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Relations among Teachers' Emotion Socialization Beliefs and Practices, and Preschoolers' Emotional Competence

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Abstract

Research Findings—Utilizing a three-part model of emotion socialization that includes Modeling, Contingent Responding, and Teaching, this study examined the associations between 44 teachers' self-reported and observed emotion socialization practices and 326 preschoolers' emotion knowledge and observed emotional behavior. Multi-level analyses revealed that the majority of the variance in the children's emotion knowledge scores and observed emotional behavior was predicted by factors within, rather than between, classrooms. Teachers' use of all three emotion socialization techniques did contribute to the prediction of the children's scores; however, the nature of these associations differed by children's age and gender.

Practice or Policy—The development of children's emotional competence is a complex, multi-faceted process in which many interaction partners play a role; early childhood teachers act as emotion socialization agents for the children in their care by modeling emotions, responding either supportively or punitively to children's expressions of emotions, and engaging in direct instruction regarding emotional experience. This research may provide a basis for potential future interventions designed to assist teachers in developing their own emotion socialization skills so that they can be more effective emotion socialization agents for the children in their care.

Emotion socialization is ubiquitous in children's lives, through their everyday contact with parents, teachers, caregivers, siblings, and peers. Children observe the emotions expressed by all of their social partners; they receive responses to their own expressions of emotion, and they obtain direct instruction regarding their own and others' emotions from teachers, caregivers, and parents. Children, in turn, incorporate this learning into their own emotional behavior (Denham, 2006; Denham, Bassett, & Zinsser, 2012).

Much of the research examining the influences of emotion socialization on children's emotional competence has been conducted with mothers and their children. Denham and Grout (1992) outlined a model of parental emotion socialization which captures the socialization practices described above, including Modeling, Contingent Responding, and Teaching (Denham, Bassett & Wyatt, 2007). This model has been utilized as a framework for subsequent research (Eisenberg, Cumberland, & Spinrad, 1998); the current study builds on this body of research by extending this model to preschool teachers.

In the context of this emotion socialization framework, the term *Modeling* refers to the ways that adults' emotional expressiveness implicitly teaches children which emotions are acceptable, and demonstrates for children that certain situations evoke particular emotions.

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Studies of mother-child interactions have found that mothers' emotional displays were related to their preschoolers' emotional displays (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997). Mothers' modeling of emotions is also associated with children's emotion knowledge. Mothers who expressed more negative emotions had children who were less knowledgeable about emotions (Denham, Zoller & Couchoud, 1994) and were rated as less socially competent with peers, whereas parents who reported being able to maintain a more positive affect during challenging parenting situations had children who were significantly more adept at understanding emotions (Denham et al., 1997).

Contingent Responding refers to parents' or caregivers' responses that either encourage or discourage children's emotional expression. Research has shown that parents who endorsed more punitive responses to their children's displays of negative emotions had children who displayed higher levels of emotional reactivity (Fabes, Leonard, Kupanoff, & Martin, 2001). Parents' self-reported responses to their children's emotional displays also predicted the children's emotion knowledge (Denham et al., 1994; Denham & Kochanoff, 2002), as well as teacher ratings of the children's social competence (Fabes et al., 2001).

Teaching entails adults' use of deliberate instruction to help children understand the causes of emotions and develop coherent predictable scripts about emotional experience (Denham et al., 1997). Several aspects of mothers' emotion language, such as the total number of emotion words spoken, the use of both unique emotion words and emotion labels, and the number of emotion-related explanations given, were positively related to children's use of unique emotion words and emotion labels (Martin & Green, 2005). Mothers' direct teaching about emotions also predicted children's emotion knowledge in that mothers who spontaneously explained their emotions had children who were more adept at understanding emotions (Denham et al., 1994), and mothers' use of causal explanations for emotions was positively related to children's emotion knowledge (Martin & Green, 2005).

As noted above, much of the research on emotion socialization has been conducted with mothers and their children; however, children spend many of their waking hours in the care of other, non-parental adults. Approximately 68% of children younger than 6 years spend time in non-parental care (ChildTrends, 2010), with 32% being cared for in center-based settings; therefore, early childhood teachers and other childcare providers are also important emotion socialization agents for the children in their care. By examining teachers' emotion socialization practices, the current study adds to an emerging field of research, with few studies having been conducted as yet on teachers' direct socialization of children's emotional competence.

As a first step, Ahn (2005) coded teachers' responses to children's expressions of emotions, revealing that teachers engaged in many of the same emotion socialization practices as had previously been found in parents, such as empathically responding to children's emotions, distracting children from emotional situations, and threatening punishment for or minimizing the seriousness of children's emotional expressions. The teachers also engaged in direct teaching about emotional experiences, such as teaching constructive ways to express emotion.

In addition, a growing body of research in preschool settings has focused on the positive associations between the emotional supportiveness of the classroom environment and a variety of outcomes. Emotional supportiveness, which includes ratings of the emotional climate (positive and negative), teacher's sensitivity to children's emotional and academic needs, and the extent to which the teacher provides children with opportunities to take responsibility in the classroom (Pianta, La Paro, & Hamre, 2008), has been positively related to social outcomes, including children's social skills (Burchinal, Vandergrift, Pianta, &

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Mashburn, 2010) and their social competence (Curby et al., 2009; Mashburn et al., 2008). These constructs are closely related to emotional competence. Taken together, these findings help set the stage for examining the associations of teachers' emotion socialization beliefs and practices with children's emotional competence.

Children's Emotional Competence

There exists a significant body of research on children's emotional competence, including both the factors that influence the development of emotional competence, and the influence of emotional competence on other areas of children's development (see Denham, 2006, for a review; Denham, Blair, Schmidt, & DeMulder, 2002; Trentacosta, Izard, Mostow, & Fine, 2006). Emotional competence is defined as the ability (a) to appropriately express emotions, (b) to understand one's own emotions and the emotions of others, and (c) to regulate one's own emotions (Denham, 2006). Children who express relatively more positive than negative emotions are rated higher on friendliness and assertiveness and lower on aggressiveness and sadness; these children respond more prosocially to their peers' emotions, and are seen as more likable by their peers (Denham, McKinley, Couchoud, & Holt, 1990). Similarly, during the preschool period, children begin to develop a cognitive understanding of many aspects of emotional expression, gradually coming to differentiate among the negative emotions (anger versus sadness, for example) and becoming increasingly capable of using emotion language (Denham, Cook, & Zoller, 1992). Children with higher levels of emotion knowledge may be at an advantage in emotionally-charged situations, such as peer interactions, by enabling them to respond more appropriately to others, thus strengthening social relationships.

