

Conversations about emotion in high-risk dyads

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Early emotional understanding is fostered by mother–child conversation in which mothers elaboratively enhance children’s understanding. Little is known of the broader relational and risk factors influencing maternal discourse style, how discourse content and quality are associated with children’s emotion language, and how these predict emotion understanding. In this longitudinal study of a high-risk sample, attachment security and family risks were assessed when children were 2 years old. One year later, observations of mother–child emotion conversation yielded measures of maternal discourse content and quality, and children’s emotion words and emotion labels. Child emotion understanding was independently assessed one year later as well. Central findings were: (1) content and quality of maternal discourse was negatively related to family risk factors and positively associated with secure attachment; (2) child emotion language in conversation was positively associated with secure attachment beyond the effects of child language and maternal discourse content; and (3) differences in emotion language ability predicted children’s emotion understanding.

Keywords: attachment security; emotion understanding; maternal discourse; high-risk

Introduction

In recent years, ideas from attachment theory and research on conceptual growth have been integrated to yield new perspectives to the development of children’s mental working models of people and relationships. Developing emotional understanding has been at the nexus of these new perspectives because of its importance to how young children think about themselves, other people, and relational interaction, which are central features of Bowlby’s internal working models construct. Recent research has yielded several conclusions relevant to the development of working models. First, early childhood is a period of significant advance in emotion understanding, and when internal working models associated with conceptions of self, people, and relationships are likely to be growing significantly (Denham, 1998; Thompson, 2000). Second, parent–child conversation is an important catalyst to developing emotion understanding, and preschoolers whose mothers make frequent conversational references to emotions and who use rich, descriptive language when discussing feelings (also described as highly “elaborative” mothers) show greater insight into the feelings of others (Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991; Fivush & Vasudeva, 2002; Laible, 2004; Ontai & Thompson, 2002). Third, mothers in secure attachment relationships talk in this more elaborative manner with their preschoolers who are, in turn, more advanced in emotion

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understanding, particularly understanding of negative emotions (Laible, 2004; Laible & Thompson, 1998; Ontai & Thompson, 2002; see Reese, 2002). These conclusions are consistent with Bretherton's (1993) portrayal of the more "open, fluid communication" that is shared by securely-attached children with their caregivers that enables emotional sharing and discussion, particularly of negative emotions that might be more troubling, disturbing, or confusing to young children. These findings suggest that mental working models of self, people, and relationships develop during the preschool years partly through the content and quality of parent-child everyday conversation (Thompson, Laible, & Ontai, 2003).

As valuable as these conclusions are for advancing attachment theory and research, much remains to be understood about conversational dynamics between mothers and children. First, why do mothers differ in their conversational style with young children? Understanding the origins of these individual differences can contribute to a better appreciation of the reasons why some children experience richer, more supportive conversation with their mothers than do others. Second, what is the relative influence of the content (i.e., *what* mother says, such as the frequency of emotion references) and the quality (i.e., *how* she says it, such as mother's use of elaborative speech) of the mother's contributions to shared conversation? These aspects of the mother's speech have been typically viewed together in prior research on conversation and children's developing understanding, but they may have different origins and influences (Thompson, 2006). Finally, what contributions do children make to shared conversation? Recognizing that even young children make independent contributions to conversational discourse, it is important to understand the importance of influences like the child's language proficiency. Moreover, research shows that mothers in secure dyads speak differently to their children, but we know less about how securely-attached children talk about emotion, after accounting for maternal differences.

This study was designed to advance understanding about the antecedents and correlates of mother-child emotion conversations, with emphasis on the role of attachment security. In a longitudinal study of preschoolers and their mothers, we sought to understand the predictors of individual differences in the quality and content of maternal discourse in conversations about the child's prior experiences of positive and negative emotion, as well as differences in children's emotion language, and emotion understanding. The sample consisted of high-risk families experiencing economic and emotional stress, enabling us to examine a variety of influences on parent-child conversation and developing emotion understanding.

Differences in maternal discourse about emotion with children

Mothers tend to be consistent in their style of discourse with children over time and with different partners (Haden, 1998; Haden, Haine, & Fivush, 1997; Ruffman, Slade, & Crowe, 2002), suggesting that differences between mothers in discourse style are consistent and due to maternal characteristics. As earlier noted, mothers who are in secure relationships with their offspring (and who have themselves secure attachment representations; see Reese, 2008, p. 451-464, this issue) are more elaborative in their style of discourse with offspring. In addition, differences in socio-economic status (SES) have proven to be one of the most reliable predictors of maternal discourse style. Lower-income parents speak to their children using less rich vocabulary, engage them less frequently in conversation, and ask them fewer questions about their experience than do middle-income parents (Hoff, 2003; Hoff-Ginsburg, 1991; Wiley, Rose, Burger, & Miller, 1998). As a result, lower-income children acquire fewer words over time than

their higher-SES counterparts (Hoff, 2003; Pan, Rowe, Singer, & Snowe, 2005). With respect to emotion-related discourse, lower-income mothers have been found to value the expression of negative affect more than middle-income mothers and possess different goals for their children's emotion socialization (Miller & Sperry, 1987), which could lead to more frequent references to negative emotion than in higher-income families (Eisenberg, 1996; McLoyd, 1990; but see Eisenberg, 1999, for different findings) and contribute to the association between low SES and deficits in social and emotional understanding (e.g., Cutting & Dunn, 1999; Garner, Curenton, & Taylor, 2005; Pears & Moses, 2003).

