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Parents' beliefs about preschooler's emotions: the role of socialization and implications for child outcomes

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Parents' Beliefs about Preschooler's Emotions: the Role of Socialization and Implications
for Child Outcomes

by

Erin Karahuta

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Parents' beliefs about preschooler's emotions: the role of socialization and implications for child outcomes
Erin Karahuta

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Table of Contents

List of Tables

Abstract

Previous research has demonstrated that mothers vary in the degree to which they believe children's emotions are valuable. These beliefs relate to self-reported parenting behaviors. However, research has not examined how mothers' beliefs relate to children's socioemotional outcomes. The current study predicted the extent to which mothers value children's emotions and see value in coaching their children through emotional experiences would be positively related to children's emotion understanding and empathy, and this relationship would be mediated by the quality of mother-child emotion discourse. Mother-preschooler dyads took part in this lab-based study. Overall, our predictions were not confirmed, however, there was some support for a positive relationship between mothers' belief in emotion coaching and children's empathy. In contrast with prior work, mothers' beliefs did not predict discourse quality. Future work should assess if other factors, such as child characteristics, are more influential than mothers' beliefs about emotions in predicting parenting strategies.

Introduction

It has been long known that parenting plays an important role in young children's socioemotional development. Researchers have investigated ways in which parents socialize children to understand emotions, but little is known about mechanisms that lead parents to engage in specific emotion socializing behaviors. The currently study will investigate mothers' beliefs about emotions as such a mechanism. Emotions play a large role in influencing parenting behaviors, which leads to important emotion related outcomes in children (Dix, 1991). The current study will therefore examine mothers' beliefs about their preschooler's emotions and how these beliefs predict parenting behavior, as well as investigate a possible link between parents' beliefs about emotions and preschoolers' socioemotional outcomes, specifically, preschoolers' development of emotional understanding and empathic behavior. Because little work has been done linking parenting beliefs about children's emotions to children's socioemotional outcomes, we hope to shed light onto the pathway that guides parents to interact with their children in ways that lead to children's optimal development.

Parents' Beliefs about Emotions

Within the family context, parents hold beliefs about emotions and emotional expression, and in this way, parents' ideas about emotional expression guide how parents approach emotional expression when interacting with their children (Dix, 1991). Research on parents' beliefs about emotions focuses on the extent to which parents accept and see value in their child's expression of emotions, or the extent to which parents view emotions as harmful, disruptive, and damaging. This line of research stems from the study of parental meta-emotion philosophy, the idea that parents' feelings and

thoughts about parents' own emotions as well as their children's emotions influence how

parents view emotions and how they act regarding emotion (Gottman, Katz, & Hooven,

1996). These philosophies are thought to fall into two categories: seeing value in

emotions, or conversely, viewing emotions as dangerous (Gottman, Katz, & Hooven,

1996; Katz, Wilson, & Gottman, 1999; Dunsmore & Halberstadt, 1997).

Parents who value emotions are aware of their own emotions and the emotions of

their children (Katz, Wilson, & Gottman, 1999). They view their children's expression

of negative emotion as an opportunity for intimacy and teaching, and they may view

emotional expression as an essential part of self-discovery (Dunsmore & Halberstadt,

1997). On the other hand, some parents view emotions as dangerous for their child to

experience, or they may perceive emotional expression as impolite and aggressive (Katz,

Wilson, & Gottman, 1999; Dunsmore & Halberstadt, 1997). These parents view sadness

and anger as potentially harmful to their child (Dunsmore & Halberstadt, 1997;

Dunsmore, Her, Halberstadt, Perez-Rivera, 2009). Parents who view emotions as

dangerous may believe it is best for their children to "ride out" emotions rather than

engage with these emotions (Gottman, Katz, & Hooven, 1996). Typically, the goal of

parents who view emotions as dangerous is for their child to get over an emotion without

dwelling on it (Katz, Wilson, & Gottman, 1999). Other emotion dismissing parents may

view their children's emotion as a hostile demand that the parent "fix everything" (Katz,

Wilson, & Gottman, 1999).

Parenting Beliefs and Parenting Behaviors

These differing beliefs about emotions have been found to predict various

parenting behaviors, with parents from preschoolers to adolescents (e.g., Dunsmore &

Karn, 2001; Perez Rivea & Dunsmore, 2011; Halberstadt et al., 2008). It has been theorized as well as supported empirically that parents who value emotion are accepting and encouraging of children's emotional expression (Gottman, Katz, & Hooven, 1996; Wong, McElwain, & Halberstadt, 2009; Dunsmore, Her, Halberstadt, Perez-Rivera, 2009). These parents typically validate their children's emotions and help their children label their emotions (Gottman, Katz, & Hooven, 1996). They often help their children examine the cause of negative emotions and discuss constructive ways of coping (Gottman, Katz, & Hooven, 1996). These behaviors reflect parental warmth but also surpass this dimension in that the parent-child dyad is actively engaging in the discussion of emotions (Gottman, Katz, & Hooven, 1996).

Parents who view children's emotions as harmful are more likely than parents who do not view children's emotions as harmful to ignore, suppress, or react negatively to children's emotional expression (Stelter & Halberstadt, 2011; Halberstadt, Thompson, Parker, Dunsmore, 2008). These parents also tend to mask their own emotions, therefore "shielding" their child from emotional expression, and preventing their child from having a model of healthy emotional expression (Dunsmore, Her, Halberstadt, Perez-Rivera, 2009; Halberstadt, Thompson, Parker, Dunsmore, 2008). These parents may feel that they are helping their children by denying emotional expression, and they may wish to convey to their child that emotions are fleeting and therefore not important because parents view this as the best strategy when dealing with emotions (Gottman, Katz, & Hooven, 1996). Parents who view emotions as dangerous do not provide insight or problem solving regarding their children's negative emotions, nor do they see emotion as a way to build intimacy or teach (Gottman, Katz, & Hooven, 1996). In some extreme cases, a child's

4

expression of strong emotion might be reprimanded, even when the emotion is unaccompanied by misbehavior. This type of parental behavior may be perceived by the child as rejecting (Katz, Wilson, & Gottmann, 1999; Stelter & Halberstadt, 2011).

