panfile, 2009; Thompson, 2009a; Thompson et al., 2003). The argument here is that children learn to create more emotionally expressive and integrated narratives in the context of appropriate and sensitive parent-guided reminiscing, and that the structure and content of these dialogues are, in part, a function of the parent's own representation of past experiences (Fivush & Sales, 2006). According to this perspective, the mother's own representation with regards to attachment not only plays a significant role for the immediate emotional support she provides to her child during the discussion, but also impinges on how emotional memories are recalled, evaluated, and interpreted (Harris, 1999; Thompson, 2009a; Thompson et al., 2003).

Despite the growing interest in examining the role of maternal attachment status in shaping the climate of mother-child conversations about past emotional memories, relatively few researchers have tested this connection empirically; those studies that have addressed the issue have yielded mixed results. In a study exploring the relations of maternal attachment status, maternal general coping skills, and the quality of the mother-child co-constructed narratives about stressful events, Fivush & Sales (2006) observed

mothers and their 9- to 12- year old children while they discussed stressful events resulting from the child's asthmatic condition. To assess mothers' attachment style, mothers completed the Experiences in Close Relationships Inventory (ECRI: Brennan, Clark, & Shaver, 1998). Items on this questionnaire identify anxiety and avoidance as two dimensions that are important for determining adult attachment style within close romantic relationships. Individuals who score high on either dimension are considered to be less secure in close relationships with others. The authors found that maternal avoidant attachment status was negatively correlated with quality of narrative interactions. Specifically, avoidant mothers engaged in conversations with their children that were less attuned, less communicatively fluent, and less collaborative (see also Sales, 2009). The authors also found an unexpected association between maternal anxious attachment status and mother-child co-constructed narratives. Mothers who were more anxiously attached tended to be more elaborative when reminiscing about a stressful asthma-related event with their child, and tended to provide more explanations for the causes and/or consequences of the illness or attack. Upon closer examination, it was shown that children of anxiously attached mothers had higher levels of internalizing and externalizing behaviour problems. Thus, the authors speculate that maternal elaboration may be qualitatively different in the context of highly stressful emotional events. By trying to elaborate on and explain a highly stressful and uncontrollable event, such as an asthma attack, anxious mothers may not actually be effectively helping their child to understand and cope with the situation; instead they may be increasing their child's level of stress, which may promote higher levels of anxiety and aggression in their children.

In another study examining the links between maternal attachment representations, child attachment security, and reminiscences about everyday shared experiences between mothers and their 3 year old children, Bost and her colleagues (2006) used secure base scripts as an index of maternal attachment representation. Secure base scripts refer to an individual's history of secure base support which is represented in memory as cognitive structures referred to as scripts. To complete the attachment script task, mothers were given lists of words and asked to construct a story for each using the words that appeared in the list. These word-prompted lists are intended to prime the mother's secure base script. Mothers who have a good knowledge of and easy access to the secure base script are expected to produce narratives organized around this script, and mothers who do not have an organized and consolidated secure base script will not have easy access to this cognitive structure, and thus will use the prompt words in an idiosyncratic way with no secure base content (Waters & Waters, 2006). Results from Bost et al's (2006) study did not provide support for a link between maternal secure base scripts and maternal reminiscing style but did reveal an association between the scripts and number of references to emotions in the mother-child narratives. The authors concluded that, while mothers' attachment representation may not be related to the way in which they help their children to organize and talk about shared events, they do seem to have an influence on a mother's tendency to integrate emotional content into these relational narratives.

The utility of the Adult Attachment Interview in the current study.

Measurement issues may provide an explanation of these mixed findings. While both the ECRI and secure base script are valid assessments of adult attachment, they may not be ideal in tapping into how mothers learn to assist their children in recalling and discussing

previous emotional experiences. The ECRI is a self-report measure of attachment focused on mothers' appraisals of themselves in romantic relationships, and the secure base script is a word-prompt story generation task that indirectly assesses the mothers' representation of attachment relationships. A more appropriate and direct approach to measuring maternal attachment in this context would be one that considers how mothers themselves reflect on and discuss episodic memories of their *own* early experiences with their parents, and how they create narratives surrounding these events. The Adult Attachment Interview (AAI; Main, Goldwyn, & Hesse, 2002) is a widely used and validated instrument that asks participants to report on their own attachment-related experiences during childhood and would appear to provide the best assessment of those aspects of adult attachment that are most relevant for mother-child emotion dialogues. Trained coders assign adults to an attachment category by analyzing *how* they talk about their childhood experiences, and not the content of their speech. In this sense, individuals' AAI classification is indexed by the degree of emotional openness and coherence in which they can discuss their early attachment experiences (Hesse, 2008), constructs which are at the heart of mothers' ability to scaffold their children while reminiscing about their children's emotional experiences.

   Adults classified as secure-autonomous on the AAI tend to talk about their own childhood experiences in a reflective, coherent, and consistent manner (Main, 2000). They are able to recount these early memories with ease, and do so in an emotionally open and fresh manner such that it is free from distortions and emotional defenses. During the interview, these individuals explore their thoughts and feelings freely as they display a flexible range of emotional responses. Autonomous speakers exhibit awareness

of the effects of their early childhood experiences upon their present state of mind as they

are able to accept and describe the effects of past experiences on the self. Dismissing

individuals tend to detach themselves from experiences that may trigger negative feelings.

This way of restricting negative emotions or experiences is often displayed during their

interview through an insufficiency of details, an inability to support assertions with

memories of specific attachment-related events, and a tendency to minimize or downplay

descriptions of negative experiences. As a result, the narratives of dismissing adults

during the AAI tend to be incoherent, overly succinct and brief; reflecting a need to avoid

and ignore childhood experiences and thus to protect themselves from negative emotions.

In contrast, individuals classified as preoccupied on the AAI tend to become overly

involved and enmeshed in their own attachment experiences (Main et al., 2002). During

the interview, preoccupied speakers may amplify negative affect and discuss childhood

experiences in an angry manner, indicating that they may still be overwhelmed by early

negative experiences. The narratives of preoccupied adults tend to be incoherent insofar

as they often stray from the topic, tell lengthy and rambling stories and lose track of the

interview process. Finally, mothers who are considered to be unresolved are those who

tend to be disoriented during discussions of loss or trauma (Hesse & Main, 2000; Main et

al., 2002). For example, they tend to display lapses in monitoring of reasoning or

irrational thinking when discussing loss or trauma (e.g., making statements indicating that

a parent who passed away 20 years ago is still alive in a real, not metaphysical, sense);

their speech may also be marked by a lapse in monitoring of discourse or losing track of

the discourse context completely (e.g., unusual attention to detail). Adults placed in the

unresolved group are also assigned a best fitting alternate major classification of secure, dismissing, or preoccupied.

The way in which mothers represent their own personal memories during the AAI, thus, may serve as a particularly useful measure of maternal attachment for exploring links to how they assist their children in constructing narratives about their children's past experiences, and thus represent their own autobiographical memories. To date, only one study has examined the link between maternal state of mind as assessed with the AAI and maternal reminiscing style. Working with 31 mothers and their 5.5 year old children as they reminisced about everyday past events, Reese (2008) found that mothers who were more coherent on the AAI were also more elaborative and confirming when reminiscing with their children, even after controlling for mothers' general language skills. In other words, mothers who were more coherent in discussing their own childhood experiences were better able to talk openly and elaboratively with their children about their children's past experiences.

Reese's (2008) study, however, had several limitations. First, its small sample size reduced power in detecting overall differences between maternal attachment classifications in reminiscing styles. Second, as the author pointed, maternal state of mind and mother-child reminiscing were assessed only months apart and the AAI was administered following the assessment of reminiscing, thus limiting conclusions about causal links. Finally, because no links were found between AAI classifications and mother-child conversations, it does not provide any insight on the unresolved/disoriented classification. In light of these limitations, the author emphasized the importance of

examining the association between maternal attachment representation and mother-child co-construction with a larger sample and within a longitudinal design.

A second and major goal of the current study is therefore to investigate the link between maternal state of mind with regards to attachment, using the AAI, and mother-child emotion dialogues, using the AEED. The current study will use longitudinal data and a larger sample and will be the first to examine the association between an unresolved/disorientated state of mind with regards to attachment and later emotion dialogues.

Attachment pairs: understanding quality of emotion dialogues in both continuities and discontinuities of attachment. The preceding sections have considered the associations of mother-infant attachment and maternal attachment representations with emotion dialogues separately. A more complete approach to examining the process through which differences in emotion communication evolves from socio-emotional relationships would be one that takes into account both quality of mother-infant attachment and maternal attachment. Although empirical investigations of this issue are currently lacking, theory suggests that concordantly secure dyads, that is, dyads featuring secure patterns of maternal state of mind and infant attachment, would be particularly inclined to co-construct emotionally attuned and coherent dialogues; while the shared conversations of concordantly insecure dyads would likely be less fluent and organized. Of particular interest, however, is how mothers and children might work together in constructing shared narratives when there is discordance in their attachment classifications. Studying such discontinuities in attachment patterns has been highlighted by attachment researchers as important for generating hypotheses about the predictive

power of adult attachment representation (e.g., van IJzendoorn, 1995; Atkinson et al., 2005). In these mismatched pairs, where one partner is secure and the other is non-secure, it is much more difficult to predict the quality of the co-construction process.

The third goal of the current study will be to assess the link between attachment and emotion dialogues when *both* mother and infant attachment classifications are taken into account. The argument is that these shared emotion conversations represent a dyadic interaction, and so the quality of the co-construction process ought to reflect the contributions of both partners. Concordantly secure dyads will likely develop an open and collaborative milieu in which the mother will support and welcome the discussion of her child's emotional past, and the child will cooperate because he feels safe and trusts that his mother will guide this discussion in a warm and sensitive manner. Conversely, a more restricted or overly dramatized dialogue is expected to emerge when dyads are concordantly insecure. In these dyads, mothers are expected to be less supportive by either maintaining a detached emotional stance or by having difficulty sustaining a contained emotional atmosphere; and the child is expected to be less cooperative and willing to discuss their thoughts and feelings in an organized manner. The end product will likely be a dialogue that is less coherent and less narratively organized. In the case of discordant dyads, where one partner is secure and the other insecure, communication is expected to be less harmonious and emotionally attuned. In these dyads, it is expected that there will be a noticeable gap, and a mismatch in communication patterns with one partner expressing interest and cooperation, while the other either blocking the opportunity for dialogue or filling the conversation with irrelevant details and confusion.

Once the links between maternal attachment and later mother-child emotion dialogues have been thoroughly examined, the next major goal of this study is to uncover the developmental mechanisms by which the former shapes the latter. In the following section, I will address the issue of *how* mothers' state of mind with regards to attachment manifests itself into her scaffolding ability of her child's personal narratives, and the factors that could impact this link.

The Impact of Maternal Attachment on Mother-Child Emotion Discourse:

Understanding Developmental Processes

As discussed earlier, it has been argued that mothers' sensitivity and responsiveness to their children's affective signals and emotional state during infancy play a fundamentally important role in shaping the structure and emotional climate of the dyads' emotion dialogues later on. Based on this premise, I first discuss the quality of the mother's interactions with her infant as reflected in her level of sensitivity during these dyadic exchanges, and then consider the mother's thoughts and feelings about emotions, or her affective mindset. Both stand as possible avenues through which a mother's attachment representation might influence her ability to serve as a communicative partner who promotes and encourages her child to explore and reflect on his emotional past. In addition to the mediating roles of maternal sensitivity and maternal affective mindset, I will also examine the possibility that the strength of associations between adult attachment and quality of emotion dialogues is altered, or moderated, by individual differences in early maternal sensitivity and maternal affective mindset.

Mediation models.

Quality of early mother-child interactions: The role of maternal sensitivity.

Attachment theory posits that mothers' attachment representation shapes the manner in which she responds to her infant's emotional signals, needs, and behaviours during daily interactions (Grossmann, Fremmer-Bombik, Rudolph, & Grossmann, 1988; Tarabulsy et al., 2005; van IJzendoorn, 1995). In turn, mothers' sensitivity or responsiveness creates the experiential basis through which the infant develops his working model of others and himself (van IJzendoorn, 1995). In this regard, a mother's representations of attachment guides her affective exchange with her infant and the moment-to-moment quality of this exchange forms the basis of the child's internalized knowledge of social interactions and his own feelings (Stern, 1985). The quality of these early interactions, thus, likely plays an important role in shaping the dyad's later conversational quality about emotional experiences. Sensitive and responsive caregiving expressed during the pre-verbal phase, primarily involving attunement and responses to infants' non-verbal emotional cues, serve as important catalysts to developing sensitive and responsive verbal emotion communication as the child becomes more linguistically proficient (Bretherton, 1993; Etzion-Carasso & Oppenheim, 2000; Fivush & Sales, 2006; Oppenheim & Koren-Karie, 2009).

Mothers with different states of mind with regards to attachment can be expected to exhibit different interactive behaviours toward their infants that will have differential effects on later conversational quality. Autonomous mothers will not restrict or distort perceptions of their baby's emotional signals (van IJzendoorn, 1995) as they will accurately interpret their baby's emotional signals, and respond to them in an appropriate and effective manner (Haft & Slade, 1989). Such early sensitivity and responsiveness will

emerge during later verbal interactions as their ability to serve as a sensitive communicative partner during emotional reminiscing with their children.

Dismissing mothers, who tend to downplay or minimize their own negative childhood experiences as a way of restricting their emotional experiences, may have difficulty interpreting and dealing with a range of emotions in her infant. As a way of keeping strong negative emotions at a distance, she may thus reject or be unresponsive to certain emotional signals from her infant such as distress and need for comfort or reassurance (e.g., Haft & Slade, 1989; Zeanah, Benoit, Barton, Regan, Hirschberg & Lipsett, 1993). Children's experiences of such consistent rejection from their mother may result in "defensive exclusion" (Bowlby, 1980) leading them to express their emotional needs in a more restricted manner. This may be interpreted as the infant's way of cooperating in order to help maintain her mother's state of mind with regards to attachment (Bretherton, 1990; Cassidy, 1994). As a result of suppressing and avoiding communication around certain emotions throughout infancy, the conversations of these dyads, particularly around negative or aversive emotional experiences, are likely to be emotionally flat, dysfluent, and lacking in detail.

Preoccupied mothers tend to be overly entangled in their own attachment experiences and are unable to provide a coherent account of their early childhood experiences, and are therefore likely to attend to their child's emotional signals in an unpredictable manner (Haft & Slade, 1989; van IJzendoorn, 1995). In response to the inconsistently available parent, children of preoccupied mothers may learn to heighten or exaggerate their negative emotions as a way of increasing their bids for attention and decreasing chances of losing contact with the inconsistent parent (Cassidy, 1994). Thus,

these dyads may co-construct narratives, particularly around the child's negative experiences, in an exaggerated or overly dramatic manner without appropriate resolution.

Numerous studies have examined the association between maternal attachment and maternal sensitivity and responsiveness during interactions with their infants (e.g., Biringen, Brown, Donaldson, Green, Krcmarik, & Lovas, 2000; Haft & Slade, 1989; Pederson, Gleason, Moran, & Bento, 1998). Consistent with the theoretical suggestions outlined above, autonomous mothers are likely to be more emotionally attuned to their infants during social interactions. These mothers interact with their infants during play in a more harmonious, mutual, and empathic fashion. They consistently respond to a broad range of their infants' affect and intervene appropriately. Dismissing mothers, on the other hand, tend to consistently misread their babies' negative affect. While they are comfortable attuning to their infants' positive expressions, dismissing mothers may reject of expressions of negative emotions, such as distress or bids for reassurance. Preoccupied mothers appear to respond to their babies in a pervasively unpredictable manner, within the context of both positive and negative infant affect. They may completely ignore their infants' expressions, or become overly attentive to their babies. The converging data provide convincing evidence that mothers' attunement or misattunement to their babies' emotional needs convey important information about her own internal world to her baby. Through these social interactions, the infant learns which emotions he is able to share with his mother and which must be regulated in another manner.

No studies to date have examined the link between early maternal sensitivity and their ability to co-construct narratives around affective memories. However, many leading researchers in this field argue that mothers' responsiveness during such

conversations is a function of maternal sensitivity and attunement to children's emotional state (e.g., Fivush, 2009; Koren-Karie et al., 2003; Oppenheim & Koren-Karie, 2009). A mother's dialogic sensitivity may be expressed in the way in which she structures the dialogue. A highly sensitive mother is adept at adjusting her responses according to her child's cognitive and linguistic functioning (Fivush et al., 2006). In other words, the mother allows her child's voice to be heard in the dialogue by sensitively probing her child when he may be at a loss. She may also appropriately re-direct him when he shifts his attention away or drifts to irrelevant details. At the same time, she is able to recede and listen to her child express his thoughts and feelings when he is able to recall certain memories and contribute to the narrative. I argue that such sensitivity during emotion dialogues are a reflection of the dyad's earlier interactions. Mothers who were more sensitive to their children's emotional signals during infancy will also display increased insight into their children's mental world. This will be evident in the harmonious and emotionally integrated narrative that they co-construct.

In summary, the theoretical and empirical literature supports the argument that maternal attachment status translates into an ability to provide a scaffold for her child during narratives about past events by way of her state of mind's impact on the dyad's earlier non-verbal interactions and their subsequent embodiment in later dialogues. The mother's own mental representations of attachment guides her sensitivity and responsiveness to her infant's emotional signals, and over time these experiences provide a basis for emotional expressiveness and connectedness between the dyad.

Mothers' thoughts and feelings about emotions: The role of maternal affective mindset. Our discussion about mothers' attachment representation and their ability to

effectively communicate with their child about emotional experiences would be incomplete without some consideration of mothers' thoughts and feelings about emotions themselves. This "philosophy" or mindset about emotions has been referred to as how mothers process or represent a host of emotions within themselves and their children; and is reflected in their awareness of emotions as well as their ability to coach their children on how to cope with them (DeOliveira, Moran, & Pederson, 2005; Gottman, Katz, & Hooven, 1996).

It can be argued that the way in which a mother teaches and talks to her child about emotions and emotional events reflects her own strategy for representing and coping with emotions, which, in turn, is a function of the history of her own personal experiences (DeOliveira, 2001). According to this position, an autonomous mother should be able to exhibit a flexible range of emotional responses. During the Adult Attachment Interview, she is able to describe positive early experiences in a fresh and convincing manner and describe aversive childhood experiences in a differentiated and coherent manner (Cowen, 1996). As a result of this, autonomous mothers are expected to be more aware and accepting of a wide range of emotions both within themselves and within their children (DeOliveira et al., 2005) because they have little psychological need to distort their babies' emotions in order to preserve their own state of mind with regards to attachment, rather they attune to the entire spectrum of their infants' emotional signals in an equal manner. Thus, autonomous mothers might be expected to be aware of their children's emotions and able to assist them in discussing emotional experiences and coach them on how to cope with these events. As Thompson (2009b) contends, "the coherence of secure attachment representations in mothers may permit their greater

access and acceptance of their own negative feelings, and consequently enhanced sensitivity in discussions with their child about distressing, threatening, or confusing negative feelings." (Thompson, 2009b, p.3).

In contrast, dismissing mothers tend to adopt a deactivating emotional strategy by restricting or detaching from situations that may elicit negative feelings (Cassidy, 1994). This way of suppressing aversive memories suggests that certain emotions are "off-limits" and are not as readily accessible (Mikulincer & Orbach, 1995). As such, dismissing mothers are generally uncomfortable with expressions of emotion, vulnerability, and distress (Feeny & Collins, 2003) leading them to be less aware and accepting of certain negative emotions when asked to describe their philosophy, attitudes and strategies that pertain to their own emotional experiences, and those emerging in their children. When recounting and discussing negative emotional experiences, it can therefore be expected that avoidant mothers would be more emotionally restricted with their children's emotional state, and their discomfort with negative emotions associated with negative events may prevent them from comforting their children.

Finally, preoccupied mothers' tendencies to be inconsistent in their responsiveness to children's emotional signals (Haft & Slade, 1989; van IJzendoorn, 1995) suggest that they may be unpredictable in their level of emotional awareness. During conversations about aversive emotional events with their child, preoccupied mothers may thus become unexpectedly overwhelmed. Their emotional attunement to their child may at times be overshadowed by a preoccupation with their own emotional experiences, leading them to flood the conversation with negative details and preventing them from assisting their children to resolve the distressing experience.

DeOliveira and colleagues (2005) provided support for some of these assumptions in their study examining the association between maternal attachment classification and maternal affective mindset in a high-risk sample. Using the Meta-Emotion Interview (MEI; Hooven, 1994), the authors assessed mothers' thoughts and feelings about their own negative emotional expressions as well as their attitude and behaviour toward their children's negative emotions. Their findings revealed that mothers who were classified as autonomous on the AAI were more aware of and more likely to assist their child in dealing with the emotions. In comparison, dismissing mothers were significantly lower in their responsiveness to their children's fear and sadness. These mothers tended to display lower awareness and coaching toward their child's negative affect. Specific conclusions concerning preoccupation with regards to attachment could not be made in this study because preoccupied individuals in the high risk sample were also classified as unresolved with respect to loss and/or trauma. Although the effects of preoccupied and unresolved states of mind are impossible to tease apart, it is interesting to note that the authors found that these mothers reported having difficulty regulating their own negative affect as well as responding to the same emotions in their children. This study thus provides strong empirical support for the notion that maternal attachment representations strongly influence mothers' emotional style.

In a study introducing the concept of parental meta-emotion and applying the Meta-Emotion Interview, Gottman et al. (1996) found some support for the suggestion that a mother's emotional style, or her affective mindset, may guide her verbal interactions with her child. The authors demonstrated that mothers who were more aware of their own emotions and their 5 year old children's emotions were also better able to

teach their children on how to cope with negative affect. Moreover, the results indicated that these mothers were also more likely to praise their children and provide a scaffold for them during a parent-child verbal interaction task. During their verbal interactions, these mothers tended to display more affection, engagement, positive structuring, responsiveness, and enthusiasm. On the other hand, low levels of maternal awareness of emotions both within themselves and with their children, as well as low levels of emotional coaching were found to be related to higher levels of what the authors referred to as derogation during verbal interactions. While discussing certain issues with their children, these mothers appeared to use humour at the child's expense, were more intrusive, and displayed higher levels of criticism.