We can achieve greater insight into the association of SES and characteristics of maternal discourse by considering specific influences related to SES. In this study, we focused on two kinds of risk factors associated with low SES: emotional risks and demographic risks. Emotionally stressful risks, such as domestic violence and substance abuse among family members, are more prevalent among lower-income families (e.g., Emery & Laumann-Billings, 1998) and contribute to emotionally challenging family environments characterized by negative affect that influence all family members (Repetti, Taylor, & Seeman, 2002). How emotional risks influence mothers' conversations about emotion with preschoolers has received very little research attention, despite the recognition that conversing about difficult emotional experiences affects the content and style of discourse in adults (Main, Kaplan, & Cassidy, 1985), and therefore could have strong effects on mother-child emotion conversations. Demographic risks, especially low levels of education, are also likely to impact maternal discourse (Reese & Newcombe, 2007). Income may also directly and indirectly affect discourse by influencing maternal parenting quality and levels of stress (Duncan & Brooks-Gunn, 2000).

Because of their potentially strong influence on the quality of mother-child discourse about emotional events, we sought to examine the association of emotional risks and demographic risks with two features of maternal discourse in conversation with children: the *content* of maternal discourse (i.e., what mother says), and its *quality* (i.e., how it is said, or the broader features of maternal speech). Previous research indicates that each are likely to be important, with earlier studies finding positive associations between preschoolers' emotion understanding and the content of maternal discourse (e.g., frequency of emotion references; Dunn, Brown, & Beardsall, 1991) and the quality of maternal discourse (e.g., elaborative speech; Ontai & Thompson, 2002). Researchers have rarely examined the differential influence of both the content and the quality of maternal discourse on children's emotion understanding (see Laible, 2004, for an important exception), and never with samples at socio-economic risk. This study thus provides a unique perspective on influences on these dual features of maternal discourse in a sample where emotional and demographic risks pose significant challenges to the emotional development of young children. In this study, we were also able to examine (as did Laible, 2004), the association of differences in the content and quality of maternal discourse on young children's emotion understanding.

The child's contribution to emotion conversations: relations to attachment, language competence, and emotion understanding

It is unsurprising that researchers have focused on the maternal side of mother-child conversations during the preschool years. After all, prior research has shown that both the content and quality of maternal discourse predicts preschoolers' concurrent emotion language (Denham, Cook, & Zoller, 1992; Denham, Zoller, & Couchoud, 1994;

Garner, Jones, Gaddy, & Rennie, 1997). Beyond the immediate influence of maternal speech, children's characteristics also influence the course of mother-child conversation. Two child characteristics were the focus of this investigation: child language competence, and the security of attachment. We were also interested in determining how children's emotion language relates to emotion understanding, while accounting for both children's general language competence and maternal conversational style.

Previous studies of mother-child conversation and emotion understanding in preschoolers have found differences in child language competence to be significant predictors of emotion understanding (e.g., Denham et al., 1994; Dunn et al., 1991; Laible & Thompson, 2002). This may be true because most assessments of emotion understanding rely on verbal skills, but it may also derive from the manner in which general language competence provides a conceptual aid to young children's mastery of emotion concepts. Moreover, conversations with linguistically proficient young children provide adults with enhanced opportunities for emotion-related discourse compared to conversations with children who are less verbally proficient. In several ways, therefore, differences in general language ability are likely to be associated with children's emotion understanding.

In this study, we used two measures of child emotion language to clarify the influence of language ability on emotion understanding. The first, *emotion words*, was the frequency of children's use of positive and negative emotion words in conversation with the mother. This measure is similar to those used in other studies. The second measure, *labeling of emotion states*, was the number of times children labeled an emotional state (in themselves or another person) in the absence of a specific prompt by the mother. This new measure was designed to capture the child's use of emotion language as it applied to situations and people known to the child. Although these two measures of emotion language are not independent of each other, they may have different associations with general language ability (with use of emotion words more likely to be related to general language competence) and reflect different kinds of influences on mother-child emotion conversation.

A second child characteristic that is likely to influence mother-child conversation about emotion is the security of attachment. As earlier noted, securely-attached young children are more advanced in emotion understanding compared to insecure children, and this makes them more proficient conversational partners when discussing emotional experiences with their caregivers. Moreover, according to Bretherton (1993), young children in secure relationships are likely to approach emotion-related conversations more openly, responsively, and competently owing to the greater willingness of secure children to confront emotional experiences (especially those that may be disturbing or threatening) because of their trust in attachment figures. For this reason, children in secure attachments should make contributions that are more constructive to shared conversation with their caregivers about emotional experiences. In this study, we anticipated that securely-attached children would especially exhibit greater labeling of emotion states than insecure children, reflecting their more competent integration of emotion understanding with their understanding of themselves and other people.