Some previous research has demonstrated the relationship between parents' beliefs about emotions and their tendency to discuss emotions with their children in the lab setting. For example, during play based tasks meant to elicit conversation about emotions, mothers of preschoolers and kindergartners who valued emotion tended to use more emotion labels during parent child discourse than parents who are viewed emotions as dangerous (Perez-Rivera & Dunsmore, 2011). Parents also disclosed engaging in similar behaviors in self-report measures. For example, mothers and fathers who were accepting of negative emotions reported having fewer non-supportive interactions with their 6 and 7 year old children in reaction to their children's negative emotions (Wong, McElwain, & Hablterstadt, 2009). However, apart from research described here, little research has examined this link between parents' beliefs about emotions and their discourse about emotion and there is still much to be learned.

Child Outcomes

The behaviors related to parents' beliefs about emotions are important because they may be predictive of preschoolers' socio-emotional outcomes. However, research on the topic of parents' beliefs about emotions has yet to examine parents' beliefs about emotion in relationship to children's behavioral outcomes apart from those reported by parents in self-report measures. The current study aims to address this issue. Specifically, this study will focus on how parents' beliefs about emotions may contribute to preschoolers' emotion understanding abilities and their empathic behavior.

5

Emotional understanding. Emotions are a salient part of social interactions and thus, children start learning about emotions very early in life (Dunn & Munn, 1985). Children gain a large portion of their knowledge of emotions from their parents (e.g., Eisenberg & Fabes, 1994). The parenting behaviors predicted by parents' beliefs about emotions may impact how children learn about emotions and how they interpret the emotional expressions of others, therefore influencing preschoolers' socioemotional abilities (Dunsmore & Halberstadt, 1997; Dunsmore & Karn, 2001; Dunsmore, Her, Halberstadt, Perez-Rivera, 2009). One way in which parents socialize their children's socioemotional skills is through discourse about emotions. By the time children are 18 to 20 months old, mothers and children discuss causes of emotions, including the cause of the toddler's own emotions (Dunn & Munn, 1985). By the age of three, children demonstrate the ability to talk about the emotions of others (Denham, 1986).

Parent-child emotion discourse is important to consider in that the frequency with which mothers talk about emotion has been found to predict children's emotional understanding, particularly during the preschool years. For example, discussions of emotions within the family have been shown to be linked to 3 year olds' subsequent abilities to understand the emotions of others (Dunn, Brown, & Beardsall, 1991; Denham & Auerbach, 1995). In research examining parent-child reminiscing about children's past behavior, maternal elaboration (including asking the child questions) about negative affect was positively related to preschooler's emotional understanding (Laible, 2011). Other studies using reminiscing discourse tasks yield similar findings. Mothers' use of clear, elaborative discourse and emotion-laden discourse during conversations about toddler's past positive and negative behaviors was related to preschoolers' emotional

6

understanding abilities at three years old (Laible, 2004; Laible & Song, 2006).

Conversations about emotion laden topics are thought to socialize emotion understanding in that they lead the child to reflect upon the topics discussed. Elaboration during these conversations provides children with background context, boosting children's understanding of the emotion laden discourse, while asking the child questions also promotes the child's engagement with the topic (Laible, 2004; Reese & Fivush, 1993). These conversations likely facilitate children's socioemotional development because they lead children to think about how others feel across many contexts and how children can influence the emotions of others. There

Empathic behavior. Parenting beliefs about emotions are not only important to consider in light of children's emotional understanding, but also in how these beliefs may influence children's prosocial development, including children's expressions of empathy. Prosocial behaviors are apparent early in childhood. By 18 to 20 months, toddlers' repertoire of prosocial behaviors extends to helping, sharing, giving, and comforting others, with helping seen most often (Grusec, 1991; Laible & Karahuta, 2014). Prosocial behavior has been found to increase during the second year of life, with prosocial interventions and concern for others increasing from 13 months to 25 months of age (Zahn-Waxler, Radke-Yarrow, Wagner & Chapman, 1992; Hay & Cook, 2007). These behaviors have been seen to be widely similar across children, suggesting that most children follow the same developmental pattern (Zahn-Waxler, Radke-Yarrow, Wagner & Chapman, 1992), but parenting factors have been shown to influence children's readiness to engage with others prosocially.

Just as we predict that parents' beliefs about emotions may influence

preschoolers' emotional understanding via mother-child emotional discourse, we predict preschools' empathic development will be similarly socialized. Talk about emotions is thought to cultivate young children's attention to the feelings of others, teaching young children they should care about others' emotions, as well as teaching children how to act in response to emotional displays, therefore facilitating prosocial behavior (Brownell et al., 2013). These conversations with mothers allow children to have high level discourse about emotions and emotional skills across contexts, while also validating children's own feelings and encouraging them to be sensitive to others (Garner, Dunsmore, Southam-Gerrow, 2008). Parent-child emotion discourse may lead children to understand which emotions are important to pay attention to and how to label and interpret these emotions, as well as teach children about the necessity of helping those in need (Garner, 2003).

These ideas are confirmed by children's behavioral outcomes in relationship to discourse. Mothers' explanations of emotions have been found to be negatively related to aggression in preschoolers and positively related to their prosocial behavior (Garner, Dunsmore, Southam-Gerrow, 2008). Also, mothers who asked preschoolers emotion-related questions in order to elicit conversations about emotions had children who were more likely to extend help to peers (Denham & Auerbach, 1995). Children of parent-child dyads who more often discussed positive emotions while talking about the child's past behavior were more likely to engage in prosocial behavior (Laible, 2004). Parents who directed their children to label emotions and attempted to engage children in discussion about emotions tended to have children who showed greater empathic concern for others (Garner, 2003; Brownell et al., 2013).

The Current Study

Although previous research has established links between parents' beliefs about emotions and parent-child emotion discourse, as well as between parent-child emotion discourse and preschoolers' emotional understanding and empathy, the relations between preschoolers' behavioral outcomes and parents' beliefs about emotions has received little attention. Also, previous research has neglected to examine the overall quality of emotion discourse, including the extent to which the child is engaged. The primary objective of the current study was to pursue a possible link between parents' beliefs about emotions and preschoolers' socioemotional outcomes, specifically emotional understanding and empathic behavior. Our second objective was to examine the quality of parent-child discourse about emotions as a potential mediator between parents' beliefs about emotions and preschooler's socioemotional outcomes. Preschool aged children were selected to participate in this study because previous research has demonstrated that at this age, mother-child discourse about emotions is predictive of preschoolers' developing socioemotional skills (e.g., Laible, 2004; Dunn, Brown, & Breardsall, 1991; Denham & Auerbach, 1995).