A child's age (Denham et al., 1997; Denham et al., 1994) and his or her gender (Denham et al., 1994; Dunn, Bretherton, & Munn, 1987; Garner, Robertson, & Smith, 1997; Wong, McElwain, & Halberstadt, 2009) are related to both the practices and the effects of emotion socialization. For example, age predicted children's emotion understanding (Denham et al., 1997) and moderated the associations of the parents' punitive responses with the children's emotion knowledge, with younger children being more negatively impacted than older children (Denham et al., 1997). With regard to gender, earlier work revealed that both mothers of toddlers and the toddlers' older siblings mentioned emotional states more frequently to girls than to boys when the toddlers were 18 months old; six months later, girls referred to feeling states more often than boys (Dunn et al., 1987). Likewise, mothers of daughters have reported expressing positive emotions more frequently than mothers of sons (Garner et al., 1997), and both mothers and fathers have been found to be more emotionally expressive with daughters than with sons (Wong et al., 2009). Moreover, children's gender may moderate the influences of parental emotion socialization practices on their children's emotion knowledge. For example, mothers who reacted negatively, such as with anger or sadness, to their children's expressions of emotion had children who exhibited lower levels of emotion knowledge six months later; however, further analysis revealed that this association was true only for boys (Denham et al., 1994). Likewise, Martin and Green (2005) found that the positive associations between parents' emotion talk and children's emotion knowledge was significant only for boys.

In addition to age and gender, this study explored whether the children's ethnicity played a role in the associations of the teachers' emotion socialization practices with the children's emotion knowledge and/or their observed emotional behavior.

The Current Study

The current study adds to the body of research pertaining to teachers as emotion socialization agents by examining the influences of teachers' emotion socialization beliefs

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and practices on the emotion knowledge and observed emotional behavior of the children in their care. Within the framework of the emotion socialization model we have described, we examined the following questions:

Modeling

Are teachers' observed and/or their self-reported expressions of emotion in the classroom related to the children's emotion knowledge and/or their observed emotional behavior? And do these associations differ depending on the children's age and/or their gender?

Contingent responding

Are teachers' observed sensitivity and/or their self-reported responses to children's emotional expressions related to the children's emotion knowledge and/or their observed emotional behavior? Do these associations differ depending on the children's age and/or their gender?

Teaching

Is teachers' use of direct emotion-related instruction, either observed or self-reported, related to the children's emotion knowledge and/or their observed emotional behavior? Do these associations differ depending on the children's age and/or their gender?

Method

Participants

Participants included 326 children (49.5% female; 58% Caucasian, 42% African-American or Other) ranging from 33 to 71 months old (mean = 55.59, SD = 7.66) and the 44 lead teachers (100% female) in their classrooms in the suburbs of a large metropolitan area. Approximately 36% of those children attended Head Start (53.2% female; 32.4% Caucasian, 67.6% African-American or Other); the participation rate for those attending Head Start was approximately 66%. The remaining 64% attended private childcare centers (49.2% female; 71.8% Caucasian, 28.2% African-American or Other); the participation rate for this population was approximately 32%. Caucasian children were significantly more likely to attend the private childcare centers ($\chi^2 = 44.85$, $p < .001$) and mothers of children in private childcare centers were significantly more likely to have either attended or graduated from college than mothers of Head Start children ($\chi^2 = 78.67$, $p < .001$).

Forty-one teachers responded to the demographics questionnaire (54% Caucasian, 39 % African-American, 7% Asian or American Indian/Alaskan Native); 71% were 25 to 44 years old, 20% were 18 to 24 years old and the remaining 9% were between 45 and 64 years old. With regard to education, 9.8% of the teachers held a high school diploma, 13.6% had attended some college, 20.5% held an associate's degree, 47.7% held a bachelor's degree, and one teacher held a graduate-level degree. Listwise deletion of cases in which data were missing for five teachers caused loss of the children's data from their respective classrooms. Consequently, the analyses involving the test of children's emotion knowledge included a total of 271 children (52% female; 59% Caucasian) and the analyses involving the observational measure of children's emotional behavior included 273 children (52% female; 58% Caucasian).

Procedure

After obtaining consent from the children's parents and in conjunction with a larger study of children's emotional competence (Denham, Bassett, Thayer, et al., 2012), investigators tested the children's emotion knowledge and observed their emotional behavior in the

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classroom. In addition, with the lead teachers' consent, observations of teacher-child interactions were conducted; these teachers also completed three questionnaires related to their emotion socialization beliefs and practices. Therefore, both an observational and a self-report measure were used to capture the teachers' emotion socialization beliefs and practices pertaining to each aspect of the emotion socialization model. The teachers were compensated for the time spent completing the self-report measures.

It was presumed that the lead teachers in each classroom set the emotional tone and are primarily responsible for the behavior that occurs in their classrooms (Pianta et al., 2008); therefore, observations were conducted and self-report data were collected only from the lead teachers in each classroom. It should also be noted that the observations of the teachers and of the children overlapped such that the teachers were unaware at any given time as to whether they or the children were the object of the observation, and the results of the observations were not shared with them. The teachers filled out the self-report measures toward the end of the study period, after most of the observations were completed.

Child Measures

Children's emotion knowledge—The children's emotion knowledge was assessed individually, using a shortened version of the Affect Knowledge Test (AKT; Denham, 1986). In the original AKT, children are shown four faces cut out of felt which depict happiness, sadness, anger, and fear. The children are asked to label the emotion depicted by each face (Expressive subscale), and then to point to the faces representing each of those same four emotions, one by one (Receptive subscale). The assessor then enacts two sets of puppet scenarios and the children answer the question "How does he/she (the puppet) feel?" by pointing to the felt faces. In the first set of scenarios, the puppet expresses an expected emotion, such as anger at having his/her block tower knocked down (Stereotypical scenarios). In the second set, the puppet expresses the opposite emotion from the way that particular child would feel in the same situation, per the parents' report. For example, if the parent reports that the child is happy to go to preschool, the puppet expresses sadness (Non-Stereotypical scenarios).

The original version of the AKT (Denham, 1986) contained 4 Expressive, 4 Receptive, 8 Stereotypical and 12 Non-Stereotypical items (α's = .54, .69, .74, and .82, respectively; see Denham, Bassett, Way, et al., 2012). Items pertaining to happiness were dropped from the Expressive, Receptive, and Stereotypical subscales due to lack of variability in the responses to those items in previous research. The shortened version (hereafter referred to as the AKT-S) contains 3 items each for the Expressive and Receptive subscales and 6 items for the Stereotypical subscale; this scale has been divided into two halves of 3 items each. The Non-Stereotypical subscale has also been divided into two halves of 6 items each. With the happiness items removed, this shortened version of the AKT focuses primarily on children's understanding of anger, fear, and sadness.

For each item on the Expressive and Receptive subscales, the children score 1 point for indicating the correct emotion, and 0 points for indicating an incorrect emotion. For each item on the Stereotypical and Non-Stereotypical subscales, the children score 2 points for indicating the correct emotion, 1 point for indicating an emotion of the correct valence (i.e., sad instead of angry), and 0 points if they indicate an emotion of the opposite valence (i.e., happy instead of sad or angry). A total score for the AKT was computed by summing z-scores on the subscales.

The AKT and AKT-S have demonstrated reliability and validity in previous studies (Denham et al., 2003; Denham, Bassett, Way, et al., 2012; Denham & Couchoud, 1990; Miller et al., 2006), and have been found to be useful assessment tools to document change

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in emotion knowledge (Domitrovich, Cortes, & Greenberg, 2007). The internal consistency for the aggregate created from summing standard scores for all subscales was .85.