Gottman et al.'s (1996) study did not examine mother-child conversations surrounding emotional experiences, thus findings from this study do not inform us about mothers' responses to emotional aspects of the conversations. However, these results do corroborate the notion that mothers with a heightened level of emotional awareness, both within themselves and with their children, are more likely to provide an open environment and encourage their children to express themselves openly and freely. They tend to welcome their children's contributions by showing affection and involvement; and they engage their children by providing structure and showing enthusiasm during the conversation. In contrast, mothers who are less able to acknowledge emotions within themselves and with their children appear to create a conversational environment that may be less welcoming and more hostile. By being less aware of their children's feelings, these mothers tend to respond to their children's contributions in a negative and derogatory manner. The authors conclude their paper by calling on future researchers to

consider parent-child conversations surrounding emotional moments in order to understand how parents' basic thoughts and feelings about emotions shape their emotional dialogues with their children.

Taken together, the **fourth goal of the current study** will be to examine the developmental pathways through which maternal state of mind with regards to attachment impacts later mother-child emotion dialogues. Early maternal sensitivity and affective mindset are expected to be two key processes, and thus serve as mediators, through which the complexity and richness of mothers' emotional lives, as assessed in the AAI, are conveyed to the quality of their dialogue concerning the child's emotional experiences. Although there is a strong conceptual basis for testing the mediating roles of maternal sensitivity and affective mindset, I will also examined the possibility that maternal sensitivity and affective mindset might moderate the influence of attachment representation on later mother-child emotion dialogues.

Moderation models. A basic premise in establishing mediation is that a third variable (the mediator) significantly reduces the impact of the predictor on the outcome variable. Despite the conceptual arguments justifying the exploration of maternal sensitivity and affective mindset as mediators, evidence for a meditational process may be compromised by the finding of a robust link between maternal attachment representation and mother-child emotion dialogues. Two observations suggest that the link between maternal state of mind with regards to attachment and mother-child discourse may be stronger than the link between maternal state of mind with regards to attachment and both maternal sensitivity and affective mindset. First, both maternal representation and mother-child emotion dialogues are verbal measures that are based on

narrative assessments; while maternal sensitivity is a behavioural measure of the quality

of interactions between mother and infant, and maternal affective mindset is a self-report

assay of mothers' thoughts, beliefs, and attitudes on emotions. The approach of assessing

how mothers discuss and reflect on their personal past will likely re-emerge in how they

assist their children in reflecting back on their past, thus enhancing the association

between the two constructs.

Second, the empirical association between adult attachment and sensitivity

appears to be weaker than what would be expected based on conceptual arguments. In

his seminal meta-analysis, van IJzendoorn (1995) examined maternal sensitivity as

mediating the link between adult attachment representation and infant attachment and

found an association of $r = .34$ between parental attachment representation and parental

sensitivity. In another study testing the hypothesis that parental sensitivity would mediate

the associations between autonomy in the Adult Attachment Interview and security in the

Strange Situation, Pederson et al. (1998) also found that sensitivity was only weakly

related to AAI autonomy ($r = .28$). Both of these observations suggest that mothers with

similar states of mind with regards to attachment may vary in their level of sensitivity and

responsiveness during interactions with their infants, and that probing for factors that

might moderate the impact of maternal state of mind is warranted.

Furthermore, it has been argued that within developmental research, the additive

effects of variables, as in mediation analyses, do not always yield adequate explanations

(Dearing & Hamilton, 2006). Specifically, variables that influence development often do

so by modifying the effects that some variables have on others (Gottlieb, 2003), and less

so by a full transmission of the effects of some variables on others. By testing moderation,

we can thus examine, within a developmental framework, the ways in which some processes are amplified, diminished, or qualitatively alter the influences of others.

In light of these considerations, the **fifth goal** of the current study will be to examine the extent to which the link between maternal attachment representations with emotion dialogues may be moderated by maternal sensitivity and affective mindset. It is expected that high levels of early responsiveness and positive affective mindset will strengthen, while low levels of early sensitivity and negative affective mindset will attenuate the influence of an autonomous state of mind with regards to attachment on emotionally open and coherent dialogues.

Summary of Study Goals and Hypotheses

Study goal #1: The quality of the attachment relationship and mother-child emotion dialogues

Dyads in secure attachment relationships are expected to later engage in consistently open, fluid, and collaborative shared conversations, whereas dyads in insecure attachment relationships are expected to engage in less organized, emotionally integrated, and coherent dialogues. In addition to examining the organized categories of attachment, we also sought to investigate the co-construction of emotion narratives of dyads in disorganized attachment relationships. Based on Oppenheim & Koren-Karie's (2009) conceptualization, we anticipate that the disorganized dyads will differ from the other organized but insecure dyads in that they will be more likely to engage in Inconsistent dialogues. In other words, it is expected that the lack or collapse of a consistent attachment strategy in the Strange Situation, likely due to a dysfunctional internal working model of attachment that does not assist them in seeking support, will

later be reflected in a lack of consistent and coherent strategy in effectively

communicating and expressing their thoughts and feelings.

Study goal #2: Maternal attachment representation and mother-child emotion dialogues

Mothers classified as autonomous on the AAI are expected to display a similar

narrative style when engaging in memory talks with their children. These mothers will

likely foster a more supportive and warm environment in which emotional experiences

can be discussed in a more open and coherent manner. Conversations of autonomous

mothers and their children are thus expected to be a product of the dyad, and marked by a

sense of mutual engagement and harmony. The non-autonomous mothers are

hypothesized to create narratives surrounding their children's emotional past in a less

coherent and narratively organized manner. Dismissing mothers are expected to transmit

their reminiscing style to their children by avoiding detailed discussions about emotional

topics and keeping elaborations that may elicit negative emotions at a minimum, while

preoccupied mothers are expected to be overwhelmed during parent-guided reminiscing

by being overly dramatic and emphasize on the negative aspects of their child's

experience and perhaps even shifting to her own feelings and emotional experiences.

Finally, the influence of an unresolved state of mind with regard to attachment on

maternal scaffolding ability is largely exploratory due to a lack of existing empirical and

conceptual frameworks.

Study goal #3: Mother-child attachment pairs and later emotion dialogues

It is anticipated that a collaborative, emotionally integrated, and coherent dialogue

will ensue when both partners are classified as secure. Whereas a less balanced,

emotionally restricted or overly dramatized, and less fluid dialogue is expected to emerge when dyads are concordantly insecure. In the case of discordant dyads, it is expected that there will be a mismatch in communication patterns with one partner being engaged and collaborative in the co-construction process, while the other may either block the opportunity for open dialogue or overwhelm the conversation with irrelevant details and confusion.

Study goal #4: Early maternal sensitivity and affective mindset as mediators of the link between maternal attachment representation and mother-child emotion dialogues

It is anticipated that an autonomous maternal state of mind with regards to attachment will provide a basis for sensitive and responsive caregiving during infancy, which in turn, will provide the context for collaborative, emotionally integrated, and coherent mother-child reminiscence about past experiences. On the other hand, insecure mothers who tend to display less sensitive and responsive caregiving during infancy are expected to display less sensitive and responsive scaffolding of their children's narrative accounts of the past. With regards to mothers' affective mindset, it was hypothesized that mothers with different attachment representations would demonstrate different styles of experiencing and representing emotions, both within herself and within her child, and that this will later shape the way in which emotions are recalled and discussed. That is, autonomous mothers are expected to be more aware of their own affect, and at the same time, more aware and better able to coach their children on how to cope with certain emotions. Together, these dyads can be expected to co-construct narratives surrounding the child's past in an emotionally open, accepting, and supportive manner. In contrast,

non-autonomous mothers are hypothesized to be less aware of negative emotions and are expected to report providing less assistance to their child on how to deal with negative affect. In turn, when engaged in discussions about the child's personal emotional experiences, these mothers' lower level of attunement to their children's emotional states is expected to be reflected in conversations that may be less emotionally coherent and consisting of less support to help the child resolve certain emotions.

Study goal #5: Early maternal sensitivity and affective mindset as moderators of the link between maternal attachment representation and mother-child emotion dialogues

In addition to mediation, we also tested whether the strength or associations between maternal attachment and mother-child dialogues are altered or moderated by differences in maternal sensitivity and affective mindset. It was hypothesized that low levels of maternal sensitivity during infancy and a negative affective mindset would block the positive impact of an autonomous state of mind on quality of later mother-child emotion dialogues. Whereas high levels of maternal sensitivity and positive affective mindset might serve to buffer the negative impacts of a non-autonomous state of mind on later mother-child dialogues.

Method

Participants

The participants in the study were children and their mothers recruited into a child development longitudinal study during their postpartum stay in the hospital. Mothers and their infants were both visited in their home and invited to the University laboratory at various time points throughout the first six years of the child's development.

Five time points were used for the purposes of the current study. At the beginning of the study in 2005, 77 mother-infant dyads (36 girls, 41 boys) were initially seen at home. The mean age of infants at Time 1 was 3.14 months of age ($SD = .17$). Of these, 68 mother-infant dyads (32 girls, 36 boys) participated in a second home visit at Time 2 when infant mean age was 10.28 months ($SD = .46$). At Time 3, 66 mother-infant dyads (31 girls, 35 boys) were invited to the University Laboratory when the mean age of infants was 13.32 months ($SD = .83$). Of these, 62 dyads (29 girls, 33 boys) participated in the 21 month home visit. Children's mean age at Time 4 was 22.06 months ($SD = .73$). Finally, at Time 5, when children were 3.5 years of age (*Mean* = 3.58 years; $SD = .42$), mothers and their young preschoolers were again invited to the University Laboratory. During this last wave, 50 dyads were involved (26 girls, 24 boys) and comprise the sample considered in the current study.

Demographic information was obtained during all visits. Average maternal age at the infant's birth was 30.08 (SD = 4.97; *range* = 20.20-44.85 years); average paternal age was 32.37 ($SD = 5.95$; *range* = 20.43-53.97 years). Average maternal education was 14.52 years ($SD = 1.73$; *range* = 11-18 years) and average paternal education was 14.20 ($SD = 2.00$; *range* = 10-20 years). Participants were mostly Caucasian and from middle

class families. Average household income was between $50,000 and $59,999, which encompassed the average household income for the city of London in 2005 according to Statistics Canada (Statistics Canada, 2005). The majority of the sample was married (75%), 17% were living in common law, 7% were single, and 1% was separated, and all children in the sample were first-borns in their family. Dyads that were seen at all five time points of data collection did not differ in maternal highest level of education from those in the attrition sample. Although mothers who completed the study were slightly older and had a higher level of household income than mothers who withdrew from the study, these differences were not significant (see Table 1 for descriptive information).

Table 1

Descriptive Statistics of Demographic Information by Mothers Who Completed the Study

and Mothers Who Withdrew From the Study

| | Participation in Study | | | |
| | Withdrew (N = 27) | | Completed (N = 50) | |
Variable	M	SD	M	SD
Maternal Education[1]	14.26	1.81	14.64	1.69
Maternal Age	28.65	4.72	30.85	4.97
Household Income[2]	6.00	2.35	7.06	2.21

[1] Measured in years of education.
[2] Household Income is coded on a scale from 1 to 8.

Measures

Maternal attachment representation. Each mother's state of mind regarding attachment was assessed using the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1996). During this hour-long interview, mothers are asked to describe their relationship to each parent during childhood, and to support their descriptions with specific episodic memories. Mothers are also asked a host of questions concerning their relationship with their parents such as which parent they felt closer to and why; what they would do when they were upset emotionally during their childhood; whether they ever felt rejected as a child and if their parents realized that they were rejecting them, and how these experiences may have affected the development of their personality. In addition, mothers are asked about any major loss of loved ones and possible abuse. The interview is transcribed verbatim and coded according to Main and Goldwyn's (1998) coding system. Adult state of mind with respect to attachment has been found to be unrelated to measures of general intelligence, memory, and verbal fluency (Bakermans-Kranenburg & van IJzendoorn, 1993).

Based on their discourse during the AAI, each mother was assigned a primary classification for her state of mind with regards to attachment. *Autonomous* individuals (F) manifest a freedom to explore thoughts and feelings throughout the course of the interview. Overall, they were able to provide a coherent account of their previous experiences. During the interview, they were collaborative as their responses were clear, relevant, and reasonably succinct. Moreover, Autonomous speakers also indicate that they value attachment relationships and consider attachment-related experiences as influential, and they are able to objectively reflect on the effects of their previous

experiences upon their present state of mind. The transcripts of *dismissing* mothers (Ds) tend to be relatively short and brief. The narratives are incoherent in that they often idealize or fail to recall their childhood experiences. These individuals often cannot substantiate their abstract representation of the parent with specific episodic memories. *Preoccupied* mothers (E) tend to exhibit a confused, angry, or passive preoccupation with attachment figures during the interview. Their discourse is often very lengthy and imbued with irrelevant themes and long rants resulting in incoherent transcripts that are difficult to follow.

In addition to these three primary classifications, mothers may also be classified as *unresolved/disoriented (*U/d) with respect to loss and/or trauma. These individuals tend to become disoriented during the discussion of potentially traumatic events because of lapses in the monitoring of reasoning or discourse. These mothers, in addition to being assigned to one of the three primary classifications (F, Ds, or E), also receive a secondary U/d classification to mark their disorientation during discussions of loss or trauma.

Coders were reliable according to the Main and Hesse reliability certification procedures and were blind to the goals of the study as well as other data about the dyad. Twenty-one percent of the interviews were coded by independent coders for the purposes of reliability. Percent agreement for the three primary (Ds, F, E) classifications was 83%, $\kappa = .77, p < .05$. The percent agreement for the classifications including unresolved/disoriented (Ds, F, E, U/d) was 97%, $\kappa = .96, p < .01$. Disagreements between coders were discussed and consensus codes were used for analyses.

Quality of mother-child interactions. Maternal sensitivity during mother-child interactions was assessed during a two hour long home visit. During this visit, two female

observers noted mothers' and infants' behaviour during their interactions and during

times when the mother was engaged in another task and, thus, required to balance the

needs of the task and those of her child. Maternal sensitivity was assessed using the mini-

Maternal Behaviour Q-Set home version (MBQS; Pederson & Moran, 1995; Tarabulsy et

al., 2009). The mini-MBQS home version is a 25-item instrument designed to measure

the quality of maternal behaviour during mother-infant interactions in the home. The

items describe a range of potential maternal behaviour that describe the mother's physical

and emotional availability, her responses to her child's signals, and her monitoring of her

child while occupied with another task, e.g., "Interactions revolve around baby's tempo

and current state"; "Responds to baby's distress and non-distress signals even when

engaged in some other activity such as having a conversation with the visitor"; "Builds

on the focus of baby's attention". Observers sort each item into one of five piles, items in

the first pile which are given a score of 1 are those considered to be least descriptive of

the mother; items assigned a score of 5 reflect items that are more characteristic of the

mother. The sensitivity score for each mother is taken as the Pearson correlation between

the observer sort and a criterion sort that describes a prototypically sensitive mother as

judged by a group of expert attachment researchers. Each mother, in this manner, was

given a sensitivity score that could vary from -1.0 (least sensitive or responsive) to 1.0

(prototypically sensitive or responsive).

Trained observers coded 20% of the dyads and sufficient interrater reliability was

attained ($ICC = .87$). Observers were blind to all other variables in the current study.

Child attachment. The quality of the infant's attachment relationship with the

mother was assessed using the Strange Situation Protocol (SSP; Ainsworth et al., 1978;

Main & Solomon, 1990). During this paradigm, mother and infant experience a series of separation and reunion episodes designed to elicit infant attachment behaviour. Relationships were assigned to one of three primary organized attachment relationship classifications. *Securely* attached infants (B) tend to be easily soothed by their mothers upon reunion and display few resistant or avoidant behaviours. *Avoidant* infants (A) tend to avoid their mothers and not seek contact upon reunion. *Ambivalent* infants (C) display both contact seeking behaviour and resistance upon their mothers' return and commonly are not able to be soothed by their mothers upon reunion. In addition to the three primary classifications, infants are also assigned a Disorganization score. Infants classified as Disorganized (D) exhibit an array of odd, disoriented behaviours suggesting a temporary collapse or lack of strategy for dealing with the stress of the situation.

Classifications of child attachment were assigned by two experienced judges trained by Sroufe and Carlson. Coders were blind to the study's goals and other information pertinent to the current study including mothers' AAI classifications and mother-child emotion dialogue classifications. Thirty percent of the dyads were randomly chosen and coded for purposes of interrater reliability. There was 100% agreement for the three-way attachment classifications (excluding D) and 90% agreement for the four-way attachment classifications (($\kappa = .83$, $p < .001$).

Maternal Affective Mindset. Maternal affective mindset was assessed using the Meta-Emotion Interview (MEI; Katz et al., 1997). During this interview mothers were asked about their views of emotional experience and expression; as well as their attitudes and behaviour toward their children's emotions. The three emotions that mothers were asked to report on were fear, anger, and sadness. The interview, which took on average

40 minutes, was audiotaped and directly coded from the audio tapes using the Meta-Emotion Coding System (Hooven, 1994). Based on this coding scheme, each of the emotions is rated on 7 dimensions: three reflect the mother's own emotions (awareness, acceptance, and regulation) and 4 are concerned with her responses to her child's emotions (awareness, acceptance, assistance or coaching, and perception of child's regulation). Each dimension is composed of several subscales or items that are coded on a 5-point scale (see Appendix C). Some of the subscales under the awareness of own emotions domain include "Parent has various experiences of this emotion", "Parent is descriptive of cognitive processes"; items in the awareness of child's emotions domain include "Parent is descriptive of child's experience of this emotion", "Parent knows cause of child's emotion"; items in the acceptance of own emotions dimension include "Parent feels comfortable with their expression of this emotion", "Parent says that it is important to talk about emotion"; subscales under the acceptance of child's emotions include "Parent empathizes with child's emotion", "Parent wants child to know it's ok to have this feeling"; subscales under mother's emotion regulation domain include "Parent experiences some control over this emotion", "This emotion is difficult to get over"; items under assistance provided to the child include "When child is upset, parent talks about situation, emotion", "Parent seems involved in child's experience of this emotion"; and finally, items under mothers' perception of their children's emotion regulation include "This emotion is difficult for child to get over", "Child can self-regulate this emotion".

Twenty-two percent of the interviews were randomly selected and coded for purposes of interrater reliability. With the exception of the scale on mother's perception

of child regulation of sadness, acceptable interrater reliability was attained for each

dimension within each emotion category: intraclass correlations of mothers' awareness of

her own and her child's affect ranged from $r = .67$ to $r = .95$, mean = .80; mothers'

acceptance of her own and her child's affect ranged from $r = .82$ to $r = .95$, with mean

= .88 mothers' coaching provided to children when dealing with the three emotions

ranged from $r = .67$ to $r = .69$, with mean = .68; finally, mothers' perception of her own

and her child's regulation of the three types of emotions, with the exception of child's

regulation of sadness, interrater ranged from $r = .69$ to $r = .95$, with mean = .81. The

primary coder of the Meta Emotion Interview was blind to the goals of the study and was

unaware of any other information pertaining to the study.

   Mother-child emotion dialogue. Mothers and their children participated in an

emotion discussion task to examine their ability to co-construct emotion-laden narratives

surrounding the child's personal history. Dyads were presented with four cards, each

consisting of the name of a feeling and a cartoon face expressing the feeling. The

emotions were happy, sad, scared, and mad (Fivush, 1991). Dyads were asked to recall an

event when the child felt each of the emotions and to discuss the events together by

talking about what the child felt, thought, and did. This procedure was modeled after

studies examining mothers' contributions to the development of children's narrative

competence and autobiographical memory during mother-child dialogues (e.g., Fivush,

1991; 1994; Haden, Haine, & Fivush, 1997; Reese & Fivush, 1993). The discussions

ranged in duration from 5 to 15 minutes. They were videotaped and transcribed verbatim.

All identifying information was removed from each transcript.

The transcriptions derived from each mother-child emotion dialogue were coded using the Autobiographical Emotional Events Dialogue (AEED; Koren-Karie et al., 2000). This coding scheme was designed to examine the dynamic interaction that took place when mother and children engaged in conversations about past emotional events. The AEED consists of seven mother and seven parallel child scales, as well as two scales pertaining to the overall narratives produced by the dyad. The scales ranged from 1 to 9, with higher scores indicating a greater prevalence of the behaviour. Given that the original AEED coding scheme was aimed to tap into the emotion discussions of mothers and their 4.5 and 7.5 year old children, it was necessary to adjust several of the scales in order to more accurately reflect the linguistic and cognitive capacities of the 3.5 year old children in the current study. In consultation with Nina Koren-Karie, the primary author of the AEED coding manual, several scales were slightly modified to better capture the level of functioning of the children in our sample (see Appendix D for descriptions of AEED scales; Appendix E for descriptions of adjusted scales).

The 7 maternal rating scales in the AEED are (inter-rater reliability is provided in parentheses): *Focus on the task* (.97); *Clear boundaries* (.87); *Tolerance* (.86); *Involvement and reciprocity* (.84); *Hostility* (.76); *Containment of negative feelings* (.89); *Structuring* (; .79).

The 7 parallel child rating scales are: *Focus on the task* (.99); *Maintaining child role* (.96); *Acceptance* (.87); *Involvement and cooperation* (.84); *Hostility* (1.0); *Resolution of negative feelings* (.79); *Elaboration* (.91). The two ratings scales applied to the overall narrative include: *Adequacy of the stories* (.96) and *Coherence* (.87). Both the

hostility and boundaries scale were reverse coded such that higher scores reflect lower

levels of hostility and boundary dissolution.

Interrater reliability was established using 20% of the dialogues that were

randomly chosen. Reliability was completed by the author (C.H.) of this study and the

developer of the coding scheme (N.K.K.) Once acceptable reliability was achieved, C.H.

completed the coding of the remaining 80% of the dialogues. Both coders were blind to

participants' scores on all other variables in the study. Interrater reliability of the scales

was assessed using intraclass correlations and is provided above following description of

each scale.

