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# Maternal Caregiving Representations: Links with Mother-Child Discourse and Children's Emotion Understanding

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Maternal Caregiving Representations: Links with Mother-Child Discourse and Children's  
Emotional Understanding

by

Jill R. Froimson

A Thesis

Presented to the Graduate and Research Committee

of Lehigh University

in Candidacy for the Degree of

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in

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Thesis is accepted and approved in partial fulfillment of the requirements for the Master of Science in Psychology.

Maternal Caregiving Representations: Links with Mother-Child Discourse and Children's Emotional Understanding

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## **Abstract**

While a great deal of research has examined children's attachment systems, much less work has focused on its reciprocal behavioral system, the caregiving system. Like other behavioral systems, the caregiving system is guided at the representational level, acting as a filter to influence a mother's interactions with her child. The goal of this study was to examine maternal caregiving representations in relation to mother-child discourse about emotion and children's emotion understanding abilities. Maternal caregiving representations were assessed using the shortened Parent Development Interview. Aspects of maternal caregiving representations were related to maternal elaboration and dyadic collaboration during a mother-child reminiscing discussion about a past positive emotional event, but not to discourse quality during the discussion of a past negative emotional event. Surprisingly, no aspects of mother-child discourse quality predicted children's emotion understanding, but high levels of anxiety within maternal caregiving representations were negatively related to children's emotion understanding.

## **Introduction**

Developing certain social and emotional competencies early in life is an essential aspect of becoming a functioning and thriving member of society. Skills in the socioemotional domain facilitate growth in relationships and allow for the successful navigation of the social world (Denham, 2006). It is in the context of the family and within the parent-child relationship that many of these skills first develop (Bowlby, 1980; Dunn, Brown, & Beardsall, 1988; Laible & Song, 2006; Thompson, 1998). Thus it is essential to examine what factors of the parent-child relationship contribute to the successful socialization of the child and how these factors influence the socialization practices that are employed by parents. This research aims to explore maternal caregiving representations, a topic that has received little attention in the field, and how they might influence parenting behavior and children's subsequent socioemotional development.

### *The Caregiving System*

The attachment system and thus the attachment relationship has been a widely explored topic by development psychologists. There is an extensive literature detailing the antecedents and outcomes of a secure attachment and the important role that the child's attachment system plays in social, emotional, and cognitive development. Less empirical research, however, has focused on the counterpart of the child's attachment system, the maternal caregiving system. This caregiving system is believed to serve an evolutionarily adaptive function and work in conjunction with the child's attachment system to ensure that the child receives adequate care and protection in the face of danger (Bowlby, 1982; Solomon & George, 1996).

According to George and Solomon (1999, 2008), the caregiving system matures slowly over time with its development beginning in early childhood. The phenomenon of “play mothering” can be seen in very young children and most likely derives from children’s earliest conceptions of care and the modeling of their own mother’s caregiving behaviors (Pryce, 1995; George & Solomon, 2008). As children progress through adolescence and into parenthood, hormonal and neurological changes occur and greatly contribute to the development of the caregiving system and to the ability of an individual to see him or herself as a care provider (George & Solomon, 1999). Ultimately, the emergence of the mature caregiving system allows one to shift from seeking protection and comfort upon detecting a threat to providing protection and comfort in these potentially dangerous situations (Solomon & George, 1996). The mature caregiving system is activated when the mother perceives an event or situation as potentially distressing or threatening to her child, calling into action situation–appropriate caregiving behaviors in order to protect the child and alleviate the activation of the caregiving system (George & Solomon, 2008).

### *Maternal Caregiving Representations*

According to Bowlby (1982), all behavioral systems, including the caregiving system, are guided at the representational level by internal working models that act to organize behavior around a specific goal, across multiple contexts. A maternal caregiving representation consists of the mother’s view of her child, her relationship with her child, and herself as a caregiver to that child (George, 1996; George & Solomon, 1999). It acts as a filter, influencing a mother’s interpretations of her child’s behaviors, her own

behaviors, and her expectations for the relationship (Slade, Belsky, Aber, & Phelps, 1999). These representations are child specific and are derived from the complex interaction of the mother's own attachment history and attachment related experiences and her real world experiences with her child (Slade, et al., 1999; Aber, Belsky, Slade, Crnic, 1999; Huth-Bocks, Levendosky, Bogat, & von Eye, 2004; Sokolowski, Hans, Bertstein, & Cox, 2007; George & Solomon, 2011).

To demonstrate the influence that children have on their mother's caregiving representation, Button, Painta, and Marvin (2001) conducted a study with mothers of children who had been diagnosed with either cerebral palsy or epilepsy. They found that the type of diagnosis (cerebral palsy or epilepsy) was significantly related to the themes present in mothers' representations of their relationship with their child and that these themes significantly differed from those found in the representations of mothers of typically developing children. For example, mothers of children with cerebral palsy were less likely to include themes of compliance in their representations of their relationship with their child, but were more likely to discuss painful affect. Button et al. (2001) suggest that these differences in themes are due to differences in the nature of these mother-child relationships. Time since diagnosis was also associated with the expressions of joy and pain in mothers' descriptions of their relationship with their child. The more time that had passed since diagnosis and therefore the longer period of time that these mothers had been caring for their chronically ill child, the less joy and the more pain mothers expressed in these descriptions. This suggests that, over time, the characteristics and abilities of the child can contribute to the themes present in the mother's caregiving representations (Button et al., 2001).

These maternal caregiving representations are also believed to directly influence parenting. Research in the area supports this idea. For example, Slade et al. (1999) examined the links between caregiving representations and observed parenting behavior of mothers. In this study, researchers observed the interactions of mothers and their toddlers in their homes on four separate occasions, twice when the child was 15 months and twice when the child was 21 months of age. They found that mothers with positive representations of their child and of their relationship with their child showed more positive affect, more sensitivity to the child's needs, and provided more cognitive stimulation for their toddlers than did mothers with more negative caregiving representations.

In another study examining mothers and their toddler and preschool age children with cerebral palsy, mothers' representations of their relationship with their child influenced the quality of caregiving that they were able to provide. Those mothers experiencing more negative affect in their representation of their relationship tended to display more hostility in their interactions with their child (Sayre, Pianta, Marvin & Saft, 2001). In general, mothers with positive and coherent caregiving representations tend to provide more positive, responsive, and sensitive caregiving (Alber et al., 1999, Button, et al., 2001; Sokolowski et al., 2007) and have children who are securely attached (George & Solomon, 1996; Benoit, Parker, & Zeanah, 1997).

