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Temperament and Maternal Emotion Socialization Beliefs as Predictors of Early Childhood Social Behavior in the Laboratory and Classroom

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SYNOPOSIS

Objective—We examined the roles of children's approach behavior and maternal emotion socialization practices in the development of social behavior in unfamiliar and familiar contexts from preschool to early childhood years.

Design—At 4.5 years of age, children were observed, and an assessment of approach behavior was obtained; at this time, mothers reported about their emotion socialization beliefs. Two years later, children returned to the laboratory to participate in a peer play paradigm. When children were 7 years of age, teachers completed a questionnaire about children's social behaviors in the classroom.

Results—Mothers' emotion socialization beliefs contribute to the developmental outcomes of approach behavior. For instance, observations of approach behaviors predicted a greater proportion of group play in the unfamiliar peer group when mothers reported highly supportive emotion socialization beliefs.

Conclusion—Mothers' emotion socialization beliefs appear to play an important role in modifying the developmental course of approach behavior during early childhood.

INTRODUCTION

The study of temperamentally based approach tendencies has been a longstanding focus of research due to psychosocial correlates (e.g., internalizing and externalizing difficulties) associated with behavioral manifestations of temperamentally based approach: uninhibited and inhibited behavior (Rubin & Asendorpf, 1993; Rydell, Berlin, & Bohlin, 2003). Researchers have examined the dispositional and biological correlates of uninhibited and inhibited children as well as the characteristics of their parents (Rickman & Davidson, 1994) and their parenting behaviors (Park, Belsky, Putnam, & Crnic, 1997; Rubin, Burgess, & Hastings, 2002). Although researchers have made considerable strides in better

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understanding the causes and consequences of temperamentally based approach behavior during childhood, little is known about how parents respond to the emotions of uninhibited and inhibited behavior in children, and how parents' specific responses may impact children's later socioemotional development. To address this gap, the present study examined the contribution of children's temperamental approach behavior and maternal emotion socialization beliefs to children's socioemotional development in early childhood.

To date, the majority of the extant literature has not examined approach behavior as a unidimensional concept. Rather, approach behavior has been studied categorically, and much of the research has focused on the developmental course of the extreme end of this dimension: behaviorally uninhibited and/or inhibited children. Thus, we formulated our hypotheses based on the results of studies examining the correlates of uninhibited or inhibited behavior, as well as the caregivers of uninhibited and inhibited children.

Uninhibited children who exhibit *high* approach tendencies have been characterized as fearless, frequently displaying positive affect in response to novelty (Putnam & Stifter, 2005) as well as exuberant sociable behaviors among unfamiliar peers (Rubin, Coplan, Fox, & Calkins, 1995) and in the classroom (Rimm-Kaufman & Kagan, 2005). Inhibited children demonstrate *low* temperamental approach and have been characterized by their disposition to display wary and fearful behavior in unfamiliar contexts (Kagan, Reznick, Clarke, Snidman, & Garcia-Coll, 1984; Rubin & Asendorpf, 1993) and in-school social inhibition (Scarpa, Raine, Venables, & Mednick, 1997).

The display of both uninhibited and inhibited behavior has been associated with positive and negative social outcomes during childhood. For instance, Pfeifer and colleagues (2002) reported that uninhibited toddlers displayed greater exuberance (approach behavior, positive affect) in the laboratory at 7 years than children who were rated as inhibited at 32 months, behavior that is encouraged by parents in Western cultures (Marjoribanks, 1994) and thus appears to be a desirable trait in North American youngsters. However, uninhibited children have also been observed to display more disruptive behaviors in the classroom setting than inhibited children, such as volunteering information and speaking out-of-turn (Rimm-Kaufman & Kagan, 2005). Beyond the classroom setting, uninhibited, high-approach behavior has also been associated with indices of maternal ratings of maladjustment, with research indicating that children high in approach behavior are more likely to develop externalizing difficulties during early childhood (Putnam & Stifter, 2005; Stifter, Putnam, & Jahromi, 2008) and the elementary school years (Rydell, Berlin, & Bohlin, 2003).