Based on the scales described, each dialogue is then classified into one of four

categories: one emotionally matched and three non-emotionally matched. The categories

were developed to represent a higher level of analysis which taps the overall pattern of

communication displayed by mother and child.

Emotionally matched (EM): EM dyads are focused on the task and discuss the

four emotions in an open, accepting, and organized atmosphere. Although EM dyads may

construct a range of stories with some being rich and full of details and others being short,

all the stories they create are coherent and have a believable link to the target feeling.

Mother and child are involved and interested in the construction of the stories; the mother

is tolerant and supportive of her child's ideas as she provides a secure base for her child

from which he can comfortably explore the internal world of emotions. This is evidenced

by the child displaying a freedom to express himself and accepting his mother's guidance

and suggestions. When discussing negative experiences, the mother is able to guide her

child toward a positive resolution by promoting feelings of security, strength, and

confidence in the child. The end result is four appropriate and coherent stories that are jointly created by both partners.

Non-emotionally matched - Excessive (Ex): Stories created by Ex dyads are incoherent and charged with emotional themes that are often negative and extreme. Although four stories are generated, they are often confused and loaded with exaggeration or feelings that do not match the emotion intended. The result is stories that are incoherent and difficult for the reader to understand. Mothers in these dyads have difficulty pacing their contributions to the child's rhythm. For instance, they may exaggerate, over-dramatize, or go into excessive detail about a negative experience which may end up frightening the child rather than comforting him. The mother may also be hostile and judgmental by bluntly dismissing or criticizing her child's ideas and contributions. This results in the mother not allowing the child to comfortably express himself. On the child's side, he may express hostility toward his mother and be uncooperative; he may also over-dramatize and be incoherent in his speech (such as jumping from one topic to another). In sum, it is often the case with Ex dyads that one partner dominates the conversation and is impatient and unreceptive to the other's contributions.

Non-emotionally matched – Flat (Fl): Fl dyads are limited in their dialogues and construct stories that are poorly developed. Mother and child may mention the name of an event that matches the emotion but do not develop the idea any further. There is a sense that the mother does not guide or encourage the child to express his emotions (especially negative emotions) freely and openly, as may be illustrated in her moving the child quickly to the next topic. There is an overall sense of disinterest and lack of

involvement in the task. The end result is a lack of dialogue and use of emotion labels without any real substance.

Non-emotionally matched – Inconsistent (In): In this category, there is a mismatch between the style of talk of the partners that can be manifest in three ways. First, while one partner is on task, cooperative, coherent, accepting, and involved, the other may disrupt the dialogue, shift the conversation to irrelevant details, or express hostility and anger. As a result of two contradictory partners, there is not a sense of a coherent collaboration among the dyad. A dyad is placed in the Inconsistent classification when it is clear that there are two contradictory patterns appearing simultaneously between mother and child during their discussions (e.g., a hostile mother and a cooperative child, or a hostile child and a mother who only labels emotions without providing details). A second type of inconsistency is when the dyad creates coherent and matched stories for two of the emotions, but creates incoherent and confused stories for the other two emotions. A third pattern of inconsistency emerges when there is a sudden shift in the pattern of behaviour during the process. For instance, one partner (or both) cooperate and work well together during part of the procedure, but become hostile or uninvolved during another part of the procedure.

Interrater reliability on the four-way classifications was κ = .86. And κ = .74 on the two-way classifications (emotionally matched and non-emotionally matched).

Control variables. Studies examining mother-child conversations have found mixed results concerning the link between linguistic abilities and conversational capacities. While some studies have found that verbal capacities are not associated with discourse about feelings or past events (e.g., Dunn et al., 1991; Dunn, Brown,

Slomkowski, Tesla, Youngblade, 1991; Reese, 2008), others have found this correlation to be statistically significant (e.g., Oppenheim et al., 2007). Based on these conflicting results, both maternal and child vocabulary were assessed to account for the possible confounding role of language abilities in mother-child emotion discussions in the current study.

Maternal vocabulary. Mothers completed the revised National Adult Reading Test (NART-R; Blair & Spreen, 1989) to assess expressive vocabulary abilities and to estimate of their verbal IQ. During this single-word oral reading task, individuals are asked to read aloud a list of 61 irregular words that do not follow normal grapheme-phoneme correspondence rules (e.g., gauche, sieve, hiatus).

Child vocabulary. Children's vocabulary was assessed using the Expressive Vocabulary Test (EVT; Williams, 1997), a brief measure of children's expressive language abilities. Children are shown a series of coloured pictures and are asked to answer to one question for each corresponding picture. The questions vary from "What is this?" to "What is another word for puppy?"

Overview of procedures

During a home visit when infants were 3 months of age, mothers completed the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1996) to assess maternal attachment representation. When children were 10 months of age, mothers and their infants were visited again in their home. Their interactions throughout the entire visit were observed, video recorded, and were used to assess the quality of mother-child interactions. When children were 13 months of age, mothers and their infants were invited to the University Laboratory for the first time where they completed the SSP

(Ainsworth et al., 1978) to assess infant attachment style. At a third home visit when

children were 21 months of age, mothers were interviewed with the meta-emotion

interview for parents of toddlers (Katz, Gottman, Shapiro, & Carrere, 1997) to assess

maternal affective mindset. Finally, when children were 3.5 years old they were invited

with their mothers back to the University laboratory where they engaged in an emotion

discussion task to assess quality of mother-child co-construction of emotion narratives.

The dialogue was video recorded and transcribed verbatim for coding. Mothers' and

children's linguistic abilities were also assessed during this lab visit. Table 2 outlines the

procedures and measures assessed at various time points.

Table 2

Outline of Procedures and Measures

Child age	Procedure	Assessment/Variables
3 months	Home visit Adult Attachment Interview (AAI)	Maternal attachment representation
10 months	Home visit Maternal Behavioural Q-Set (MBQS)	Quality of mother- child interactions (maternal sensitivity)
13 months	Lab visit Strange Situation Procedure (SSP)	Child attachment security
21 months	Home visit Meta Emotion Interview (MEI)	Maternal affective mindset
3.5 years	Lab visit Emotion discussion task (coded using the Autobiographical Emotional Events Dialogue; AEED)	Mother-child emotion dialogue

Results

Overview of Analyses

In an initial, largely descriptive section, data reduction methods for the MEI and AEED scales are reviewed first, followed by preliminary analyses examining the associations between control variables and various study variables. Descriptive data for each of the key variables are then provided, including: AAI, SSP, and AEED classifications; maternal sensitivity; the two MEI aggregate scores; and, the three AEED aggregate dialogue scores. Finally, the bivariate correlations among all study variables are presented.

We then begin our empirical investigation of the first overarching goal of this study: to examine the developmental origins of mother-child emotion dialogues with a particular emphasis on both the quality of the mother-child attachment relationship and mother's attachment representation. The distinct associations of both mother-child attachment relationship and mother attachment with emotion dialogues will be examined in order to determine how differences within both child and maternal attachment status might separately lead to variations in the manner in which mothers and children engage in emotion dialogues. These analyses will first examine the association of attachment status with emotion dialogue classification, then with the respective dialogue aggregate scores: the Child Cooperation and Exploration scale will be compared across the infant attachment classifications because this aggregate scale focuses on the child's contributions during the conversations; the Maternal Sensitive Guidance scale will be compared across the maternal attachment classifications because this scale focuses on the mother's performance. Next, each dyad will then be given a single classification based on

the mother's and child's attachment classifications, e.g., autonomous-secure, so that analyses can be conducted when both partners' attachment statuses are taken into account. Again, these analyses will first examine the association of attachment pairs and dialogue classification, then with the Emotionally Coherent Narrative aggregate scale because this scale reflects the overall co-construction process, thus capturing the dyad's joint contribution to the narratives.

Next, we will examine the second overarching goal of this study: to investigate the processes underlying the influence of maternal attachment representation on mother-child emotion. This will be achieved by testing the mediating and moderating roles of maternal sensitivity at 10 months and maternal affective mindset at 21 months. Moderation will be initially tested using the traditional logistic regression approach, followed by examining maternal attachment representation and emotion dialogue classification pairs.

Meta-Emotion Interview: Variable Reduction

Aggregate variables were created from the Meta-Emotion Interview scores to reduce the number of analyses and increase their robustness. Standardized scores were used in the following computations because scores were aggregated across dimensions that consisted of different number of items. Based on Gottman and colleagues' 1996 study, two aggregate scores were constructed. The "Awareness" variable was computed by summing across the standardized scores of the three different emotions and aggregating mother and child awareness scores in order to reflect mothers' overall awareness of emotions, both within herself and those emerging within her child. Cronbach's coefficient alpha indicated good internal consistency ($\alpha = .78$). The second

aggregate score, labeled "Coaching", was generated by summing across the standardized scores across the three different emotions in order to capture the extent to which mothers provided assistance to their children in coping with the various emotions. Cronbach's alpha was .63, suggesting acceptable internal consistency.

Mother-Child Emotion Dialogues: Variable Reduction

In addition to the overall classifications of emotion dialogues, information gathered from the various scales were also included. In the interest of parsimony and to increase statistical power, three aggregate dialogue scales were formed based on the various AEED rating scales (Koren-Karie, Oppenheim, & Getzler-Yosel, 2008). Following Koren-Karie et al's (2008) lead, *Maternal Sensitive Guidance* was formed based on the average score of the seven maternal scales (with the hostility and boundary dissolution scales inverted), Cronbach's alpha = .90; this aggregated scale captures mothers' overall involvement in the dialogue through her ability to effectively guide, support, and engage her child in the co-construction of narratives surrounding his personal memories. *Child Cooperation and Exploration* was derived from the mean score of the seven child scales (with the hostility and boundary dissolution scales inverted), Cronbach's Alpha = .84; this scale assesses the child's participation in the co-construction process through his elaborations and willingness to contribute to the stories. *Emotionally Coherent Narrative* was created based on the average score of the two overall narrative scales, Cronbach's Alpha = .87. This scale was designed to capture not only the completeness and organization of the narratives constructed, but also the overall quality of interactions. Although these three aggregate dialogue scores were significantly correlated with one another (mean r = .62, p < .001), they were retained as separate

variables because, as argued by Koren-Karie et al. (2008), each scale represented a conceptually distinct aspect of the co-construction process.

Preliminary analyses

Child gender and age: Associations with SSP and AEED. No associations were found between child gender and SSP (χ^2 (1, N = 50) = .38, *ns)*, or AEED classifications (χ^2 (1, N = 50) = .002, *ns)*. *t* tests indicated that child age was also not associated with either SSP (*t*(48) = 1.30, *ns)*; or AEED classifications (*t*(48) = .83, *ns)*, and that children's performance during the emotion dialogues were unrelated to gender (*t* (48) = -.98, *ns)*, with mean Child Cooperation and Exploration score for boys = 6.38, *SD* = 1.06; mean score for girls = 6.73, *SD* = 1.44. In addition, no association was found between children's age and their performance in the emotion dialogue (*r* = .01, *ns)*.

Maternal characteristics: Associations with AAI, AEED, maternal sensitivity, and maternal affective mindset. Multivariate analyses of variance (MANOVA) were conducted to determine whether mothers with different attachment representations and the various emotion discussion classifications differed with respect to maternal age, maternal education, and personal income. The multivariate test for the 3 AAI classifications using demographic information collected during the 3 month visit was not significant (Wilks *F* (6, 90) = 1.5, *ns)* . With regards to AEED classifications, demographic information collected during the 3.5 year visit also did not yield significance (Wilks *F* (3, 46) = .63, *ns)*. Table 3 and 4 provide the descriptive data for these analyses.

Next, the links between the Maternal Sensitive Guidance aggregate dialogue score and mother's age, education, and household income were assessed. As indicated in Table

5a, all correlations between the maternal dialogue score and background information collected at 3.5 years were non-significant. Correlations of maternal sensitivity and demographic information collected at 10 months, and maternal affective mindset aggregates and demographic information collected at 21 months indicated that personal income was significantly associated with both maternal sensitivity ($r = .34$, p < .05) and maternal affective mindset ($r = .33$, $p < .05$ for coaching; $r = .42$, $p <.01$ for awareness). Table 5b and 5c present correlations among all variables. As a result, personal income was entered as a covariate in all subsequent analyses involving both maternal sensitivity and the maternal affective mindset aggregate variables to ensure that the patterns of results were not unduly confounded by this variable.

Table 3

Descriptive Statistics of Demographic Information at 3 Months by AAI Classifications

| | AAI Classification | | | | | |
| | Dismissing | | Autonomous | | Preoccupied | |
Variable	M	SD	M	SD	M	SD
Maternal Education[1]	14.00	1.85	14.55	1.75	14.22	1.56
Maternal Age	28.58	4.21	32.10	4.89	28.29	4.60
Household Income[2]	6.00	3.12	7.40	2.00	6.78	1.79

[1] Measured in years of education.
[2] Household Income is coded on a scale from 1 to 8.
F (6, 90) = 1.5, *ns*

Table 4

Descriptive Statistics of Demographic Information at 3.5 Years by AEED Classifications

| | AEED Classification | | | |
| | EM | | Non-EM | |
Variable	M	SD	M	SD
Maternal Education[1]	15.28	1.65	14.90	1.47
Maternal Age	34.26	4.71	34.07	5.35
Household Income[2]	7.95	1.72	7.14	2.46

[1] Measured in years of education.
[2] Household Income is coded on a scale from 1 to 8.
$F (3, 46) = .63$, *ns*

Table 5a

Pearson Correlations of Maternal Sensitive Guidance Aggregate Dialogue Score and Demographic Information at 3.5 Years

Variable	1	2	3	4
1. Mother Sensitive Guidance[1]	–	.14	.21	.25
2. Maternal Education		–	-.01	.32*
3. Maternal Age			–	.14
4. Household Income[2]				–

[1] Measured in years of education.
[2] Household Income is coded on a scale from 1 to 8.
* $p < .05$

Table 5b

Pearson Correlations of Maternal Sensitivity and Demographic Information at 10 Months

Variable	1	2	3	4
1. Maternal sensitivity	–	.15	.09	.33*
2. Maternal Education[1]		–	.14	.45**
3. Maternal Age			–	.44**
4. Household Income[2]				–

[1] Measured in years of education.
[2] Household Income is coded on a scale from 1 to 8.
* $p < .05$ ** $p < .01$

Table 5c

Pearson Correlations of Maternal Affective Mindset Aggregate Variables and

Demographic Information at 21 Months

Variable	1	2	3	4	5
1. Coaching	–	.72**	.15	.02	.33*
2. Awareness		–	.28	.03	.42**
3. Maternal Education[1]			–	.14	.54**
4. Maternal Age				–	.24
5. Household Income[2]					–

[1] Measured in years of education.
[2] Household Income is coded on a scale from 1 to 8.
* $p < .05$ ** $p < .01$

Vocabulary: Associations with AEED variables. An analysis of variance

(ANOVA) comparing both maternal and child vocabulary across the AEED

classifications proved to be insignificant (F (1, 48) = .03, *ns*; F (1, 48) = .18, *ns*,

respectively). In addition, no significant associations were found between vocabulary

scores and respective AEED aggregate scores (r = -.03 for maternal vocabulary and

maternal sensitive guidance, *ns*; r = .04, *ns*, for child vocabulary and child exploration

and cooperation).

Descriptive summary of key variables

The distribution of AAI, SSP, and AEED classifications are presented in Table 6.

The majority of mothers displayed an Autonomous state of mind with regards to

attachment (66%), and the majority of infants were judged to be in Secure attachment

relationships at one year of age (58%). Substantial percentages of dyads were classified

in the Emotionally Matched (42%) and Emotionally Unmatched – Inconsistent (36%)

categories at 3.5 years child-age. Means, range, and standard deviations for maternal

sensitivity (MBQS), maternal affective mindset aggregate variables (MEI), and the

aggregate measures from the AEED are presented in Table 7. The correlations among all

the study variables are presented in Table 8. Specific correlations will be cited in later

sections of the Results as appropriate.

Table 6

Distributions of AAI, SSP, and AEED Classifications

Measure	Classifications	Percentage
AAI[1]	Dismissing (Ds)	14 ($n = 7$)
	Autonomous (F)	58 ($n = 29$)
	Preoccupied (E)	6 ($n = 3$)
	Unresolved/Disoriented (U/d)	22 ($n = 11$)
SSP[2]	Avoidant (A)	14 ($n = 7$)
	Secure (B)	50 ($n = 25$)
	Ambivalent (C)	4 ($n = 2$)
	Disorganized (D)	32 ($n = 16$)
AEED	Emotionally Unmatched - Flat (Fl)	14 ($n = 7$))
	Emotionally Matched (EM)	42 ($n = 23$)
	Emotionally Unmatched - Exaggerated (Ex)	8 ($n = 4$)
	Emotionally Unmatched - Inconsistent (IN)	36 ($n = 18$)

1 The distribution based on the three-way AAI classifications is: Dismissing (Ds) = 16 ($n = 8$); Autonomous (F) = 66 ($n = 33$); Preoccupied = 18 ($n = 9$).

2 The distribution based on the three-way SSP classifications is: Avoidant (A) = 24 ($n = 12$); Secure (B) = 58 ($n = 29$); Ambivalent (C) = 18 ($n = 9$)

Table 7

Descriptive Statistics of Maternal Sensitivity, MEI Aggregate Scores, and AEED

Aggregate Scales

Measure	Mean	Range	SD
MBQS			
Maternal Sensitivity	0.24	-0.88 to 0.96	0.61
MEI			
Awareness	0.00	-12.05 to 5.02	4.30
Coaching	0.00	-6.89 to 2.43	2.30
AEED			
Maternal Sensitive Guidance	6.82	3.86-8.71	1.35
Child Cooperation and Exploration	6.54	3.71-8.57	1.25
Emotionally Coherent Narrative	5.32	2.00-9.00	1.94

Table 8

Pearson Correlations Among All Variables

Variable	1	2	3	4	5	6	7	8	9
1. SSP[1]	–	.56**	.16	.29*	.38**	.29*	.23	.58**	.36**
2. AEED[2]		–	.53**	.41**	.31*	.36**	.56**	.63**	.75**
3. AAI[3]			–	.30*	.34*	.23	.63**	.21	.53**
4. Maternal sensitivity				–	.43**	.49**	.18	.05	.28*
6. Coaching					–	.72**	.28*	.27	.27
7. Awareness						–	.25	.33*	.40**
8. Mother Sensitive Guidance							–	.48**	.64**
9. Child Cooperation and Exploration								–	.74**
10. Emotionally coherent Narrative									–

* p < .05   ** p < .01
[1] Binary classification was used with secure attachment coded as "1" and insecure attachment coded as "0".
[2] Binary classification was used with Emotionally Matched dialogues coded as "1" and Non-Emotionally Matched dialogues coded as "0".
[3] Binary classification was used with an Autonomous state of mind regarding attachment coded as "1" and Non-Autonomous classification coded as "0'.

Developmental Origins of Mother-Child Emotion Dialogues: Associations With

Child Attachment and Maternal Attachment Representation

The primary goal of the study was to examine the antecedents that may help

explain the variation in the ways mothers and children engage in conversation about

previous emotional experiences. To begin, we examine the association between child

attachment and mother-child emotion dialogues. Chi-square analyses were used to assess

the level of significance of the overall association between Strange Situation

classification at 13 months, and emotion dialogue classification at 3.5 years. The

contributions of individual cells to this association were also examined using the adjusted

standardized residual.

Associations between dialogues and infant attachment classifications. Table 8

indicates a significant correlation ($r = .56, p < .01$) between 13 month security of

attachment coded dichotomously as secure/non-secure, and 3.5 year dichotomous AEED

classifications coded as EM/Non-EM. Chi-square analyses also revealed a significant

association between the three-way infant attachment classifications (secure, avoidant, and

resistant) and the dichotomous dialogue scores, $\chi^2 (2, N = 50) = 15.68, \ p < .001$ (see

Table 9a). Dyads classified as secure during infancy ($n = 29$) were significantly more

likely to engage in EM dialogues at 3.5 years, $z = 4.0, p < .05$, and significantly less likely

to engage in Non-EM dialogues at 3.5 years, $z = -4.0, p < .05$. Specifically, of those

classified as secure, 66.5% were found to engage in EM dialogues. Among children

classified as avoidant, more were likely to later engage in Non-EM dialogues ($z = 2.7, p$

$< .05$), and less likely to engage in EM dialogues ($z = -2.7, p < .05$). Specifically, of those

classified as avoidant, 92% were found to engage in Non-EM dialogues. Among children

classified as ambivalent, similar patterns were found; more were likely to be classified as engaging in Non-EM dialogues ($z = 2.1$, $p < .05$), and less likely to be classified as engaging in EM dialogues ($z = -2.1$, $p < .05$). Specifically, of those classified as resistant, 89% engaged in Non-EM dialogues at 3.5 years. These results are consistent with findings in the extant literature and provide support for the theoretical argument that infant attachment security serves as a basis for the co-construction of open, organized, and cooperative emotion dialogues.

Parallel analyses examining the associations between four-way infant attachment classifications (including the disorganized group in addition to the three organized groups) and the three-way dialogues scores (including the IN sub-classification as separate from the two overarching categories) were conducted to determine whether there would be a link between disorganized attachment and the IN dialogue classification. The overall chi-square statistic was significant, χ^2 (6, $N = 50$) = 25.71, $p < .001$ (see Table 9b). Disorganized infants were significantly less likely to engage in EM dialogues at 3.5 years, $z = -2.9$, $p < .05$, and significantly more likely to engage in IN dialogues at 3.5 years, $z = 2.7$, $p < .05$.