Most research examining maternal caregiving representations and parenting behavior focuses on sensitivity, and this body of research has generally failed to examine how maternal caregiving representations relate to other dimensions of parent-child interaction and child socialization. Two notable exceptions exist. The first aimed to

improve parent-child interactions between substance abusing mothers and their children by improving their representation of their relationship with their child (Suchman, DeCoste, Castiglioni, Legow, & Mayes, 2008). These mothers participated in a series of intensive and personalized therapy sessions during which a trained therapist assisted them in reflecting on the thoughts, emotions, and intentions that drive their own behavior, their child's behavior, and their interactions with their child. This study found that reworking mother's caregiving representations to be more positive allowed mothers to engage in more affectionate social interactions with their children and to provide their children with more appropriate scaffolding and feedback during these social interactions.

Another exception is a recent study by Laible, Murphy, and Augustine (2013), linking maternal caregiving representations to the way in which mothers discussed a past negative emotional event with their child. In this study, a mother's representation of her relationship with her preschool child at 42 months predicted the quality of mother-child discussions during a reminiscing task about past negative emotions when the child was 48 months. Mothers with positive and coherent representations were more likely to use elaboration in these discussions and were more likely to elicit the child's input in co-constructing these memories. These positive and coherent representations give mothers the ability to more openly discuss negative emotions with their children (Laible, et al., 2013). Laible et al. (2013) attribute this to the influence of the mother's own attachment system on these representations of the mother-child relationship (Solomon & George, 1996) and the ability of individuals with secure attachments to more openly engage in talk about emotion (Bretherton, 1990).

### *Mother-Child Discourse about Emotion*

The emotions of others can be a nuance of social interaction that is difficult for children to understand. While some understanding can develop by witnessing the emotional expressions of others and experiencing parents' emotional reactions to their own emotions (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Denham, 2006), children also learn about emotional states through a more active means of emotional socialization that involves being intentionally taught about emotion. Parents can help to clarify the meaning of emotions through discourse with their children (Thompson, Laible, & Ontai, 2003). By discussing with children the causes and consequences of emotions, parents can help elucidate for their children the internal states that emotional expressions signify (Brown & Dunn, 1996; Denham & Auerbach, 1995; Denham et al., 1997). Importantly, research suggests that for these discussions to be effective in influencing emotional development, they must occur within the context of a warm and sensitive relationship (Laible & Thompson, 1998). These positive relationships help to foster greater amounts of maternal elaboration, openness, and clarity during discussions surrounding emotion, particularly during discussions of negative emotions (Laible, 2004b; Laible & Song, 2006).

Parent-child discourse about emotions has been consistently linked to higher levels of emotion understanding, prosocial behavior, and other aspects of social and moral competence (Denham, et al., 1997; Laible 2004b; Laible & Song, 2006; Laible, 2011; Laible et al., 2013; Brownell, Svetlova, Anderson, Nichols, & Drummond, 2013). Because of the impact that the quality of these discussions can have on children's later development, it is important to explore what other factors, such as maternal caregiving

representations, might play a role in fostering this open and elaborative mother-child discourse.

### *Emotion Understanding*

During the preschool years children undergo a great deal of growth in the domain of emotional understanding (Denham, 1986; Brown & Dunn, 1996). It is during this time that children develop the ability to identify emotional expressions, the causes of these emotions (in both themselves and others), how emotions can facilitate the attainment of certain goals, the ability to dissociate their own emotional states from those of others, and the ability to verbalize feelings and converse about emotional experiences (Saarni, Campos, Camras, & Witherington, 2006). Children, however, develop an understanding for different emotions at different rates. For instance, Denham & Couchoud (1990) found that preschool children more easily recognize and verbally identify positively valenced emotions as compared to negatively valenced emotions.

Preschoolers are also learning to pick up on nonverbal emotional cues and use them to interpret social interactions (Denham, 2006); thus, emotional understanding is believed to play a role in guiding children's behavior during social interactions. Higher levels of emotion understanding in young children have been repeatedly associated with positive outcomes such as increased moral understanding, conscience development, prosocial behavior, and more positive interpersonal relationships (Denham, 1986; Dunn, Brown, & Maguire, 1995; Laible, 2004a; Eggum, Eisenberg, Kao, Spinrad, Bolnick, Hofer, Kupfer, & Fabricious, 2011). Conversely, lower levels of emotion understanding have been linked to higher levels of anger and aggression in young children (Denham,

Caverly, Schmidt, Blair, DeMulder, Caal, Hamada, & Mason, 2002) and to problems with peers (Izard, Fine, Schultz, Mostow, Ackerman, & Youngstrom, 2001). Emotion understanding is also believed to have consequences for the development of certain cognitive abilities. For example, increased levels of emotion understanding are associated with and shown to predict later performance on a theory of mind task (O'Brien, Weaver, Nelson, Calkins, Leerkes, & Marcovitch, 2011).

While such individual differences as temperamental dispositions and language skills have been associated with emotion understanding (Denham, Zoller, & Couchoud, 1994), it is believed to be extrinsic social factors that most facilitate the development of emotional competence (Denham et al., 1994, Denham, 2006). Children's ability to understand their own emotions and the emotions of others is highly dependent on factors such as the quality of mother-child discourse surrounding emotional events (e.g., Denham et al., 1994; Laible 2004a) as well as the quality of the mother-child relationship itself (Laible & Thompson, 1998).

### **The Current Study**

The purpose of this study was to examine a possible relation between maternal caregiving representations and children's socioemotional development. To our knowledge, no other studies have examined the developmental impact that these maternal caregiving representations have on children's development of emotional competence. We propose that, through mother-child discourse, mother's representations of their relationships with their children can influence children's subsequent socioemotional development. More specifically, we were interested in how the existence of certain themes within maternal caregiving representations relates to the emotional content of

mother-child discourse when discussing past experiences that were emotionally positive or emotionally negative for the child and how this use of emotional discussion predicts children's emotion understanding abilities.

We argue that since maternal caregiving representations guide mothers' parenting behavior (Solomon & George, 1996), they should consistently influence how mothers both discuss emotions with their children and elicit their children's input in these discussions. Since these caregiving representations are deeply influenced by mothers' own attachment security (Solomon & George, 1996) and following the reasoning that those with more secure attachments are more open about discussing emotions (DeOliveira, Moran, Pederson, 2005) and are better able to engage in open and coherent communication about emotions, especially difficult emotions (Bretherton, 1990; Laible & Panfile, 2009), positive and coherent caregiving representations should allow mothers to access and openly discuss a wider range of emotions when interacting with their child. Mothers with positive and coherent caregiving representations should also be more elaborative during these discussions and more willing to discuss both the causes and consequences of emotions. Additionally, those with positive representations of their relationship with their child should engage in more sensitive and responsive parenting (Slade et al., 1999) and thus have children who are more engaged and willing to contribute to these discussions (see Laible, Thompson, & Froimson, in press), making these discussions more collaborative in nature. Consequently, these positive maternal caregiving representations should create a rich emotional environment that fosters the development of emotional competence and emotional understanding in the child.