Observation of children's emotional expression—The children's emotional expression and emotional behavior was captured by a shortened version of the Minnesota Preschool Affect Checklist-Revised (MPAC-R; Denham, Zahn-Waxler, Cummings, & Iannotti, 1991), hereafter referred to as the MPAC-R-Short Form (MPAC-R/S; Denham, Bassett, Thayer, et al., 2012). In most cases, the items eliminated from the previous version were those which occurred infrequently or not at all based on a larger study of children's emotional competence (Denham, Bassett, Thayer, et al., 2012). To collect the MPAC-R/S data, trained investigators conducted four 5-minute observations of each child, on different days and capturing a range of activities. Intra-class correlations indicated inter-observer reliabilities of .93 for Positive Affect ("The child displays positive affect in any manner (i.e., facial, vocal, or bodily affect). The child's behaviors must match the context of a given situation. Examples: Smiling, laughing, singing, dancing, etc."); .88 for Negative Affect ("The child displays negative affect in any manner (i.e., facial, vocal, or bodily affect). The child's behaviors must match the context of a given situation."); .84 for Empathy and Prosocial Behavior ("Taking turns: The child plays with a toy or participates in an activity and then allows another to do the same. A clear beginning and end of each child's turn during an activity must be observed."); and .90 for Negative/Aggressive Reactions to Frustration ("The child displays context-related interpersonal aggression (verbal or physical). Someone does something to which the child responds with aggression. The emotionally arousing preceding event must be observed"). Principal component analysis using Promax rotation resulted in a two-factor solution which accounted for 57% of the variance in children's MPAC-R/S scores. Based on this analysis, two composites were created: *Positive-Prosocial*, comprising the sums of the mean scores on 6 items across 4 visits for Positive Affect and Empathy and Prosocial Behavior ($\alpha = .58$), and *Negative-Aggressive*, comprising the sums of the mean scores for 5 items across 4 visits for Negative Affect, Negative Responses to Frustration, and Aggressive Behavior ($\alpha = .66$). These two factors were utilized for all analyses involving the MPAC-R/S.

Both the MPAC-R and MPAC-R/S have demonstrated adequate validity. Previous research has shown that older preschoolers demonstrated more social-emotional skill, and that children of non-depressed mothers were more prosocial (Denham et al., 1991). Denham, Bassett, Thayer and colleagues (2012) also found associations in hypothesized directions between MPAC-R/S components and measures of classroom adjustment.

Teacher Measures: Modeling

Classroom Assessment Scoring System-Pre-K (CLASS-PK)

Observations of the teachers' classroom behaviors were coded utilizing the CLASS-PK, which consists of 10 dimensions typically combined to form three domains: emotional support, classroom organization, and instructional support (Pianta et al., 2008). Scores for each dimension can range from 1 to 7, and are based on the degree to which certain behavioral markers characterize the classroom during a given observation cycle. Observations of each classroom consisted of four contiguous 20-minute observation cycles, interspersed with their corresponding 10-minute coding cycles. Scores on each dimension were averaged across these four observations.

To reach the recommended inter-rater reliability criteria 80% of the observers' scores must be within one scale point of master coders' scores across five 20-minute video segments (Pianta et al., 2008). In addition to meeting these reliability criteria, approximately 20% of the live observations were dual-coded during the actual data collection. Intra-class

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correlations for those dual-coded segments ranged from .69 to .88, with an average correlation of .80.

For the purposes of the current study, we focused on the teachers' scores on three of the four dimensions contained in the Emotional Support domain – Positive Climate, Negative Climate, and Teacher Sensitivity – which are most closely related, conceptually, to aspects of emotion socialization. The teachers' scores on Positive Climate (e.g. smiling, laughter, enthusiasm) and Negative Climate (e.g. irritability, anger) captured the teachers' emotional expressiveness in the classroom (Modeling). Teacher Sensitivity is most closely related to Contingent Responding (please see below).

With regard to validity of the CLASS as it relates to the current study, Pianta and colleagues (2008) indicated a moderately high correlation ($r^2 = .63$, $p < .001$) between the CLASS Emotional Support domain and the Interactions factor on the Early Childhood Environment Rating Scale – Revised Edition (ECERS-R; Harms, Clifford, & Cryer, 1998).

Classroom Expressiveness Questionnaire (CEQ)

The CEQ examines the frequency of teachers' self-reported emotional expressiveness within the classroom setting. The CEQ was adapted for use with teachers from the Self-Expressiveness in the Family Questionnaire (SEFQ; Halberstadt, Cassidy, Stifter, Parke, & Fox, 1995). The 40 hypothetical scenarios in the CEQ represent a range of emotions that might be expressed in a classroom environment; for example, items include "Thanking someone in the class for something they have done" and "Expressing anger at someone else's carelessness." Teachers indicated on a 9-point Likert-type scale the frequency with which they express the indicated emotions, ranging from 1 (not frequently in my classroom) to 9 (very frequently in my classroom). We adapted this measure for use in classrooms by replacing any family-oriented language with references to the classroom environment; for example, we replaced the phrase "family member" with "someone in the class" in many of the items. Factor analysis of data from previous research with the original SEFQ has yielded two aggregate subscales: *Positive Expressiveness* (23 items) and *Negative Expressiveness* (17 items); these same subscales were used for all analyses involving the CEQ in the current study. Reliability coefficients for the original measure (Halberstadt et al., 1995) were .94 and .92, for Positive and Negative Expressiveness, respectively; for the current sample, α's were .84 for Positive Expressiveness and .67 for Negative Expressiveness.

With regard to validity of the SEFQ, Halberstadt and colleagues (1995) note moderately strong correlations between the SEFQ scales and other parental report measures of emotions: Positive and Negative Expressiveness were positively correlated with anger expression, $r(67) = .51$ and .54, respectively, both $ps < .001$, and negatively correlated with controlling anger, $r(67) = -.34$, $p < .05$ and $-.53$, $p < .001$, respectively.

Teacher Measures: Contingent Responding

Classroom Assessment Scoring System (CLASS-PK)

As noted above, observations of the teachers' classroom behaviors were conducted utilizing the CLASS-PK (Pianta et al., 2008). Scores on the Teacher Sensitivity dimension reflect the teacher's awareness of and responsiveness to the children's emotional (and academic) needs, including acknowledging emotions and providing comfort and assistance; therefore, the teachers' scores on this dimension were utilized for the analyses related to Contingent Responding (please see earlier description for reliability and validity information for this instrument).

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Coping with Children's Negative Emotions Scale (CCNES)

Originally designed for parents, the CCNES describes 10 hypothetical situations wherein a child in the classroom is expressing a negative emotion (Fabes, Eisenberg, & Bernzweig, 1990). The original CCNES contained 12 items; to adapt the measure for use with teachers, 2 items were eliminated because they could not readily be modified to the classroom setting. Minor changes were made to the remaining 10 items to describe classroom situations (e.g. "my child" was replaced with "one of the children in my class").