Table 9a

Associations Between 3-Way Infant Attachment and Dichotomous Dialogue

Classifications at 3.5 Years

Attachment Classification	AEED Classifications	
	EM	Non-EM
Avoidant (A)	1 (*5.0*, -2.7)*	11 (*7.0*, 2.7)*
Secure (B)	19 (*12.2*, 4.0)*	10 (*16.8*, -4.0)*
Ambivalent/Resistant (C)	1 (*3.8*, -2.1)*	8 (*5.2*, 2.1)*

Note. Pearson χ^2 (2, $N = 50$) = 15.68 , $p < .001$
Numbers in parentheses represent expected values (first number, italicized), and adjusted
standardized residuals (second number).
* $p < .05$)

Table 9b

Associations Between 4-Way Infant Attachment and Dichotomous Dialogue

Classifications at 3.5 Years

Attachment Classification	AEED Classifications		
	EM	Non-EM	IN
Avoidant (A)	1 (*2.9*, -1.6)	3 (*1.5*, 1.4)	3 (*2.5*, .4)
Secure (B)	18 (*10.5*, 4.3)*	2 (*5.5*, -2.4)*	5 (*9.0*, -2.4)*
Ambivalent/Resistant (C)	0 (*.8*, -1.2)	2 (*.4*, 2.7)*	0 (*.7*, -1.1)
Disorganization (D)	2 (*6.7*, -2.9)*	4 (*3.5*, .4)	10 (*5.8*, 2.7)*

Note. Pearson χ^2 (6, $N = 50$) = 25.71 , $p < .001$
Numbers in parentheses represent expected values (first number, italicized), and adjusted
standardized residuals (second number).
* $p < .05$

Next, a univariate Analysis of Variance (ANOVA) was conducted comparing the

AEED aggregate score "Child Cooperation and Exploration" across the 3 SSP attachment

classifications. This analysis was conducted to further understand how children's roles

and contributions to dialogues differ across infant attachment classifications. Tests of

between-subjects effects proved significant, F (3, 46) = 13.02, p < .001. A subsequent

Tukey's honestly significant difference (HSD) test indicated that while avoidant and

resistant children did not differ from one another, children classified as being in secure

attachment relationships displayed significantly higher levels of cooperation and

exploration during conversations with their mothers than both the avoidant and resistant

groups (see Table 10a).

Parallel analyses were conducted for the 4-way SSP classifications. Tests of

between-subjects effects again proved significant, F (3, 46) = 10.9, p < .001. A

subsequent Tukey's HSD test yielded similar results, suggesting that addition of the

disorganized group did not significantly modify the findings from the 3-way SSP

analyses. That is, while avoidant, resistant, and disorganized children did not differ from

one another, children classified as being in secure attachment relationships displayed

significantly higher levels of cooperation and exploration during conversations with their

mothers than both avoidant and resistant groups as well as children classified as

disorganized (see Table 10b).

Table 10a

Comparison of Children's Cooperation and Exploration During Emotion Dialogues

Across 3-way Infant Attachment Classifications

Attachment Classification	*N*	*M*	*SD*
Avoidant (A)	12	5.64^{+}	1.07
Secure (B)	29	7.16^{a+}	0.95
Ambivalent (C)	9	6.01^{b}	1.21

Note. F (3, 46) = 10.9, *p* < .001
Means with different lettered superscripts differ significantly at *p* <.05 with Tukey's post hoc statistic.
Means sharing the superscript $^{+}$ differ at *p* <.001.

Table 10b

Comparison of Children's Cooperation and Exploration During Emotion Dialogues

Across 4-way Infant Attachment Classifications

Attachment Classification	*N*	*M*	*SD*
Avoidant (A)	7	5.33^{+}	1.17
Secure (B)	25	7.26^{a*+}	0.83
Ambivalent (C)	2	5.00^{b}	0.40
Disorganized (D)	16	6.15*	1.19

Note. F (3, 46) = 10.9, *p* < .001
Means with different lettered superscripts differ significantly at *p* <.05 with Tukey's post hoc statistic.
Means sharing the superscript * differ at *p* <.01.
Means sharing the superscript $^{+}$ differ at *p* <.001.

Associations between dialogues and maternal attachment representation. As can be seen in Table 8, mothers with autonomous states of mind tended to engage in Emotionally Matched dialogues with their children ($r = .53$, $p < .01$). Chi-square analyses revealed a significant association between the three primary maternal attachment (autonomous, dismissing, and preoccupied) and dichotomous AEED classifications χ^2 (2, $N = 50$) = 14.01, $p < .01$ (see Table 11a). As predicted, mothers who are autonomous were significantly more likely to engage in EM dialogues with their children, $z = 3.7$, $p < .05$, and significantly less likely to engage in Non-EM dialogues, $z = -3.7$, $p < .05$. Specifically, of those mothers classified as autonomous, 61% engaged in EM dialogues with their children at 3.5 years. Mothers who were classified as dismissing were significantly more likely to engage in Non-EM dialogues with their children, $z = 2.6$, $p < .05$, and significantly less likely to engage in Non-EM dialogues, $z = -2.6$, $p < .05$. Specifically, of those mothers classified as dismissing 100% engaged in Non-EM dialogues with their children. Finally, most preoccupied mothers tended to engage in Non-EM dialogues, $z = 2.1$, $p < .05$, and were less likely to engage in EM dialogues, $z = -2.1$, $p < .05$. Specifically, of those classified as preoccupied 89% of mothers engaged in Non-EM dialogues.

Parallel analyses examining the 4-way AAI classifications, which includes the U/d classification as a separate category, revealed that the patterns of associations between the 3-way AAI and the dichotomous AEED classifications remained the same (see Table 11b), and that addition of the U/d classification did not have a major influence on the significant chi-square test statistic. Mothers who were classified as

unresolved/disoriented were not more likely to engage in either EM or Non-EM

dialogues with their children, $z = -.4$, *ns*; $z = .4$, *ns*, respectively.

Table 11a

Associations Between 3-Way Maternal Attachment and Dichotomous Dialogue

Classifications at 3.5 Years

	AEED Classifications	
Attachment Classification	EM	Non-EM
Dismissing (Ds)	0 (*3.4*, -2.6)*	8 (*4.6*, 2.6)*
Autonomous (F)	20 (*13.9*, 3.7)*	13 (*19.1*, -3.7)*
Preoccupied (E)	1 (*3.8*, -2.1)*	8 (*5.2*, 2.1)*

Note. Pearson χ^2 (2, $N = 50$) = 14.01 , $p < .01$
Numbers in parentheses represent expected values (first number, italicized), and adjusted standardized residuals (second number).
* $p < .05$

Table 11b

Associations Between 4-Way Maternal Attachment and Dichotomous Dialogue

Classifications at 3.5 Years

	AEED Classifications	
Attachment Classification	EM	Non-EM
Dismissing (Ds)	0 (*2.9*, -2.4)*	7 (*4.1*, 2.4)*
Autonomous (F)	17 (*12.2*, 2.8)*	12 (*16.8*, -2.8)*
Preoccupied (E)	0 (*1.3*, -1.5)	3 (*1.7*, 1.5)
Unresolved/disoriented (U/d)	4 (*4.6*, -.4)	7 (*6.4*, .4)

Note. Pearson χ^2 (3, $N = 50$) = 10.67, $p < .05$
Numbers in parentheses represent expected values (first number, italicized), and adjusted standardized residuals (second number).
* $p < .05$

An ANOVA comparing the AEED aggregate dialogue scale Maternal Sensitive Guidance across the 3-way maternal states of mind proved significant (F (2, 47) = 16.12, p < .001). Subsequent Tukey's HSD tests showed that autonomous mothers displayed significantly higher levels of sensitive guidance than both dismissing and preoccupied mothers. Mothers who were dismissing did not differ from mothers who were preoccupied in their level of sensitive guidance during emotion dialogues (see Table 12a for means).

A second analysis with the 4-way AAI classifications revealed the same pattern of results. Autonomous mothers provided more scaffolding and support for their children during the co-construction process than dismissing, preoccupied, and unresolved mothers with no difference among mothers in the three non-autonomous groups (see Table 12b for means).

Table 12a

Comparison of Maternal Sensitive Guidance Across 3-Way Maternal Attachment

Classifications

Attachment Classification	*M*	*SD*
Maternal Sensitive Guidance Scale		
Dismissing (Ds)	5.93 [b]	1.11
Autonomous (F)	7.42 [a+]	0.97
Preoccupied (E)	5.40[+]	1.35

Note F (2, 47) = 16.12, *p* < .001
Means with different lettered superscripts differ significantly at *p* <.01 with Tukey's post hoc statistic.
Means in the same row sharing the superscript [+] differ at *p* <.001.

Table 12b

Comparison of Maternal Sensitive Guidance Across 4-way Maternal Attachment

Classifications

Attachment Classification	*M*	*SD*
Maternal Sensitive Guidance Scale		
Dismissing (Ds)	6.04 [b]	1.14
Autonomous (F)	7.46 [a +]	0.87
Preoccupied (E)	5.33 [b]	1.16
Unresolved/disoriented (U/d)	6.03[+]	1.68

Note F (3. 46) = 7.59, *p* < .001
Means with different lettered superscripts differ significantly at *p* <.05 with Tukey's post hoc statistic.
Means sharing the superscript [+] differ at *p* <.01.

Associations between dialogues and attachment pairs. Next, children's and

mothers' attachment statuses were combined into groups in order to examine the types of

emotion dialogues created when attachment status of both were taken into account. Four

mother-child groups were formed on the basis of their attachment classifications, as

follows: 1. Autonomous-Secure (F-B); 2. Non-Autonomous-Non-Secure (NotF-NotB); 3.

Autonomous-Insecure (F-notB) ; 4. Non-Autonomous-Secure (NotF-B). Dichotomous

Secure/Insecure classifications of child attachment were used to create the four groups

because ANOVAs comparing AEED classifications across the three and four way SSP

classifications indicated that the insecure classifications did not differ from one another

across AEED classifications; and, because comparisons of the Child Cooperation and

Exploration aggregate scale across the SSP classifications also did not reveal a difference

between the insecure groups. Similarly, non-autonomous mothers do not differ from one

another, either across AEED classifications or using the AEED aggregate score Maternal

Sensitive Guidance.

Given the important role of examining the possible mismatch in emotion

dialogues of dyads within the two discordant attachment groups, the IN sub-group was

extracted from the broader Non-EM AEED classification and kept as a separate group.

Thus, attachment pairs were compared across three AEED classifications: EM, Non-EM,

and IN. Chi-square analysis of the four attachment pairs and AEED classifications proved

to be significant, χ^2 (6, $N = 50$) = 44.34, $p < .001$ (see Table 13a). Dyads in which both

partners were secure were significantly more likely to engage in EM dialogues, $z = 5.9$, p

<.05, and significantly less likely to engage in both Non-EM and IN dialogues, $z = -3.2$, p

<.05 and $z = -3.3$, p <.05, respectively. Specifically, of the concordantly secure dyads,

90.5% engaged in EM dialogues, and the remaining 9.5% engaged in IN dialogues. On

the other hand, dyads in which both partners were insecure were significantly more likely

to engage in Non-EM dialogues, $z = 3.6$, $p < .05$, and unlikely to engage in EM dialogues,

$z = -2.1$, $p < .05$. Specifically, of the concordantly insecure dyads, 67% engaged in Non-

EM dialogues and only 11% in EM dialogues. Although statistically non-significant,

insecure dyads were also unlikely to engage in IN dialogues, $z = -1.0$, *ns*. Finally, both of

the discordant pairs (Autonomous-Insecure and Non-Autonomous-Secure) were highly

unlikely to engage in EM dialogues, $z = -2.7$, $p < .05$ and $z = -2.6$, $p < .05$, respectively,

and significantly likely to engage in IN dialogues, $z = 2.5$, $p < .05$ and $z = 2.5$, $p < .05$,

respectively. Specifically, of the dyads classified in the Autonomous-Insecure group,

67% engaged in IN dialogues, while 75% of the Non-Autonomous-Secure dyads engaged

in IN dialogues. These results support the hypothesis that a mismatch in attachment

classifications may later manifest itself as non-synchronous emotion dialogues where two

contradictory patterns of communication are observed.

Next, we compared the AEED aggregate dialogue scores, Child Cooperation and

Exploration, Maternal Sensitive Guidance, and Emotionally Coherent Narrative across

the four concordant and discordant attachment groups to further understand the individual

performances of mothers and children in emotion dialogues, as well as the overall

organization of the narratives and the quality of the co-construction process as a whole. A

MANOVA proved to be significant, Wilks $F (9, 44) = .7.55$, $p < .001$. The test of

between-subjects effects indicated that the four groups significantly differed on Maternal

Sensitive Guidance ($F (3, 46) = 13.11$, $p < .001$), Child Cooperation and Exploration ($F (3,$

$46) = 9.08$, $p < .001$), and Emotionally Coherent Narrative ($F (3, 46) = 9.39$, $p < .001$).

Follow-up analyses using Tukey's HSD (see Table 13b) revealed that autonomous mothers in secure relationships with their children displayed significantly higher levels of sensitive guidance and scaffolding during emotion dialogues than both non-autonomous mothers with insecurely attached children and non-autonomous mothers with securely attached children. Autonomous mothers with securely attached children did not significantly differ from autonomous mothers with insecurely attached children. Furthermore, a significant difference was found in the two discordant pairs such that autonomous mothers with insecure children were more responsive and sensitive during the co-construction process than non-autonomous mothers with secure children, suggesting that mothers' level of guidance and scaffolding provided during the emotion dialogues was strongly connected to their own attachment representation. With regards to Child Cooperation and Exploration, multiple comparisons revealed that children in concordantly secure dyads were significantly more engaged and collaborative than both insecure children in concordantly insecure dyads and insecure children with autonomous mothers. Finally, comparisons across the Emotionally Coherent Narrative aggregate scale showed that the concordantly secure dyads created narratives that were significantly more coherent and emotionally integrated than all other three groups (see Table 13b for descriptive information).

Table 13a

Associations Between Concordant and Discordant Attachment Pairs and Emotion

Dialogue Classification at 3.5 Years

Attachment Pairs	AEED Classifications		
	EM	Non-EM	IN
Autonomous-Secure	19 (*8.8*, 5.9)*	0 (*4.6*, -3.2)*	2 (*7.6*, -3.3)*
Non Autonomous-Insecure	1 (*3.8*, -2.1)*	6 (*2.0*, 3.6)*	2 (*3.2*, -1.0)
Autonomous-Insecure	1 (*5.0*, -2.7)*	3 (*2.6*, .30)	8 (*4.3*, 2.5)*
Non Autonomous-Secure	0 (*3.4*, -2.6)*	2 (*1.8*, .20)	6 (*2.9*, 2.5)*

Note. Pearson χ^2 (6, *N* = 50) = 44.34, *p* < .001
Numbers in parentheses represent expected values (first number, italicized), and adjusted
standardized residuals (second number).
p < .05

Table 13b

Comparisons of the Emotion Dialogue Aggregate Scales Across Attachment Pairs

	AEED Aggregate Scores					
	Maternal Sensitive Guidance		Child Cooperation & Exploration		Emotionally Coherent Narrative	
Attachment Pairs	*M*	*SD*	*M*	*SD*	*M*	*SD*
Autonomous-Secure	7.72 [a]	.72	7.35 [a†]	.99	6.62 [a*†]	1.36
Non Autonomous-Insecure	5.87 [b]	1.34	5.75 [†]	.94	3.78 [b]	1.94
Autonomous-Insecure	6.90 [*]	1.15	5.67 [b]	1.30	5.04*	1.80
Non Autonomous-Secure	5.39 [b*]	1.14	6.66	.67	4.06 [†]	1.32

Note. F (9, 44) = .7.55, *p* <.001
Means in the same column with different lettered superscripts differ significantly at *p* <.001 with Tukey's post hoc statistic.
Means in the same column sharing the superscript [*] differ at *p* <.05.
Means sharing the superscript [†] differ at *p* <.01.

The Impact of Maternal Attachment Representation on Mother-Child Emotion Dialogues: The Mediating and Moderating Roles of Maternal Sensitivity and Maternal Affective Mindset

The second goal of the study is to examine factors that may shed some light on the possible pathways by which maternal attachment representation shapes later mother-child emotion dialogues. The three variables of interest are maternal sensitivity, assessed at 10 months infant age, mothers' awareness of emotions as well as the level of coaching provided to her toddler to deal with various emotions at 21 months child age. Mediation models are presented first, followed by moderation models.

Mediation models. It was predicted that the association between maternal state of mind regarding attachment and emotional dialogue styles would be mediated by way of maternal sensitivity and aspects of the mother's affective mindset (see Fig. 1 for general mediation model).

Figure Caption

Figure 1. Mediating Roles of Maternal Sensitivity and Maternal Affective Mindset

Independent Variable   Mediator   Dependent Variable

X   **Y**

| Maternal Attachment Representation (AAI) | → | Maternal Sensitivity (MBQS), Awareness, or Coaching | → | Emotion Dialogues (AEED) |

Z
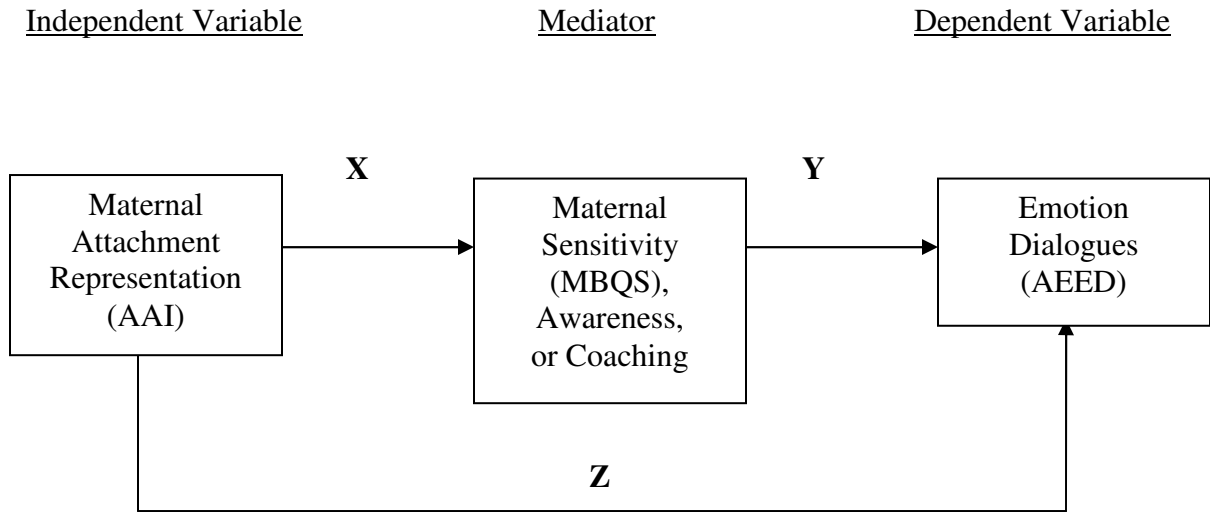
According to Baron and Kenny (1986), three conditions must first be established prior to testing meditation. First, the independent variable (maternal AAI) must be related to the dependent variable (AEED classification), as in pathway Z in Fig. 1. Second, the independent variable must be associated with the mediator variable (quality of mother-child interactions as assessed by the MBQS, and maternal affective mindset measured by the MEI), as in pathway X. And third, the mediator variable must be linked to the dependent variable, as in pathway Y. Once it has been determined that the variables are linked to one another, mediation can be tested by way of two regression equations:

(1) The independent variable is regressed against the dependent variable.

(2) The independent variable is regressed against the dependent variable while controlling for the mediator variable.

Mediation holds if the effect of the independent variable on the dependent variable is significantly reduced in the second equation. Or put another way, maternal sensitivity can be said to mediate the link between maternal attachment status and AEED classification if the direct effects of maternal classification on AEED classification (equation 1) is significantly attenuated when sensitivity has been partialed out (equation 2).[2]

Maternal sensitivity. Table 8 shows that the 3 conditions required to test for mediation have been met: (1) maternal state of mind was related to mother-child emotion dialogues ($r = .53$, $p = .01$); (2) maternal state of mind was significantly correlated with maternal sensitivity ($r = .30$, $p < .05$); and (3) maternal sensitivity was positively linked to AEED classifications ($r = .41$, $p < .01$).

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[2] The dichotomous AAI classifications were used in all subsequent analyses because the non-autonomous classifications appear to represent a relatively homogenous group, as reflected in non-significant differences in the dichotomous AEED classifications across the non-autonomous groups.

Two logistic regressions were conducted to assess the mediation model: (1)

AEED classification was regressed on AAI classification, $\beta = 3.20$ ($SE = 1.09$), Wald's χ^2

$= 8.63$, $p < .01$. (2) The AEED classification was regressed on both the AAI classification,

$\beta = 3.26$ ($SE = 1.19$), Wald's $\chi^2 = 7.47$, $p < .01$, and maternal sensitivity, $\beta = 1.52$ ($SE =$

0.72), Wald's $\chi^2 = 4.45$, $p < .05$, with simultaneous entry, while controlling for household

income at 10 months. All conditions held in the predicted direction. However, the

association of AAI classification with AEED classification was larger in the second

equation ($\beta = 3.26$) than in the first ($\beta = 3.20$), a relation inconsistent with the possibility

of mediation. As a result, there was no evidence supporting maternal sensitivity as a

primary pathway by which maternal attachment representation impacts mother-child

emotion dialogues.

Maternal affective mindset: Awareness of emotions. The bivariate correlations

presented in Table 8 indicate that mothers' awareness of emotions, both within herself

and her child, is not significantly associated with maternal attachment representation (r

$= .23$, *ns*), thus failing to meet conditions required to assess its role as a mediator between

maternal attachment status and the quality of emotional dialogues.

Maternal affective mindset: Coaching of emotions. Table 8 reveals that the three

conditions set by Baron and Kenny (1986) were met for mothers' coaching of children's

emotions at 21 months to qualify for testing mediation: (1) Maternal attachment

representation is significantly related to the mediator variable, Coaching ($r = .34$, $p < .05$);

(2) Coaching is positively associated with the dependent variable, AEED classification (r

$= .31$, $p < .05$); and (3) as noted earlier, maternal state of mind is positively associated

with mother-child emotion dialogue ($r = .53$, $p = .01$).