In this study, we test these ideas by assessing the associations between mothers' caregiving representations, their discourse about emotion in a reminiscing task, and their children's emotion understanding. We predict that those mothers who have positive and coherent representations of their relationship with their child will be more open when discussing emotions with their child during the reminiscing task, making more references to emotions and using more elaboration to discuss these emotions. These mothers will also be more likely to elicit the child's help in constructing these conversations. We also predict that mothers who partake in this type of open and elaborative discourse about emotions with their children will have children who show greater emotional understanding abilities. Thus, we predict that mothers with more positive and coherent representations of their relationship with their child will have children who show more emotional competence.

## **Methods**

### *Participants*

Thirty-five mother-child dyads, with children ages 42-54 months ( $M=46.5$ ), were recruited from the Lehigh Valley and surrounding areas through the Lehigh University Child Participant Pool as well as through local daycares, libraries, preschools, and advertisements on online networks and parenting forums. Of the participating children, 18 were female and mothers reported that 68.6% were Caucasian, 2.9% were Asian, 20% identified as Other, and 8.6% did not report an ethnicity. Among mothers, 85.7% had at least a college degree or higher. One mother-child dyad was dropped from analysis after the mother indicated that her child had severe language delays.

## *Overview*

Mother-child dyads were brought into the Lehigh University Emotional Development Lab to participate in an hour and a half long lab session, as part of a larger study on children's socioemotional development. Prior to any tasks, mothers signed a consent form and completed the forced choice questionnaire needed for the emotion understanding measure. Mothers and their children then engaged in a ten minute free play warm up task to allow them to adjust to the lab setting. After ten minutes they were asked to clean up the toys in the lab. Following the clean up, the dyad was asked to complete two tasks together including a storybook task and the reminiscing task. Only the reminiscing, however, was examined in this study. The dyad was then separated to individually complete tasks.

The child remained in the lab with an experimenter to complete several assessments, including an emotion understanding task, and tasks to assess the child's empathy, guilt, prosocial behavior, and ability delay to gratification. This study will only focus on the emotion understanding task. While the child was completing his or her tasks in the lab, the mother was brought to another room by an experimenter and given the Parent Development Interview (PDI; Slade et al., 1999), a measure designed to assess caregiving representations. She was then asked to complete several other questionnaires including parental beliefs about children's emotions, parental expressiveness, and child's temperament. For the purpose of this study we will only focus on the responses from the Parent Development Interview. The entirety of each session was video recorded and the Parent Development Interview audio recorded for later coding. At the end of the session mothers were debriefed and the child was given a toy for participating in the study.

### *Predictors of Emotion Understanding*

*Mother-Child Discourse about Emotion.* Each mother was asked to think about and discuss with her child two recent past events that involved both herself and her child: one in which her child experienced a positive emotion and one in which her child experienced a negative emotion. They were instructed that these events should be one-time events rather than daily occurrences. Mothers were asked to sit comfortably with their child and to try to elicit their child's memory of the event as naturally as possible. The experimenter left the room and asked the mother to notify her when she had completed these discussions as to allow the mother to determine discussion lengths.

Verbatim transcripts of these discussions were made and coded for emotional content (following Dunn & Munn, 1987; Kuebli, Butler, & Fivush, 1995; Laible & Song, 2006). For each of the discussions, all references to emotional states (e.g., happy, sad, angry) or use of emotion indicative words (e.g., laughing, crying, yelling) were identified and counted. We also coded for whether or not the cause of that emotion is discussed and whether the consequences of the emotion were discussed, again noting the speaker and the valence. Mothers' discussions of the consequences of both positive and negative emotions were not included in analyses due to the infrequency of their occurrence. No mothers discussed the consequences of positive emotions and, on average, mothers only discussed the consequences of negative emotions 0.32 times. Adequate interrater reliability was established by having a second independent coder code twenty percent of the conversations (N=20) for references to emotions and causes of emotions during discussions about past positive emotional events ( $r = .93$  and  $r = .84$ , respectively) and

for references to emotions and causes of emotions during discussions about past negative emotional events ( $r = .98$  and  $r = .96$ , respectively).

The extent to which mothers elaborated on these emotional events was also coded on a scale from 1-5 (1=low, 5=high) following Laible (2004). Mothers who engaged in high levels of elaboration were those who provided a great deal of background information, introducing new information on most conversational turns, and who frequently asked their child open-ended questions. Mothers who engaged in low levels of elaboration were those who failed to provide background information in these discussions and rather than asking open-ended questions asked a series of yes/no questions. Separate scores were created for elaboration during the discussion about the positive emotional event and elaboration during the discussion about the negative emotional event. Twenty percent ( $N=7$ ) of conversations were coded by a second coder for interrater reliability and adequate interclass correlations were obtained for maternal elaboration during the discussion about a past positive emotional event ( $r = .95$ ) and for maternal elaboration during the discussion about a past negative emotional event ( $r = .94$ ).

The extent to which both partners were contributing to these discussions, was also coded on a five-point scale (following Laible et al., 2013), with a score of 1 indicating that one partner controlled the conversation with little or no input from the other. A high score of 5 indicated equal contribution and participation by both individuals in the dyad during the conversation. Again, collaboration was scored separately for the discussion of the positive emotional event and the discussion of the negative emotional event. Twenty percent ( $N=7$ ) of conversations were coded by a second rater and adequate interrater

reliability was obtained for dyadic collaboration during the discussions about a past positive ( $r = .95$ ) and a past negative emotional event ( $r = .96$ ).

*Maternal Caregiving Representations.* The shortened Parent Development Interview (PDI; Slade et al., 1999) was administered to mothers in order to assess their representations of their relationship with their child. This 25 question semi-structured interview asks mothers about their view of their child, themselves as a parent, the relationship with their child, the affective experiences they have with parenting, experiences with their own parents, and their child's experiences with loss and or separation. The PDI has been shown to have links with theoretically relevant constructs such as parenting behavior, the Adult Attachment Interview, and children's attachment classification (George & Solomon, 1989; Button et al., 2001; Laible et al., 2013; Sayre et al., 2001; Slade et al., 1999).

The PDI was coded from extensive notes taken from audiotapes of the interviews. This measure of maternal caregiving representations has been coded a number of different ways. We used two different coding schemes to code the PDI, one of which was developed by Pianta, O'Connor, Morog, Button, Dimmock, & Marvin (1995) and one of which was developed by Fiese et al. (1999) and adapted by Laible et al. (2013).

We coded the interviews for the amount of secure base/ comfort the mother discusses in the interview, her ability to take the perspective of the child, the amount of joy/ pleasure, anger and anxiety the mother experiences through the relationship, and her coherence in her discussion of the relationship.

Following Pianta et al. (1995), the constructs of secure base/ comfort, perspective taking, joy/pleasure, anger, and anxiety were coded on a 4-point scale with a 0 indicating

the absence of the construct and a 3 indicating the clear presence of and elaboration on the construct during the interview. Twenty percent (N=7) of the interviews were independently coded by a second rater for the constructs of secure base/ comfort, joy/pleasure, anger, anxiety, and perspective taking. Acceptable interrater reliability was obtained with interclass correlation coefficients of .84, 1.0, .84, .93, and .81 respectively.