The teachers responded to 6 choices within each item by rating the likelihood that they would respond that way, ranging from 1 (very unlikely) to 7 (very likely). The six choices within each item reflect the six subscales of the CCNES: Distress Reactions, Punitive Reactions, Expressive Encouragement, Emotion-Focused Reactions, Problem-Focused Reactions, and Minimization Reactions. Example: "If one of the children in my class is frightened and can't go to sleep at naptime after watching a scary TV show, I would: (a) "encourage the child to talk about what scared him/her" (Expressive Encouragement), (b) "get upset with him/her for being silly" (Distress reaction), (c) "tell the child he is over-reacting" (Minimization Reaction), (d) "help the child think of something to do so that he/she can get to sleep" (Problem-Focused Reaction), (e) "tell him/her to go to sleep or I will tell his/her mother not to allow him/her to watch any more TV" (Punitive Reaction), and (f) "do something fun with the child to help him/her forget about what scared him/her" (Emotion-Focused Reaction).

Reliability coefficients for the original CCNES scales ranged from .69 to .85, and the pattern of interrelations with other self-report indices of parental responses to children's emotions provided evidence for construct validity of the CCNES (Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002). Furthermore, these authors found that parents' scores on the CCNES were significantly related to their children's emotion knowledge scores: parents who reported more emotion- and problem-focused responses to their children's negative emotions had children who were more adept at decoding others' emotions. Conversely, children of parents who tended to become upset and distressed when exposed to their children's negative emotions had more difficulty decoding others' emotions (Fabes et al., 2002).

Further research with the CCNES has revealed high correlations among the subscales, yielding two basic profiles of responses: Coaching responses and Dismissing responses (Denham & Kochanoff, 2002; Denham, Bassett, & Wyatt, 2010). Principal component analysis of the data for the current study revealed a similar pattern which accounted for 67% of the variance; therefore, the overarching categories of *Coaching* (consisting of the sum of the teachers' mean scores on the 10 items for Expressive Encouragement, Emotion-Focused Reactions, and Problem-Focused Reactions) and *Dismissing* (consisting of the sum of the teachers' mean scores on the same 10 items for Distress Reactions, Punitive Reactions, and Minimization Reactions) were used for all analyses involving the CCNES. Alphas were computed for these aggregates: .91 for Coaching responses and.61 for Dismissing responses, following Bakeman and Gottman (1997). Although the reliability coefficient for the Dismissing aggregate was somewhat low, we believe this was due to several negatively worded items in the scale. That is, three of the items on the Distress subscale required the teachers to rate the likelihood of *not* behaving in a particular way (e.g. "I would NOT get upset myself."). This may have been confusing for some of the teachers. In addition, a single teacher rated several items on each of these subscales as "highly likely," and a group of 10 teachers rated a single item on the Minimization scale ("Tell the child that he/she will feel better soon.") as "highly likely." These findings will be explored further in the Discussion.

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Teacher Measures: Teaching

Picturebook task

For this second observational measure, the teachers recorded two conversations with the children about books depicting emotional situations. These books included pictures only and portrayed situations involving happiness, surprise, sadness, anger, and fear (Izard, Dougherty, & Hembree, 1983). Instructions to the teachers were deliberately vague to allow maximum flexibility; they were simply asked to talk with the children about these books in whatever manner they wished. Coding of the transcribed recordings yielded a count of the teachers' utterances which either labeled emotions or explained emotional experiences.

The coding system used for the picturebook task was derived from the Parent-Child Affect Communication Task (PACT; Denham et al., 1992; Zahn-Waxler, Ridgeway, Denham, Usher, & Cole, 1993; Denham & Kochanoff, 2002). Words that referred to discrete emotions and to behavioral expressions of emotion were counted (repetitions of the other's emotion labels were not included in the tally for emotion words); in addition, functions of utterances containing emotion words were also tallied. Inter-rater reliability coefficients for the emotion terms ranged from .94 to .99, with an average reliability of .98; coefficients for the functions ranged from .68 to 1.00, with an average of .96. Two scores were derived from these tallies: (1) a score for *elaborativeness*, which comprised the teachers' scores for explaining the causes and/or consequences of emotions, clarifying children's misunderstandings about emotions, and their use of socialization strategies such as confirmation, disconfirmation or denial ($\alpha = .62$), and (2) the *proportion of emotion words* of the total number of words spoken, $\alpha = .65$.

Teacher Emotion Socialization Self-Test (TESST)

By replacing references to "my child" with "a child" or "one of the children in my class," we developed the Teacher Emotion Socialization Self-Test (TESST) based on the Emotion-Related Parenting Styles Self-Test Likert version (ERPSST-Likert; Hakim-Larson, Parker, Lee, Goodwin, & Voelker, 2006). The TESST consists of 81 Likert-type statements and the teachers responded by indicating their level of agreement with each statement, ranging from 1 (strongly disagree) to 7 (strongly agree). Four subscales were generated, representing four emotion socialization styles: Dismissing, Disapproving, Laissez-Faire, and Emotion-Coaching styles; higher scores indicate higher levels of endorsement of that emotion socialization style. Hakim-Larson and colleagues (2006) reported reliability coefficients for the ERPSST-Likert scales of .72 for Dismissing, .91 for Disapproving, .72 for Laissez-faire, and .82 for Emotion-Coaching. Only the data from the 23-item *Emotion-Coaching* subscale ($\alpha = .83$) was included in the analyses for the current study, as it most closely relates to the Teaching aspect of emotion socialization.

To address the issue of construct validity of the ERPSST, Hakim-Larson and colleagues (2006) also asked parents to complete the CCNES and the SEFQ. These authors found that parents' scores on the Emotion-Coaching scale of the ERPSST were positively related to their Positive Expressiveness scores on the SEFQ, $r(31) = .53$, $p < .01$, as well as to their scores on the Expressiveness Encouragement subscale of the CCNES, $r(31) = .59$, $p < .01$.

Results

Table 1 lists the descriptive statistics for the child- and teacher-level variables, as well as the bivariate correlations among these variables. Children's age was significantly correlated with their emotion knowledge scores, with older children scoring significantly higher than younger children. Children's age was also significantly related to the teachers' scores on the CLASS-PK Positive and Negative Climate dimensions. T-tests were conducted to compare

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the scores of boys to girls, and those of Caucasian children to African American and other minority children; these analyses indicated no significant differences between boys and girls nor between Caucasian and African-American or other minority children on any of the child outcomes. Regarding the relations among the teacher-level variables and child outcomes, only the correlation of the teachers' scores on CLASS-PK Teacher Sensitivity were significantly (negatively) related to the children's Negative-Aggressive behavior, as captured by the MPAC-R/S.

Multi-Level Modeling (MLM)

In general, we investigated how well the observational and self-report measures of the teachers' emotion socialization beliefs and practices predicted the children's emotional competence scores. Because the data for the children were nested in classrooms, MLM was employed to conduct these analyses. MLM accounts for the non-independence of data, such as scores for multiple children in classroom settings (Kreft & De Leeuw, 2006).