Inhibited behavior has also been associated with a wide range of social and emotional outcomes, with a large body of research indicating that inhibited behavior in toddlerhood is predictive of reticent, wary behavior during the preschool years (e.g., Burgess, Marshall, Rubin, & Fox, 2003; Rubin, Burgess, & Hastings, 2002). However, as is the case with high-approach behavior, inhibited temperament and solitary behavior have also been associated with positive outcomes, including measures of cognitive regulation (Blair, Peters, & Granger, 2004) and positive feelings of cognitive competence (Nelson, Rubin, & Fox, 2005).

Although studies have confirmed an association between both high- and low-approach behavior and later social development, it is well accepted that the trajectories associated with particular temperament types vary (Rothbart & Bates, 2006) and that these variations may be due to environmental input. Parents, for one, can impact the stability of approach behavior. Specifically, parents have been found to alter the developmental course of approach behaviors by affecting the social outcomes associated with certain temperamental characteristics. For instance, Kochanska (1995, 1997) examined the development of conscience in children with varying degrees of fearfulness. She found that parenting that involved gentle discipline (reasoning; low in power assertion) was related to prosocial, moral behavior in fearful children during the preschool years; however, observed maternal responsiveness, attachment to mother, and shared positive responsiveness appeared to benefit the conscience development of fearless children (Kochanska, 1995; 1997; Kochanska, Askan, & Joy, 2007). Similarly, Dennis (2006) reported that mothers who engaged in positive focus (showing affection, praise, focusing on happy events) during a waiting task had children who displayed more persistence during two frustration tasks, but this relation was found only for children who were high on temperamental approach orientation. In addition, there is a large body of research indicating that the parents of inhibited children affect children's later behavior in the unfamiliar context via the quality of parent-child interaction (e.g., Park, Belsky, Putnam, & Crnic, 1997; Rubin, Burgess, & Hastings, 2002).

Consistent with the notion of "goodness of fit" (Thomas & Chess, 1977), the literature on parents of uninhibited and inhibited children suggests that certain parenting practices may better fit children of varying temperamental approach tendencies (e.g., Kochanska et al., 2007; Rubin et al., 2002). However, few studies have examined how temperament interacts with *specific* parenting processes to predict later social behavior. One area that requires further attention is how parents of children who are higher or lower in approach behavior socialize negative emotions. This area of study seems important because children with particular dispositions are known to have difficulty regulating emotion; specifically children who are high in approach are thought to have difficulty in the regulation of frustration, whereas children who are low in approach appear to grapple with the regulation of fear (Stifter et al., 2008).

Importantly, studies have linked the manner with which parents socialize emotions to later adjustment in children. Parents who report responding to their children's negative emotion displays in a supportive and sensitive manner have children who are more prosocial and affectively competent (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Warren & Stifter, 2008); whereas unsupportive or harsh reactions to children's emotions have been associated with children's social incompetence (Fabes et al., 2001; Jones, Eisenberg, Fabes, & MacKinnon, 2002). Although much is known about the direct contributions of parental emotion socialization for child outcomes, little is known how these practices interact with temperament to shape children's social development. Thus, in the present study, we examined maternal emotion socialization beliefs as a potential moderator of the relation between temperamental approach behavior and later social behavior in two contexts: the laboratory and the classroom.

Specifically, observations of children's approach behavior, shyness, and positive affect across a two laboratory visits were used to create an index of children's behavioral manifestations of temperamental approach at 4.5 years. In addition, when children were 4.5 years of age, mothers completed a questionnaire to index three different emotion socialization responses – supportive responses (e.g., discussion about children's emotion display), non-supportive responses (e.g., punishing children's display of emotion), and distress responses (e.g., reacting with emotional distress to children's display of emotion). When children were 6.5 years of age, children were observed while interacting with unfamiliar peers; furthermore, their social behaviors in the classroom were assessed by their teachers approximately six months later. Thus, indices of children's social behaviors were assessed in two contexts. The vast majority of studies examining how parenting may affect the development of temperamental approach tendency in children have focused on the prediction of behavior measured in the laboratory (e.g., Dennis, 2006; Rubin et al., 2002); however, it seems critical to better understand how parenting may influence children's behavior in both the unfamiliar (laboratory) and familiar (classroom) settings as each has different social challenges.