Next, two logistic regressions were conducted to assess the mediating model: (1)

AEED classification was regressed on AAI classification, $\beta = 3.20$ ($SE = 1.09$), Wald's χ^2

$= 8.63$, $p < .01$. (2) The AEED classification was regressed on both the AAI classification,

$\beta = 3.04$ ($SE = 1.12$), Wald's $\chi^2 = 7.43$, $p < .01$, and Coaching, $\beta = 0.25$ ($SE = 0.19$),

Wald's $\chi^2 = 1.83$, $p = ns$, with simultaneous entry, while controlling for household

income at 21 months. In this second regression, the effects of AAI classification on

AEED dropped (from $\beta = 3.20$ to $\beta = 2.97$). It should be noted however, that AAI

classification remained significant, even when entered with Coaching, indicating that

Coaching cannot fully mediate the link between maternal attachment and AEED

classification. A Sobel test was conducted to assess the significance of mediation. The

Goodman test (calculated with Preacher & Leonardelli, 2001) revealed that the difference

between β weights was not significant, $z = 1.25$, ns.

Taken together, results failed to substantiate a mediation model. The data reveal

that maternal sensitivity, awareness and coaching of emotions do not appear to be the

primary means by which mother-child emotion dialogues is shaped by maternal

attachment representation. Next, we examine a moderation model that may help to better

explain the relations among the variables.

Moderation models.

Logistic regression. The traditional approach of testing for moderation is to assess

the interaction of the independent and moderator variables (Baron & Kenny, 1986). By

way of standard multiple regressions, moderator effects are assessed by testing the

product of the independent and moderator variables. This method, however, has its

limitations in non-experimental field studies. In a review of the literature, McClelland

and Judd (1993) reported that field studies have more difficulty detecting moderator effects or interactions than do experimental studies. This is due to the fact that experimental designs have less model error because they are conducted under more controlled laboratory conditions than in non-experimental field settings. Furthermore, because field researchers cannot control measurement error by assigning observations to levels of the independent and moderator variables, as experimentalists do, errors in the effects of the independent and moderator variables are exacerbated when they are multiplied to create the interaction variable. Finally, the possible magnitude of the interaction may be limited by theoretical constraints in field studies. While disordinal or crossover interactions are often reported in experimental studies, theory often leads non-experimental studies, on the other hand, to expect ordinal or fan-shaped interactions. The theoretical constraints of ordinal interactions in field studies thus limit the possible magnitude of the moderator regression coefficient, which weaken the detection of a significant interaction effect (McClelland & Judd, 1993). With the aforementioned caveats in mind, logistic regressions, which test the significance of the interaction between maternal state of mind and the various moderators (maternal sensitivity, and awareness and coaching of emotions), were supplemented with comparisons of the moderator variables across concordance and discordance of AAI-AEED classification.

Three separate binary logistic regressions were conducted whereby AAI classification, the moderator variable (maternal sensitivity at 10 months, mothers' awareness and level of coaching at 21 months), and their interaction were simultaneously entered to predict AEED classification at 3.5 years, while controlling for the effects of household income assessed at 10 and 21 months, respectively. In each case, AAI

classification remained significant, while the moderators did not. Furthermore, in all 3

models, the interaction term did not significantly improve prediction (see Table 14 for

results of the 3 logistic regressions).

Table 14

Results of Logistic Regressions Predicting Mother-Child Emotion Dialogue

Classification

Regression model	Wald χ^2	β	SE
Predictor			
Maternal sensitivity as moderator			
10 mth Household income	1.29	-.23	.20
AAI	5.79*	3.98	1.66
Maternal sensitivity	.24	-1.02	2.07
AAI ×maternal sensitivity	1.52	2.70	2.19
Awareness as moderator			
21 mth Household income	1.04	-.20	.19
AAI	4.94*	3.56	1.60
Awareness	.80	.38	.43
AAI ×awareness	.14	-.17	.44
Coaching as moderator			
21 mth Household income	.44	-.12	.19
AAI	5.17*	3.86	1.70
Coaching	.65	-.33	.41
AAI ×coaching	2.57	.72	.45

* $p < .05$

Analysis of concordant and discordant pairs. In light of the non-significant findings using the traditional moderation approach, and the limitations of this method outlined earlier, we sought to examine moderation with a different approach, more appropriate to non-experimental designs. Evidence of moderation will be provided if the association between two variables changes as a function of the moderator variable (Baron & Kenny, 1986). For instance, a moderating effect would be indicated if the impact of maternal attachment representation on mother-child emotion dialogues was augmented or attenuated as a function of varying levels of maternal sensitivity and aspects of maternal affective mindset. We sought evidence of such a moderating effect by forming pairs based on the match and mismatches of AAI and AEED classifications and by comparing levels of sensitivity and affective mindset across these pairs.   Our approach here parallels that developed in a study examining the association between maternal state of mind and sensitivity in predicting infant attachment security, in which Atkinson et al. (2005) created four mother-infant pairs based on their attachment concordance (Autonomous-Secure and Non-Autonomous-Insecure) and discordance (Autonomous-Insecure and Non-Autonomous-Secure). The authors demonstrated the moderating role of maternal sensitivity by comparing it across the four matched and mismatched pairs.

Following this approach, four groups were created based on the concordance and discordance between maternal attachment and mother-child emotion dialogue classifications: 1. Autonomous-Emotionally Matched (F-EM); 2. Non Autonomous-Non Emotionally Matched (NonF-NonEM); 3. Autonomous-Non Emotionally Matched (F-NonEM); and 4. Non Autonomous-Emotionally Matched (NonF-EM). The NonF-EM group was omitted due to an insufficiency of dyads in this group. The remaining three

groups were used in subsequent analyses: two concordant groups: F-EM and NonF-

NonEM, and one discordant group: F-NonEM.

In the analyses that follow, we expect variation in sensitivity and maternal

affective mindset across the concordant dyads, a result that would suggest that these

variables facilitate the impact of mothers' state of mind regarding attachment on later

mother-child co-construction. More specifically, it is predicted that autonomous mothers

promote coherent memory talks and engage in EM dialogues as a result of displaying

high levels of sensitivity and maternal affective mindset; whilst non-autonomous mothers

impair emotion conversation and engage in Non-EM dialogues by displaying low levels

of sensitivity and maternal affective mindset. Furthermore, we would expect that

evidence of the moderation model will be found by comparisons of levels of sensitivity

and affective mindset between the Autonomous-EM and the discordant Autonomous-

NonEM groups. That is, evidence that autonomous mothers engaging in EM dialogues

are significantly higher in sensitivity and affective mindset than autonomous mothers

who engage in Non-EM dialogues would suggest that low levels of these factors

attenuate or block the positive influence of an autonomous state of mind on later mother-

child co-construction, resulting in a Non-EM classification. [3]

Maternal sensitivity. An initial analysis examining the three groups of matched

and mismatched dyads for demographic differences revealed no significant discrepancies

in terms of maternal education, $F(2, 46) = .65$, *ns*, and household income, $F(2, 46) =$

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[3] A more complete and robust assessment of moderation would also include the comparison of moderators between the NonF-NonEM and NonF-EM pairs, with significantly higher levels of sensitivity and maternal affective mindset in the latter pairs reflecting an attenuated impact of state of mind on emotion dialogues. In other words, a non autonomous state of mind would no longer have a negative impact on emotion dialogues (and thus an EM classification would result) if high levels of sensitivity and affective mindset are displayed. However, since there was an insufficient number of the NonF-EM group in our sample, evidence for full moderation could not be provided.

1.47, *ns*; however, pairs did significantly differ in terms of maternal age, F (2, 46) = 3.89, $p < .05$. Autonomous mothers engaging in Non-Emotionally Matched dialogues (Mean age = 36.81 years) were significantly older than Non-Autonomous mothers engaging in Non-Emotionally Matched dialogues (Mean age = 31.85 years), $p < .05$. Maternal age was thus covaried out of all subsequent analyses involving the AAI-AEED pairs.

An ANCOVA was conducted in order to compare sensitivity ratings across the 3 groups while controlling for the effects of household income at 10 months and maternal age at 3.5 years. Results indicated that sensitivity significantly differed across the 3 groups, F (2, 44) = 5.02, $p < .05$ (see Table 15). Follow-up tests showed that Autonomous mothers engaging in Emotionally Matched dialogues with their children were significantly more responsive at 10 months child age than Non-Autonomous mothers who engaged in Non-Emotionally Matched dialogues, $p < .05$. In addition, Autonomous mothers who engage in Emotionally Matched dialogues also displayed significantly higher levels of sensitivity than Autonomous mothers who engaged in Non-Emotionally Matched dialogues, $p < .05$. These data are consistent with moderation insofar as levels of sensitivity seem to facilitate the effects of maternal attachment representation on mother-child emotion dialogues as in the case of the concordant dyads (with mean sensitivity = .57 for F-EM dyads, and .00 for NonF-NonEM dyads), and impede the effects of maternal attachment on mother-child emotion dialogues as in the case of discordant dyads (with mean sensitivity = .57 for F-EM dyads, and F-NonEM dyads mean sensitivity = .08). This suggests that low levels of sensitivity can block the influence that maternal attachment can have on mother-child emotion conversations.

Table 15

Descriptive Statistics for Maternal Sensitivity Across AAI-AEED Concordant and

Discordant Pairs

Groups	N	M	SD
Autonomous – Emotionally Matched	20	.57 [a]	.41
Non Autonomous – Non Emotionally Matched	16	.00 [b]	.57
Autonomous – Non Emotionally Matched	13	.08 [b]	.73

Note. $F (2, 44) = 5.02, p < .05$
Means with different lettered superscripts differ significantly at $p < .05$ with Bonferroni adjustment.

Maternal affective mindset. An ANCOVA was conducted with 21 month household income and 3.5 year maternal age entered as covariates. Results indicated that the 3 AAI-AEED groups did not significantly differ in awareness, F (2, 44) = 3.10, *ns.* With regards to coaching, mothers significantly differed in the assistance they provided their children at 21 months in coping with emotions, F (2, 44) = 3.81, $p < .05$. Follow-up analyses showed that Autonomous mothers who engaged in EM dialogues (Mean coaching = 1.05) provided significantly more assistance in helping their children deal with emotions than Non Autonomous mothers who engaged in Non-EM mothers (M = -.94), $p < .05$. However, the Autonomous-EM and Autonomous-NonEM comparison was non-significant. These findings indicate that while mothers' overall awareness of emotions do not moderate the impact of maternal attachment on mother-child emotion dialogues, moderation was partially supported for the amount of emotional coaching that mothers provided to their children at 21 months. Specifically, comparison of the concordant dyads (Autonomous-EM and Non Autonomous-NonEM) illustrates that coaching augments the impact of maternal state of mind on mother-child emotion dialogues (see Table 16).

Table 16

Descriptive Statistics for Maternal Affective Mindset Across AAI-AEED Concordant and

Discordant Pairs

Maternal Affective Mindset Variable		
Groups	*M*	*SD*
Awareness		
Autonomous-EM	1.74	2.40
NonAutonomous-NonEM	-1.59	4.40
Autonomous-NonEM	-.93	5.68
Coaching		
Autonomous-EM	1.05 [a]	1.21
NonAutonomous-NonEM	-.94 [b]	2.54
Autonomous-NonEM	-.20	2.67

Note. For awareness: $F(2, 44) = 3.10$, *ns*; for coaching: $F(2, 44) = 3.81$, $p < .05$
Means with different lettered superscripts differ significantly at $p < .05$.

Discussion

Parent-led conversations about past emotional experiences help children to recall, understand, and organize their emotional past, thus facilitating the verbalization and consolidation of otherwise abstract memories and experiences. The results of this dissertation underscore the importance of early attachment and maternal attachment representation for dyads' later capacity of co-constructing dialogues surrounding the child's emotional past in a narratively coherent, emotionally regulated, and mutually attuned manner. In this discussion, the main results of the research project will first be summarized based on the five study goals outlined in the introduction of this thesis. This will be followed by discussions of key findings, unanticipated or ambiguous results, limitations, and directions for future work.

Overview of Main Study Findings

Study goal #1: The quality of the attachment relationship and mother-child emotion dialogues

Results from this research project reinforce and extend our current knowledge of the developmental origins of mother-child emotion dialogues. Our data replicate findings in the extant literature by supporting the established link between children's attachment style and patterns of mother-child emotion communication. Children in secure attachment relationships at 13 months are later more comfortable discussing past emotional experiences with their mothers even if the emotional memories are aversive. This is consistent with the suggestion that the social-emotional relationship acts as a secure base for exploring emotions and provides a haven of safety to resolve difficult emotional experiences (Bretherton, 1990; Oppenheim & Koren-Karie, 2009). As a result, dyads in

secure relationships are able to create narratives that are emotionally open, supportive, and coherent. By contrast, children who are in insecure attachment relationships are less comfortable discussing these issues with their mothers because they may have experienced a degree of insensitive and unresponsive caregiving. Their mother-child dialogues, then, tend to be incoherent, less reciprocal, and less emotionally integrated. In addition, consistent with Oppenheim & Koren-Karie's (2009) conceptualization, children who were classified as disorganized were not only unlikely to engage in emotionally open and coherent conversations with their mothers, but they were highly likely to engage in dialogues that were marked by an absence of a clear strategy.

Study goal #2: Maternal attachment representation and mother-child emotion dialogues

Maternal attachment classification on the AAI at 3 months infant age was found to significantly predict classification on mother-child emotion dialogues three and a half years later. As expected, Autonomous mothers provide a secure base for their children to explore the internal world of emotions. Compared to Dismissing and Preoccupied mothers, Autonomous mothers tend to engage in dialogues with their children that are more supportive, accepting, and emotionally organized. This is bolstered by the finding that Autonomous mothers display higher levels of sensitive guidance and scaffolding during conversations with their children about their emotional past. Our results, however, did not provide support for a link between the unresolved state of mind with regards to attachment and later mother-child emotion dialogues, suggesting that the state of mind reflected by the Unresolved/disoriented category in the AAI is perhaps unrelated to mothers' discussions with their children of their emotional past.

Study goal #3: Mother-child attachment pairs and later emotion dialogues

The analysis of concordant and discordant attachment pairs affords further insight into how the co-construction process evolves from socio-emotional relationships. First, whereas concordantly secure dyads, i.e., those featuring mothers with an Autonomous state of mind and dyads in secure attachment relationships, tend to engage in EM dialogues and are unlikely to engage in Non-EM dialogues, the reverse pattern is true for concordantly insecure dyads such that they are likely to engage in Non-EM dialogues but unlikely to engage in EM dialogues. A mismatch in attachment styles was found to lead to a mismatch in communication styles insofar as mothers and infants in both the discordant attachment groups (Autonomous - Insecure, and Non Autonomous - Secure) were more likely to display differing patterns of communication during the co-construction process, and thus be assigned to the Inconsistent classification. Second, examination of the aggregate dialogue scores revealed that an individual's performance in these dyadic verbal exchanges is largely a function of his or her own attachment status and appears unaffected by the other partner's attachment. That is, Autonomous mothers display significantly higher levels of sensitive guidance than non-Autonomous mothers irrespective of the nature of their relationship with their infant; and, moreover, Autonomous mothers do not differ from one another as a function of the security/insecurity of their relationship with their infant at a year of age. Similar to this pattern of findings concerning maternal state of mind, securely attached children displayed higher levels of collaboration and elaboration during emotion than their non-secure counterparts irrespective of the attachment status of their mothers; and, furthermore, children in secure attachment relationships with Autonomous mothers did

not differ from children in secure attachment relationships with non Autonomous mothers. These findings suggest that partners engage in dialogues in a manner that was consistent with their own attachment style independently of the other's attachment status.

In contrast with the results reflecting the individual's contribution to the overall process and the organization of the narratives created, it is interesting to note that the organization of the co-construction process and the coherence and emotional integration of the end product were found to be uniquely related to dyads featuring security of both the attachment relationship and mothers' state of mind regarding attachment. That is Autonomous - Secure dyads scored significantly higher on the Emotionally Coherent Narrative scale than all the other three groups in which at least one member was insecure.

Study goal #4: Early maternal sensitivity and affective mindset as mediators of the link between maternal attachment representation and mother-child emotion dialogues

Our results did not provide support for a mediation model. That is, neither maternal sensitivity assessed during mother-child interactions observed at 10 months infant age, nor maternal affective mindset assessed during an interview tapping into mothers' thoughts and feelings about emotions both within herself and those within her 21 month old toddler emerged as the main pathways through which maternal attachment representation shapes mother-child dialogues.

Study goal #5: Early maternal sensitivity and affective mindset as moderators of the link between maternal attachment representation and mother-child emotion dialogues

Finally, we tested whether the associations between maternal attachment representation and mother-child emotion dialogues were altered by differences in maternal sensitivity and affective mindset. Traditional logistic regression analyses did not provide evidence of moderation: in all cases, the interactions between AAI and moderators did not prove to be significant. Analyses comparing sensitivity and affective mindset across AAI-AEED pairs, while controlling for the effects of household income, however, provided preliminary support for workings of moderation. Autonomous mothers who engaged in EM dialogues were significantly more sensitive at 10 months and provided more coaching of negative affect at 21 months than non-Autonomous mothers who engaged in Non-EM dialogues. The effect of moderation was most obvious in the comparison between Autonomous - EM and Autonomous - NonEM groups where an unexpected lower level of sensitivity in the latter group attenuated the positive impact of an Autonomous state of mind on the quality of later mother-child emotion conversations.

The Role of Disorganization in Mother-Child Emotion Dialogues

A key contribution of the current study to the extant literature is the finding that children with disorganized histories may have more difficulty conducting dialogues with a consistent strategy than organized but insecure dyads, as reflected by the portion of dyads engaging in Inconsistent dialogues (62.5% of disorganized dyads, 43% of avoidant dyads, 0% of resistant dyads). The temporary breakdown or absence of a regulatory strategy among disorganized infants to cope with negative emotions in the face of stress, as identified in the Strange Situation, apparently later leaves the child without a coherent and consistent strategy to recall and recount past emotional memories (Oppenheim et al.,

2007). Children who have had experiences of being less trusting and perhaps even fearful of their parent in times of need, as in the case of disorganized attachment, may fail to develop an organized strategy of using their parents as a secure base or safe haven (van IJzendoorn, Schuengle, & Bakermans-Kranenburg, 1999). Over time, these children may have access to more limited adaptive resources in their repertoire, and thus become more intimidated and less comfortable in reflecting on and working with their parents in forming ideas about past emotional events into coherent narratives.

The link between Disorganization and Inconsistent emotion dialogues may have been observed here but not in past research because the current study assessed emotion dialogues following a separation. Reunions between caregivers and a child are thought to be especially revealing of attachment-related processes (Ainsworth et al., 1978). By requiring mothers and their children to discuss past emotional experiences during a reunion episode, then, we are afforded the opportunity to observe how the child may (or may not) implement various strategies to deal with a potentially stressful situation in the presence of their parent, and how this may impact the manner in which thoughts and feelings about past emotional events are communicated. With the attachment system activated at the outset of the emotion dialogue, the potential disruption in the child's attachment strategy and subsequent communications may be more readily captured (see Etzion-Carasso & Oppenheim, 2000 for a similar approach).

Given that the Inconsistent classification is thought to reflect the most severe difficulties in mother-child emotion communication, our findings highlight and reinforce the implications of early Disorganization for later developmental psychopathology. Disorganized behavior in infancy may predict problems in effective and adaptive

recollection of past memories, how these experiences are organized, interpreted and ultimately incorporated into children's emerging sense of self. It would be an important and necessary step for future studies to not only replicate these findings, but to uncover the potential mechanisms underlying the transformation of early disorganized behaviours into later Inconsistent dialogue classifications.

The Importance of Maternal Attachment Representation for Co-Constructing Organized Narratives Surrounding Children's Emotional Past

A major and unique contribution of this thesis to existing research is the finding of a robust association between maternal state of mind with regards to attachment and quality of mother-child emotion dialogues. Mothers with different attachment representations demonstrated distinct patterns of communicating with their children about past emotional events. The shared conversations of Autonomous mothers and their children are characterized by sensitive probing and prompting which provide their children with opportunities to express themselves and elaborate on their thoughts and feelings. These mothers further demonstrate their involvement and interest in the discussion, and hence promote a sense of security in their children, by reassuring their children's contributions and ensuring a certain level of resolution to the discussion. This dialogic style can be shown in the following conversation between a mother and her child concerning the emotion "mad":

M: Do you remember a time when you were mad? When?
C: When John (younger sibling) was getting my stuff.
M: Yeah you get mad at John when he takes your stuff right?
C. And then you have to say no pushing.
M: And what does he try to take from you?
C: Um…
M: When were you mad? When he took what?
C: Groovy girls. My groovy Girls.

M: Oh.
C: That's what he took.
M: He took your groovy girls? And what did you do then?
C: I tried to take it away but I couldn't.
M: And did you say anything?
C: Yeah, I said John give me that back and he didn't listen.
M: And then what happened?
C: And then you told him to give it back and then he dropped it on the floor and then I got it.
M: So then you felt better cuz you got your dolls back?
C: Mhmm!

In contrast, conversations of Dismissing mothers tend to be less developed as the opportunity for elaboration of the stories, particularly those surrounding a negative theme, is often blocked. As a result, there is often no room for a positive resolution to the emotional event being discussed. This can be illustrated in the following conversation between mother and child concerning the mad emotion:

M: Does anything else make Katie mad? (Mother just asked if Katie is mad when her little brother kicks her toys, and the child agreed). When Dylan takes your toys, what else makes you mad? Were you mad when your rainbow book got ruined yesterday?
C: (Nods).
M: Were you mad?
C: (Nods).
M: Yeah.
C: Yeah. And then I cried.
M: Then you cried? Then you got SAD! Oh well, sometimes things get ruined. Oh that's it!
C: But which one –
M: (Interrupts C) That's it! Those are four feelings!