MLM analyses involve at least two levels of equations. In the present study, the Level-1 equation models the within-classroom (i.e. child-level) variance while the Level-2 equation models the between-classroom (i.e. teacher-level) variance. Intra-class correlations were computed by running unconditional models with no predictors to determine the amount of within- and between-classroom variance in each outcome; results indicated that 13.03% ($p < .01$) of the variance in the children's mean total AKT-S scores, 7.64% ($p < .05$) of the variance in their MPAC-R/S Positive-Prosocial scores, and 5.56% ($p < .05$) of the variance in their MPAC-R/S Negative-Aggressive scores were attributable to the classroom.

Within the emotion socialization framework outlined above, the data were analyzed in two stages. We first examined the main effects models: the models with child-level predictors at Level-1, and teacher-level predictors at Level-2, for each of the three child outcomes: AKT Mean Total Z-scores, MPAC-R/S Positive-Prosocial behavior, and MPAC-R/S Negative-Aggressive behavior. Child-level predictors included age (grand mean centered), gender, and ethnicity (Caucasian/African-American or Other); both gender and ethnicity were uncentered. Teacher-level predictors included the grand mean centered scores on the observational and self-report instruments, as well as the uncentered, dichotomous teacher-level control variables including: center type (Head Start/private childcare center) and teachers' education level (high school diploma or associate's degree/ bachelor's degree or higher) Secondly, we examined the interactions of the teachers' scores with children's age and gender. To reduce the likelihood of Type 1 error, the alpha level for these interaction analyses was set to .01.

Estimates of effect sizes (δ? were computed for instances in which there were significant associations between the child- or teacher-level predictors and the children's outcomes by taking the regression coefficient for that predictor, multiplying it by the predictor's standard deviation, and dividing by the standard deviation of the outcome; these are interpreted as Cohen's d's. It should be noted, however, that the reported effect sizes do not take nesting into account; therefore, caution in interpretation is warranted.

Modeling

First, we asked whether the teachers' scores on the Positive and Negative Climate dimensions of the CLASS-PK and/or their scores on the Positive and Negative Expressiveness scales of the CEQ predicted the children's scores on the AKT-S and/or their scores on the MPAC-R/S, controlling for children's age and gender, the types of center, and the teachers' education levels. Results indicated (Table 2) that older children had more emotion knowledge than younger children ($t = 5.971$, $p < .001$, $\delta = .43$), and girls scored

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higher than boys (t = -2.693, p = .01, δ = -.15). Additionally, children in classrooms where teachers reported higher education levels had more emotion knowledge (t = 2.792, p = .01, δ = .13). Surprisingly, children's emotion knowledge scores were also higher in classrooms with lower observed Positive Climate scores (t = −2.275, p = .03, δ = −.18).

As noted above, for each of the emotion socialization categories, we examined the interactions of the children's age and gender with the teachers' scores for each of the child outcomes. As shown in Table 2, children's age moderated the association between the teachers' observed Negative Climate and the children's emotion knowledge scores t = 3.727, p < .001, δ = 1.85), and the association between the teachers' self-reported Negative Expressiveness and the children's observed Positive-Prosocial behavior (t = -3.748, p < .001, δ = −1.71). Figure 1 shows that the association between observed Negative Climate in the classroom and children's emotion knowledge scores depended on the children's age, in that the association between Negative Climate and emotion knowledge was positive for older children but negative for younger children. Figure 2 indicates that the teachers' self-reported Negative Expressiveness was associated with fewer observed instances of Positive-Prosocial behavior, but only for the older children. In classrooms where teachers reported expressing more negative affect, older children were observed to engage in fewer positive-prosocial behaviors.

None of the interactions of the teachers' scores with the children's gender reached significance at the p < .01 level.

Contingent Responding

Next we asked whether the teachers' scores on the Teacher Sensitivity dimension of the CLASS-PK and/or their scores on the Dismissing or Coaching profiles of the CCNES predicted the children's scores on the AKT-S and/or the MPAC-R/S, and whether the children's age or gender moderated any of these associations. As previously noted, children's age and gender significantly predicted the children's emotion knowledge scores. With regard to the teacher-level predictors, the type of center, the teachers' education level, and their observed Teacher Sensitivity scores also significantly predicted the children's emotion knowledge scores: children's emotion knowledge scores were higher in private child care classrooms (t = -2.762, p = .01, δ = -.19), and in classrooms where teachers reported higher levels of education (t = 3.171, p = .00, δ = .14). Children's emotion knowledge scores were lower in classrooms where teachers exhibited higher levels of sensitivity (t = -2.825, p = .01, δ = -.16). Teachers also reported using more Coaching responses in classrooms where children exhibited more instances of Negative-Aggressive behavior (t = 2.115, p = .04, δ = .12). As evidenced in Table 2, none of the interactions between children's age or gender and the teachers' scores reached significance at the p < .01 level.

Teaching

Finally, we asked whether the teachers' scores for elaborativeness, the proportion of emotion words they uttered during the picturebook task, and/or their scores on the TESST emotion-coaching scale predicted the children's scores on the AKT and/or the MPAC-R/S, and whether any of these associations were moderated by the children's age or gender. As previously noted, children's age and gender were significant predictors of their emotion knowledge scores (Table 2). In addition, attending a private childcare center (t = -3.546, p < .01, δ = -.20) and teachers' education level (t = 2.384, p = .02, δ = .13) were also significant predictors of the children's emotion knowledge. None of the teachers' scores on the observational or self-report measures for this aspect of the emotion socialization model

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significantly predicted the children's scores, and none of the interactions reached significance at the $p < .01$ level.

Discussion

Much of the past research on emotion socialization has involved parents and their children, but children spend many of their waking hours in the company of other adults, such as preschool teachers. Since previous research has found that the preschool years represent an important period of development for emotional competence, we explored whether preschool teachers' emotion socialization beliefs and practices predicted the emotional competence of the children in their care and whether children's age or gender influenced those associations.

Our main research questions focused on teachers' emotion socialization beliefs and practices: their modeling of emotions, contingent responding to children's emotional expressions, and their direct teaching about emotions. Therefore, we will address these findings first, followed by a discussion of child-level influences.

Modeling

The finding in which Positive Climate scores *negatively* predicted the children's emotion knowledge scores seemed somewhat counter-intuitive at first. However, we have two potential explanations for this finding. It must first be noted that Positive and Negative Climate are strongly negatively correlated. This suggests that multi-collinearity may have played a role in our results, and that it is the unique aspects of positive climate that were negatively related to the outcome. Furthermore, previous research has found that exposure to moderate levels of negative emotions is associated with higher levels of emotion understanding (Denham & Grout, 1992; Garner, Jones & Miner, 1994) and thus it is possible that lower levels of positive climate may have created opportunities for children to experience low-intensity negative climate from which to gain emotion knowledge. This may be a delicate balance; however, because exposure to higher levels of negative emotions has been found to interfere with children's emotional competence (Garner et al., 1994). As in the present study, Denham and colleagues (1997) found that younger children's emotion knowledge was particularly negatively associated with their parents' use of punitive emotion socialization strategies. It may be the case that some of the negative aspects of the classroom environments in this study, such as teachers' anger or peer aggression, may have interfered with the younger children's ability to process the informational aspects of these emotional encounters.