The present study

In this study, therefore, we examined the importance of attachment security in predicting (1) the content and quality of maternal discourse and (2) children's emotion words and labeling of emotion states. We anticipated that secure relationships would influence the

development of children's emotion understanding through its effects on both maternal discourse and child emotion language during mother-child conversations. This study was also designed to extend previous research on attachment, mother-child conversation, and children's emotion understanding by longitudinally exploring, in a lower-income sample of mothers and children at socio-demographic risk, the broader correlates of maternal and child contributions to emotion-related conversation. We anticipated that emotional risks and demographic risks within the family would be negatively associated, one year later, with the content and quality of maternal discourse, but prior research did not permit differential hypotheses concerning which kinds of risks would be most influential to each feature of maternal discourse. We expected that the child's language competence (along with maternal discourse influences) would be associated with the child's production of emotion words and labeling of emotional states, but we anticipated that language would have a stronger influence on emotion words than labeling. Attachment security would also be related to both aspects of child emotion language assessed one year later, but would have a stronger association with labeling emotional states. Finally, consistent with prior research, we expected that an independent measure of child emotion understanding would be associated with maternal and child conversation discourse variables, but that child emotion language variables would have a stronger association with emotion understanding because they reflect the child's representations (or working models) of emotion in oneself and others.

Method

Participants

Participants were 42 mothers and children (22 girls, 20 boys) who were enrolled in an early intervention program, Early Head Start, designed to provide family support and promote child development among children living in poverty. Mothers and children were enrolled in the study when the children were 2-3 years old ($M = 28$ months, $SD = 0.33$) and were seen again when children were 3-4 years old ($M = 42$ months, $SD = 0.35$). Average time between visits was 1 year ($SD = 0.28$). Mothers' ages ranged from 19 to 40 years at the time of the first visit ($M = 25.5$ years, $SD = 4.89$). The majority of mothers were White ($n = 33$); five mothers were African American, three were Hispanic, and one was Asian. Data on mother and child language are missing for one family who refused to be videotaped due to religious reasons. Fifty percent of mothers were unmarried at the time of the first visit. Eighty percent of the mothers had graduated from high school, but only three mothers had obtained college degrees. Eighty percent of the families had yearly income under US\$18,000, and thirteen of the families were receiving governmental cash assistance, a marker of severe poverty. Sixty-four percent of the mothers were employed at the time of the first visit.

Procedure

Mothers and children were seen at two visits, averaging one year apart. At the first visit, mothers were asked to report on risk status and children's attachment security was assessed using observer sorts of the Attachment Q-Set (Waters & Deane, 1985). Observers spent on average 2 hours in the families' homes.

On the second visit, a researcher visited the home, assessed the child using the Denham emotion understanding task (Denham, 1986). Researchers then videotaped the mother and the child discussing several emotional events in the recent past. Mothers were explicitly

asked to “discuss recent times with the child that the child was happy, angry and sad” based on a modification of a procedure developed by Fivush (1991). Conversations were considered complete when mothers and children had discussed all three emotions, regardless of how long the conversation continued, and mothers were given no additional prompts beyond the request to discuss the three emotions. Conversations continued for 25.85 turns on average, ranging from 10 to 78 ($SD = 14.69$). Both visits were conducted at the family’s convenience, and mothers were given a small stipend for their agreement to participate.

Measures

Attachment security

To assess the security of attachment, children were observed in their homes for an average of 2 hours by trained observers who then completed the Attachment Q-Sort (Waters & Deane, 1985). Mothers were told to act as they normally do at home during the observation. Observers sorted 90 cards into nine groups based on how accurately the cards described the child’s behavior. Each item on the Q-Sort has been assigned a value indicating the score a prototypically “most secure” child would receive on that item; security scores were calculated by correlating the observed child’s scores on Q-Sort items with a security criterion sort containing values for the prototypically secure child.

Two research assistants with substantial background in attachment theory were trained to conduct Q-Sort observations using guidelines provided by Everett Waters, and by conducting practice observations in pairs. Reliability for the two observers who conducted the observations was calculated by correlating their scores on sorts of 10 different children’s behavior, some of whom were included in the sample for the present study, and averaged 0.71. Children’s scores on the Attachment Q-Sort ranged from -0.21 to 0.75 ($M = 0.22$, $SD = 0.25$). The mean for this sample is consistent with security score means for other high-risk samples; across multiple studies using the Attachment Q-Sort, van IJzendoorn, Vereijken, Bakermans-Kranenburg, and Riksen-Walraven (2004) reported a mean of 0.32 for typically-developing samples and 0.21 for clinical samples.

Emotional risks

During the first visit, mothers were given a checklist of emotional risks (6 total), and were asked to indicate which risks applied to them. Mothers were told that the list helped the intervention program and the researchers understand the types of issues that affected the family. Mothers were familiar with the items on the checklist and had been asked about them before the time of the observation, which increased their familiarity and comfort in answering the questions. None of the mothers refused to respond to questions regarding emotional risks. Mothers were also asked to report their ages, family income levels, education levels, employment status, the child’s age, and what adults and children presently lived in the home.

Emotional risks were defined by whether they represented a significant disruption in the mother’s emotional history and/or created a negative emotional climate in the home. Emotional risks included the presence of alcohol or drug abuse in the family, a family member with problems controlling anger, the presence of domestic violence in the home, the mother’s report that she or someone else in the home had difficulty with parenting, and

mothers' history of sexual abuse. Mothers reported an average of 1.65 emotional risks ($SD = 1.31$), ranging from 0 to 4. The most common emotional risks were domestic violence (48.8% of the sample reporting this risk), alcohol and drug abuse in the family (39.5%), and excessive anger (37.2%).