Specifically, we predicted that mothers who self-report that they value children's positive and negative emotional expression, and well as those who report they believe it is important to engage with emotions with their children, would more frequently discuss emotion with their children, and would do so with greater elaboration and collaboration than parents who view emotions as dangerous. We also predicted that mothers' beliefs about emotions would predict both children's emotional understanding ability as measured during a lab task, as well as children's moral development, as demonstrated by

children's expressions of empathy toward an experimenter. We predicted the link between mothers' beliefs about emotions and the outcomes of emotional understanding and empathy would be mediated by mother-child emotion discourse.

Method

Participants

Thirty-five preschoolers (17 male, 18 female) and their mothers took part in the study. One child (male) was excluded from the study because he was extremely upset while participating and his mother disclosed that he was developmentally delayed. The children who participated were within the age range of 42 to 53 months (mean age = 46.55 months). Participants were recruited thorough a database of families who expressed interest in participating in studies, from daycares, and via online postings. Each child received a puzzle to thank them for their participation.

Study Design

Mothers and children completed the study in a lab playroom. All lab tasks were video recorded. Mothers and children first took part in a free play and clean-up task to allow the child to feel comfortable in the lab playroom. The dyads then took part in a reminiscing task during which the mother and child discussed the child's past behavior. Mothers then left the room to complete self-report measures. Children also completed a number of measures while their mothers were not present. First, children completed an emotion understanding task. Following this, the child's empathic behavior was measured. This study was part of a larger study including measures that are not relevant to the current study and are therefore not discussed.

Parent Measures

  Parental beliefs about children's emotions. To measure mothers' beliefs about emotions parents completed the Parents' Beliefs about Children's Emotions (PBACE) questionnaire (Halberstadt et al., 2008). This is a 36 item questionnaire including subscales which measured mothers' beliefs about the extent to which they value positive emotions (e.g., "When children are too happy they can get out of control") ($\alpha = 0.75$), the extent to which mothers value negative emotions (e.g., "It is sometimes good for children to let their anger out") ($\alpha = 0.55$), the degree to which mothers think they should play a role in emotion socialization (e.g., "It's a parents job to teach children about how to handle negative feelings") ($\alpha = 0.50$), and the extent to which mothers believe children should cope with emotions independently (e.g., "It's usually best to let children work though being sad on their own") ($\alpha = 0.81$). Mothers were asked to rate the degree to which they agreed with each item on a scale from 1 to 6 (1 = strongly disagree, 6 = strongly agree). This measure has been previously well validated (Halberstadt et al, 2008).

Joint Lab Tasks

  Reminiscing task. Following a procedure similar to that used by Kuebli and Fivush (1992) and Laible and Thompson (2000), mothers were asked to discuss with their children two incidents that occurred in the last week. Mothers were asked to talk to their children about a time the child experienced a negative emotion and a time when the child experienced a positive emotion. The researcher indicated that both the mother and the child should have been present during the incidents the mother chose to talk about. Mothers were also asked to select one-time events rather than events that routinely occur.

11

The researcher instructed mothers to sit comfortably with the child and to attempt to elicit his or her memory about the events as naturally as possible. The researcher was not present during the conversations. The mother determined the length of the interview, and she notified the researcher when the conversation had ended.

Discourse coding. Verbatim transcripts were made from the discourse tasks. Transcripts were coded for mothers' and children's references to emotion, the valance of the discussed emotion, and elaboration. Mothers' references to emotions included all references to emotional states (e.g., angry, upset, happy, sad) as well as the use of words that indicate emotional states (e.g., smiling, laughing, yelling, crying). Transcripts were coded for references to *causes of emotions* when the mother discussed the source of an emotion, as well as *emotion validation* when the mother confirmed her child's emotion related statements (e.g., "Yes, you were angry"). Transcripts were also coded for mothers' references to *consequences* of emotions, but references to consequences were made so infrequently (on average .32 references per conversation) that this code was dropped. Inter-rater reliability was established for all discourse codes by conducting interclass correlations: references to positive emotions (r = 0.93), references to negative emotions (r = 0.98), references to the cause of positive emotions (r = 0.84), references to the cause of negative emotions (r = 0.96), validation of positive emotions (r = 0.85), and validation of negative emotions (r = 1.00).

The degree to which the dyad elaborated about the emotional event was also coded. These ratings were assigned on the basis of criteria used in previous research (Laible, 2004; Laible, Panfile, & Augustine, 2013). Each transcript was rated on a five-point scale (1 = *low,* 5 = *high*), reflecting the amount of detail and background

description the dyad gave during their reminiscing conversation, as well as the quality of questions the mothers asked the child (e.g., asking a yes or no question or a question requiring the child to elaborate). The anchoring points of the scale reflected the following: 1 = little or no background information was discussed, the mother did not ask open-ended questions, the mother repeated the same material regardless of the child's response; 3 = mothers offered a moderate amount of background information, mothers used a mix of open ended and yes-no questions, mothers were occasionally repetitive; 5 = mothers discussed high levels of background information, mothers used mostly open-ended questions, repetition was only used when the child ignored a question or did not respond to the mother. Inter-rater reliability was established by conducting interclass correlations for elaboration during the conversation regarding positive emotions ($r = 0.95$) and for elaboration during the conversation regarding negative emotions ($r = 0.94$).

Finally, the extent to which the dyad collaborated during the conversation was coded. Collaboration was rated on a five-point-scale (1 = *low,* 5 = *high*), reflecting the extent to which both members of the dyad contributed equally to the conversation. These ratings were assigned based upon previous research (Laible, Panfile, & Augustine, 2013). The anchoring points of the scale reflected the following: 1 = one of the members of the dyad contributed little or no information to the conversation, while the other member dominated the conversation; 3 = the conversation was moderately co-constructed, one member of the dyad still dominated, but sometimes expanded upon the ideas of the other member; 5 = the conversation was completely co-constructed, with both members of the dyad contributing new information to the conversation and building upon information offered by the other member. Inter-rater reliability was established by conducting

13

interclass correlations for collaboration during the conversation regarding positive emotions (r = 0.95) and for collaboration during the conversation regarding negative emotions (r = 0.96).