It may also be the case that by including the range of ages assessed in this study, we have captured an important time window during which particular types of social-emotional learning are taking place. As noted above, younger children are perhaps more susceptible to teachers' negative emotionality and their own consequent arousal may interfere with learning about emotions, whereas older children, who exhibited higher levels of emotional competence, may have learned to regulate their own arousal to the point that they can learn from the emotional situations they encounter, even when those situations are moderately negative.

Contingent Responding

Teachers' observed sensitivity to the children's needs negatively predicted the children's emotion knowledge scores. This finding may reflect the teachers' attempts to respond sensitively to the children's lack of emotion knowledge skills. Similarly, teachers reported higher levels of coaching responses in classrooms where more incidents of children's negative-aggressive behavior were observed. This pattern of findings calls attention to the

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bi-directional, transactional nature of the teacher-child relationship, with children's characteristics and behavior potentially influencing teachers' behavior and vice versa (Curby, Downer, & Booren, 2013). Future research could shed light on the directionality of these associations – for example, a longitudinal study could be conducted in which the children's emotion knowledge is measured before and after a period during which the teachers' sensitive behavior is observed.

There may also be important differences in the ways that teachers respond to children's emotional expressions. In examining the pattern of responses to the CCNES, we discovered that a single teacher responded that she would be highly likely to engage in particular minimizing, punitive, and dismissive responses to children's emotional expressions, and that a subset of the teachers espoused a particular minimizing strategy. Further research is needed to examine these patterns more closely, and to explore more deeply the factors underlying teachers' responses to children's emotions. Pursuing this line of research could potentially provide opportunities to develop training for early childhood teachers which targets the ways they respond to children's emotional expressions.

Teaching

Surprisingly, given that previous research has found associations between mothers' use of explanatory language about emotions and children's emotion knowledge (Denham et al., 1994), there were no significant main effects of the teachers' direct teaching about emotions on the children's emotion knowledge or observed emotional behavior. It should be noted, however, that the teachers' use of emotion language was relatively scarce (Table 2), comprising 5% or less of their total words uttered, despite being given a task that was designed to elicit emotion language. These findings may indicate a need for further training for teachers with regard to direct teaching about emotional experiences (see Denham, Bassett, & Zinsser, 2012 for suggestions).

With regard to the study as a whole, classroom factors may have contributed to differences in children's emotional competence; however, given that the majority of the variance in children's emotion knowledge scores and observed emotional behavior was within classrooms, other child-related factors seem to have played a larger role. Children's maturation, in particular, seems to be an important component, since children's age was a strong predictor of their emotion knowledge. One direction for future research would be to examine teachers' emotion socialization practices earlier in children's lives, perhaps in toddlerhood, then measure the children's emotional competence when they reach preschool, to explore the degree to which characteristics of the earlier environment may predict children's later emotion knowledge. This approach would build on the work of Brophy-Herb and colleagues (2011) who examined the role of mothers' emotion socialization practices in the development of their toddler's social-emotional competence.

Although we simply included them as control variables, it is notable that both teachers' education level and, in most cases, the type of center significantly predicted the children's emotion knowledge scores. Children whose teachers had at least a bachelor's degree exhibited higher levels of emotion knowledge than children whose teachers reported less education; attendance in the private child care centers also significantly predicted higher emotion knowledge scores. However, although center type did predict some aspects of children's emotional competence, even with their ethnicity accounted for in the model, an important limitation of the current study was the confounding of center type with ethnicity, with the Head Start centers attended by children of primarily African-American or other descent and the private childcare centers attended mostly by children of Caucasian backgrounds. Further research is needed to disentangle the influences of ethnic and cultural

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background, socioeconomic status, and center type on the development of children's emotional competence.

Other child-level factors not included in the current study may also play a role in moderating the associations between teachers' emotion socialization and children's emotional competence, such as the children's cognitive skills, temperament or attachment security. For example, research has shown that children's skill at theory of mind tasks (Harwood & Farrar, 2006) and temperamental characteristics, such as dispositional emotional intensity (Garner & Power, 1996) and fearfulness (van der Mark, van Ijzendoorn, & Bakermans-Kranenberg, 2002), are associated with their emotional competence. Furthermore, children's temperamental characteristics have been found to interact with emotional support in predicting academic outcomes (Curby, Rudasill, Edwards, & Perez-Edgar, 2011), and to influence mothers' socialization behaviors (Eisenberg & Fabes, 1994). Likewise, attachment security has been found to predict various aspects of children's social-emotional competence. Secure attachment to mothers predicted children's understanding of negative emotions (Laible & Thompson, 1998) and secure attachment with teachers was related to preschool children's prosocial behavior (Mitchell-Copeland, Denham, & DeMulder, 1997). Secure attachment to both mothers and teachers predicted children's emotion knowledge (Denham et al., 2002). Future research could explore the possibilities that any of these child-level factors might influence the success of teachers' emotion socialization efforts to enhance children's emotional competence.

In addition to these child-level factors, future research should also take into account the emotion socialization strategies being practiced in the child's home, by his or her parents or other family members, which were not included in the present study. Given that the variance in the children's scores in the current study was primarily due to factors within rather than between the classrooms, and given that past research has already found strong associations with parental emotion socialization practices and children's emotional competence (Denham & Grout, 1992; Denham & Kochanoff, 2002; Denham et al., 1997; Denham et al., 1994; Fabes et al., 2002; Garner et al., 1994; Garner & Power, 1996; Garner et al., 1997), it would have been informative to know what kinds of emotion socialization strategies were being employed in the children's home environments.

Conclusions

The development of children's emotional competence is a complex, multi-faceted process in which many interaction partners play a role; early childhood teachers represent one such interaction partner, acting as emotion socialization agents for the children in their care. Teachers bring their own emotional competence into this relationship by modeling emotions, responding either supportively or punitively to children's expressions of emotions, and engaging in direct instruction regarding emotional experience. The emotional climate of the preschool classroom, created in large part by the teacher, influences children's emotion understanding and behavior. Some exposure to learning about anger, fear, and sadness can be beneficial, for example, especially in a safe, nurturing environment, but too much negative emotionality from the important adults in a child's life can interfere with the child's emotional development; this is especially true for younger children.

For their part, children bring with them into the classroom many factors which influence the way they express emotions, their ability to understand their own emotions and the emotions of others, and their skill at regulating their own emotions. Their age, in particular, seems to be an important factor in determining their emotion understanding; their age may also influence the emotion socialization practices in which their teachers engage, in the intricate dance that is teacher-child interaction.

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The development of children's emotional competence represents a dynamic process, influenced by a complex interplay of factors, both within the child and emanating from the child's environment. It is hoped that further research into this important aspect of children's development can eventually provide the basis for future interventions designed to assist teachers in developing their own emotional competence skills so that they can, in turn, be more effective emotion socialization agents for the children in their care.