Demographic risks

Three indicators were used to describe maternal demographic risk: maternal age, income, and years of education. All three were collected from mothers at the time of the first visit. Monthly income ranged from less than US\$250 a month to over US\$1500, with median income between US\$750 and US\$1000 a month, and years of education ranged from less than 10th grade to college graduate, with a median education level of high school graduation. Mothers who were older had more education ($r = .60, p < .001$), and also reported higher monthly income ($r = .33, p < .05$); there was no significant association between income and education. To create a composite of the three measures, all three were transformed into z -scores, averaged, and reverse-coded so that higher scores indicated greater risk. The resulting variable was used in bivariate and multivariate analyses as described below to indicate maternal demographic risk.

Quality and content of maternal discourse

From the verbatim transcripts of mother-child conversations about emotion, four aspects of maternal discourse content and quality were assessed: mothers' elaboration, validation, and imposition, and mothers' references to emotion in conversation with children.

Mothers' elaboration

Mothers' elaboration indicated the extent to which mothers used rich, elaborative language with their children and provided them with substantial background information and detail about the incident in question. The coding was a 5-point scale, with 1 indicating low elaboration and 5 indicating high elaboration (Laible, 2004). Mothers who were rated 1 provided little additional information about the emotion in question, did not elaborate on their children's contributions, and often repeated themselves or their children from one conversational turn to the next. Conversely, mothers who were rated 5 provided many details about the emotion in question and used rich, descriptive language, often building on their children's contributions to the conversation.

Conversations were coded for elaboration twice. The first elaboration coding was based on the entire mother-child emotion conversation, and is referred to as global elaboration. The second elaboration coding was based on the discussion of individual emotions within the mother-child emotion conversation; transcripts were divided into segments for each emotion discussed, and the segments were then rated individually for elaboration. The second coding is referred to as individual emotion elaboration. All transcripts for global elaboration were coded by two raters who were reliable with one another (intraclass correlation = .91) and who were blind to risk status and relationship quality, and differences were resolved through conferencing. The second coding of elaboration, individual emotion elaboration, was conducted by raters who were blind to the first set of codes, and individual elaboration codes were assigned for the discussion of each individual emotion (sad, happy, and angry). Again, all transcripts were coded by two

raters (average intraclass correlation = .93) who were blind to risk status and relationship quality. Global elaboration and individual emotion elaboration scores were correlated with one another ($r = .45$, $p < .01$ for happy; $r = .57$, $p < .001$ for sad; $r = .50$, $p < .001$ for angry). Scores for elaboration used in the following analyses were calculated by averaging the global scores and the individual emotion elaboration scores ($M = 2.95$, $SD = .96$).

Mothers' validation

Mothers' validation was rated on a 0–2 point scale indexing the extent to which mothers validated their children in conversation and affirmed their perspectives (Fivush, in press). Ratings of 2 indicated that mothers frequently affirmed and actively built upon their children's contributions to the conversation, while ratings of 0 indicated that mothers did not affirm or build on their child's contributions. Two coders rated each transcript (kappa = .64), and differences were resolved through conferencing.

Mothers' imposition

Mothers' imposition was also rated on a 0–2 point scale, and indexed the extent to which mothers imposed their own viewpoint about the nature of the child's emotional response on the child during conversation. Ratings of 2 indicated that mothers assigned emotional states to their children (for example, "When you were left out, you felt sad"), asked their children few open-ended questions, and in general dictated the discussion of the emotion, whereas ratings of 0 indicated that mothers allowed their children considerable freedom to describe their feelings, asked many open-ended questions that allowed children to contribute information about how they felt and why, and encouraged children to independently describe the emotional event. Two coders rated each transcript (kappa = .62), and differences were resolved through conferencing.

Mothers' references to emotion

Mothers' references to emotion were measured by counting the frequency of emotion words mothers used during the conversation. Emotion words were defined as words depicting emotional states (e.g., happy, sad, angry, scared) as well as those depicting direct behavioral consequences of emotional states (e.g., crying, laughing). The first mention of each emotion word was not counted, as the prompt by the experimenter required mothers to an emotion word initially. The number of emotion words used by mothers ranged from 0 to 30 ($M = 8.26$, $SD = 6.78$). The total number of emotion references was then adjusted by the number of conversational turns to control for differences in conversation duration. Two raters counted emotion words and their counts were highly correlated ($r = .99$). Discrepancies were resolved through conferencing.

The four variables (maternal elaboration, validation, imposition, and references to emotion) were then factor-analyzed using principal components analyses with Oblimin rotation, as it was theoretically plausible that maternal discourse quality and content would be associated with one another. Results yielded two factors, one labeled "Quality" and consisting of mothers' elaboration (.78), validation (.78), and imposition (–.79) and explaining 50% of the variance (eigenvalue = 2.18), and the other labeled "Content" and consisting of the total number of positive and negative emotion words used by mothers in conversation with children (.95) and explaining an additional 25% of the variance

(eigenvalue = 1.00). The two factors were not significantly correlated with one another. These two factors were used in subsequent analyses.

Children's emotion language

There were two indices of children's emotion language: (1) children's use of positive and negative *emotion words* and (2) children's ability to independently generate *labeling of emotional states*. Using the verbatim transcripts of mother-child conversations, scores were calculated by counting the number of positive and negative emotion words used by the child and the number of times the child offered a label for an emotional state in the absence of a prompt by the mother. Two raters counted emotion words and their counts were highly correlated for children's use of emotion words ($r = .95$) and children's abilities to generate labels for emotional states ($r = .91$). Discrepancies were resolved through conferencing. Children's use of emotion words ranged from 0 to 15 ($M = 3.50$, $SD = 3.47$), and children's labeling of emotional states ranged from 0 to 9 ($M = 1.80$, $SD = 2.39$).