Preoccupied mothers, on the other hand, often cannot contain their own emotions and thus consistently shift the focus of the discussion to themselves and their own emotions. The transcripts of Preoccupied mothers and their children are often marked by confusion as a different emotion may be introduced during the discussion of another emotion. As a result of this narrative style, there is often no closure to the negative

feelings discussed. This can be demonstrated in a discussion between a dyad on the

scared and mad emotions:

M: Is that what that face looks like to you? Does he look scared?
C: Mmhmm
M: Was I scared when the Jack in the Box popped out? (During an earlier play session, mom & child played with a Jack in the Box toy).
C: Mmhmm
M: Did that scare me?
C: Nuh uh.
M: No, did it make you happy cause it scared Mommy?
C: Mmhmm (Mom and child get distracted by the snacks for a few minutes).
C: Mommy, let's get that up (points to the scary face page).
M: We don't like scared?
C: Nuh uh.
M: What else makes you scared? Do you know what makes Mommy scared?
C: Mmhmm.
M: Is when you run away outside and she doesn't know where you are. Remember how you went down in Dora's basement and scared Mommy cause she didn't know where you were? (flips page)
C: (tries sounding out the word mad) Mad!
M: Mad? Does that face look mad to you?
C: Nuh uh, Mommy what is that?
M: That is mad. A very angry face, looks very cross and stern.
C: Mmhmm
M: Does Mommy get mad at Daddy?
C: Mmmm.
M: No. Does Mommy get mad at you?
C: Mmmm.
M: Why do I get mad at you?
C: Cause when I run away, you get mad at me.
M: That's true. I don't get mad at you, I just get scared cause I don't know where you are.
C: Mmmhmm.

Contrary to our expectations, Preoccupied mothers did not often engage in

dialogues that were exaggerated, over-dramatized, or charged with negative or extreme

themes. It is possible that the nature and simplicity of the experiences in these young

children's lives are not sufficient in providing a platform for such exaggeration and

dramatization. The confusion and incoherence that characterize the conversations

between mothers and their young children, instead, are due to consistent shifts to the

mothers' own feelings and experiences and incorporation of a different emotion into the discussion.

      The Unresolved/disoriented classification. Our data did not support a link between the Unresolved/disoriented state of mind with regards to attachment and quality of later mother-child emotion dialogues. In the AAI, indices of an Unresolved/disoriented state of mind involve lapses in monitoring of reasoning or discourse only during the discussion of loss, trauma, or abuse. The shared narratives with their children, therefore, may not include the type of experiences and details that would evoke the disoriented speech observed during the AAI.

      Although existing empirical and conceptual frameworks do not provide bases for a strong hypothesis regarding associations between an Unresolved maternal state of mind and quality of mother child emotion dialogues, it has been proposed that lapses in monitoring during the discourse of unresolved individuals originate from dysregulation around fear (Hesse & Main, 2000). Thus, it is possible that when discussing intense emotional experiences with their children, particularly surrounding fear or fearful events, Unresolved mothers may be unable to provide a scaffold for their child and to assist their child in resolving the negative fearful experiences. Although mothers and children were asked to discuss a fearful memory in the current study, these discussions may not have been sufficiently arousing to evoke mothers' disorientation. Moreover, we were not able to isolate and analyze the discussion of an individual emotion as the coding scheme applies to the entire co-construction process and not to any specific emotion. It would be important for future studies to probe the possibility of whether mothers with an Unresolved/disoriented state of mind might display some type of dysregulation or lapse

during conversations surrounding fear. It would perhaps be more appropriate, however, that such mother-child emotion dialogues take place when children are older in order to facilitate discussions that are sufficiently emotionally intense.

The Autonomous-NonEM link: An unanticipated pattern. Closer examination of Table 11a indicates that although Autonomous mothers are significantly unlikely to engage in Non-EM dialogues, a surprising 39% of Autonomous mothers do. This unanticipated pattern warranted further examination not only because this proportion is higher than what one would expect on the basis of measurement error, but because the study of these theoretical anomalies is important to the elaboration of our conceptualization of the mechanisms by which maternal attachment representation impacts emotion dialogues.

Unplanned comparisons were conducted in order to address this issue. First, the Non-EM overarching classification was decomposed into its three sub-categories: Flat (Fl), Exaggerated (Ex), and Inconsistent (IN) in order to determine what types of Non-EM dialogues these Autonomous mothers tended to engage in. Of the 13 Autonomous mothers that engaged in Non-EM dialogues, 10 engaged in IN dialogues while 3 engaged in Ex dialogues. Next, of the 10 dyads in which the mother was Autonomous and the dialogue was classified as IN, mothers' and children's performance during the dialogue were compared to examine whether the IN classification was a result of a mismatch in the dyad's communication style. In these dyads, Maternal Sensitive Guidance was found to be significantly higher than Child Cooperation and Exploration, $t(9) = 13.54$, $p < .001$ (with mean Maternal Sensitive Guidance = 7.44, $SD = .62$; mean Child Cooperation and Exploration = 5.63, $SD = .91$).

Taken together, this suggests that the unexpected pattern found between Autonomous mothers who engage in Non-EM dialogues is due to an inconsistency between dyads' engagement and contributions to the dialogues, with mothers being more involved and collaborative than their children. It is possible that this gap in communication style emerged as a result of the age of the children in our sample. Mothers of these young children may have to work extra hard to maintain their children's focus on the task and to keep them interested. As a result of mothers' efforts and these young children's tendency to be uncooperative, two distinct styles are observed during the co-construction process. Another possible explanation for this gap in communication could be a mismatch in attachment patterns. Of the 10 Autonomous mothers who engaged in Inconsistent dialogues, 8 had children who were in insecure attachment relationships. We will next turn our focus to the discussion of the concordance and discordance in attachment patterns.

Co-Construction as a Function of Both Partners' Attachment: Independent Processes?

Our study is the first to examine the maintenance of the emotional bond between mother and child from infancy to the early preschool stage as a function of the attachment status of both partners. Findings from the comparison of the aggregate emotion dialogue scales across the four attachment pairs (see Table 13b) indicate that the performance of each mother and infant during shared conversations is a function of their individual attachment style and largely unaffected by his or her partner's attachment status. Although this seems to suggest that mothers' and children's performance during dialogues might be independent of one another, other studies have found evidence for

mutual accommodation between mothers' and children's narrative styles over time. For instance, Reese et al. (1993) found no association between mothers' elaborativeness and children's memory responses when children were 40 and 46 months of age, yet, maternal elaborativeness at these early time points was significantly related to children's memory responses when children were 58 and 70 months of age. The authors assert that mothers' early narrative style does not influence children's own style of memory talks early in development, but instead the contributions of early maternal reminiscing style to children's narrative style only becomes apparent later on in development as the child becomes an increasingly more competent participant in joint reminiscing. This argument supports a "spiral model" proposed by Reese and colleagues (e.g., Haden et al., 1997; Newcombe & Reese, 2004; Reese et al., 2004) whereby co-constructed narratives become more interactive and collaborative with parents increasing provision of narrative support as a function of their children's developing skills over time.

Based on these findings, it is possible that early in development, when mothers and children are at the outset of learning to think and talk about the emotional past, individuals' contributions to these dialogues are heavily dependent on their own attachment style, but over time, as these interactive exchanges increase and as children become more involved participants in these conversations, a reciprocal system evolves with partners having a greater influence on one another. It is imperative for future studies to examine the conversations of mothers and children within a longitudinal design and with measurements of both mother and child attachment. Such an approach would afford invaluable insight on whether the stability in the quality of mother-child dialogues over time is a function of the individual's attachment status, a function of the mutual influence

of partners' narrative style over time, or even perhaps a more complex combination of both.

The Contributing Roles of Maternal Sensitivity and Maternal Affective Mindset

> **Early maternal sensitivity is unrelated to later maternal sensitive guidance during emotion dialogues.** Table 8 indicates that while maternal sensitivity

during mother-infant interactions assessed at 10 months infant age is significantly associated with overall emotion dialogue classifications, it is not, however, correlated with the Maternal Sensitive Guidance dialogue aggregate scale at 3.5 years child age. Our focus here was on the impact of adult attachment on later mother-child dialogue classification by way of early maternal sensitivity and we did not make predictions specific to the link between early sensitivity and later Maternal Sensitivity Guidance. It is nonetheless surprising that this association was not significant because of previous arguments that maternal responsiveness during infancy ought to develop into sensitive guidance during later mother-child co-construction (e.g., Etzion-Carasso & Oppenheim, 2000; Fivush & Sales, 2006).

An examination of the specific scales used to calculate the Maternal Sensitive Guidance aggregate score suggests that some scales may be more reflective of the construct of early sensitivity than others. Specifically, when a new aggregate is created based on only the Involvement and reciprocity, Closure of negative feelings, and Structuring of the interactions scales, the association between early maternal sensitivity and later maternal responsiveness during emotion dialogues becomes significant ($r = .28$, $p < .05$). Although the other four maternal scales in the AEED are still highly relevant to mothers' overall performance in shared conversations, it is perhaps those three scales

representing mothers' involvement and interest, as well as their ability to provide comfort and resolution in the face of distress and to structure the interactions that best capture the concept of early maternal sensitivity as assessed by the MBQS. It will be important for future work to study variations in maternal responsiveness during discourse in relation to early sensitivity; in particular, researchers should consider and identify the specific facets of responsive maternal guidance during emotion dialogues that are most pertinent to early maternal sensitivity during mother-infant interactions.

Maternal attachment representation and maternal awareness of emotions. Contrary to our expectations, we did not find an association between mothers' dichotomous AAI classifications and the maternal awareness score on the MEI. Follow up comparisons of awareness across the 3-way AAI classifications, however, were significant, $F (2, 46) = 5.58, p < .05$. Specifically, Dismissing mothers were lower on awareness ($M = -3.87$) than both Autonomous ($M = .51$) and Preoccupied ($M = 1.55$) mothers, suggesting that variations in awareness between the non-Autonomous mothers precluded a significant association between the dichotomous AAI classification and the maternal awareness score.

While the patterns of awareness between Autonomous and Dismissing mothers were in line with our expectations, the elevated level of awareness in Preoccupied mothers was unanticipated. It has been argued, however, that as Preoccupied individuals have a tendency of amplifying negative affect they will have increased accessibility to negative emotional memories that are sad or anxiety-provoking (Mikulincer & Orbach, 1995). This focus and orientation towards negative affect will likely be displayed through a heightened awareness of negative emotions within themselves and with their children.

Amplified attunement to negative affect may be maladaptive because such a hypervigilant approach to negative emotions is likely to exacerbate Preoccupied individuals' anxiety such that they may experience difficulties in regulating inner distress (Kobak & Sceery, 1988) leading to exaggerated or overdramatized conversations with their children. Taken together, it appears that both a lack of emotional awareness, as seen in Dismissing mothers, and an overly heightened level of emotional awareness, as displayed by Preoccupied mothers, can result in poor quality of later mother-child dialogues. An optimal level of emotional awareness, on the other hand, is most likely to result in a well-regulated and emotionally contained discussion of past experiences.

Lack of support for a mediation model. Our findings indicate that differences in early maternal sensitivity and affective mindset do not appear to be the primary pathways by which adult attachment affects later shared reminiscing between mother and child. It is likely that the strong link between the AAI and AEED classifications, both narrative measures, precluded detection of a mediating effect. That is, AAI predicted mother-child emotion dialogue and could not be accounted for by maternal sensitivity and affective mindset.

Another means by which maternal attachment might be transmitted to later dialogues is through *maternal insightfulness*, defined as mothers' "capacity to consider the motives underlying their children's behaviours and emotional experiences in a complete, positive, and child-focused manner while taking into consideration their children's perspectives" (pg. 534, Koren-Karie, Oppenheim, Dolev, Sher, & Etzion-Carasso, 2002). Maternal insightfulness is assessed by interviewing mothers on their perceptions of their children's as well as their own thoughts and feelings after observing

previously recorded interactions with their children. This construct may be particularly useful in outlining the mechanism by which maternal attachment representation impacts later mother-child emotion talk because it requires the mother to not only reflect on her own thoughts and feelings but also to discuss the internal states and motives of her child during specific episodes of interaction between her and her child. Maternal insightfulness thus not only captures key components of maternal sensitivity, in fact, Koren-Karie et al., (2002) found that mothers who are positively insightful are also more sensitive, but it also embodies components of the maternal affective mindset employed in the current study, such as awareness. The MEI however, asks mothers to report their thoughts and feelings about affect based on abstract memories or scenarios. By asking mothers to review videotaped footage of real interactions with their children, as in the insightfulness assessment, and discuss their reflections we may be better able to encapsulate the specific aspects of mothers' representations of themselves and of their children that are most relevant to both their own attachment representation and mother-child dialogues. Because our study was not able to detect a mediating mechanism, the transmission of maternal attachment strategy to later dialogues remains largely unexplained.

Early sensitivity moderates the impact of maternal attachment representation on later mother-child emotion dialogues. Evidence for moderation in our sample was most evident in the comparison of sensitivity between the Autonomous-EM and Autonomous-NonEM groups with the latter group showing significantly lower levels of sensitivity. What remains unclear is why some mothers may behave with unexpected levels of sensitivity despite what may be predicted on the basis of their Autonomous state of mind with regards to attachment, such that the unanticipated low

levels of sensitivity appears to have blocked the positive influence of an Autonomous

state of mind on later mother-child emotion dialogues?

Despite conceptual arguments for a link between adult attachment representation

and responsiveness, intervention studies suggest that discrepancies between the

representational and behavioural levels are possible. For example, in their meta-analytic

review of studies aiming at enhancing parental sensitivity and child attachment security,

van IJzendoorn, Junner, & Duyvesteyn (1995) contend that changes can occur at the

behavioural level without accompanying changes at the representational level. That is,

interventions may be effective in enhancing parental responsiveness and infant

attachment without influencing parental attachment representations, thus creating a

discrepancy between the representational and the behavioural level. Factors that may

potentially influence mothers' sensitivity such that it becomes inconsistent with her

attachment representation may include personal adversity such as various life stresses

(Phelps, Belsky, & Crnic, 1998) and maternal emotional well-being, including depressive

symptoms (Adams,Gunnar, & Tanaka, 2004). Other long term contextual factors that

may impact this link include the husband's attachment history. For example, Cohn,

Cowan, Cowan, & Pearson (1992) showed that husbands' Autonomous attachment

representation moderated the association between mother's autonomy and her sensitivity.

Our study was limited by the fact that we did not have sufficient dyads in the

Non-Autonomous-EM group. This prevented us from testing the hypothesis that

unexpectedly high levels of early maternal sensitivity in these dyads would attenuate the

transmission of Non-Autonomous attachment on later mother-child discourse. It would

be important in our understanding of the developmental mechanisms underlying the

impact of maternal attachment on later dialogues to include both types of discordant

groups (Autonomous-NonEM and Non-Autonomous-EM), as well as to examine the

possible factors that might steer dyads away from the expected developmental pathway.

Examining Emotion Dialogues of Three and a Half Year Olds

Although studying the narratives constructed by mothers and their 3.5 year old

children may have posed certain limitations, such as reduced length of discussions and

less depth and emotional complexity in the narratives, this period in development was

critical in the current study. Children display some ability to recall and discuss a past

emotional event very early in their development. Initially, when the child is around 2

years of age, the adult provides much of the structure and content of recall. At this stage,

the child is an active onlooker and is drawn into the activity by the adult. Shortly, by

around 2.5 to 3.5 years of age, the child begins to participate to a greater extent and

contributes more to the dialogue with the guidance of the adult. Finally, by 5 years of age,

the child is able to independently construct a coherent narrative account of past emotional

events (Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986).

The developmental progression of children's involvement in recounting past

emotional events suggests that by around 3.5 years of age, the developing child is able to

actively engage in co-constructing narratives about past experiences. This age is

particularly critical in the child's linguistic and cognitive development because it marks

the beginning of many other budding abilities. For instance, research on autobiographical

memory suggests that young children are not able to create coherent narratives about

their personal memories until the age of 3 (C. Nelson, 1993) because it is only around this

time when they are able to encode their past experiences in language and retrieve them at

will (K. Nelson, 1993). Research on children's use of emotional language suggests that children begin to use emotion words as soon as they begin to talk (see Bretherton et al., 1986 for a review). By 2 years of age and upward, children are well equipped to start talking about emotions. Initially, they learn to label their own and others' emotions, by the age of 3 and beyond children are able to talk about the antecedents and consequences of emotional states and their discussion about past emotions become increasingly accurate, clear and complex.

Despite their developing cognitive and linguistic skills at this stage, 3.5 year olds still require a significant amount of assistance from their parents. Unlike 5 year olds, who are able to construct coherent narratives rather independently, 3.5 year olds need a great deal of support from their parents in structuring their verbal elaborations of past emotional events, organizing their memories, and understanding their past experiences. As a result, this is a critical phase of the child's development in which the caregiver plays an essential role in the co-construction. Examining the conversations of children with their caregivers during the stage in which they are developing more mature verbal and memory skills provides a unique opportunity to understand how parents help their children to coherently construct a narrative about past emotional events, to organize their memories, to express and reflect on their emotional past, and to interpret and understand past emotional events at a time when the child is just at the beginning of this journey.

Implications and Future Directions

Past research has compellingly documented the power of dialogue on children's emotional well-being and subsequent development. The current study contributes to this body of work by profiling the antecedents of this dialogic interaction between mother and

child. Our study builds on prior research by demonstrating that how children learn to reconstruct, interpret, and internalize their emotional past is not only a function of how their mothers represent their own early attachment experiences, but that this transmission in reminiscing style is subject to change by the quality of the dyad's earlier interactions. Low levels of early maternal responsiveness to infants' emotional signals may potentially block the positive influence that an Autonomous state of mind has on later communication. Future studies should examine whether providing these mothers with various types of support might improve sensitivity and consequently the quality of affective meaning making with their children. Combined with results from intervention studies (e.g., Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003), our data imply that the converse may be true. That is, intervention or prevention programs aimed at improving early maternal sensitivity may potentially circumvent the impact of a non-Autonomous state of mind on later dialogues. As noted earlier, it would be important for future research to test this hypothesis.

Another important area for future research is to broaden the research base both in terms of conversational partners and social contexts. Because children grow up in complex social worlds that include critical socialization agents, such as fathers, grandparents, siblings, and peers, the current field could benefit from examining how discourse with mothers as well as with other influential individuals work together in contributing to children's reconstruction and understanding of their emotional past. Moreover, the current study was based on a low-risk, community sample and there is a need to extend this focus to include other high-risk, clinical samples. This would provide

significant insight into contextual factors that might influence mothers' performance in shared reminiscing with their children.

Finally, it will also be critical to examine whether these early mother-child emotion dialogues are related to children's capacity to construct a coherent, objective, and balanced narrative around childhood memories as adults. Such an investigation would enable a more direct investigation of the transmission of internal working models of attachment. In particular, it would be interesting to examine the developmental trajectory of the children in the mismatch AAI-AEED groups. Specifically, the question is whether children of Autonomous mothers who engaged in poorly organized and emotionally incoherent dialogues would display later reminiscing styles or attachment representations, as in their own AAI classifications, that are more reflective of the shared dialogue or of their mothers' attachment representations? Or do emotion discussions moderate the link between maternal and child attachment representations? Clearly, much exciting research lies ahead as we continue to discover the captivating journey children embark on as they learn about themselves, others, relationships, and the world.

References

Adam, E.K., Gunnar, M.R., & Tanaka, A. (2004). Adult attachment, parent emotion, and observed parenting behavior: Mediator and moderator models. *Child Development, 75,* 110-122.

Ainsworth, M.D.S.(1969). *Maternal Sensitivity Scales*. John Hopkins University, Baltimore.

Ainsworth, M.D.S. (1989). Attachments beyond infancy. *American Psychologist, 44,* 709-716.

Ainsworth, MD.S., Bell, S.M.V., & Stayton, D.J. (1971). Individual differences in strange-situation behaviour of one-year-olds. In H.R. Schaffer (Ed.), *The origins of human social relations* (pp. 17-57). London: Academic Press.

Ainsworth, M.S., Blehar, M.C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation.* Hillsdale, NJ: Erlbaum.

Alexander, K.W., Quas, J.A., & Goodman, G.S. (2002). Theoretical advances in understanding children's memory for distressing events: The role of attachment. *Developmental Review, 22,* 490-519.

Atkinson, L., Goldberg, S., Raval, V., Pederson, D., Benoit, D., Moran, G., Poulton, L., Myhal, N., Zwiers, M., Gleason, K., Leung, E. (2005). On the relation between maternal state of mind and sensitivity in the prediction of infant attachment security. *Developmental Psychology, 41*, 42-63.

Bakermans-Kranenburg, M, & van IJzendoorn, M.H. (1993). A psychometric study of the Adult Attachment Interview: Reliability and discriminant validity. *Developmental Psychology,   29,* 870-879.

Bakermans-Kranenburg, M., & van IJzendoorn, M.H. (2009). The first 10,000 Adult

   Attachment Interview: Distributions of adult attachment representations in clinical

   and non-clinical groups. *Attachment & Human Development, 11,* 233-263.

Barkermans-Kranenburg, M.J., van IJzendoorn, M.H., & Juffer, F. (2003). Less is more:

   Meta-analyses of sensitivity and attachment interventions in early childhood.

   Psychological Bulletin, 129, 195-215.

Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in

   social psychological research: Conceptual, strategic and statistical considerations.

   Journal of Personality and Social Psychology, 51, 1173-1182.

Biringen, Z., Brown, D., Donaldson, L., Green, S., Krcmarik, S., & Lovas, G. (2000).

   Adult Attachment Interview: Linkages with dimensions of emotional availability

   for mothers and their pre-kindergarteners. *Attachment & Human Development, 2,*

   188-202.

Blair, J.R., & Spreen, O. (1989). Predicting premorbid IQ: A revision of the National

   Adult Reading Test. *The Clinical Neuropsychologist, 3*, 129-136.

Bost, K.K., Shin, N., McBride, B.A., Brown, G.L., Vaughn, B.E., Coppola, G., Verissimo,

   M., Monteiro, L., & Korth, B. (2006). Maternal secure base scripts, children's

   attachment security, and mother-child narrative styles. *Attachment & Human*

   Development, 8, 241- 260.

Bowlby, J. (1969). *Attachment and loss.* Vol. 1 *Attachment.* New York: Basic Books.