The literature suggests that variations in temperamental approach are relatively stable over time (e.g., Henderson, Marshall, Fox, & Rubin, 2004; Majdandzic & van den Boom, 2007; Stifter, et al., 2008); thus, it was expected that children's approach scores at 4.5 years would be positively associated with sociable behavior and negatively associated with socially reticent behavior (unoccupied and onlooking behaviors) among unfamiliar peers 2 years later. Furthermore, based on previous research on the parents of uninhibited and inhibited children, as well as the literature on the socialization of emotion in early childhood, it was expected that maternal emotion socialization beliefs would moderate the relation between temperamentally based approach behavior and social behaviors at 7 years of age. Specifically, we expected that maternal emotion socialization beliefs characterized as supportive would contribute to the development of adaptive social behaviors (e.g., group play among unfamiliar others; on-task classroom behaviors), especially for those children high in approach; however, we expected no comparable association for children with low-approach tendencies. Furthermore, we expected that maternal emotion socialization beliefs characterized as non-supportive (punitive) would contribute to the development of maladaptive social behaviors (e.g., disruptive behavior in the classroom) but the outcomes of these non-supportive socialization beliefs would be different for different children; specifically, we expected non-supportive reactions to contribute to the display of social reticence in the unfamiliar peer group for low-approach children and the development of aggressive, disruptive behavior for high-approach children. Finally, given that maternal distress in the face of children's dysregulated affect has been associated with children's internalizing and externalizing difficulties (e.g., Eisenberg et al., 1999), we expected that maternal distress reactions would moderate the relation between temperamental approach and social behavior in the same fashion as non-supportive emotion socialization beliefs.

METHOD

Participants

Participants were drawn from two completed longitudinal studies on infant development and were originally recruited from a local hospital and an area Women, Infants, and Children (WIC) program. Samples were re-recruited for a new study examining temperament and social behavior in early childhood. A total of 124 families were contacted, and 72 agreed to participate when children were 4.5 years of age. This new sample was followed up when children were 5.5 years of age, 6.5 years of age, and 7 years. The current study focuses on three of the visits: the 4.5-year assessment, the 6.5-year assessment, and 7-year assessment. Of the original 72 families (34 females) recruited at 4.5 years, 63 families (33 females) were available for the follow-up visit at 6.5 years; 58 participants had complete data for the predictor variables of interest. Those participants who did not participate in the 6.5-year follow-up did not differ from those who did participate on any of the 4.5-year measures (approach behavior, maternal supportive reactions, maternal non-supportive reactions, and maternal distress reactions).

Participants were drawn from predominantly European American, educated, middle-class families. Maternal age at the time of recruitment into the study averaged 35 years (range 20 to 47). Education level for mothers averaged 15.6 years (range 10–26 years). Thirty-three percent of families reported their income to be between $50,000 and $75,000.

Procedure

4.5-year assessment—When children were within 2 weeks of turning 4.5 years of age, they visited the laboratory on two separate occasions, once with their mother and once with their father. Dyads were observed during a variety of tasks designed to elicit emotional reactivity and regulation (e.g., disappointment; delay of gratification; see Stifter et al., 2008, for further details about the visit protocol). Also at this time, parents completed questionnaires regarding their parenting practices, children's temperament, and children's social/emotional behaviors. For the present study, experimenters' global observations of child behavior and maternal ratings of their own parenting behavior were used (see below).

6.5-year assessment—During the summer before children entered the first grade (M = 6 years 4 months, range = 6 years – 7 years, 2 months), they were invited to the laboratory to assess social behaviors in the unfamiliar peer group. The peer visit procedure was adapted from Rubin et al. (1995). During the visit, children participated in several activities with 2 or 3 other unfamiliar, same-age, same-gender children; playgroups were matched only by gender. The children were invited into the playroom where they were introduced to one another. The playroom was furnished with a variety of age-appropriate toys such as board games, books, Matchbox cars, Barbie dolls, and Lego blocks. The observational paradigm consisted of five episodes: (1) 15-min unstructured free play; (2) a clean-up task; (3) a group cooperative task; (4) "show-and-tell" speeches; and (5) a second 15-min free play with special toy. All tasks were videotaped for off-line coding. Only the two free-play episodes were of interest to the present study.