Children's emotion understanding

Children's emotion understanding was assessed using an affective perspective-taking task (Denham, 1986). In the first part of the task, children's abilities to recognize facial expressions associated with emotions were assessed. Children were presented with four felt puppet faces, one each with prototypically happy, sad, scared, and angry expressions drawn with paint, and for each face children were asked, "How does this one feel?" They were then asked to point to the face that corresponded with each of the target emotions (e.g., "Show me the happy face"). Each child received two points for accurately naming the faces at the experimenter's first request; children were given one point if they had the correct valence but the wrong emotion (for instance, if the child reported that the angry face was sad). Children were also given two points for each time they correctly pointed to the face that expressed the requested emotion, and were given one point if they matched a face with the right valence but the wrong emotion.

In the second part of the task, children were presented with 20 short vignettes, acted out by hand puppets whose gender matched the child's gender, describing an emotional event. The vignettes were accompanied by visual and facial cues by the experimenter. In eight of the 20 stories, the puppet was shown to feel the same way that most people would feel in the given situation (e.g., happy to get ice cream); these were called the stereotypical vignettes. In the other 12 vignettes, the puppet was made to feel opposite to how the child would feel, based on maternal reports of the child's typical feelings in these situations; these were called the non-stereotypical vignettes. Therefore, each of the non-stereotypical vignettes was tailored to the child's expected responses. Mothers completed a forced-choice questionnaire at the beginning of the visit that asked them to predict how their child would feel in each of the 12 non-stereotypical stories, and subsequently for each story, the puppet was portrayed to feel in a way that was contrary to what the child would feel. Thus, the non-stereotypical vignettes were designed to assess whether children could distinguish their own feelings from that of the story character, and rely instead on the experimenter's facial and vocal cues to identify the correct emotion for the puppet. At the end of each story, children were asked, "How did the puppet feel?" If children did not respond with a verbal emotion label, they were asked to point to the corresponding felt puppet face. Two points were given for an

accurate response, and one point was given if children matched the valence of the emotion but did not accurately identify it (for example, saying that the angry puppet was sad). Total scores were calculated by summing the child's scores on each part of the task. The highest possible score was 48, and scores in this sample ranged from 21 to 44 ($M = 32.95$, $SD = 6.50$).

Children's language competence

Children's expressive language abilities were assessed by determining their mean length utterance in conversation with mothers ($M = 6.04$, $SD = 4.12$). Children's receptive vocabulary was assessed with the Peabody Picture Vocabulary Test-III (PPVT; Dunn & Dunn, 1997), a widely used measure of receptive vocabulary. In the test, the child is shown four pictures and is asked to match a word that the interviewer says to the corresponding picture. The PPVT-III has good internal consistency reliability (Cronbach's alpha = .92 to .98) and correlates highly (.8 to .9) with intelligence tests. Children's raw scores ranged from 14 to 61 ($M = 35.68$, $SD = 11.18$). Both children's expressive and receptive language scores were transformed into z -scores and averaged to create an index of children's overall language competence, which was used in analyses described below.

Results

Before beginning multivariate analyses, bivariate analyses were conducted (Table 1). Results indicated that the content of maternal discourse was positively associated with children's production of positive and negative emotion words, and with children's labeling of emotional states. Content of maternal discourse was also negatively associated with emotional risks, but not demographic risks. The quality of maternal discourse was positively associated with children's labeling of emotional states (but not with child emotion words), with attachment security, and with maternal demographic risks (but not emotional risks). The quality and content of maternal discourse were not significantly associated with each other, or with children's emotion understanding or their language competence.

Several significant relations were also noted between children's emotion language, relationship quality, maternal risks, and emotion understanding. Children's production of emotion words was significantly associated with attachment security and emotion understanding, and was marginally associated with children's language competence. Children's labeling of emotional states was also associated with attachment security and emotion understanding, and also with demographic risks and emotional risks, but not with language competence. The two measures of children's emotion language were also strongly correlated with one another. Attachment security was negatively associated with emotional risks but not with demographic risks. Emotion understanding was significantly associated with maternal demographic risks, emotional risks, attachment security, and children's language competence.

Multivariate analyses

The purpose of the regression analyses that follow was to evaluate specific predictive relations between the security of attachment, family emotional and demographic risks, the content and quality of maternal discourse in parent-child conversation, child emotion language, and child emotion understanding. In the first set of regressions, risk factors and

Table 1. Correlations between predictor and outcome variables.

Emotional risks (1)	Demographic risks (2)	Attachment security (3)	Quality (4)	Content (5)	Language competence (6)	Child emotion words (7)	Labeling of emotional states (8)	Emotion understanding (9)
	.29+	-.34*	-.14	-.46**	-.07	-.18	-.33*	-.38*
2.		-.24	-.47**	.00	-.35*	-.20	-.31*	-.52***
3.			.38*	.18	.03	.34*	.48**	.44**
4.				.10	.18	.20	.36*	.19
5.					-.12	.53***	.46**	.12
6.						.27+	.02	.35*
7.							.63***	.39*
8.								.40*

Note: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

the security of attachment were used to predict maternal discourse (i.e., the content and quality of speech to children). In the second set of regressions, measures of maternal discourse, together with child language competence and attachment security, were used to predict children's emotion words and children's labeling of emotional states in conversation. Finally, these processes were brought together in a final set of regression analyses in which measures of maternal discourse, child emotion language, and language competence were used to predict children's emotion understanding.