Child Outcome Measures

Emotional understanding. To assess their emotional understanding, children took part in an affective perspective-taking task developed by Denham (1986). This measure has been found to have predictive and concurrent validity in assessing this construct (e.g., Laible & Thompson, 1998). This task involved two parts. First, the child's ability to recognize facial expressions was assessed. Children were given four felt faces with the expressions of happy, sad, angry, and scared depicted on them. The researcher asked the child to pick the face that corresponds with the target emotion (e.g., "Show me the sad face"). After this, the child was asked to label each of the faces with the correct emotion (e.g., "How does this face feel?"). This task was scored by giving each child two points for the correct identification of each emotion and one point for identifying a face incorrectly but with the correct positive-negative valance.

In the second part of the task children watched the researcher use hand puppets to enact 20 vignettes conveying emotional themes. During this task, the researcher accompanied the puppets' actions with her own facial and vocal expressions (e.g., a big smile and a happy voice when the vignette is conveying happiness). Eight of these vignettes were labeled as *stereotypical*; the puppets were portrayed as feeling as most people would in the situation (e.g., feeling happy about a trip to the zoo). The remaining twelve vignettes are labeled *nonstereotypical*; the puppet acted in a way showing that it felt the opposite way the child would have felt in the same situation (e.g., the puppet was

14

happy to see large dog while the child would have felt scared of a large dog). To determine how children would have felt in these situations, prior to this task, mothers filled out a forced-choice survey asking them to predict how their child would feel in these scenarios. The nonstereotypical vignettes were used in order to assess if the children could separate their own feelings from those of the characters in the story. The child watched the researcher enact each vignette and the child was then asked, "How did the puppet feel?" They were then asked to point to the felt face that depicted the correct emotion. The children received a score of two points if they correctly identified the emotion the puppet was portrayed as feeling and they received one point if they correctly identified the positive or negative valance of the emotion. The child's scores for both the first and second parts of the task were summed following Denham (1986). This summed score served as the child's overall emotional understanding score.

Empathic behavior. Following the emotional understanding task, the child's empathic behavior was measured in response to a researcher who feigned and injury (following Robinson, Zahn-Waxler, & Emde, 1994; Young et al., 1999; Zahn-Waxler et al., 2001). While the child and the researcher were coloring at a table, the researcher 'accidentally' closed her finger in a clipboard. The researcher displayed distress for thirty seconds (e.g., by rubbing and shaking her finger and showing pain on her face), and then feigned subsiding distress for thirty seconds (e.g., showing less intense facial expressions and rubbing her finger less urgently). After the full minute of feigned distress, the researcher reassured the child that her finger felt better and that she was not hurt.

Coding empathic behavior. Behavioral coding of empathic responses to the

15

feigned injury followed the coding system outlined in Young et al. (1999). Children's

responses were observed and rated on five-point scales for concerned expressions (facial,

gestural, and vocal signs of concern), arousal level (body tension and play disruption),

and prosocial behavior (attempts to alleviate the distress). Inter-rater reliability was

established for each of the scales by conducting interclass correlations: concerned

expression ($r = 1.00$), prosocial behavior ($r = 0.75$), and arousal ($r = 0.94$). The task was

coded as follows:

> Concerned expression – the affective expression toward the researcher. This can
>
> include facial, gestural, and vocal signs of sadness.
>
> > 1 – child shows no concern and ignores the researcher; OR child attends to
> >
> > the researcher and shows brief, slight concern (child looks at or
> >
> > acknowledges the researcher but without concern and for less than 8
> >
> > seconds)
> >
> > 2 – child shows moderate concern with brow furrowed and lips
> >
> > downturned for 5 to 14 seconds; OR child shows mild concern (staring at
> >
> > the experimenter with a neutral face) for 8 to 24 seconds
> >
> > 3 – child shows strong facial concern with brow furrowed and lips
> >
> > downturned for 5 to 14 seconds: OR child shows moderate facial concern
> >
> > with brow furrowed for 15 to 24 seconds; OR child shows mild facial
> >
> > concern for at least 25 seconds
> >
> > 4 – child shows strong facial concern for 15 to 24 seconds; OR child
> >
> > shows moderate facial concern for at least 25 seconds
> >
> > 5 – child shows strong facial concern for at least 25 seconds

Arousal Level – child demonstrates bodily tension reflected in either attention to the injured researcher, disruption of play, or postural freezing.

1 – child ignores the researcher; OR child attends to the researcher briefly showing little bodily tension and play is uninterrupted

2 – child shows moderate arousal, child's play is interrupted for 5 to 14 seconds; OR child shows mild arousal for 8 to 24 seconds

3 – child is moderately aroused, reflected by prolonged postural freezing or bodily tension for 5 to 14 seconds; OR child shows moderate arousal, play is interrupted for 15 to 24 seconds; OR child shows mild arousal for at least 25 seconds

4 – child is highly aroused, reflected by prolonged postural freezing or bodily tension for 15 to 24 seconds; OR child shows moderate arousal and play is interrupted for at least 25 seconds

5 – child is highly aroused and shows prolonged postural freezing or bodily tension for at least 25 seconds

Helping/prosocial behavior – the degree to which the child seeks to comfort the researcher and helps alleviate her pain

1 – child shows no attempt to help the researcher

2 – child briefly assists the researcher by asking clarification questions: (e.g., "What happened?" "Are you hurt?")

3 – child helps the researcher moderately once for a short period of time (e.g., offering help, "You'll be okay," asking if the researcher needs medicine) OR asking the researcher multiple questions

17

4 – showing dedicated help to the researcher (e.g., going to get help from

their mother or getting a Band-Aid) OR helping the researcher moderately

for a longer period of time (e.g., offering help repeatedly, or repeating

"You'll be okay").

5 – showing dedication to helping the researcher repeatedly, for a long

duration

Results

Data Reduction

To reduce the number of variables, we conducted factor analyses on the variables

reflecting mothers' beliefs about emotions and the discourse variables. First, each scale of

the Parenting Beliefs about Children's Emotions measure was submitted to a principle

components analysis to determine if any of the scales represented a single factor. Three

factors emerged from 4 scales. Scales measuring the extent to which mothers believe they

should have knowledge of their children's emotions and the extent to which mothers

believe children should handle emotions autonomously loaded onto a single factor, with

the belief that mothers should have knowledge of their children's emotions loading

positively (0.84) and the belief that children should handle emotions autonomously

loading negatively (-0.84) (eigenvalue = 1.40, 69.86% of the variance). This variable

will be hereafter referred to as *belief in emotion coaching*. The extent to which mothers

value positive emotions also loaded onto it's own factor, and the extent to which mothers

value negative emotions loaded onto it's own factor. Therefore, the original measures of

the belief that positive emotions are valuable and the belief that negative emotions are

valuable were used in the analysis.