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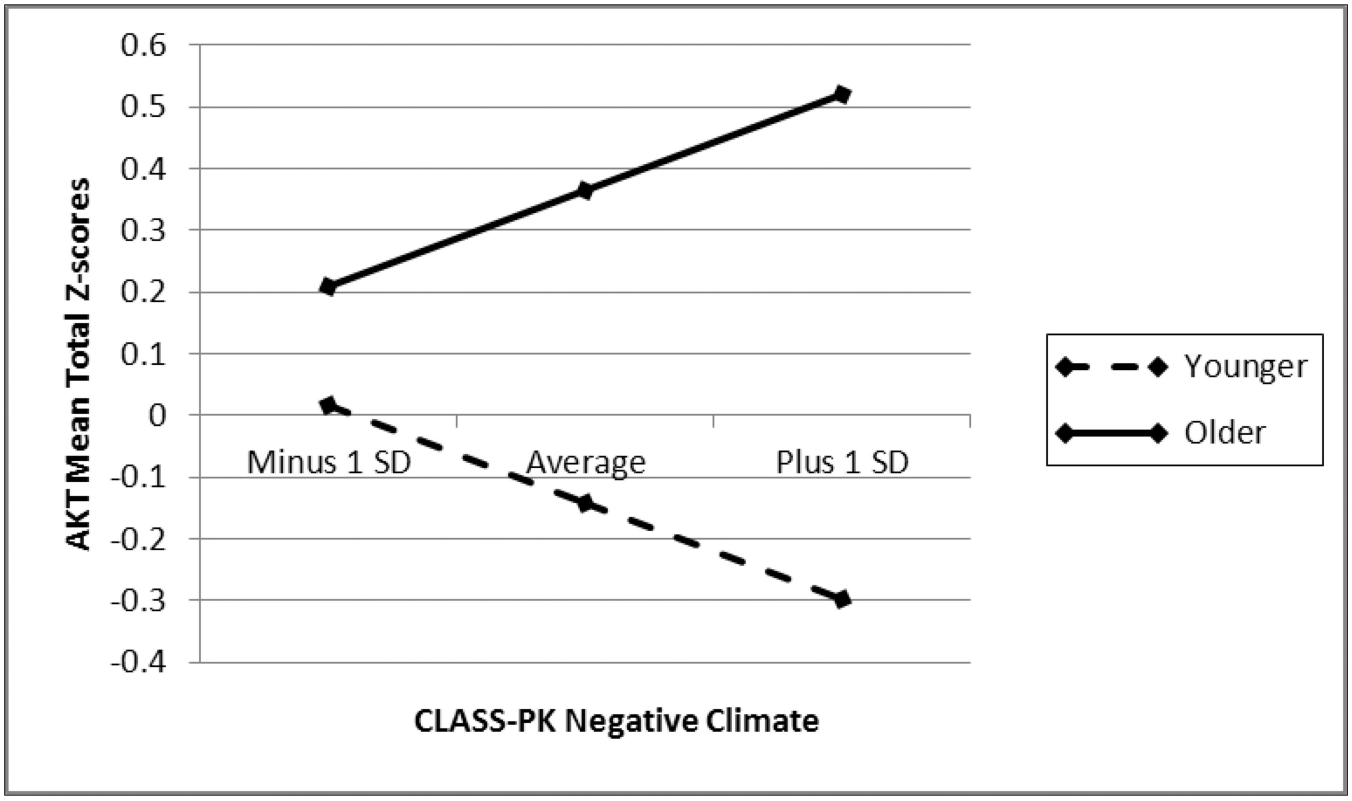

Figure 1.
Age×CLASS-PK Negative Climate on Children's Emotion Knowledge Scores

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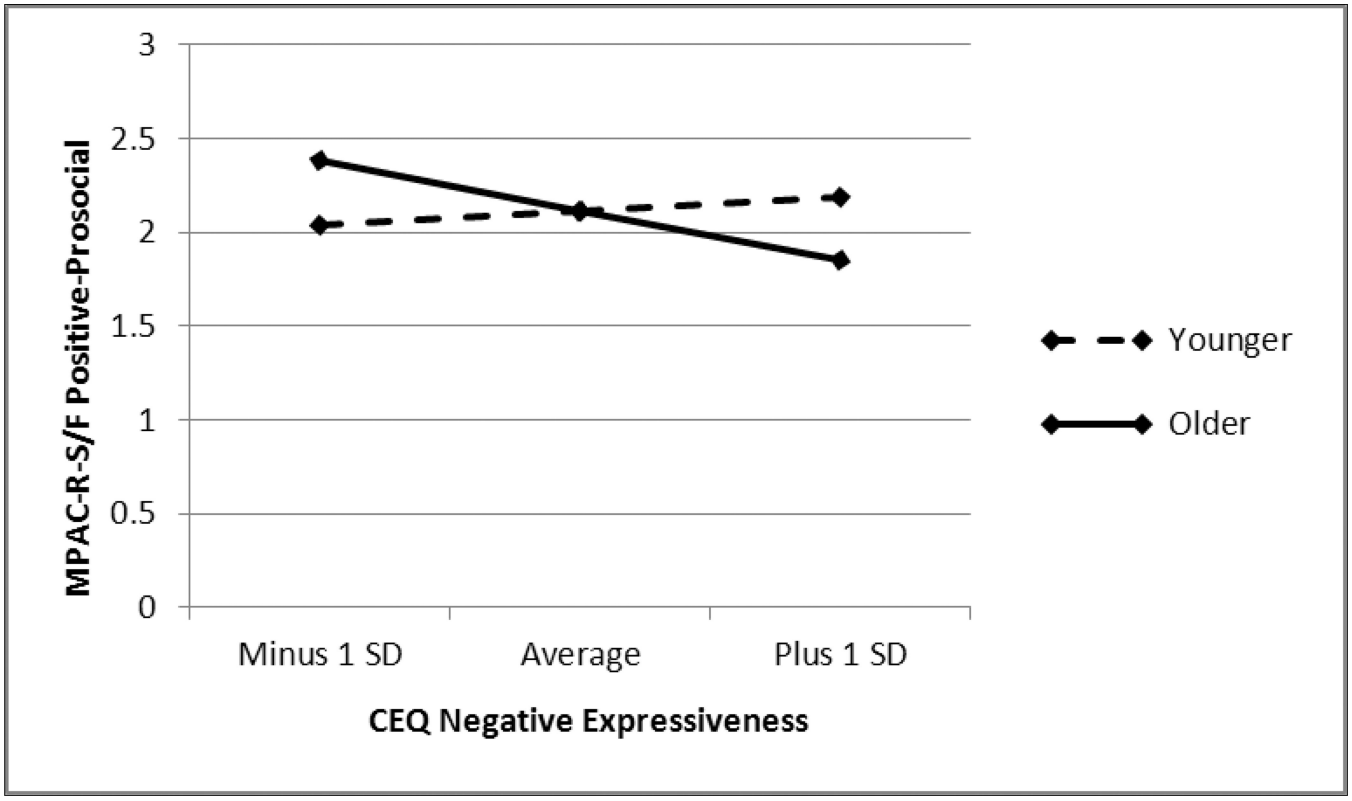