Predictors of maternal discourse

The first set of multivariate models examined the roles of family emotional risk factors, demographic risks, and attachment security in predicting the quality and content of mothers' discourse about emotion with their children. The first model yielded a significant prediction of the quality of maternal discourse, explaining 30% of the variance ($R^2 = .30$, $F(3, 40) = 5.29$, $p < .01$). Attachment security (assessed when children were 2 years old) was significantly and positively related to the quality of maternal discourse when children were 3 years old ($\beta = .31$, $p < .05$). Maternal demographic risks were also significantly and negatively associated with discourse quality ($\beta = -.41$, $p < .01$); mothers who were older, had more income, and were better educated engaged in higher quality discourse with their children. The second model yielded a significant prediction of the content of maternal discourse ($R^2 = .23$, $F(3, 40) = 3.69$, $p < .05$). Maternal emotional risks (not demographic risks) were the only significant predictor ($\beta = -.49$, $p < .01$). Mothers who reported more emotional risk factors when children were 2 years old made fewer references to emotion in conversations with children one year later.

Children's emotion language

The second set of multivariate models identified the contributions of maternal discourse quality and content and children's attachment security and language competence to children's emotion language. Two measures of children's emotion language (children's production of emotion words and labeling of emotional states) were used as indicators of children's emotion language. Because previous research has established that maternal discourse content and quality are related to children's emotion language, they were entered in the first step of the model, along with children's overall language competence. In both models, children's attachment security was entered into the second step of the model, to assess whether attachment security accounted for variance in emotion language beyond maternal discourse and language competence.

Emotion words

In the first step of the model, the content of maternal discourse was a positive and significant predictor of children's emotion language, while maternal discourse quality showed no relation to children's emotion language (see Table 2). Children's language competence was also significantly and positively associated with children's emotion language, and this model accounted for 40% of the variance ($R^2 = .40$, $F(3, 41) = 8.42$, $p < .001$). Adding children's attachment security in the second step marginally improved the model. Children who were more securely attached at 2 years old used more emotion words in conversations with mothers at 3 years old ($R^2 = .45$, $F(4, 41) = 7.50$, $p < .001$; $R^2\text{change} = .05$, $p < .10$). Maternal discourse content and children's language

competence remained significant predictors after including attachment security, and maternal discourse quality continued to show no relation with children's emotion language.

Labeling of emotional states

In the first step of the model, both the content and the quality of maternal discourse were positively and significant related to children's labeling of emotional states ($R^2 = .31$, $F(3, 41) = 5.70$, $p < .001$; see Table 3). In contrast to children's production of emotion words, children's abilities to label emotional states were not reflective of their overall language competence. Adding attachment security in the second step of the model significantly improved the model. Children who were more securely attached at 2 years of age labeled emotional states more frequently in conversation with mothers at 3 years of age ($R^2 = .41$, $F(4, 41) = 6.32$, $p < .001$; $R^2\text{change} = .10$, $p < .05$). Maternal discourse content remained a significant predictor after including attachment security in the model, but maternal discourse quality was reduced to nonsignificance, and children's language competence continued to show no relation with children's labeling of emotional states.

Table 2. Summary of regression predicting children's production of emotion words.

	<i>B</i>	<i>SEB</i>	β
Step 1			
Quality of maternal discourse	0.12	0.20	0.08
Content of maternal discourse	0.85	0.19	0.56***
Child language competence	0.37	0.15	0.32*
Step 2			
Quality of maternal discourse	-0.01	0.21	-0.00
Content of maternal discourse	0.80	0.19	0.53***
Child language competence	0.38	0.15	0.32*
Security of attachment	1.48	0.82	0.24+

Note: $R^2 = 0.40$ for Step 1; $R^2 = 0.45$ for Step 2, $R^2\text{-change} = .05$.
+ $p \leq .10$; * $p < .05$; ** $p < .01$.

Table 3. Summary of regression predicting children's labeling of emotional states.

	<i>B</i>	<i>SEB</i>	β
Step 1			
Quality of maternal discourse	0.03	0.02	0.31*
Content of maternal discourse	0.05	0.02	0.43**
Child language competence	0.00	0.01	0.02
Step 2			
Quality of maternal discourse	0.02	0.02	0.18
Content of maternal discourse	0.04	0.01	0.39**
Child language competence	0.00	0.01	0.02
Security of attachment	0.51	0.06	0.34*

Note: $R^2 = 0.31$ for Step 1; $R^2 = 0.41$ for Step 2, $R^2\text{-change} = .10$.
* $p < .05$; ** $p < .01$.

Children's emotion understanding

In the final set of models, the importance of maternal discourse, children's emotion language and language competence in predicting emotion understanding were examined. The goals of these analyses were twofold. The first goal was to determine whether children's emotion language was related to emotion understanding when controlling for children's overall language competence. The second goal was to examine the associations between maternal discourse content and quality with children's emotion understanding, after accounting for the impact of children's emotion language and children's overall language competence.