Coherence was coded following Fiese et al. (1999) and Laible et al. (2013), by examining three dimensions of coherence: personalization, synthesis, and contradiction. These three elements of coherence were each coded using 5-point scales. A high score on personalization refers to the mother's ability to provide specific examples or specific memories when describing her child or her relationship with her child. A low score on personalization indicates the mother's inability to provide specific examples to back up assertions made about the child or the relationship with the child and her tendency to speak in generalities throughout the interview. Mothers who received high scores on synthesis were those who discussed common themes throughout the interview, whereas mothers who only discussed ideas once throughout the interview received a low score on synthesis. The dimension of contradiction was reverse coded such that a high score on the dimension of contradiction was given to mothers who were consistent in how they describe their child and their relationship with their child or if they acknowledged and explained any contradictions that they might have made during the interview. Mothers were given low scores on this dimension, however, if they often contradicted themselves throughout the interview and did not realize or acknowledge that they were doing this. Following Laible et al. (2013), the scores on each of these scales were averaged to obtain one score of coherence. Twenty percent of the interviews (N=7) were coded

independently by a second rater to establish appropriate interrater reliability for the three aspects of coherence. Interclass correlations for personalization, synthesis, and contradiction were .93, .91, and .85, respectively.

### *Emotion Understanding*

In order to assess children's emotional competence, they completed a two-part emotion understanding task developed by Denham (1986). The first part of the task tested children's ability to decipher the meaning of a facial expression and to recognize the facial expression that is indicative of a certain emotion. Each child was shown four felt faces, each displaying one of the following emotions: happy, sad, angry, and scared. Children were asked to indicate which face displays each emotion ("show me the sad face"). Following this they were asked to identify and report the emotion that each face is expressing ("how does this face feel?"). For both tasks, each child received 2 points for the correct identification of each emotion and 1 point for the correct positive-negative valence. Children could achieve a maximum score of 16 points for this first part of the task.

During the second part of the task, children watched an experimenter use hand puppets to enact 20 vignettes. While the hand puppets themselves had neutral faces, the experimenter used both visually and vocally appropriate cues to accompany the vignettes. Eight of the 20 vignettes were "stereotypical," with the puppet displaying an emotion that most individuals would feel in that particular situation. The other 12 vignettes were "nonstereotypical," with the puppet expressing an emotion that was indicated to be the opposite of what the child would feel in that situation (e.g. the child is afraid of dogs but

the puppet is shown feeling happy when approached by a dog). These nonstereotypical vignettes were tailored specifically to each child by having the mothers fill out a forced-choice questionnaire at the beginning of this experiment. This questionnaire asked them to report how they believe their child would feel in the twelve situations that are portrayed in the vignettes. The purpose of these 12 nonstereotypical vignettes was to assess children's abilities to discriminate his or her own feelings from the feelings that he/she is observing in the puppet.

After each of the vignettes, the child was asked, "how did the puppet feel?" and was then asked to indicate the puppet's emotion by attaching one of the four felt faces (from part one of the task) to the puppet. Each child received 2 points for the correct answer and 1 point for identifying the correct positive-negative valence. The scores on all 20 vignettes were summed, and, following Denham (1986) were added to the score from the first task to attain one emotion understanding score. Each child had the potential to receive a maximum combined score of 56. This task has repeatedly shown to have good predictive validity in assessing emotional understanding in preschool children (Denham et al., 2002; Laible 2004; Laible & Song, 2006).

## **Results**

### *Data Reduction*

To reduce the number of variables in this study and in an attempt to conserve the variable to participant ratio, factor analyses were performed. To reduce the reminiscing factors in a theoretically relevant way, maternal references to positive emotions and to the causes of positive emotions during the discussion about a past positive emotional event were submitted to a principle components factor analysis. Both loaded strongly positively

on a single factor labeled maternal positive emotional talk (eigenvalue 1.75; 87.31% of the variance). Maternal references to negative emotions and to causes of negative emotions during the discussion about a past negative emotional event were also submitted to a principle components factor analysis and once again a single factor, labeled maternal negative emotional talk (eigenvalue 1.40; 69.85% of the variance) emerged with both factors loading strongly positively. Since we were interested in examining how mothers discussed positive versus negative emotional events, positive emotional talk and negative emotional talk were kept as separate variables despite the two being highly correlated ( $r=.59, p < .01$ ).

Similarly, to reduce the number of PDI factors all of the PDI variables were submitted to a principle components factor analysis with a varimax rotation. This resulted in a three-factor solution with comfort, perspective taking, joy/pleasure, and coherence loading on one factor, anger loading on a second factor, and anxiety loading on a third factor. Since they loaded by themselves, anger and anxiety were dropped from the factor analysis. Once those two factors were dropped, a single factor labeled maternal positive representations emerged with all four positive constructs of coherence, secure base/comfort, perspective taking, and joy/pleasure loading strongly and positively, with the lowest loading at .58 and the highest loading at .75 (eigenvalue=1.88; 46.94% of the variance).

Thus, the six dimensions of reminiscing examined in this study included dyadic collaboration and maternal elaboration during reminiscing about a positive event, dyadic collaboration and maternal elaboration during reminiscing about a negative event, maternal positive emotional talk and maternal negative emotional talk. The three aspects

of caregiving representations that were examined in this study in relation to mother-child discourse and children's emotion understanding abilities were maternal positive representations, anger, and anxiety.

### *Descriptive Data and Bivariate Correlations*

Descriptive data for the variables in this study appear in Table 1. Bivariate correlations between the study variables can be found in Table 2. There were few significant correlations found between aspects of maternal caregiving representations (as measured by the PDI) and other study variables. There was a significant positive correlation between positive maternal representations and dyadic collaboration during reminiscing conversations about past positive emotional events ( $r = .37, p < .05$ ). A significant positive correlation also existed between anger in maternal caregiving representations and maternal elaboration during reminiscing conversations about past positive emotional events ( $r = .41, p < .05$ ). Four significant correlations were found between the reminiscing variables. Maternal elaboration when reminiscing about past positive emotions was highly correlated with maternal elaboration during negative reminiscing conversations ( $r = .48, p < .01$ ). Dyadic collaboration during positive reminiscing conversations was highly correlated with dyadic collaboration during negative reminiscing conversations ( $r = .45, p < .01$ ). Dyadic collaboration during positive reminiscing conversations was also marginally correlated with maternal negative emotion talk ( $r = -.33, p < .10$ ), however this relationship was negative. Finally, maternal negative emotion talk was highly correlated with maternal positive emotion talk ( $r = .59, p < .01$ ). The only relationship between any of the study variables and emotion

understanding was a marginally significant positive relationship between dyadic collaboration during reminiscing about a negative emotional event and children's performance on the emotion understanding task ( $r = .30, p < .10$ ).