Figure 2.
Age×CEQ Negative Expressiveness on Children's Positive-Prosocial Behavior

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TABLE 1

Descriptive Statistics and Bivariate Correlations Among Child-Level and Teacher-Level Variables

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
n	262	264	264	326	38	38	38	38	38	37	37	38	38	38
M	−0.01	2.34	0.41	55.59	5.36	1.64	6.87	2.77	4.63	5.06	17.09	0.46	0.03	2.46
SD	0.56	0.70	0.50	7.66	1.17	0.65	0.97	0.73	1.29	1.32	2.23	0.25	0.01	0.96
Minimum	−2.16	0	0	33	3.25	1.00	4.45	1.44	2.25	3.40	13.40	0.00	0.00	4.17
Maximum	0.58*	4	3	71	7.00	3.25	8.30	4.24	6.75	7.78	20.90	1.00	0.05	6.81
Possible minimum	−2.72	0	0		1	1	1	1	1	3	3	0	0	1
Possible maximum	0.58	6	5		7	7	9	9	7	21	21	1	1	7
Child level														
1. AKT	—													
2. MPAC-R-S/F Positive-Prosocial	.08	—												
3. MPAC-R-S/F Negative-Aggressive	−.03	−.06	—											
4. Age	.39***	.07	−.10	—										
Teacher level														
Modeling														
5. CLASS-PK Positive Climate	−.10	.01	−.29	.38*	—									
6. CLASS-PK Negative Climate	−.08	.02	.17	−.40**	−.72**	—								
7. CEQ Positive Expressiveness	−.00	−.19	.20	−.01	.10	−.21	—							
8. CEQ Negative Expressiveness	.10	−.21	.09	−.16	−.08	−.01	.07	—						
Contingent responding														
9. CLASS-PK Teacher Sensitivity	−.13	−.04	−.34*	.36*	.86**	−.58**	.05	.05	—					
10. CCNES Dismissing	.18	−.07	.21	.08	−.14	−.03	.07	.57**	−.18	—				
11. CCNES Coaching	−.01	−.26	.15	.01	.05	−.19	.40**	.01	.04	−.21	—			
Teaching														
12. Picture book elaborativeness	.02	−.05	.13	−.09	−.17	.16	−.28	.10	−.28	.19	−.09	—		
13. Picture book proportion of emotion words	.07	.17	−.02	.09	.22	−.18	−.05	−.13	.02	.05	−.25	.27	—	
14. TESST Emotion-Coaching	.06	−.23	.08	.02	.10	−.22	.50**	.18	.12	−.01	.67**	−.37*	−.26	—

Note. Range of raw AKT scores = 5–24; possible range = 0–24. AKT = Affect Knowledge Test; MPAC-R-S/F = Minnesota Preschool Affect Checklist-Revised-Short Form; CLASS-PK = Classroom Assessment Scoring System-Pre-K; CEQ = Classroom Expressiveness Questionnaire; CCNES = Coping with Children's Negative Emotions Scale; TESST = Teacher Emotion Socialization Self-Test.

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* $p < .05$.

** $p < .01$.

*** $p < .001$.

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TABLE 2

Coefficients for the Main Effects and Interaction Models

Effect	*Variable*	*AKT Mean Total z*	*MPAC-R-S/F Positive-Prosocial*	*MPAC-R-S/F Negative-Aggressive*
Modeling				
Main effects				
Child level	Age	0.03***	0.00	−0.00
	Gender	−0.17**	0.13	0.08
	Ethnicity	0.03	0.17	−0.04
Teacher level	Center type	−0.19	−0.02	−0.06
	Education level	0.14**	0.15	−0.08
	CLASS-PK Positive Climate	−0.08*	−0.01	−0.07
	CLASS-PK Negative Climate	−0.03	0.01	−0.04
	CEQ Positive Expressiveness	0.03	−0.07	0.03
	CEQ Negative Expressiveness	0.02	−0.09	0.01
Interactions				
Age ×	CLASS-PK Positive Climate	0.01	−0.00	0.00
	CLASS-PK Negative Climate	0.03***	0.01	−0.01
	CEQ Positive Expressiveness	0.01	0.00	−0.01
	CEQ Negative Expressiveness	−0.00	−0.03***	0.00
Gender ×	CLASS-PK Positive Climate	−0.12*	0.05	−0.12
	CLASS-PK Negative Climate	−0.10	0.03	−0.19
	CEQ Positive Expressiveness	0.00	0.01	0.04
	CEQ Negative Expressiveness	0.10	0.04	−0.09
Contingent responding				
Main effects				
Child level	Age	0.03***	0.00	−0.00
	Gender	−0.16*	0.14	0.07
	Ethnicity	0.02	0.17	−0.02
Teacher level	Center type	−0.24*	−0.01	−0.05
	Education level	0.15**	0.16	−0.11
	CLASS-PK Teacher Sensitivity	−0.07**	−0.03	−0.03
	CCNES Dismissing	−0.01	−0.08	0.05
	CCNES Coaching	0.01	−0.04	0.03*
Interactions				
Age ×	CLASS-PK Teacher Sensitivity	−0.00	−0.01	0.00
	CCNES Dismissing	−0.01*	−0.01*	0.01
	CCNES Coaching	0.00	0.00	−0.00
Gender ×	CLASS-PK Teacher Sensitivity	−0.07	0.02	−0.00
	CCNES Dismissing	0.10*	0.03	0.03

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Effect	*Variable*	*AKT Mean Total z*	*MPAC-R-S/F Positive-Prosocial*	*MPAC-R-S/F Negative-Aggressive*
	CCNES Coaching	0.01	−0.05	0.02
Teaching				
Main effects				
Child level	Age	0.03***	0.00	−0.00
	Gender	−0.18**	0.13	0.08
	Ethnicity	0.04	0.18	−0.04
Teacher level	Center type	−0.26**	0.02	−0.13
	Education level	0.14*	0.10	−0.09
	Picture book elaborativeness	0.11	−0.15	0.01
	Picture book proportion of emotion words	2.11	3.55	1.00
	TESST Emotion-Coaching	0.09	−0.08	0.02
Interactions				
Age ×	Picture Book Elaborativeness	−0.01	0.04*	−0.00
	Picture Book Proportion of Emotion Words	0.18	0.48	−0.26
	TESST Emotion-Coaching	0.01	0.02	0.00
Gender ×	Picture Book Elaborativeness	0.49	−0.03	0.04
	Picture Book Proportion of Emotion Words	−5.73	−17.32*	1.64
	TESST Emotion-Coaching	0.08	−0.20	0.15

Note. AKT = Affect Knowledge Test; MPAC-R-S/F = Minnesota Preschool Affect Checklist-Revised-Short Form; CLASS-PK = Classroom Assessment Scoring System-Pre-K; CEQ = Classroom Expressiveness Questionnaire; CCNES = Coping with Children's Negative Emotions Scale; TESST = Teacher Emotion Socialization Self-Test.

* $p < .05$.

** $p < .01$.

*** $p < .001$.