Therefore, in two hierarchical regression models predicting emotion understanding, children's emotion language was entered into the first step (due to the strong association between them, child emotion words and child labeling of emotional states were used separately as predictors in two models), followed by children's language competence in the second step, and by maternal discourse quality and content in the third step. Results indicated that children's production of emotion words and their abilities to label their emotional states were both significantly associated with emotion understanding after accounting for children's language competence (see Tables 4 and 5). Conversely, neither maternal discourse content nor quality was significantly related to emotion understanding in either model. The final model that included children's emotion words explained 22% of the variance in children's total emotion understanding scores, and adding variables beyond children's emotion language did not significantly improve the model ($R^2 = .22$, $F(4, 41) = 2.65$, $p < .05$). The final model that included children's labeling of emotional states explained 28% of the variance in children's total emotion understanding scores, and adding children's language competence did significantly improve the model ($R^2 = .28$, $F(4, 41) = 3.56$, $p < .05$).

In sum, results indicated that the quality of maternal discourse about emotion reflects the quality of the attachment relationship between mothers and family demographic risks, while the content of maternal discourse about emotion is related to mothers' emotional history. Mothers who make more frequent references to emotion have children who do the same. However, in addition to promoting high-quality maternal discourse, attachment

Table 4. Summary of regression predicting children's emotion understanding from children's emotion words, language competence, and maternal discourse.

	<i>B</i>	<i>SEB</i>	β
Step 1			
Child emotion words	1.66	0.63	0.39**
Step 2			
Child emotion words	1.35	0.64	0.31*
Child language competence	1.36	0.74	0.27+
Step 3			
Child emotion words	1.35	0.81	0.31+
Child language competence	1.28	0.81	0.25
Quality of maternal discourse	0.55	0.98	0.08
Content of maternal discourse	-0.14	1.19	-0.02

Note: $R^2 = 0.15$ for Step 1; $R^2 = 0.22$ for Step 2, R^2 -change = .07 ($p < .10$); $R^2 = 0.22$ for Step 3, R^2 -change = .01 (NS).

+ $p \leq .10$; * $p < .05$; ** $p < .01$.

Table 5. Summary of regression predicting children's emotion understanding from children's labeling of emotional states, language competence, and maternal discourse.

	<i>B</i>	<i>SEB</i>	β
Step 1			
Labeling of emotional states	23.75	8.61	0.40**
Step 2			
Labeling of emotional states	23.30	8.08	0.39**
Child language competence	1.74	0.69	0.35*
Step 3			
Labeling of emotional states	24.30	9.98	0.41*
Child language competence	1.74	0.72	0.35*
Quality of maternal discourse	-0.11	1.00	-0.02
Content of maternal discourse	-0.15	1.05	-0.02

Note: $R^2 = 0.16$ for Step 1; $R^2 = 0.28$ for Step 2, R^2 -change = .16 ($p < .01$); $R^2 = 0.28$ for Step 3, R^2 -change = .01 (*NS*).

* $p < .05$; ** $p < .01$.

security measured one year prior to the conversation was also positively related to children's discussion of emotions, and this effect was independent of the quality or content of maternal discourse. Finally, children's emotion language was associated with their emotion understanding, even after accounting for children's overall language competence and the effects of maternal emotion discourse.

Discussion

There are four central conclusions that emerge from this study. First, the quality of the mother-child attachment relationship and family emotional and demographic risks affect the content and quality of maternal discourse one year later. Second, both the content and the quality of maternal discourse are associated with children's emotion language, although in somewhat different ways. Third, children who are securely attached are more likely to use emotion language in conversation with their mothers one year later, independently of maternal discourse and children's overall language competence. Fourth, children who talk more about emotion are also better at affective perspective-taking, and the associations between emotion language and emotion understanding suggest coherence in young children's emotion knowledge.

How mothers talk with their preschoolers is an important influence on their social and emotional knowledge (Thompson, 2006). This study significantly expands understanding of the predictors of maternal conversational characteristics because (1) it was conducted with a high-risk sample of families in economic difficulty, and (2) we examined predictors of both the *content* and the *quality* of maternal discourse. Overall, the results indicate that risk and relationship factors, assessed a year earlier, were important influences on the quality of mother-child conversations. First, mothers who were poorly educated, younger, and had lower income were less likely to use the quality of discourse that prior researchers have identified as important for enhancing children's social and emotional understanding (e.g., Laible, 2004). This quality of discourse consists of being richly elaborative of the child's conversational contributions, affirming the child's perspectives (and not imposing their own) and offering validation for what children are experiencing. The association of this style of discourse with lower demographic risks may be due to the reduced stresses

associated with better income, the effects of greater maternal educational attainment, or other reasons that await further study.

Second, mothers with higher emotional risk factors (defined in this study as substance abuse in the home, domestic violence, a history of sexual abuse, or living with someone who has an anger control problem) were less likely to use emotion words when talking about their children's emotional experiences. This is an important limitation of conversations between mothers and children who have experienced emotional stress, especially in light of the significant association between the content of maternal discourse and children's emotion language. Mothers who have experienced difficult emotional challenges may be hesitant to directly discuss emotions with their children due to the highly charged and sensitive nature of the emotional situations that they, perhaps together with their children, have experienced. However, the failure to employ a rich emotional vocabulary may diminish children's abilities to gain insight into their own emotional states, especially for children who are experiencing difficult and stressful emotional situations within their families. Moreover, in light of the fact that the content of maternal discourse was associated both with children's production of emotion words and their labeling of emotional states in themselves and others, the association of emotional risks with the mother's diminished use of emotion words in mother-child conversation suggests that children living in high-risk families may be vulnerable to significant deficits in emotion knowledge.