Elaboration and collaboration during the two conversations about emotions were also submitted to a principle components analysis. Two factors emerged. Elaboration during the positive conversations and elaboration during negative conversations loaded onto a single factor, each loading at 0.79 or higher (eigenvalue = 1.50, 37.60% of the variance). Collaboration during the positive conversations and collaboration during negative conversations loaded onto its own factor, with each loading at 0.79 or higher (eigenvalue = 1.48, 39.94% of the variance). These variables will hereafter be referred to as *elaboration* and *collaboration*.

Finally, mothers' discourse variables, including mothers' references to emotion words, the causes of emotions, and emotion validations during the conversations about the child's positive and negative emotions were also subjected to a principle components analysis. Two factors emerged. Mothers' references to positive emotions and the cause of positive emotions, and mothers' references to negative emotions and the cause of negative emotions all loaded onto a single factor, with each variable loading at 0.64 or higher (eigenvalue = 2.52, 62.90% of the variance). Hereafter this variable will be referred to as *mothers' talk about emotions*. Mothers' use of validation during the positive conversations and mothers' use of validation during negative conversations loaded onto a separate factor, with each variable loading at 0.77 or higher (eigenvalue = 1.19, 59.46% of the variance). This variable will be hereafter referred to as *validation*.

Descriptive Data and Bivariate Relations

Descriptive statistics can be found in Table 1. Bivariate relations for each of the variables, as well as the demographic variables of child sex, child age, and maternal education were explored (Table 2). Child age was not correlated with any of the

variables, however child sex was positively correlated with the quality of mothers' elaboration with mothers engaging in more elaboration with girls ($r = 0.38$, $p < 0.05$), and mothers' level of education was negatively related to mothers' emotion talk ($r = -0.39$, $p < 0.05$). There was a positive correlation between the mothers' belief in emotion coaching and children's concerned expression during the empathy task ($r = 0.36$, $p < 0.05$).

Regression Models

Hierarchal regression models were constructed to assess the relationship between mothers' beliefs about emotions and mother-child discourse, as well as the relationship between mothers' beliefs about emotions and child outcomes. Regression models were also constructed to assess the relationship between mother-child discourse variables and child outcome variables. For each of these regression models, we controlled for child gender and maternal education by entering these variables in the first step of the model. Maternal education and child gender were used as controls because the bivariate correlations indicated they were related to variables of interest. Also, previous research has found gender differences in children's socioemotional development, as well as differences related to the family's socioeconomic status, reflected by mothers' education (e.g., Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992; Kochanska & Aksan, 1995). Previous work would also suggest that children's age should be related to their socioemotional skills (see Eisenberg, Fabes, & Spinrad, 2006), but because bivariate correlations did not reveal a relationship between child age and our variables we did not control for child age.

Mothers' Beliefs as Predictors of Discourse Quality. Regression models were

20

constructed to predict the quality of mother-child discourse (including elaboration, collaboration, mothers' talk about emotions, and mothers' use of emotion validation) from mothers' emotion beliefs. For each model, maternal education and child's sex were entered in the first step. The second step included the following variables: the extent to which mothers believe positive emotions are valuable, the extent to which mothers believe negative emotions as valuable, and the extent to which mothers believe in emotion coaching.

 In the model predicting elaboration, children's gender made a significant independent contribution to mothers' elaboration ($\beta = 0.42$, $p < 0.05$). Mothers were more elaborative during conversations with daughters than conversations with sons. The overall model did not significantly predict mothers' elaboration.

In the model predicting mothers' references to emotions, the addition of mothers' education made a significant independent contribution ($\beta = -0.416$, $p < 0.05$). Mothers' education was negatively related to references to emotions during conversations about positive and negative emotions. Overall, the model did not significantly predict mothers' references to emotions.

The model did not significantly predict mother-child collaboration during discourse, nor did it significantly predict mothers' validation of emotions. Table 4 provides a summary of the models predicting discourse quality from mothers' beliefs about emotions.

Mothers' Beliefs as Predictors of Child Outcomes. Regression models were also constructed to predict children's outcomes in the emotion understanding task and the empathy task from the measures of mothers' beliefs about emotions. For each model,

21

maternal education and child's sex was entered in the first step. The second step included the following variables: the extent to which mothers viewed positive emotions as valuable, the extent to which mothers viewed negative emotions as valuable, and the extent to which mothers believed in emotion coaching. The results from these models are summarized in Table 5.

When predicting children's emotion understanding, child sex and mothers' education were not significant predictors, however, in the second step, the addition of the measure of the extent to which mothers believe negative emotions are valuable marginally independently increased the predictive value of the model ($\beta = -0.35$, $p < 0.10$). This indicates that mothers who valued negative emotions had children who performed more poorly on the emotion understanding task than children whose mothers did not value negative emotions. The overall model predicting children's emotion understanding was not significant.

In the model predicting children's arousal during the empathy task, the extent to which mothers believed negative emotions are valuable marginally independently increased the predictive value of the model ($\beta = -0.35$, $p < 0.10$). This suggests that children of mothers who valued negative emotions showed less arousal toward an injured experimenter than children whose mothers did not value negative emotions. The overall model predicting children's arousal during the empathy task was not significant.

When predicting children's concerned expression during the empathy task, child sex and mothers' education again were not significant predictors, however, in the second step the addition of the measure of the extent to which mothers believe in emotion coaching marginally independently predicted children's concerned expression ($\beta = 0.41$,

$p = 0.054$). This indicates that mothers' belief that they should assist their children in engaging with emotions was positively related to children's concerned expression. The overall model did not significantly predict children's concerned expression.

The model assessing the relationship between mothers' beliefs about emotions and children's prosocial behavior during the empathy task was not significantly predictive.

Discourse as a Predictor of Child Outcomes. Two models reflecting the quality of mother-child discourse were used to predict children's outcomes. In the first model, children's sex and mothers' education were entered in the first step. Mothers' elaboration and collaboration were entered in the second step. This model did not significantly predict emotion understanding, nor did it predict children's prosocial behavior during the empathy task. However, in the model predicting children's concerned expression during the empathy task, mother-child collaboration during discourse made a significant contribution in predicting children's concerned expression ($\beta = 0.39$, $p < 0.05$). The overall model was not significantly predictive. These models are summarized in Table 6.