Bowlby, J. (1973). *Attachment and loss.* Vol. 2 *Separation: Anxiety and anger.* New

   York: Basic.

Bowlby, J. (1980). *Attachment and loss.* Vol. 3. *Loss: Sadness and depression.* New York: Basic Books.

Bowlby, J. (1988). *A secure base: Clinical applications of attachment theory.* London: Routledge.

Bretherton, I. (1990). Open communication and internal working models: Their role in attachment relationships. In R. Thompson (Ed.), *Socioemotional development. Nebraska symposium on motivation*, *Vol 36* (pp. 57-113). Lincoln: University of Nebraska Press.

Bretherton, I. (1991). Pouring new wine into old bottles: The social self as internal working model. In M.R. Gunnar & L.A. Sroufe (Eds.), *Self processes and development. Minnesota Symposia on Child Psychology, Vol. 23* (pp. 1-41). Hillsdale, NJ. Erlbaum.

Bretherton, I. (1993). From dialogue to representation: The co-construction of self in relationships. In C.A. Nelson (Ed.), *Memory and affect in development: Minnesota symposia on child development, Vol. 26* (p. 237-263). Hillsdale, NJ: Lawrence Earlbaum   Associates.

Bretherton, I., Fritz, J., Zahn-Waxler, C., & Ridgeway, D. (1986). Learning to talk about emotions: A functionalist perspective. *Child Development, 57,* 529-548.

Bretherton, I., & Munholland, K.A. (1999). Internal working models in attachment relationships: A construct revisited. In J. Cassidy, & P.R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 89-111). New York: Guildford Press.

Bretherton, I., Ridgeway, D., & Cassidy, J. (1990). Assessing internal working models of the attachment relationship: An attachment story completion task for 3-year-olds. In M.T. Greenberg, D. Cicchetti, & E.M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (p. 273-308). Chicago: University of Chicago Press.

Cassidy, J. (1994). Emotion regulation: Influences of attachment relationships. *Monographs of the Society for Research in Child Development, 59,* 228-249.

Cleveland, E.S., & Reese, E. (2006). Maternal structure and autonomy support in conversations about the past: Contributions to children's autobiographical memory. *Developmental Psychology, 41,* 376-388.

Cowen, P.A., (1996). Meta-thoughts on the role of meta-emotion in children's development: Comment on Gottman et al. (1996). *Journal of Family Psychology, 10,* 277-283.

Cowen, D.A., Cowan, P.A., Cowan, C.P. & Pearson, J. (1992). Mothers' and fathers' working models of childhood attachment relationships, parenting styles, and child behavior. *Development and Psychopathology, 4,* 417-431.

Dearing, E. & Hamilton, L.C. (2006). Contemporary advances and classic advice for analyzing mediating and moderating variables. *Monographs of the Society for Research in Child Development, 71,* pp. 88-104.

DeOliveira, C.A., Moran, G., & Pederson, D.R. (2005). Understanding the link between maternal adult attachment classifications and thoughts and feelings about emotions. *Attachment and Human Development, 7,* 153-170.

DeOliveira, C.A., (2001). *Understanding the function of emotions within the framework*

of attachment organization. Unpublished doctoral dissertation, University of Western Ontario.

Dunn, J., Brown, J., & Beardsall, L. (1991). Family talk about feelings states and children's later understanding of others' emotions. *Developmental Psychology, 27,* 448-455.

Dunn, J., Brown, J., Slomkowski, C., Tesla, C., & Youngblade, L. (1991). Young children's understanding of other people's feelings and beliefs: Individual differences and their antecedents. *Child Development, 62*, 1352-1366.

Edelstein, R.S, Weede Alexander, K., Shaver, P.R., Schaaf, J.M, Quas, J.A., Lovas, G.S., & Goodman, G.S. (2004). Adult attachment style and parental responsiveness during a stressful event. *Attachment & Human Development, 6,* 31-52.

Feeney, B.C., & Collins, N.L. (2003). Motivations for caregiving in adult intimate relationships: Influences on caregiving behavior and relationship functioning. *Personality and Social Psychology Bulletin, 29,* 950-968.

Etzion-Carasso, A., & Oppenheim, D. (2000). Open mother-pre-schooler communication: Relations with early secure attachment. *Attachment & Human Development, 2,* 347-370.

Fivush, R. (1991). The social construction of personal narratives. *Merrill-Palmer Quarterly, 37,* 59-81.

Fivush, R. (1993). Emotional content of parent-child conversations about the past. In C.A. Nelson (Ed.), *Memory and affect in development: The Minnesota Symposia on Child Psychology, Vol 26* (pp. 39-77). New Jersey: Lawrence Erlbaum Associates.

Fivush, R. (1994). Constructing narrative, emotion, and self in parent-child conversations about the past. In U. Neisser, & R. Fivush (Eds.), *The remembering self: Construction and accuracy in the self-narrative* (pp. 136-157). Cambridge: Cambridge University Press.

Fivush, R. (2009). Co-constructing memories and meaning over time. In J.A. Quas, & R. Fivush (Eds.), *Emotion and Memory in Development* (pp. 343-35). New York: Oxford University Press.

Fivush, R., & Fromhoff, F.A. (1988). Style and structure in mother-child conversations about the past. *Discourse Processes, 11*, 337-355.

Fivush, R., Haden, C.A., & Reese, E. (2006). Elaborating on elaborations: Role of maternal reminiscing style in cognitive and socioemotional development. *Child Development, 77,* 1568-1588.

Fivush, R., & McDermott Sales, J. (2006). Coping, attachment, and mother-child narratives of stressful events. *Merrill-Palmer Quarterly, 52,* 125-150.

Fivush, R, & Reese, E. (2002). Reminiscing and relating: The development of parent-child talk about the past. In J.D. Webster & B.K. Haight (Eds.), *Critical advances in reminiscing work: From theory to application* (pp. 109-122). New York: Springer.

Fivush, R., & Sales, J.M. (2006). Coping, attachment, and mother-child narratives of stressful event. *Merrill-Palmer Quarterly, 52,* 125-151.

Fivush, R., & Vasudeva, A. (2002). Remembering to relate: Social-emotional correlates of mother-child reminiscing. *Journal of Cognition and Development, 3,* 73-90.

Gottlieb, G. (2003). On making behavior genetics truly developmental. *Human*

Development, 46, 337-355.

George, C., Kaplan, N., & Main, M. (1996). *Adult Attachment Interview.* Unpublished interview, Department of Psychology, University of California, Berkeley (third edition).

Gottman, J., Katz, L., Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology, 10,* 243- 268.

Grossmann, K., Fremmer-Bombik, E., Rudolph, J., & Grossmann, K.E. (1988). Maternal attachment representations as related to patterns of infant-mother attachment and maternal care during the first year. In R.A. Hinde & J. Stevenson-Hinde (Eds.), *Relationships within families* (pp. 241-260).

Haden, C.A. (1998). Reminiscing With Different Children: Relating Maternal Stylistic Consistency and Sibling Similarity in Talk About the Past. *Developmental Psychology, 34,* 99-114.

Haden, C.A., Haine, R.A., & Fivush, R. (1997). Developing narrative structure in parent-child reminiscing across the preschool years. *Developmental Psychology, 22,* 295-307.

Haft, W., L., & Slade, A. (1989). Affect attunement and maternal attachment: A pilot study. *Infant Mental Health Journal, 10,* 157-172.

Harris, P.L. (1999). Individual differences in understanding emotion: The role of attachment status and psychological discourse. *Attachment & Human Development, 1,* 307-324.

Hesse, E. (2008). The Adult Attachment Interview: Protocol, method of analysis, and

empirical studies. In J. Cassidy & P.R. Shaver (Eds.), *Handbook of attachment:*

Theory, research, and clinical applications, 2ⁿᵈ Ed. (pp. 552-598). New York:

Guilford Press.

Hesse, E., & Main, M. (2000). Disorganized infant, child, and adult attachment: Collapse

in the behavioural and attentional strategies. *Journal of the American*

Psychoanalysis Association, 48, 1097-1127.

Hooven, C. (1994). *The meta-emotion coding system.* Unpublished manuscript,

University of Washington, Seattle.

Katz, L.F., Gottman, J.M., Shapiro, A.F., & Carrere, S. (1997). *The meta-emotion*

interview for parents of toddlers. Unpublished laboratory manual, University of

Washington, Seattle.

Kobak, R.R., & Sceery, A. (1988). Attachment in late adolescence: Working models,

affect regulation, and representations of self and others. *Child Development, 59,*

135-146.

Koren-Karie, N. (April, 2011). *Mothers' promotion of emotion dialogues with their*

children: A foster care study. Symposium presented at the 2011 Society for

Research in Child Development in Montreal, Canada.

Koren-Karie, N., Oppenheim, D., Dolev, S., Sher, E., & Etzion-Carasso, A. (2002).

Mothers' insightfulness regarding their infants' internal experience: Relations

with maternal sensitivity and infant attachment. *Developmental Psychology, 38,*

534-542.

Koren-Karie, N., Oppenheim, D., & Getzler-Yosel, R. (2008). Shaping children's internal
working models through mother-child dialogues: the importance of resolving past
maternal trauma. *Attachment & Human Development, 10,* 465-483.

Koren-Karie, N., Oppenheim, D., Haimovich, Z., & Etzion-Carasso, A. (2000).
Autobiographical Emotional Events Dialogues: Classification and scoring system.
Unpublished manual, University of Haifa, Haifa, Israel.

Koren-Karie, N., Oppenheim, D., Haimovich, Z., & Etzion-Carasso, A. (2003).
Dialogues of seven-year-olds with their mothers about emotional events:
Development of a typology. In R.N. Emde, D.P. Wolf, & D. Oppenheim (Eds.),
*Revealing the inner worlds of young children: The MacArthur story stem battery
and parent-child narratives* (pp. 338-354). New York: Oxford University press.

Laible, D. (2004). Mother-child discourse surrounding a child's past behaviour at 30
months: Links to emotional understanding and early conscience development at
36 months. *Merrill-Palmer Quarterly, 50,* 159-180.

Laible, D., J., & Panfile, T. (2009). Mother-child reminiscing in the context of secure
attachment relationships: Lessons in Understanding and coping with negative
emotions. In J. Quas, & R. Fivush (Eds.) *Emotion and memory in development:
Biological, cognitive, and social considerations* (pp. 166-195). New York: Oxford
University Press.

Laible, D., J., & Song, J., Constructing emotional and relational understanding : The role
of affect and mother-child discourse. *Merrill-Palmer Quarterly, 52,* 44-69.

Laible, D., J., & Thompson, R.A. (2000). Mother-child discourse, attachment security, shared positive affect, and early conscience development. *Child Development, 71,* 1424, 1440.

MacDonald, P.L., & Gardner, R.C. (2000). Type I error rate comparisons of post hoc procedures for chi-square tables. *Educational and Psychological Measurement, 60,* 735-54.

Main, M. (2000). The organized categories of infant, child, and adult attachment: Flexible vs. inflexible attention under attachment-related stress. *Journal of the American Psychoanalytic Association, 48,* 1055-1096.

Main, M., & Goldwyn, R. (1998). *Adult attachment classification system.* Unpublished manual, University of California at Berkeley.

Main, M., Goldwyn, R., & Hesse, E. (2002). *Adult Attachment Scoring and Classification Systems, Version 7.0.* Unpublished manuscript, University of California at Berkeley.

Main, M., & Solomon, J. (1986). Discovery of an insecure-disorganized/disoriented attachment pattern. In T. B. Brazelton and M. W. Yogman (Eds.), *Affective development in infancy* (pp. 95-124). New Jersey: Ablex Publishing.

Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/ disoriented during the Ainsworth strange situation. In M.T. Greenberg, D. Cicchetti and E. M. Cummings (Eds), *Attachment in the Preschool Years: Theory, Research and Intervention* (pp. 121-160). Chicago: University of Chicago Press.

McClelland, G.G., & Judd, C.M. (1993). Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulleting, 114,* 376-390.

McDermott Sales, J. (2009). 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 J. Quas, & R. Fivush (Eds.) *Emotion

and memory in development: Biological, cognitive, and social considerations* (pp.

196-217). New York: Oxford University Press.

Mikulincer, M., & Orbach, I. (1995). Attachment styles and repressive defensiveness:

The accessibility and architecture of affective memories. *Journal of Personality

and Social Psychology, 68,* 917-925.

Neisser, U., & Fivush, R. (1994). *The remembering self: Construction and accuracy in

the self-narrative* Cambridge: Cambridge University Press.

Nelson, C.A., (1993). *Memory and affect: The Minnesota Symposia on Child Psychology,

Vol 26.* New Jersey: Lawrence Erlbaum Associates.

Nelson, K. (1993). The psychological and social origins of autobiographical memory.

Psychological Science, 4, 7-14.

Nelson, K. (1996). *Language in cognitive development: The emergence of the mediated

mind*. New York: Cambridge University Press.

Nelson, K., & Fivush, R. (2004). The emergency of autobiographical memory: A social

cultural developmental theory. *Psychological Review, 111,* 486-511.

Newcombe, R., & Reese, E. (2004). Evaluations and orientations in mother-child

narratives as a function of attachment security: A longitudinal investigation.

International Journal of Behavioral Development, 28, 230-245.

Ontai, L.L., & Thompson, R.A. (2002). Patterns of attachment and maternal discourse effects on children's emotion understanding from 3 to 5 years of age. *Social Development, 11,* 434 – 450).

Ontai, L.L., & Thompson, R.A. (2008). Attachment, parent-child discourse and theory-of-mind development. *Social Development, 17,* 47-60.

Oppenheim, D., & Koren-Karie, N. (2009). Mother-child emotion dialogues: A window into the psychological secure base. In J. Quas, & R. Fivush (Eds.) *Emotion and memory in development: Biological, cognitive, and social considerations* (pp. 142-165). New York: Oxford University Press.

Oppenheim, D., Koren-Karie, N., & Sagi-Schwartz, A. (2007). Emotion dialogues between mothers and children at 4.5 and 7.5 years: Relations with children's attachment at 1 year. *Child Development, 78,* 38-52.

Oppenheim, D., & Waters, H., S. (1995). Narrative processes and attachment representations: Issues of development and assessment. *Monographs of the Society for Research in Child Development, 60,* 197-215.

Pederson, D.R., Gleason, K., Moran, G., & Bento, S. (1998). Maternal attachment representations, maternal sensitivity, and the infant-mother attachment relationship. *Developmental Psychology, 34,* 925-922.

Phelps, J.L., Belsky, J., & Crnic, K. (1998). Earned security, daily stress, and parenting: A comparison of five alternative models. *Development and Psychopathology, 10,* 21-38.

Pillemer, D. (1998). What is remembered about early childhood events? *Clinical Psychology Review, 18,* 895-913.

Preacher, K.J., & Leonardelli, G.J. (2001). *Calculation for the Sobel Test: An interactive calculation tool for mediation tests.* Retrieved June 9, 2011, from http://people.ku.edu/~preacher/sobel/sobel.htm

Reese, E. (2008). Maternal coherence in the Adult Attachment Interview is linked to maternal reminiscing and to children's self concept. *Attachment & Human Development, 10,* 451-464.

Reese, E., Haden, C.A., & Fivush, R. (1993). Mother-child conversations about the past: Relationships of style and memory over time. *Cognitive Development, 8,* 403-430.

Reese, E., & Cleveland, E. (2006). Mother-child reminiscing and children's understanding of mind. *Merrill-Palmer Quarterly, 52,* 17-43.

Reese, E., & Fivush, R. (1993). Parental styles of talking about the past. *Developmental Psychology, 29,* 596-606.

Reese, E., Haden, C.A., & Fivush, R. (1993). Mother-child conversations about the past: Relationships of style and memory over time. *Cognitive Development, 8,* 403-430.

Reese, E., & Newcombe, R., (2007). Training mothers in elaborative reminiscing enhances children's autobiographical memory. *Child Development 78,* 1153-1170.

Rogoff, B. (1990). *Apprenticeship in Thinking: Cognitive Development in Social Context.* New York: Oxford University Press.

Sales, J.M. (2009). 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 J.A. Quas, & R. Fivush (Eds.), *Emotion and Memory in Development* (pp. 196-217). New York: Oxford University Press.

Smolak, L., & Weinraub, M. (1983). Maternal speech: Strategy or response? *Journal of Child Language, 10,* 7-64.

Solomon, J., George, C., & De Jong, A. (1995). Children classified as controlling at age six : Evidence of disorganized representational strategies and aggression at home and at school. *Development and Psychopathology, 7,* 447-463.

Statistics Canada (2005). *Average earnings of the population 15 years and over by highest level   of schooling, by census metropolitan area.* Retrieved November 23rd, 2009, from http://www40.statcan.ca/l01/cst01/labor51d-eng.htm

Stern, D.N. (1985). *The interpersonal world of the infant.* New York: Basic Books.

Tarabulsy, G.M., Bernier, A., Provost, M.A., Maranda, J., Larose, S., Moss, E., Larose, M., Tessier, R. (2005). Another look inside the gap: Ecological contributions to the transmission of attachment in a sample of adolescent mother-infant dyads. *Developmental Psychology, 41,* 212-224.

Tarabulsy, G.M., Provost, M.A., Bordelau, S., Trudel-Fitzberald, C., Moran, G., Pederson, D., … Pierce, T. (2009). Validation of a short version of the maternal behaviour Q-set applied to a brief video record of mother-infant interaction. *Infant Behaviour & Development, 32,* 132-136.

Thompson, R.A. (2000). The legacy of early attachments. *Child Development, 71,* 145-152.

Thompson, R.A. (2006). The development of the person: Social understanding, relationships,   self, conscience. In W. Damon & R.M. Lerner (Eds.), *Handbook of child psychology* (6th   ed.), *Vol 3. Social, emotional, and personality development* (N. Eisenberg, Vol Ed.) (pp.24-98). New York, NY: Wiley.

Thompson, R.A. (2009a). Relationship, stress, and memory. In J.A. Quas, & R. Fivush (Eds.), *Emotion and Memory in Development* (pp. 355-373). New York: Oxford University Press.

Thompson, R.A., (2009b). *Parent-child relationships, conversations, and developing emotion regulation.* Symposium presented at the 2009 Biennial Meeting of the Society for Research in Child Development, April, Denver, Colorado.

Thompson, R.A., Laible, D.J., & Ontai, L.L. (2003). Early understandings of emotion, morality, and self: Developing a working model. In R.V. Kail (Ed.), *Advances in child development and behaviour, 31* (pp. 139-172). San Diego: Academic.

van IJzendoorn, M.H., (1995). Adult attachment representations, parental responsiveness, and infant attachment: A meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin, 117,* 387-403.

van IJzendoorn, M.H., Juffer, F., & Duyveteyn, M.G.C. (1995). Breaking the intergenerational cycle of insecure attachment: A review of the effects of attachment-based interventions on maternal sensitivity and infant security. *Journal of Child and Adolescent Psychology and Psychiatry, 36,* 225-248.

van IJzendoorn, M.H., Schuengel, C., & Bakermans-Kranenburg, M.J. (1999). Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants, and sequelae. *Develompent and Psychopathology, 11,* 225-249.

Vygotsky, L.S., (1978). *Mind and society.* Cambridge, M: Harvard University Press.

Waters, E. (1987). Attachment behavior Q-set. Stony Brook, NY: State University of New York at Stony Brook, Department of Psychology.

Waters, E., & Cummings, M. (2000). A secure base from which to explore close

relationships. *Child Development, 71,* 164-172.

Waters, H. S., & Waters, E. (2006). The attachment working models concept: Among

other things, we build script-like representations of secure base experiences.

Attachment & Human Development, 8, 185-197.

Welch-Ross, M.K. (1997). Mother-child participation in conversation about the past:

Relationship to preschoolers' theory of mind. *Developmental Psychology, 33,*

618-629.

Williams, K. (1997). *Expressive Vocabulary Test.* Circle Pines, MN: American Guidance

Service.

Zeanah, C.H., Benoit, D., Barton, M., Regan, C., Hirschberg, L.M., & Lipsett, L.P.

(1993). Representations of attachment in mothers and their one-year-old infants.

Journal of the American Academy of Child and Adolescent Psychiatry, 32, 278-

286.

Appendix A

Ethics Approval

Office of Research Ethics

The University of Western Ontario
Room 00045 Dental Sciences Building, London, ON, Canada N6A 5C1
Telephone: (519) 661-3036 Fax: (519) 850-2466 Email: ethics@uwo.c
Website www.uwo.ca/research/ethics

Western Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. G. Moran
Review Number: 10390S
Revision Number: 1
Protocol Title: Exploring the Nature and Origins of Parent Child Relationships

Department and Institution: Psychology, University of Western Ontario
Sponsor:
Approval Date 07-Jan-05
End Date: 30-Apr-08
Documents Reviewed and Approved: Revised Letter of Information, Revised Visit 2 Interview

Documents Received for Information:

This is to notify you that the University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (REB) which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario has granted full board approval to the above named reserch study on the date noted above.

This approval shall remain valid until end date noted above assuming timely and acceptable responses to the REB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the REB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the REB:
a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) all adverse and unexpected experiences or events that are both serious and unexpected
c) new information that may adversely affect the safety of the subjects or the conduct of the study

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to this office for approval.

Members of the REB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the REB.

Chair of REB: Dr. Jerry Paquette

Karen Kueneman, BA (Hons), Ethics Officer REB

Faxed Y/N
Date: Jan 10/05

This is an official document. Please retain the original in your files.
UWO REB Ethics Approval   10390S   Page 1 of 1

Appendix B

Letter of Information and Consent

Exploring the Nature and Origins of Parent Child Relationships

Dear Parent,

We are conducting a study with new mothers and their firstborn babies to learn more about how babies develop social and emotional relationships with their mothers. We want to understand how a mother's past and present experiences influence the growing relationship with her baby. We will be asking parents about many different types of experiences which may or may not apply. You are always free to not answer any questions should you not feel comfortable.

Our study will last 2 years and will involve 6 visits. Some of the visits will be in your home; others will be at the university. We are interested in your opinions about why your baby behaves as he/she does in different situations with you. We are also interested in the demands and rewards of parenting.