Prior to performing any regression analyses, we conducted a series of bivariate correlations to examine possible relationships between the study variables and relevant characteristics of the mother and child including child age, child gender, child ethnicity, and maternal education. Child age was only related to the amount of anger expressed in maternal caregiving representations, with child age being marginally positively related to maternal expressions of anger ( $r = .33, p < .10$ ). Child's gender was related to several study variables. Child's gender was positively correlated with mother's perspective taking in their representations of their relationships ( $r = .35, p < .05$ ), with mothers of daughters engaging in more perspective taking in their discussions of their relationships than did mothers of sons. Gender was also significantly correlated with mother's use of elaboration in the reminiscing discussions of positive events ( $r = .35, p < .05$ ) and marginally correlated ( $r = .34, p < .10$ ) with elaboration in the reminiscing discussions of negative events. Mothers of daughters engaged in more elaboration during both positive and negative reminiscing discussions than did mothers of sons. Finally, gender was also marginally related to performance on the emotion understanding task ( $r = .30, p < .10$ ), with girls outscoring boys. Maternal education was positively related to coherence in mother's representations of their relationship with their child ( $r = .40, p < .05$ ). Maternal education was also significantly negatively related to mothers' use of emotional talk during positive reminiscing conversations ( $r = -.40, p < .05$ ).

### *Regression Models*

In the following regression models we controlled for child age, child gender, and maternal education by entering them in the first step of the models. This was done because of the relationships found between these characteristics and the study variables and because previous research has found differences in mother-child discourse and child's socioemotional development on the basis of age, gender, and socioeconomic status (see, for example, Brown & Dunn, 1996, Denham et al., 1997, Laible et al., 2013). Child ethnicity was not significantly related to any of the study variables and was thus not controlled for in any of the regression analyses.

To follow up the significant bivariate correlation, a regression model was built predicting maternal elaboration during reminiscing conversations about positive emotional events from the themes present in the maternal caregiving representations. Child age and gender as well as maternal education were entered in the first step and the factors of maternal positive representations, anger, and anxiety were entered in the second step. This first step failed to account for a significant amount of systematic variance ( $\Delta R^2 = .18$ ,  $\Delta F = 2.02$ ,  $p > .05$ ). The addition of the PDI factors in the second step also failed to significantly increase the amount of systematic variance in the model ( $\Delta R^2 = .17$ ,  $\Delta F = 2.13$ ,  $p > .05$ ). The theme of anger in maternal caregiving representations in the model was, however, significantly associated with maternal elaboration when reminiscing about a positive emotional event ( $\beta = .39$ ,  $p < .05$ ), with mothers who contained more anger in their representation of their relationship with their child using more elaboration during these conversations.

A regression model was built to predict dyadic collaboration during reminiscing conversations about positive emotional events from the dimensions of maternal caregiving representations as measured by the PDI. Child age, child gender, and maternal education were entered into the first step of the model and did not account for any significant change in the systematic variance of the model ( $\Delta R^2 = .04$ ,  $\Delta F = .41$ ,  $p > .05$ ). The three dimensions of the PDI were entered into the second step of the model and while there was no significant change in the systematic variance of the model ( $\Delta R^2 = .19$ ,  $\Delta F = 2.12$ ,  $p > .05$ ), there was a significant association between maternal positive representations and this form of dyadic collaboration ( $\beta = .39$ ,  $p < .05$ ). Those with more positive representations of their relationship with their child were more likely to collaborate with their child during these conversations about past positive emotional events than those with representations that are less positive.

A series of regression models were built to predict each of the other four dimensions of maternal discussion during the reminiscing task from the themes present in the maternal caregiving representations. None of these models contained variables that were significant predictors of mother-child discourse. These four regression models maternal elaboration during negative reminiscing conversations, dyadic collaboration during negative reminiscing conversations, maternal positive emotional talk during positive reminiscing conversations, and maternal negative emotional talk during negative reminiscing conversation, along with the regression model predicting maternal elaboration during positive reminiscing conversations and dyadic collaboration during positive reminiscing conversations can be seen in Table 3.

Two regression models were then built to predict children's performance on the emotion understanding task, one from the discourse factors during reminiscing about positive events and one from the discourse factors during reminiscing about negative events. Neither of these models accounted for a significant amount of the systematic variance. These two regressions can be found in Table 4.

Finally, a regression model was built to predict children's emotion understanding from the three factors of the PDI. Once again child age, child gender, and maternal education were entered in the first step and these factors accounted for a marginally significant amount of the systematic variance ( $\Delta R^2 = .20$ ,  $\Delta F = 2.38$ ,  $p < .10$ ). Child age ( $\beta = .53$ ,  $p < .01$ ) and gender ( $\beta = .38$ ,  $p < .05$ ) were both significant predictors of children's emotion understanding, with older children and girls outperforming younger children and boys. The three PDI factors of maternal positive representations, anger, and anxiety were entered into the second step of the model. The addition of these factors did not account for a significant amount of the systematic variance ( $\Delta R^2 = .17$ ,  $\Delta F = 2.12$ ,  $p > .05$ ). The existence of anxiety in mothers' representations of their relationship with their child was moderately associated with children's emotion understanding ( $\beta = -.31$ ,  $p < .10$ ), such that mothers with increased levels of anxiety in their representations had children who scored lower on the emotion understanding task than those with less anxiety in their representations.

### *Testing Mediation*

The proposed analysis examining maternal discourse mediating the relationship between themes in mothers' representations of their relationships with their children and

children's emotion understanding was not conducted because the results failed to meet the necessary assumptions outlined by Barron and Kenny (1986). While there were significant bivariate correlations between aspects of the PDI and aspects of the reminiscing conversations and marginally significant bivariate correlations between aspects of the reminiscing conversations and children's emotion understanding, we were unable to find significant bivariate correlations between dimensions of the PDI and children's emotion understanding. Additionally, the relationships that were found between aspects of the PDI and discourse factors of the reminiscing task were between difference variables than those relationships that were found between discourse factors of the reminiscing task and children's emotion understanding. Thus a mediation analysis was not conducted.

### **Discussion**

The purpose of this study was to examine the relationship between maternal caregiving representations, mother-child discourse, and children's emotional development. We predicted that the themes present in mothers' caregiving representations would be related to the quality of mother-child discourse during discussions about past positive and past negative emotional experiences. We also predicted, following previous research findings (e.g. see Laible, 2004b), that the features of this emotional discourse would predict children's performance on a task designed to capture emotion understanding. Furthermore, we predicted that the themes present in maternal caregiving representations would be related to children's emotion understanding through the quality of mother-child discourse about past positive and past negative emotional events. The results showed mixed support for these predictions.