In the model predicting children's arousal during the empathy task, mother-child collaboration during discourse made a significant contribution in predicting children's arousal during the empathy task ($\beta = 0.44$, $p < 0.05$). This demonstrates that children of dyads who engaged in higher quality discourse, specifically those who were more collaborative during discussions of past emotion, were more likely to exhibit concerned expression and arousal in response to an injured experimenter. Overall, this model was not predictive of children's arousal.

In the second model reflecting the quality of mother-child discourse, children's

23

sex and mothers' education were again entered in the first step of the model, while mothers' talk about emotions and mothers' validation of emotions were entered in the second step. This model did not significantly predict children's emotion understanding, children's concerned expression during the empathy task, or children's arousal during the empathy task. However, in the model predicting children's prosocial behavior during the empathy task, mothers' talk about emotions made a significant independent contribution ($\beta = 0.39$, $p < 0.05$), suggesting that children of mothers who more often reference emotions and the causes of emotions are more likely to respond with helping behavior toward an injured experimenter. The overall models were not significantly predictive of children's outcomes; they are summarized in Table 7.

Assessing Mediation. We planned to test the prediction that mother-child discourse about emotions will mediate the link between mothers' beliefs about emotions and children's emotional understanding, as well as children's empathic behavior, by running mediational regression analyses, but we did not find bivariate relationships between mothers' beliefs about emotions and parent child discourse, nor did we find sufficient relationships between mothers' beliefs about emotions and child outcomes that would suggest mediation. Therefore, we will not assess mediation at this time, but we will readdress this question when we have a larger sample size.

Discussion

Mothers' Beliefs and Children's Outcomes

This study was conducted to assess the relationship between mothers' beliefs about emotions and their children's socioemotional outcomes, specifically children's emotion understanding abilities and children's empathic behavior. We predicted this

relationship would be mediated by the quality of mother-child discussion about children's past positive and negative emotions. However, we found little evidence of a relationship between mothers' beliefs about emotions and children's outcomes, except for a positive relationship between the extent to which mothers believed in emotion coaching and children's concerned expression during the empathy task. Although only marginally significant, this finding was in line with our prediction, that parents who believe that it is useful and healthy to engage with emotions will have children who express greater empathy. In this case, children of parents with this emotion related belief were more likely to express facial concern for an injured experimenter.

We also found a marginally significant negative relationship between the extent to which mothers viewed emotions as harmful and children's arousal during the empathy task, as well as a significant negative relationship between the extent to which mothers viewed emotions as harmful and children's emotion understanding scores. This indicates that children of mothers who value negative emotions expressed less arousal in response to a hurt experimenter, as well as showed poorer emotion understanding abilities, than children whose mothers did not value negative emotions. This finding is in the opposite direction of our predictions, however, perhaps this finding can be explained in that parents who value negative emotions allow their children to express negative emotion, but are not more likely to guide their children through coping with and understanding emotions. We found no relationship between mothers' belief in the value of negative emotions and the quality of mother-child discourse, nor did we find a relationship between mother's belief in negative emotions and mother's belief in emotion coaching. Therefore, perhaps even though these mothers do not reject negative emotions, these

mothers are not engaging in effective emotion socialization strategies.

An alternative explanation could be that children's arousal in response to an injured experimenter is akin to a response indicating personal distress rather than empathy. Arousal is a measure of children's bodily tension, which may indicate children's discomfort and distress in response to the experimenter in need. This type of distress could be conceived of as self-focused rather than prosocial (e.g., Batson, 1987). Perhaps children whose parents value negative emotions were more comfortable with the experimenter's display of pain and negative emotions because these children have previously viewed their parents respond to negative emotion without discomfort. This would be consistent with Social Learning Theory, which maintains that children learn socio-emotional skills from observing and imitating the behavior of models, including parents (e.g., Bandura, 1986). Therefore children of parents who value negative emotion, and thus do not reject negative emotion, might not experience discomfort or arousal by viewing an individual in distress because these children modeled their mothers' response to negative emotions. Future research could address this question by taking a closer look at children's personal distress reactions.

Mothers' Beliefs and Mother-Child Discourse

Overall, the results of this study do not indicate that parents' beliefs about emotions predict aspects of parent-child discourse, and there was little evidence that mothers' beliefs predicted children's socio-emotional outcomes. This is inconsistent with previous studies demonstrating that mothers' beliefs about children's emotions were related to the self-reported quality of mother-child discourse (e.g., Halberstadt, Thompson, Parker, & Dunsmore, 2008; Wong, McElwan, & Halberstadt, 2009), as well

as the quality of discourse observed in the lab (Perez Rivera & Dunsmore, 2011). This absence of findings may be caused in part by the lack of statistical power yielded by the sample size of 34 mother-child dyads. Since little research has examined the relationship between mothers' emotion related beliefs and discourse, it might also be the case that mothers' beliefs about emotions were simply not as influential in predicting discourse about children's previous positive and negative emotional experiences as predicted. Perhaps mothers' socialization of their children is more driven by their children's emotional expression, rather than mothers' own beliefs, and mothers adapt their behavior in ways that are effective in dealing with their children's emotional expression. For example, Laible (2004) found that mothers' perceptions of children's temperament were predictive of the quality of mother-child discourse during a reminiscing task, suggesting that mothers adapted their discourse to the characteristics of their children. Future research could examine the possibility of an interaction between mothers' beliefs about emotions and children's temperament.

Similarly, it would be interesting to examine if children affect the stability of mothers' beliefs about children's emotions. Perhaps individuals' beliefs about children's emotions change once they have had children; for example, perhaps a mother views using an emotion coaching strategy with her tantrum-prone three year old as futile, while prior to having children she might have thought of emotion coaching as a valuable tool. Children's behavior may shape the beliefs that mothers hold, in that mothers may only maintain beliefs they see as practical and effective in dealing with children's emotions. Future longitudinal studies could examine these emotion beliefs pre and post motherhood.

Another explanation as to why mother's beliefs about emotions did not relate to aspects of mother-child emotion discourse could be that although mothers possess beliefs about emotions, these beliefs do not translate into parenting strategies. These beliefs could perhaps represent ideals held by mothers regarding children's emotions, but for mothers of preschoolers, these ideals may be difficult to support with parenting behaviors. For example, mothers may believe it is valuable for children to experience a full range of emotions, including negative emotions, but when the child expresses highly disruptive negative emotions, mothers may feel they cannot nurture the expression of this emotion. Rather, it may be the case that mothers will seek strategy to quickly end the negative emotion in favor of perusing other goals that may be more immediately pressing than fostering their children's socioemotional competence (Hastings & Grusec, 1998). Future research could examine if mothers feel that their beliefs about their children's emotions are consistent with their parenting behaviors, and could probe mothers for instances of when they choose parenting strategies that are congruent and incongruent with their emotion beliefs. Perhaps mothers would report that they would be more likely to view emotions as valuable when emotions are expressed in a private setting than in a public setting, and mothers might support the use emotion coaching only when they are in a situation with few conflicting goals as opposed to a situation that is very demanding of the mother.