If you agree to participate in the study:

- Visit One: The first visit will be about two hours in your home when your baby is about 3 months old. At that time we will interview you, asking questions about your childhood experiences, your early relationship with your parents, any experiences of major separation, loss, or trauma, and your thoughts about how these experiences have affected your role as a mother. Some mothers may find aspects of the interview sad or upsetting because some of the questions are about sad or stressful events. Should you feel uncomfortable with any of the questions, you will not have to answer them. The interview will be audiotaped and later transcribed. We would also like to videotape you and your baby playing. After this we have a questionnaire about parenting experiences for you to fill out.

- Visit Two: When your baby is 3-4 months of age, (maximum 2 hours in total): We will visit you and your baby when your baby is awake. For about 20 minutes, we will ask you to play with your baby. The play session will be videotaped. After the play session we will have you watch the video and ask you about what you think your baby is feeling. Afterwards, we will ask you to fill out questionnaires about your experiences as a parent, any stresses associated with being a mother and the people you turn to for help and support. We would also like to ask you specific questions about your parenting experience so far, what your baby can do and who is helpful to you. This interview will be audiotaped.

- Visit Three: When your baby is between 9 and 10 months old, (maximum 2 hours): We will again visit you at home. We will give the baby some activities to

do with the visitor to observe how your baby interacts with strangers and observe how he/she plays with you. We will arrange this visit to take place at a feeding time so that we will be able to see how your baby communicates his/her wants. Certain parts of this visit will be videotaped. Once again we will ask you questions about why your baby behaves as he /she does in these different situations as well as ask you about your early experiences in other relationships. This interview will be audiotaped. Once again we have questionnaires about your experiences as a parent.

- Visit Four: When your baby is 13 months old, (about 1 hour): You will visit us at the Child Development Centre at UWO. For this visit, we are interested in how your baby plays in new surroundings both when you are with your baby and when you are away. We will ask you to leave your baby for two brief periods (no more than 3 minutes each) during this part of the procedure. If your baby becomes upset, we will send you back in immediately. This visit will be videotaped. Parking costs at the university will be covered, or we can provide transportation for you and your baby.

- Visit Five: When your baby is about 21 months of age, (maximum 2 hours): We will visit you at home. We will give the baby some activities to do with the visitor to observe how your baby interacts with strangers and observe how he/she plays with you. We will interview you about your experiences as a mother (the interview will take about one hour, and will be audiotaped). Certain parts of this visit will be videotaped. We will also ask you to fill out questionnaires about your experiences.

- Visit Six: When your baby is 24 months of age, (maximum 90 minutes): You will visit us at the Child Development Centre at UWO. We will observe how your toddler interacts and plays in different surroundings and how he/she reacts to an interesting but unusual remote-controlled toy. This visit will be videotaped. We will ask you about your experiences with your toddler since we last saw you and ask you to fill out some questionnaires.

All information collected from you for the study will be kept confidential. All written, audiotaped, and videotaped records and questionnaires will be assigned numbers to maintain confidentiality. Audiotapes are erased after transcription. Any identifying information such as names and place of birth will be changed to maintain confidentiality. Only those directly involved in the study will see the transcripts and videotapes unless you agree that fragments can be used for professional training. The family names will only be available to direct members of the research group. Absolute confidentiality cannot be guaranteed as we may have to disclose certain information as required by law according to provisions under the Child and Family Services Act. This includes any suspicion that a child under the age of 16 years is or has been abused or if you are in imminent danger of hurting yourself or another person. If the results of the study are

published, your name will not be used and no information that discloses your identity will be released or published.

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time. Even if specific questionnaires request that you answer every question you do not have to do so. There are no known risks associated with any of the procedures. This study will not result in any direct benefit to you or your baby but may help us to further understand factors that may have an impact on the social and emotional development of infants and how relationships develop. In appreciation for your assistance with the study you will receive $25.00 for each visit or $150.00 over the course of the study.

If you wish, you will have the opportunity to receive the results of the study. You may receive a copy of the videotape of the home visits if you wish. Throughout the study we will ask you if you have any questions about any of the procedures. We would also appreciate any ideas or advice about your experience as a participant. We hope that participating in this study will be an interesting time for you and your baby. If at any time you have questions or concerns, please do not hesitate to let the researcher know or you can contact the principal investigators or research coordinator listed below:

Dr. Greg Moran   Dr. David Pederson
Department of Psychology   Department of Psychology
University of Western Ontario   University of Western Ontario

Sandi Bento   Dr. Heidi Bailey
Research Coordinator   Department of Psychology
Child Development Centre   MacKinnon Building

If you have questions about the conduct of this study or your rights as a research subject you may contact:

The Director
Office of Research Ethics
The University of Western Ontario

Exploring Parent-Child Relationships, Emotion Regulation, Children's Thinking and Heart and Respiration Responses at the Preschool Age

Dear Parent,

We are conducting a study with 3 ½ year olds and their parents to learn more about preschoolers' development in the areas of relationships, emotions and thinking. We want to understand how children's relationships with their parents develop at this age, how they talk about emotions and how they learn to think about different things. We will be asking you and your child to do a variety of activities both together and apart. The visit will last approximately an hour and a half and will be videotaped. If you do not wish to be videotaped you should not participate in the study. You are always free to choose not to participate in an activity or answer a question.

In this visit, we will have both you and your child wear some special equipment. You will have a
small sensor clipped to your waist and your child will wear a light-weight vest with the sensor inside. These will monitor and record your heart rate and your breathing as you go through the activities. All of the equipment is safe to wear and the electrodes feel a lot like putting on and then removing a sticker. A new area of research has been looking at how mothers and their children regulate at a physiological level, that is, how their heart rates are often in "sync", so we are interested to see how this relates to other areas of preschoolers' development.

- o After you are both set up with the special equipment, we will ask your child to do two quick activities that tell us about his/her thinking. In the first activity, your child will be instructed to provide one of two words depending on the picture card presented. In the second task, your child will be asked to find the correct targets on a page of different pictures. We are interested to see if preschoolers can remember and correctly employ the rules of the game and if they can successfully focus their attention to find the correct targets. While your child is doing those activities, we will give you a package of questionnaires to begin filling out. These will help us to further understand your child's development.

- o Then, because we are interested in how your child plays in new surroundings both when you are present and when you are not, we will then ask you to leave your child for two brief periods (approximately 4 minutes each) during this part of the visit. If your child becomes upset, we will send you back in immediately.

- o Following that, when you and your child are in the room together, we will observe how your child reacts to an interesting, but unusual mask. The mask will speak to your child and your child may find this a bit scary. If you feel that your child has become too upset, we will stop the task. We would like to observe what your child does in response to the unusual mask as a way of better understanding preschoolers' emotion regulation skills.

o   You and your child will then separate again, and your child will be asked to make up some stories involving dolls. Your child will not be alone: someone from our research team will be with him/her during this time. In the meantime, you will be completing some questionnaires and brief activities in an adjacent room. The questionnaires and activities that you complete will parallel the things that your child does, and will help us to understand where children learn different skills and abilities.

o   Next, you and your child will get together for a snack and you will be asked to talk about some past experiences involving various emotions. This will help us to understand preschoolers' behaviour in relationships with parents and will provide more information about their emotion regulation skills.

o   Finally, we will ask you some questions about demographic information while your child is asked to tell us the names of some pictures and objects. If, at this point, you haven't had a chance to complete all of the questionnaires in the package that you received at the start of the visit, we will provide you with a self-addressed, stamped envelope and ask you to complete them at home and mail them back to us.

All information collected from you for the study will be kept confidential. All written and videotaped records and questionnaires will be assigned numbers to maintain confidentiality. Any identifying information such as names and place of birth will be changed to maintain confidentiality. Only those directly involved in the study will see the transcripts and videotapes unless you agree that fragments can be used for professional training. The family names will only be available to direct members of the research group. Absolute confidentiality cannot be guaranteed as we may have to disclose certain information as required by law according to provisions under the Child and Family Services Act. This includes any suspicion that a child under the age of 16 years is or has been abused or if you are in imminent danger of hurting yourself or another person. If the results of the study are published, your name will not be used and no information that discloses your identity will be released or published.

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time. Even if specific questionnaires request that you answer every question you do not have to do so. There are no known risks associated with any of the procedures. As mentioned above, the electrodes, feel a lot like putting on and then removing a sticker. If you feel that this is too upsetting for your child, we will discontinue this part of the visit. This study will not result in any direct benefit to you or your child, but will help us to further understand the development of preschoolers. In appreciation for your assistance with the study you will receive $30.00 and a DVD with selected excerpts from your visit.

Throughout the study we will ask you if you have any questions about any of the procedures. We would also appreciate any ideas or advice about your experience as a participant. We hope that participating in this study will be an interesting time for you and your child. If at any time you have questions or concerns, please do not hesitate to let the researcher know or you can contact the principal investigators or research coordinator listed below:

Dr. Greg Moran
Department of Psychology
University of Western Ontario

Dr. Heidi Bailey
Department of Psychology
University of Guelph

Dr. Jean-Francois Bureau
Department of Psychology
University of Ottawa

Dr. David Pederson
Department of Psychology
University of Western Ontario

Sandi Bento
Research Coordinator
Child Development Centre

If you have questions about the conduct of this study or your rights as a research subject you may contact:

The Director
Office of Research Ethics
The University of Western Ontario

Exploring the Nature and Origins of Parent Child Relationships

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction

_____
Parent's Name (Please Print)

_____   _____
Parent's Signature   Date

_____
Name of Person Obtaining Informed Consent

_____   _____
Signature of Person Obtaining Informed Consent   Date

Appendix C

Meta Emotion Interview Coding Sheet

MEI CODING SHEET -- PARENT'S OWN EMOTION
ID#_____

Awareness

AS	A	N	D	DS	dk		
AS	A		D	DS	dk		A1. P experiences this emotion
AS	A		D	DS	dk		A2. P has no problem distinguishing this emotion from others
AS	A		D	DS	dk		A3. P has various experiences of this emotion
	A		D		dk		A4. P is descriptive of their experience of this emotion
	A		D		DK		A5. P is descriptive of physical sensations
	A		D		DK		A6. P is descriptive of cognitive process (thoughts, image)
	A		D		DK		A7. P provides a descriptive anecdote
	A	N	D		DK		A8. P seems to know cause of emotion
	A		d		DK		A9. P is aware of their own remediation process
	A	N	D		dk		A10. P answers questions easily, without hesitation or confusion
	A	N	D		dk		A11. P talks at length about this emotion
	A	N	D		Dk		A12. P voice shows interest, excitement re emotion

Acceptance

AS	A	N	D	DS	dk		
AS	A	N	D	DS	dk		B1. P accepts this emotion (it has value, it's part of life)
AS	A	N	D	DS	DK		B2. P expresses this emotion (alone or with others)
	A	n	D		DK		B3. P distinguishes times when they would and would not express
AS	A	N	D		DK		B4. Others can tell when P is experiencing emotion
	A		d		DK		B5. P expresses some other emotion when feeling this emotion
	A	N	D		DK		B6. P feels comfortable with their expression of this emotion
	A	N	D		dk		B7. The importance of controlling emotion is emphasized
AS	A	N	D	DS	DK		B8. P shares emotion with others
	A	N	D		DK		B9. P prefers waiting until emotion is over and then talk
	A	N	D	DS	DK		B10. Remediation technique suggests acceptance vs. avoidance
	A	N	D	DS	DK		B11. The focus of the emotion is the self or family (vs. world)
AS	A	N	D	DS	DK		B12. Spouse is accepting of subject's expression
AS	A		D		DK		B13. P says it is important to express this emotion
AS	A		D		DK		B14. P says that it is important to talk about emotion
	A				DK		B15. P dislikes the way others express this emotion
AS	A	N	D	DS	dk		B16. P confides in interviewer
AS	A	N	D	DS	dk		B17. P digresses from question being asked

Regulation

AS	A	N	D				
AS	A	N	D				C1. There is difficulty regulating intensity
AS	A	N	D				C2. This emotion occurs often
AS	A	N	D				C3. This emotion is difficult to get over
AS	A	N	D				C4. This emotion has been a problem/concern
	A		D	DS	DK		C5. P experiences some control over this emotion
AS	A		d		DK		C6. This emotion gets blended with another emotion
	A		D		DK		C7. P has remediation techniques for this emotion
AS	A	N	d		DK		C8. P has remediation techniques that work for this emotion
	A		D				C9. P thinks this emotion can be dangerous
	A	N	D				C10. P has needed help with this emotion
AS	A	N	d		DK		C11. P tries hard to avoid this feeling
	A				DK		C12. P has lacked feeling when appropriate to feel

MEI CODING SHEET – CHILD EMOTION

Awareness

	A	N	D		dk		
	A	N	D		dk		D1. P notices that child has this emotion
	A	N	D		dk		D2. P has no problem distinguishing this emotion
	A		D		DK		D3. Parent is descriptive of child's experience of emotion
	A		D		DK		D4. Parent has insight into child's experience of this emotion
	A		D		DK		D5. Parent is descriptive of some part of the remediation process
	A		D		DK		D6. Parent knows cause of child's emotion
	A	N	D		dk		D7. P talks at length about child's experiences
AS	A	N	D	DS	dk		D8. P answers questions quickly and easily about child's experience
	A	N	D		dk		D9. P's voice shows interest (excitement) re child's experience

Acceptance

	A	N	D	dk		
	A	N	D	dk		E1. P seems comfortable with child's emotion and expression
	A		D	DK		E2. C expresses this emotion
	A	N	D	dk		E3. P empathizes with child's emotion (look at voice tone)
	A		D	DK		E4. P ants child to know it's ok to have this feeling
	A		D	Dk		E5. P wants child to talk to them about emotion
AS	A	N	D	dk		E6. P seems concerned about appropriateness, usually of expression
	A		d	DK		E7. Child is ever isolated when expressing
	A		d	DK		E8. Child is ever punished when expressing
	A		d	DK		E9. Child is ever restrained when expressing
	A		D	DK		E10. P prefers child to be soothed before P gets involved
	A		d	DK		E11. P ever distracts from emotion
	A		d	DK		E12. P ever offers treat to distract from emotion
	A		d	DK		E13. P uses a mental (analytical) approach to child's emotion

Coaching

	A	N	D	DS	dk		
	A	N	D	DS	dk		F1. P shows respect for child's experience of emotion
	A		D		DK		F2. When child is upset, P talks about situation, emotion
	A	N	d		DK		F3. P intervenes (protects from cause) in situations causing emotion
	A	N	d		DK		F4. P comforts during emotion
	A		d		DK		F5. P teaches rules for appropriate expressiveness to child
	A	N	D		DK		F6. Strategies used seem age and situationally appropriate
	A				DK		F7. P talks with child about the nature of this emotion.
	A		d		DK		F8. P teaches strategies to sooth own emotion
	A	N	D		DK		F9. P seems involved in child's experience of this emotion
	A		d		DK		F10. P sees at a loss over how to deal with this emotion
	A	N	D		dk		F11. p has given thought and energy to what child knows of emotions

Regulation

		A	N	D	dk		
AS	A	N	D	dk		G1. Child has difficulty regulating this emotion
AS	A	N	D	dk		G2. This emotion occurs frequently in Child
AS	A	N	D	dk		G3. This emotion is difficult for Child to get over
AS	A	N	D	dk		G4. P is concerned about Child's experience or expression
AS	A		d	DK		G5. This emotion gets blended with another emotion in Child
AS	A	N	d	DK		G6. There has been a problem outside the home with this emotion
AS	A		D	DK		G7. P knows of remediation thechniques that work with Child
AS	A	N	D	DK		G8. C can self-regulate this emotion
AS	A	N	d	DK		G9. This emotion comes and goes swiftly for C

Appendix D

Descriptions of AEED Scales

The 7 maternal rating scales in the AEED are (behaviours in parentheses reflect high ratings):

- *Focus on the task*: Mother is focused on completing the task, she is not easily distracted and does not shift her focus to irrelevant details.

- *Clear boundaries:* Mother accepts the child as a separate person with his own perspectives and experiences; she does not force her own ideas or emotions and does not become overwhelmed by the child's themes.

- *Tolerance:* Mother is accepting of her child's thoughts and feelings, she enables him to express a wide range of emotional themes without being defensive or judgmental.

- *Involvement and reciprocity*: Mother is positively engaged in the task and shows genuine interest in the child and the stories.

- *Hostility*: Mother does not show hostility, anger, or derogation.

- *Containment of negative feelings*: Mother guides her child's negative experiences toward a positive resolution that emphasizes on his coping, strength , and well-being.

- *Structuring*: Mother helps her child organize his thoughts and feelings and facilitates the construction of rich and coherent stories.

The 7 parallel child rating scales are:

- *Focus on the task: C*hild is focused on completing the task, when he does shift to irrelevant details, he is easily coaxed into returning his attention to the dialogue.

- *Maintaining child role: D*oes not assume a parental role, e.g., by refraining to talk about an event that may upset the mother, promising to protect the mother, or act in controlling, punitive manner.

- *Acceptance: C*hild accepts mother's suggestions and willingly allows her to guide her in their conversations.

- *Involvement and cooperation*: Child is positively engaged in the task, cooperates with mother and is interested in the creation and development of the stories.

- *Hostility*: Child does not show hostility, anger, or negative affect toward the mother.

- *Resolution of negative feelings*: Child ends discussion of negative experiences with positive resolution, demonstrating that he has successfully coped with the negative emotion.

- *Elaboration*: With the assistance of his mother, the child is able to tell stories that contain some content and details.

The two scales applied to the overall narrative include:

- *Adequacy of the stories: E*ach story matches the emotion it is intended to describe, the contents of the stories are not bizarre and unconnected.

- *Coherence*: Mother and child co-construct stories that are coherent, fluent, clear, and easy to follow.

Appendix E

The Downward Age Adjustment of Various AEED Scales

In consultation with Nina Koren-Karie, the primary author of the AEED coding manual, minor adjustments to several of the scales so that it more accurately reflects the linguistic and cognitive capabilities of 3.5 and 4 year olds. After some discussion, it was decided that only 4 scales required some modification.

- *Child's shift of focus:* Given that young children are easily distracted and have more difficulty focusing their attention on the task, more leniency towards instances of shifts of focus is given in this scale. Comments and questions about people or topics irrelevant to the task are taken into account. This resulted in allowing several instances of shifts of focus even for higher scores. Children are assigned a "9" on this scale even if they make a single shift of focus to irrelevant details. The extent of the child's shift of focus was measured by the effort needed on the mother's part to bring the child's attention back to the task; a child is still assigned a relatively high score if he is easily coaxed into returning his attention back to the dialogue.

- *Mother's involvement and reciprocity:* Because younger children have a greater need for assistance from their mothers in shaping the dialogue, mothers are unlikely to be under-involved in the task. Thus, this scale was adjusted to focus more on a mother's over-involvement, and less on under-involvement. Mothers are expected to be more involved in the task; probing and questioning are viewed as necessary and appropriate assistance to help her young child move along in the discussions in their joint effort to create four complete and coherent stories.

- *Mother's structuring of the interaction:* Again, this scale reflects an expectation that mothers interacting with younger children will provide a greater degree of structure than with older children; less emphasis is placed on under-structuring as it is expected to be unlikely with younger children. Interactions are judged to feature an optimal level of structuring when a mother poses questions to her child in a way that helps her organize her thoughts and feelings.

- *Child's elaboration of the stories:* Given their limited language capacities, children are given more credit for their elaboration. As a result, higher scores can include instances of short and curt elaborations.

VITA

Name: Celia Hsiao

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1999-2003 B.Sc. Science

2005-2007 M.Sc. Psychology

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Publications:

Lechcier-Kimal, Chung, J., **Hsiao, C.**, & Chen, X. (2009). Children's social interactions in cultural context. In L.R. Elling (Ed.), *Social Development* (pp. 259-268). Huntington, NY: Nova Science Publishers.

Chen, X., Chung, J., & **Hsiao, C.** (2008). Peer interactions and relationships from a cross-cultural perspective. In Rubin, K., Bukowski, W., & Laursen B. (Eds.) *Handbook of Peer Interactions, Relationships, and Groups.* (pp. 432-451). New York: Guilford Press.

Hsiao, C. & Richter, L. (2005). Video clips capture lessons in caring. *Children First, 9(62),* 10-13.

Hsiao, C. & Richter, L. (2005). Learning from caregivers and hospitalized children affected by HIV/AIDS in South Africa. *Newsletter of Infant Mental Health Promotion at Sick Kids' Hospital in Toronto, 43,* 28-30.

Conference Presentations:

Hsiao, C., Moran, G. (April, 2011). *Understanding developmental processes underlying mother-child conversations about emotions.* Symposium presented at the 2011 Society for Research in Child Development in Montreal, Canada.

Hsiao, C., Moran, G., Koren-Karie, N., Chemali, B., Pederson, D.R., Bailey, H.N. (April, 2011). *Antecedents of mother-child co-construction of coherent narratives of past*

emotional events. Poster presented at the 2011 Society for Research in Child Development in Montreal, Canada.

Hsiao, C., Moran, G., & Koren-Karie, N. (March, 2010). *From infant attachment security to mother-child emotion dialogues: Understanding emotion communication in the early years*. Poster presented at the 2010 International Conference on Infant Studies in Baltimore, Maryland.

Richter, L., Rochat, T., Rollins, N., **& Hsiao, C**. (April, 2005). *An approach to improve the care of sick children in hospitals in South Africa in the context of the AIDS pandemic.* Poster presented at the 7th International Aids Impact Conference, Cape Town, South Africa.

Richter, L., **Hsiao, C**., Rochat, T., Rollins, T. (July, 2005). *Improving the care of HIV+ children.* Paper presented at the International Child Development Programme, Oslo, Norway.

Campos, J. L., **Hsiao, C**., Chan, G. S. W., & Sun, H. (2005). The influence of vision on the estimation of walked distance [Abstract]. *Journal of Vision*, 5(8), 305a, http://journalofvision.org/5/8/305/, doi:10.1167/5.8.305.