### *Maternal Caregiving Representations and Mother-Child Emotional Discourse*

Maternal caregiving representations were assessed using the Parent Development Interview and were coded for coherence and the themes of joy/pleasure, secure base/comfort, perspective taking, anger, and anxiety. Replicating previous research (see e.g. Slade et al., 1999 & Laible et al., 2013), we found that coherence and the themes of joy/pleasure, secure base/comfort and perspective taking could be reduced into a single factor of positive representations. Thus, maternal caregiving representations in this study were defined by these three factors of positive representations, anger, and anxiety.

Maternal caregiving representations were only related to mother-child discourse surrounding past positive emotional events and not to mother-child discourse surrounding past negative emotional events. The factor of positive representations was positively associated with dyadic collaboration during conversations about children's past positive emotional events. Perhaps, as past research suggests, those mothers with positive caregiving representations are engaging in more sensitive parenting (Slade et al., 1999) and thus create more positive and warm relationships with their children that allow for the establishment of a mutually responsive orientation within the relationship (Maccoby & Martin, 1983). Children within mutually responsive relationships are invested in the relationship and thus feel obligated to cooperate and to engage with their parents in order to maintain positivity within the relationship (see Laible et al., in press). Thus, the willingness of these children to engage with their parents may explain why these conversations about past positive emotional events are more collaborative for children of mothers with positive representations of their relationship.

Maternal elaboration during conversations about children's past positive emotional events was also related to maternal caregiving representations. More specifically, it was related to the amount of anger discussed by the mother during the PDI, with mothers who expressed more anger in their caregiving representations using greater amounts of elaboration during this discussion of a past positive emotional event. While at first this finding was surprising and thought to be contrary to our predictions, it may be explained when one considers the strong relationship between one's caregiving representations and one's own attachment security (Solomon & George, 1996; Slade et al., 1999). Rather than indicating negative affect in their relationship with their child, mothers' expressions of anger throughout the PDI may reflect the ability to engage in open communication about negative emotions that is characteristic of a secure attachment (Bretherton, 1990; DeOliveira et al., 2005). Thus the fact that these mothers are more elaborative throughout their conversations with their children about past positive emotional events may be due to the ease with which they can access and discuss a wide range of emotions, including positive emotions.

Surprisingly, no other aspects of mother-child discourse were related to maternal caregiving representations in the present study. This may be partially due to the design of the current study. The present study examined the concurrent relationship between caregiving representations and mother-child discourse, where as previous work has examined this relationship longitudinally (Laible et al., 2013). Laible et al. (2013) found that caregiving representations when the child was 42 months predicted maternal elaboration and dyadic collaboration during discussions about a past negative emotional event when the child was 48 months, controlling for dyadic collaboration and maternal

elaboration at 42 months. They, however, did not find that these caregiving representations at 42 months predicted mother-child discourse when the child was 42 months. Thus, a mother's caregiving representations may be extremely important for predicting and shaping future parenting behavior and changes in parenting, but may relate less to current parenting behavior.

Additionally, the range in ages of the children in the participating dyads may also explain the lack of significant findings relating maternal caregiving representations and aspects of mother-child emotional discourse. Laible et al. (2013) found significant relationships between caregiving representations and aspects of mother-child discourse during reminiscing about negative emotional events. They, however, interviewed mothers of children who were all exactly 42 months old. Since mother's experiences with their child over time help shape these maternal caregiving representations (George, 1996; Sokolowski et al., 2007) the themes present in these representations may be related to the length of time the mother has known her child (the age of the child). We found some evidence for this when we examined the bivariate correlations between child characteristics and aspects of maternal caregiving representations. Child age was significantly positively related to expressions of anger within maternal caregiving representations.

Furthermore, when the means and standard deviations of maternal elaboration and dyadic collaboration and all aspects of the PDI were compared to those of Laible et al. (2013) they appeared to be similar. Additionally, the factor analysis on the positive aspects of the maternal caregiving representations in this study replicated the factor analysis that was performed by Laible et al. (2013). All of this together might suggest

that the lack of power in our study is contributing to our inability to find significant relationships between maternal caregiving representations and mother-child discourse about past emotional events.

#### *Mother-Child Emotional Discourse and Children's Emotion Understanding*

Children's emotion understanding as assessed by their performance on an emotion understanding task, was examined in relation to each of the six aspects of mother-child discourse surrounding a past positive emotional event. The only relationship that was found was a marginally significant correlation between collaboration during conversations about past negative emotional events and children's emotion understanding. This finding was in line with our predictions, however, this relationship did not hold once submitted to a regression analysis in which child's gender and child's age were controlled. There were no other significant findings relating mother-child emotional discourse to children's emotion understanding, which was surprising given the consistency with which previous work has found a link between mother-child discourse and children's emotion understanding (Denham et al., 1994; Laible 2004a; Laible 2004b; Laible 2011). The means and standard deviations for emotion understanding and aspects of mother-child discourse in this study, however, were comparable to those found in previous studies, suggesting that our lack of predicted significant findings may be due to the small number of participants in our study and our lack of power to detect any significant relationships.

Additionally, our lack of significant relationships between dimensions of mother-child discourse and children's emotion understanding may be due to children's

performance on the emotion understanding task. While previous research has found this emotion understanding task to have validity with children up to 54 months (Denham & Couchoud, 1990), the children in our study spanned a year in age and since child age is consistently predictive of children's emotion understanding (Denham et al., 1997), child age was accounting for a large portion of the variance in both models predicting emotion understanding from mother-child discourse. Thus, although the mean score of emotion understanding was in line with that of previous studies (Laible 2004a; Laible 2011; Laible et al., 2013) we were unable to detect a relationship between mother-child discourse and emotional competence because of the large age range of the children in this study. With a larger sample size or a smaller range in child age a relationship between aspects of mother-child discourse and children's emotion understanding may emerge.

#### *Maternal Caregiving Representations and Children's Emotion Understanding*

The three aspects of maternal caregiving representations (positive representations, anger, and anxiety) were examined in relation to children's performance on the emotion understanding task. While there were no significant bivariate correlations between emotion understanding and any of these three aspects of maternal caregiving representations, once child's gender, child's age, and maternal education were controlled for in a regression model, anxiety was negatively associated with children's emotion understanding. Children of mothers who expressed more anxiety in their representations of their relationships with their children had children who did not perform as well on the emotion understanding task as children of mothers who expressed less worry and anxiety in these representations. While an excess of anxiety in a mother's representation of her

relationship with her child did not have an impact on any of the emotional discourse factors, it may influence other parenting behaviors. For example, Button et al. (2001) found that mothers who expressed greater amounts of anxiety and worry about their child's future were less sensitive to their child, gave their child less support, and showed less positive affect during a problem solving task. These mothers may be preoccupied with these feelings of worry and therefore lack the resources to provide their children with sensitive parenting. Since it is within the context of a sensitive relationship that emotion understanding is able to develop (Laible & Thompson, 1998), those children who are not receiving sensitive parenting are less emotionally competent than those children who do.