Discourse as a Predictor of Children's Outcomes

The results of this study were consistent only in part with that of prior studies illustrating that the quality of parent-child discourse is predictive of children's socioemotional outcomes (e.g., Laible, 2004; Laible & Song 2006). The current study

found that mother-child collaboration during the reminiscing conversation positively predicted children's concerned expression and arousal during the empathy task. Mothers' overall references to emotions and references to the cause of emotions were positively predictive of children's prosocial behavior. It is interesting that collaboration predicted all aspects of the empathy task except for prosocial behavior, while mothers' references to emotions only predicted prosocial behavior. Perhaps this is the case because collaboration during discussion of emotions may lead children to engage with emotions, contributing to the socialization of children's empathy, but collaboration does not specifically teach children how to engage in prosocial helping behaviors. Children of highly collaborative dyads may understand the feelings of others to the extent they can react empathically to those in need, but may not know how to provide help and alleviate others' negative emotions. However, children whose mothers more often referred to emotions and the causes of emotion were more likely to engage in prosocial helping behaviors. Mothers' talk about emotions and the causes of emotion may lead children to have better knowledge of how they can affect the emotions of others (Garner, Dunsmore, Southam-Gerrow, 2008). Previous research has found that mothers' explanations of emotions are predictive of children's prosocial behaviors, perhaps because children are aware of appropriate ways in which to help others (Garner, 2003; Brownell et al., 2013).

A limitation of this study is that children may have found it particularly difficult to respond with helping behavior during the empathy task used in this study because there was no clear solution for how to alleviate the experimenter's pain. For example, there were no resources in the lab that the child could retrieve to help or comfort the experimenter. Also, children likely had very little experience with helping an adult (who

was also a stranger) in need, making it particularly difficult for the children to know how to help the experimenter. Therefore, children whose mothers explicitly taught them about emotions and their causes may have been best equip to help the experimenter, while the children of highly collaborative dyads may have been concerned but did not now how to help.

It should also be noted that emotion understanding was never predicted by mothers' beliefs about emotions, nor was it predicted by mother-child discourse variables. In the current study, children's emotion understanding was only negatively predicted by the extent to which mothers valued negative emotions; it was never predicted in accordance with our hypotheses. This is inconsistent with previous research which has found positive links between mother-child emotion related discourse and this emotion understanding task (e.g., Denham & Auerbach, 1986; Laible, 2004; Laible & Song, 2006; Laible, 2011) as well as research which has found links between the Parents' Beliefs about Children's Emotions Measure and this emotion understanding task (Perez Rivera & Dunsmore, 2011). This lack of results may be the due to the limited power of the current study. We compared our data from the discourse variables (mother elaboration, mother-child collaboration, and mothers' references to emotions) and child outcome variables (emotion understanding, concerned expression, prosocial behavior, and arousal) to these same variables used in Laible, Panfile, and Augustine (2013), and found that although our means for discourse variables and child outcome variables differed from those of Laible and colleagues, the standard deviations of our variables were very similar. We do not find it surprising that our means differed; Laible and colleagues used as sample of 42 month old children, while the current study had a sample

of children whose age spanned a year. This age difference likely resulted in differences in children's ability and the manner in which mothers interacted with children between the two samples.

Future Directions and Limitations

Future work could address the link between mothers' beliefs about emotions and other facets of parenting behaviors. A limitation of the current study is that although we examined the relationship between mothers' beliefs about emotions and mother-child discourse about emotions, we were not able to observe mothers' reactions to their children's naturally occurring emotions. Perhaps mothers' beliefs about emotions would be more predictive of parenting behaviors in the face of children's actual emotional expressions. The reminiscing task may have altered how parents address emotional expression because they were not behaving within the context of the emotional event. To examine a potential link between mothers' beliefs about emotions and mothers' parenting behaviors in response to their children's emotional expression, perhaps in home observations could be conducted in order to observe mothers' reactions to their children's naturally occurring emotions.

Future studies could also examine how children's own characteristics shape mothers' beliefs about emotion. For example, perhaps the mother of a highly negatively reactive child will view negative emotions as more harmful than the mother of a child who is low in negative reactivity. It would be interesting to pursue the existence of a bidirectional relationship between children's emotionality and mothers' beliefs about emotions consistent with the theory presented by Bell (1968), who proposed that children's characteristics elicit and reinforce specific parenting behaviors.

Conclusions

Although the current study did not fully support our predictions, this study offers preliminary evidence that mothers' beliefs about emotions are a predictor of children's outcomes, offering some evidence that mothers who report coaching their children's emotions have children who respond more empathically to a person in need than children of mothers who are dismissive of children's emotions. Our continued work on this project and future studies can assess how these outcomes are socialized as we strive to understand the pathways that lead parents to use effective parenting behaviors for raising empathic, emotionally competent children.

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Table 1
Descriptive Data

	M	*SD*	Range
Value positive emotion	4.64	1.06	1.5 – 6
Value negative emotion	4.24	0.55	3.17 – 5.5
Emotion Coaching			
Children should handle emotions autonomously	3.01	0.78	1.71 – 4.57
Parent should have knowledge of child emotion	4.51	0.87	3 – 6
Elaboration			
Elaboration: positive emotion conversation	3.5	.90	1 – 5
Elaboration: negative emotion conversation	3.41	.78	2 – 5
Collaboration			
Collaboration: positive emotion conversation	3.61	1.21	1 – 5
Collaboration: negative emotion conversation	3.47	1.11	1 – 5
Mothers' emotion talk			
References to positive emotion	7.15	5.99	0 – 27
References to causes: positive emotion	2.50	3.60	0 – 16
References to negative emotion	6.56	3.31	1 – 16
References to causes: negative emotion	3.13	2.04	1 – 10
Validation			
Validation: positive emotion	.21	.41	0 – 1
Validation: negative emotion	.35	.59	0 – 2
Child's concerned expression	2.26	.67	1 – 3
Child's prosocial behavior	1.94	1.01	1 – 4
Child's arousal	3.00	1.15	1 – 5
Child's emotion understanding	46.56	6.65	20 – 55