Third, mothers in secure relationships with their children were more likely to engage in high-quality discourse a year later. Consistent with prior findings (e.g., Laible, 2004; Ontai & Thompson, 2002; Thompson et al., 2003), these mothers were more elaborative of the child's conversational contributions and contributed more information about the child's emotional experiences. This is the first study to establish this association predictively rather than contemporaneously, contributing to the conclusion that a secure attachment leads to richer, more constructive maternal discourse quality as children increasingly enter into conversations about everyday experiences. This is consistent with the more open, reflective, and mutually responsive conversational style hypothesized to characterize securely-attached dyads (Bretherton, 1993). Importantly, there were no differences in the content of maternal discourse by attachment security. Mothers in insecurely attached dyads mentioned emotion just as frequently as securely attached dyads, but appeared to do so in manner that was less validating, elaborative, and affirming.

Another central conclusion of this study is that examining both the content and the quality of maternal discourse in parent-child emotion conversation reveals that both are important to child emotion language, although in somewhat different ways. The content of the mother's contributions (the number of positive and negative emotion words) was directly predictive of children's production of emotion words and their labeling of emotional states during the same conversation, consistent with findings from previous studies (e.g., Dunn et al., 1991; Ruffman et al., 2002). By contrast, the influence of the quality of maternal discourse (elaborative speech, validations, etc.) seems to have been mediated by the broader security of the parent-child relationship: when predicting children's emotional labeling, for example, the significance of maternal discourse quality became nonsignificant when attachment security was included in the equation. This suggests that especially in families under stress, broader relational influences may be important to the quality of maternal conversational discourse with young children, and this hypothesis also merits further exploration.

The findings of this study indicate that attachment security, measured one year prior to the mother-child conversation, was also independently associated with children's

production of emotion language, beyond the contributions of either children's overall language competence or maternal discourse characteristics. These results thus suggest that children in secure dyads talk more effectively about emotions than insecurely attached children. Although the influence of attachment security could be seen with both of the emotion language variables, it was significant in predicting children's labeling of emotional states in themselves and others, which involves the application of emotion understanding to specific individuals. (By contrast, differences in general language competence predicted children's production of emotion words, but not labeling of emotional states.)

Their advanced acquisition of emotion language may be another route by which attachment security is associated with children's social cognitive development. Because attachment security was measured one year prior to the measurement of children's emotion language, it appears that a secure attachment when children are learning to talk (assessed, in this study, around 2 years old) may facilitate their use of emotion language in conversations with mothers by 3 years old. Prior research has demonstrated that secure attachment relationships are associated with children's increased insight into the feelings and emotions of others (Laible & Thompson, 1998; Ontai & Thompson, 2002), which then may be expressed in their use of emotion language as well as in their skills in identifying emotion. When considered together with the significant role of attachment security in predicting the quality of maternal discourse with children at 3 years old, the findings of this study suggest how mental working models arise from secure or insecure relationships in infancy. As toddlers are rapidly acquiring words for (among many other things) the internal states in other people that fascinate them, a secure mother-child relationship provides a relational and, increasingly, a conversational context in which these concepts can be understood, explored, and clarified. In the elaborative and affirming quality of discourse that characterizes mothers in secure dyads, toddlers begin to acquire not only a rich emotional vocabulary but also facility in enlisting emotional concepts to understand the behavior of others and themselves (i.e., emotional labeling). As mental working models of the self, others, and relationships begin to consolidate, children in secure relationships become increasingly capable of enlisting this rich emotional knowledge in understanding themselves and other people.

This conclusion is supported by the strong associations between children's emotion language and their skills in emotion understanding. As this study demonstrates, children's emotion language showed strong associations with their performance in an affective perspective-taking task that required skills in emotional identification and comprehension. The relations between these variables, which remained after controlling for children's receptive and productive language abilities, suggests that emotion language and emotion understanding both arise from a common source of emotion knowledge in children. These links between emotion language and emotion understanding can be taken as an indication that children's emotion knowledge is manifested in multiple ways, and is becoming increasingly coherent and integrated during the preschool years.

There are, of course, limitations to the present study. Mothers' and children's emotion language was assessed from the same conversation, precluding the ability to identify the direction of effects from concurrent assessments. While assessing mothers and children simultaneously provides an opportunity to examine their joint contributions to the conversation, it is not possible to determine if similar relations between mother and child conversational content are apparent when mothers and children are assessed independently of one another. Moreover, because emotion understanding and emotion language were also assessed concurrently, it is not possible to determine whether prior emotion understanding facilitates children's acquisition of emotion language, or vice versa.

Identifying the developmental progression of children's emotion knowledge, expressed through emotion understanding as well as emotion language, should be a focus of future research as it may yield insight into the developmental progression of cognition and emotion. Despite the limitations, this study provides additional insight into the dynamics of conversation about emotion between mothers and children, and the important role of relational security and family risks in maternal and child contributions to shared understanding.

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