Additionally, anxiety may influence the quality of mother-child discourse about these emotional events in a way that the discourse measures that were used in this study were unable to capture. For example, we examined elaboration during these discussions and Fivush and Sales (2006) have found that anxiously attached mothers are highly elaborative during conversations with their children. They also, however, found that these mothers tended to have children with more internalizing and externalizing problems, suggesting that although they were using elaboration this elaboration may not have been for the benefit of the child (Fivush & Sales, 2006). Perhaps mothers in our study who expressed a great deal of anxiety in their representation of their relationship with their child were elaborating not to enhance children's understanding of the event, but were engaging in a more ruminative and less child focused elaboration. Unfortunately, we were unable to detect the difference between these two types of elaboration with the

current measure. The link between anxiety in maternal caregiving representations and children's socioemotional outcomes is a rich area for future research.

### *Limitations & Future Directions*

This study was not without limitations. The first limitation lies in the coding of the Parent Development Interview. While we coded for constructs that we believed to be the most relevant to mother-child discourse about emotion and the development of children's emotion understanding, this coding was not an exhaustive measure of maternal caregiving representations. Pianta et al. (1995) outlines coding schemes for the mentions of the themes of control/compliance, child achievement/ performance, enmeshment, dismissiveness, and guilt, to name a few. The presence of enmeshment or inappropriate parent-child boundaries throughout the interview, the dismissive nature of the mother or her reluctance to answer questions, as well as the mother's inability to answer the questions (especially those regarding the affective experiences of parenting) may be particularly interesting aspects of the interview to look at in the future. George (2011) has suggested that the presence of such themes may be characteristic of mothers with disorganized caregiving systems and this disorganization can be classified as either dysregulated or constricted. Those mothers whose caregiving systems become dysregulated often come to see their child as an uncontrollable adversary who makes caregiving difficult (George, 2011). Those with constricted caregiving systems have a one-sided view of their child, often describing him or her as angelic and perfect and are unable to answer questions that may threaten this view. George (2011) suggests that these mothers see the child as being able to take care of themselves and thus do not need to be

taken care of by the mother. Disorganized caregiving representations can result from particularly traumatic experiences in the mother's life such as miscarriage, death of a baby, child disability, and experiences of violence and abuse (Almqvist & Broberg, 2003). While it was not coded for in the interview, several mothers did discuss such traumatic events, leading us to believe that some of these mothers could be characterized as having dysregulated or constricted representations of their relationship with their child. These characterizations would thus be particularly interesting aspects of maternal caregiving representations to examine in relation to parenting behavior.

Another limitation of this study was that we only examined mother-child discourse about emotion in one context, the reminiscing about positive and negative emotional events. It may also be interesting to examine mother-child discourse in the context of the storybook reading task that was also collected in this data set. For this task, mothers were given a wordless storybook entitled *Frog on His Own* by Mercer Mayer and were asked to create a story with the help of their child. This storybook was chosen because it contains many emotion-laden events and themes and provides mothers with ample opportunities to discuss emotion, particularly negative emotion, with their child. While the reminiscing task allows mother-child dyads to discuss the child's own emotional experiences, the storybook reading task provides an opportunity for mothers to talk to their children about the emotional experiences of others. Discussing emotions in these two different contexts has been shown to relate differently to emotion understanding (Laible, 2004b) and thus may also relate differently to maternal caregiving representations.

Additionally, in the future we may want to examine the results of the emotion understanding task in a slightly different way. Previous research has found evidence that children more rapidly develop the ability to identify positive emotions compared to negative emotions (Denham & Couchand, 1990). Since we would predict that mothers with more positive and coherent representations of their relationship with their child are able to engage in more elaborative and collaborative discussions with their children about negative emotions, we suspect that these children might develop an understanding for negative emotions at a faster rate than those children of mothers with less positive and coherent caregiving representations. Thus in the future this could be examined by dividing up the emotion understanding task into scores for children's ability to identify positively valenced emotion and negatively valenced emotions.

Finally, the biggest limitation in this study was the number of participants. This data set only contains data from thirty-five mother-child dyads. Previous studies that have examined maternal caregiving representations, mother-child discourse, or children's socioemotional development have had approximately double the number of participants (see e.g., Laible & Song, 2006; Laible, 2010; Laible et al., 2013). This, however, is an ongoing data set and with the addition of the necessary participants we hope to gain the power necessary to find the predicted relationships between themes present in maternal caregiving representations, aspects of mother-child discourse about past emotional events, and children's emotion understanding.

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## Tables

*Table 1: Descriptive Statistics*

Variable	M	SD
<b>Maternal Caregiving Representations</b>		
Maternal Positive Representations		
<i>PDI Coherence</i>	3.33	0.69
<i>PDI Perspective Taking</i>	1.71	0.91
<i>PDI Comfort/Secure Base</i>	1.41	1.05
<i>PDI Joy/Pleasure</i>	1.56	0.93
PDI Anger	1.59	0.82
PDI Anxiety	1.53	0.93
<b>Reminiscing about Positive Emotional Event</b>		
Maternal Positive Emotion Talk		
<i>References to Positive Emotions</i>	7.15	5.99
<i>References to Causes of Positive Emotions</i>	2.50	3.60
Maternal Elaboration	3.50	0.89
Dyadic Collaboration	3.62	1.21
<b>Reminiscing about Negative Emotional Event</b>		
Maternal Negative Emotion Talk		
<i>References to Negative Emotions</i>	6.56	3.31
<i>References to Causes of Negative Emotions</i>	3.13	2.04
Maternal Elaboration	3.41	0.78
Dyadic Collaboration	3.47	1.12
<b>Children's Emotion Understanding</b>	46.56	6.66

Table 2: Bivariate Correlations between Study Variables

	1	2	3	4	5	6	7	8	9	10
1. Maternal positive representations	-	-.10	.02	-.03	.04	.37*	-.03	.12	.01	-.02
2. Anger		-	.18	.41*	.13	.20	-.05	-.02	-.03	-.17
3. Anxiety			-	-.11	.03	.11	.10	.09	.01	-.28
4. Maternal elaboration for positive emotional discussions				-	.48**	.01	.00	-.11	.02	.11
5. Maternal elaboration for negative emotional discussions					-	-.18	.15	-.08	-.04	-.01
6. Collaboration for positive emotional discussions						-	.45**	-.03	-.33+	.00
7. Collaboration for negative emotional discussions							-	.08	-.01	.30+
8. Maternal positive emotional talk								-	.59**	-.23
9. Maternal negative emotional talk									-	-.03
10. Children's emotional understanding										-

\*p <.05, \*\*p<.01, +p<.10

Table 3: Regression Models Predicting Aspects of Reminiscing Quality from Maternal Caregiving Representations

*Maternal Caregiving Representations & Maternal Elaboration During Positive Reminiscing Conversations*