Table 2

Bivariate Correlations

	1	2	3	4	5	6	7	8	9	10	11
1. Value positive emotions		0.67	0.41*	0.01	0.06	0.15	0.27	-0.36	-0.27	-0.15	0.05
2. Value negative emotions			0.11	-0.11	-0.11	-0.01	-0.21	0.23	0.23	-0.35	-0.35
3. Help children with emotions				0.12	0.11	.33ˣ	0.31ˣ	0.38**	0.01	0.17	0.04
4. Elaboration					0.00	-0.05	0.02	0.04	0.01	0.17	0.04
5. Collaboration						-0.14	-0.03	0.25	0.17	0.18	0.19
6. Emotion Talk							0.23	0.18	-0.25	0.09	-0.18
7. Emotion Validation								-0.08	-0.19	0.00	0.23
8. Concerned Expression									0.29	0.31	-0.04
9. Prosocial Behavior										0.47**	0.09
10. Arousal											0.15
11. Emotion Understanding											

* p < 0.05, ** p < 0.01

Table 3

Regression Models Predicting Parent-Child Discourse from Mothers' Beliefs

β at Final Step

Predictor	Elaboration	Collaboration	Emotion Talk	Emotion Validation
Gender	0.42*	0.15	-0.13	0.10
Mothers' education	0.08	0.18	-0.42*	-0.11
Belief – value of positive emotions	-0.17	0.01	0.05	0.05
Belief – value of negative emotions	-0.14	0.06	0.00	0.06
Belief – emotion coaching	0.19	0.13	0.24	0.22

* $p < 0.05$

Table 4

Regression Models Predicting Children's Outcomes from Mothers' Beliefs

β at Final Step

Predictor	Emotion Understanding	Concerned Expression	Prosocial Behavior	Arousal
Gender	0.29	-0.15	-0.02	-0.30
Mothers' Education	-0.03	-0.18	-0.17	-0.34
Belief – value of positive emotions	-0.07	-0.17	-0.27	-0.17
Belief – value of negative emotions	-0.35[†]	0.17	-0.23	-0.35[†]
Belief – emotion coaching	0.09	0.41[†]	-0.02	-0.05

† = $p < 0.07$

Table 5

Regression Models: Elaboration and Collaboration Predicting Child Outcomes

β at Final Step

Predictor	Emotion Understanding	Concerned Expression	Prosocial Behavior	Arousal
Gender	0.30	-0.21	-0.02	-0.26
Mothers' Education	0.03	-0.18	-0.21	-0.27
Elaboration	-0.06	0.19	0.08	0.35
Collaboration	0.12	0.39*	0.26	0.44*

* $p < 0.05$

Table 6

Regression Models: Mother Emotion Talk and Validation of Emotions Predicting Child Outcomes

β at Final Step

Predictor	Emotion Understanding	Concerned Expression	Prosocial Behavior	Arousal
Gender	0.32	-0.20	-0.05	-0.24
Mothers' Education	-0.01	-0.19	-0.19	-0.29
Emotion Talk	-0.18	0.11	0.39*	-0.05
Validation	0.24	-0.06	-0.26	-0.01

* $p < 0.05$

<div align="center">**Curriculum Vitae**</div>

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Education

Pursuing Ph.D., Psychology, Lehigh University; Bethlehem, PA
        Concentration: Developmental Psychology

B.S. & B.A. Psychology & German Language, University of Pittsburgh; Pittsburgh, PA
        April 2012

Research Interests

I am focused on studying young children's moral and emotional development, with a specific interest in learning how parenting practices and the quality of the parent-child relationship influence children's moral outcomes.

Research Projects

Current Project	Master's Research Project Department of Psychology, Lehigh University *Parents' beliefs about preschooler's emotions: the role of socialization and implications for child outcomes*
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 *Parenting goals as predictors of parent-child conflict outcomes*
2012	Honors Thesis Department of Psychology, University of Pittsburgh *Relations between compliance and prosocial behavior in toddlers*

Publications

Laible, D., & **Karahuta, E.** (2014). Prosocial development in early childhood. In L. Padilla-Walker & G. Carlo (Eds). The Complexities of Raising Prosocial Children: An Examination of the Multidimensionality of Prosocial Behaviors. New York, NY: Oxford University Press

Pettygrove, D. M., Hammond, S. I., **Karahuta, E. L.**, Waugh, W. E., & Brownell, C. A. (2013). From cleaning up to helping out: Parental socialization and children's early prosocial behavior. *Infant Behavior and Development*,*36* (4), 843-846.

Poster Presentations

Karahuta E., Laible, D., & Froimson, J. (2014, March 20). *Bidirectional effects of sensitive parenting and cooperation during childhood and adolescence.* Poster accepted to be presented at the biennial of the Society for Research on Adolescence, Austin, TX.

Laible, D., **Karahuta, E.**, Froimson, J., & Carlo G. (2014, March 20). *Predicting adolescent aggressive, delinquent, and cooperative behavior from earlier peer group affiliation and social behavior.* Poster accepted to be presented at the biennial of the Society for Research on Adolescence, Austin, TX.

Froimson, J., Laible, D., & **Karahuta, E.** (2014, March 20). *Links between empathy, guilt, and perspective taking and children's roles in bullying episodes.* Poster accepted to be presented at the biennial of the Society for Research on Adolescence, Austin, TX.

Laible, D., Froimson, J., **Karahuta, E.**, Murphy, T., Augustine, M. (2014, March 20). *Predicting adolescent prosocial and aggressive behaviors: The roles of attachment and moral affect and cognition.* Poster accepted to be presented at the biennial of the Society for Research on Adolescence, Austin, TX.

Teaching Experience

2014	Lab Instructor – Child Development Lab, Lehigh University
2014	Graduate Teaching Assistant – Child Development, Lehigh University
2013	Graduate Teaching Assistant – Experimental Research Methods, Lehigh University
2013	Graduate Teaching Assistant – Introduction to Psychology, Lehigh University
2012	Graduate Teaching Assistant – Child Development, Lehigh University
2011	Undergraduate Teaching Assistant – Cognitive Psychology, University of Pittsburgh

Awards

2013	Recipient of the Strohl Summer Research Fellowship, Lehigh University