Variables & Steps	$\beta$ in full model	$R^2$	$\Delta R^2$
1. Gender	.40*		
Child Age	.15		
Maternal Education	.02	.18	.18
2. Positive Representations	-.06		
Anger	.39*		
Anxiety	-1.11	.35	.17

\*p < .05, \*\*p < .01, +p < .10

*Maternal Caregiving Representations & Maternal Elaboration During Negative Reminiscing Conversations*

Variables & Steps	$\beta$ in full model	$R^2$	$\Delta R^2$
1. Gender	.36 <sup>+</sup>		
Child Age	-.21		
Maternal Education	.26	.17	.17
2. Positive Representations	-.09		
Anger	.17		
Anxiety	.07	.21	.04

\*p < .05, \*\*p < .01, +p < .10

*Maternal Caregiving Representations & Dyadic Collaboration During Positive Reminiscing Conversations*

Variables & Steps	$\beta$ in full model	$R^2$	$\Delta R^2$
1. Gender	-.06		
Child Age	.05		
Maternal Education	.03	.04	.04
2. Positive Representations	.39*		
Anger	.26		
Anxiety	.08	.24	.20

\*p < .05, \*\*p < .01, +p < .10

*Maternal Caregiving Representations & Dyadic Collaboration During Negative Reminiscing Conversations*

Variables & Steps	$\beta$ in full model	$R^2$	$\Delta R^2$
1. Gender	.23		
Child Age	.07		
Maternal Education	.15	.05	.05
2. Positive Representations	-.15		
Anger	-.07		
Anxiety	.17	.10	.05

\*p < .05, \*\*p < .01, +p < .10

*Maternal Caregiving Representations & Maternal Positive Emotional Talk During Reminiscing Conversations*

Variables & Steps	$\beta$ in full model	$R^2$	$\Delta R^2$
1. Gender	-.17		
Child Age	-.22		
Maternal Education	-.40	.19	.19
2. Positive Representations	.21		
Anger	.10		
Anxiety	.14	.26	.07

\*p < .05, \*\*p < .01, +p < .10

*Maternal Caregiving Representations & Maternal Negative Emotional Talk During Reminiscing Discussions*

Variables & Steps	$\beta$ in full model	$R^2$	$\Delta R^2$
1. Gender	-.12		
Child Age	.17		
Maternal Education	-.32	.08	.08
2. Positive Representations	.11		
Anger	-.02		
Anxiety	-.01	.09	.01

\*p < .05, \*\*p < .01, +p < .10

*Table 4: Regression Models Predicting Emotion Understanding from Aspects of Reminiscing Quality*

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*Aspects of Positive Reminiscing Discussions & Emotion Understanding*

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Variables & Steps	$\beta$ in full model	$R^2$	$\Delta R^2$
1. Gender	.38 <sup>+</sup>		
Child Age	.37 <sup>+</sup>		
Maternal Education	-.16	.20 <sup>+</sup>	.20 <sup>+</sup>
2. Collaboration	-.07		
Elaboration	-.07		
Positive Emotion Talk	-.18	.24	.04

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\*p <.05, \*\*p<.01, +p<.10

*Aspects of Negative Reminiscing Discussions & Emotion Understanding*

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Variables & Steps	$\beta$ in full model	$R^2$	$\Delta R^2$
1. Gender	.47 <sup>*</sup>		
Child Age	.42 <sup>*</sup>		
Maternal Education	-.16	.26 <sup>*</sup>	.26 <sup>*</sup>
2. Collaboration	-.19		
Elaboration	.10		
Negative Emotion Talk	-.05	.30	.04

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\*p <.05, \*\*p<.01, +p<.10

*Table 5: Regression Models Predicting Emotion Understanding from Maternal Caregiving Representations*

Variables & Steps	$\beta$ in full model	$R^2$	$\Delta R^2$
1. Gender	.38*		
Child Age	.53**		
Maternal Education	-.09	.20 <sup>+</sup>	.20 <sup>+</sup>
2. Positive Representations	-.09		
Anger	-.26		
Anxiety	-.31 <sup>+</sup>	.37	.17

\* $p < .05$ , \*\* $p < .01$ , + $p < .10$

## Curriculum Vita

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### Education

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- 2014      Master of Science in Psychology  
            Concentration: Developmental Psychology  
            Lehigh University, Bethlehem, PA
- 2012      Bachelor of Arts  
            Major: Psychology  
            Minors: Biology & Chinese Language  
            Lehigh University, Bethlehem, PA

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### Research Projects

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- 2014      Master's Research Project  
            Department of Psychology, Lehigh University  
            *Maternal caregiving representations: Links with mother-child discourse  
            and children's emotion understanding*
- 2013      Primary Investigator: Deborah Laible  
            Department of Psychology, Lehigh University  
            *Parent conversations about moral dilemmas: Links with moral identity,  
            moral values, and behavior*
- 2013      First Year Research Project  
            Department of Psychology, Lehigh University  
            *Attachment security as a predictor of guilt and shame in preschool  
            children*

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### Research Experience

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- 2009-2014      Lehigh University Emotional Development Lab  
                    Bethlehem, PA  
                    Lab Director: Dr. Deborah Laible
- 2004-2008      Cleveland Clinic Microsurgery Lab  
                    Cleveland, OH  
                    Lab Director: Dr. Maria Siemionow

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**Publications**

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Laible, D., Thompson, R.A., & Froimson, J. (in press). Early socialization: The influence of close relationships. In J. Grusec & P. Hastings (Eds.), *Handbook of Socialization* (Rev. Ed.). New York: Guilford.

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**Poster Presentations**

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Froimson, J., Laible, D., & Karahuta, E. (2014). *Links between empathy, guilt, and perspective taking and children's roles in bullying episodes*. Presented at the biennial meeting of the Society for Research on Adolescence.

Laible, D., Froimson, J., Karahuta, E., Murphy, T., Augustine, M. (2014). *Predicting adolescent prosocial and aggressive behaviors: The roles of attachment and moral affect and cognition*. Presented at the biennial meeting of the Society for Research on Adolescence.

Karahuta E., Laible, D., & Froimson, J. (2014). *Bidirectional effects of sensitive parenting and cooperation during childhood and adolescence*. Presented at the biennial meeting of the Society for Research on Adolescence.

Laible, D., Karahuta, E., Froimson, J., & Carlo G. (2014). *Predicting adolescent aggressive, delinquent, and cooperative behavior from earlier peer group affiliation and social behavior*. Presented at the biennial meeting of the Society for Research on Adolescence.

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**Teaching Experience**

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2014	Graduate Teaching Assistant – Experimental Research Methods, Lehigh University
2013	Graduate Teaching Assistant – Adulthood and Aging, Lehigh University
2013	Graduate Teaching Assistant – Experimental Research Methods, Lehigh University
2012	Teacher Development Program Level One Certificate, Lehigh University

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**Awards**

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2012	Lehigh University Presidential Scholar
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