Mothers completed questionnaires at this time point. The questionnaires included measures of demographics, child temperament, parenting, and children's behavior. Parents were also asked for permission to contact their child's teacher.

7-year assessment—If consent was given, teachers were mailed questionnaires (described below) 6 months into each child's first grade year (i.e., winter) (M = 7 years, range = 6 years, 4 months – 8 years). Teachers were asked to complete questionnaires as soon as possible, and return them by mail. Teachers were paid $10 for their time. Only the teachers' ratings of the children's classroom behavior were used in the present analysis.

Temperament and Emotion Socialization Assessments – 4.5 Years

Children's approach—Child temperament was rated by two adult experimenters using the Observations of Child Temperament Scale (Stifter et al., 2008). These ratings were made during both mother and father laboratory visits when children were 4.5 years of age. Children's activity level, attachment behaviors, reaction to novel persons, compliance, frustration, positive affect, shyness/fearfulness, task persistence, comprehension (understanding of instructions), and language production were rated on 5- or 9-point scales. The two experimenters who had different roles during the laboratory visit conferred at the end of the visit, came to consensus, and then scored the child on each of the above scales; thus, inter-rater reliability was not assessed. The experimenters were minimally trained to mirror parental assessments (Stifter, Willoughby, & Towe-Goodman, 2008).

Of interest to the present study were the subscales related to approach and inhibited behavior, including: (1) reaction to novel persons, (2) shyness/fearfulness, and (3) positive affect. Ratings of children's *reactions to novel persons* were on a 5-point scale; 1 = *Avoidant/Withdrawn* to 5 = *Inviting (initiating, demanding)*. Ratings of *shyness/fearfulness* were on a 9-point scale; 1 = *Accepts the entire lab visit with no evidence of fear, caution, or inhibition of action* to 9 = *Strong indication of fear of the lab visit, to the extent that he/she cannot be brought to participate in many of the tasks*. Ratings of *positive affect* were on a 9-point scale; 1 = *Child seems unhappy throughout the lab visit* to 9 = *Child radiates happiness; nothing upsets him/her; is animated*. The ratings of reactions to novelty, shyness/fearfulness, and positive affect from both the mother-child visit and father-child visit were used to create a global measure of approach behavior. The ratings between the mother-child observations and father-child observations were significantly correlated (novelty $r(61) = .40$, $p < .001$; positive affect $r(61) = .33$, $p < .01$; and shyness $r(61) = .49$, $p < .001$); therefore, they were combined to obtain a single rating of temperamental approach. Ratings were first standardized, then the shyness scores were inversed and an aggregate of the six subscales (three from the mother-child observations and three from the father-child observations) was computed. Higher scores indicated greater observed approach, and lower scores indicated less observed approach behaviors ($\alpha = .78$).

Maternal emotion socialization beliefs—Mothers completed The Coping with Children's Negative Emotions Scale (CCNES; Fabes, Eisenberg, & Bernzweig, 1990; Fabes, Poulin, Eisenberg, & Madden-Dietrich, 2002). The CCNES asks parents to rate how they would respond to their children's display of negative emotions (anger, sadness, fear,

embarrassment, and disappointment). The measure consists of 12 scenarios depicting children expressing a negative emotion (e.g., "If my child becomes angry because he/she is sick or hurt and can't go to his/her friend's birthday party, I would:…) and six responses (e.g., "tell my child not to make a big deal out of missing the party") to each scenario. Parents are asked to rate each of the six responses on how likely they would respond in the same fashion (1 = *very unlikely* to 7 = *very likely*). The *problem-focused* ("the degree to which parents help the child solve the problem that caused the child's distress"), *emotion-focused* ("the degree to which parents respond with strategies that are designed to help the child feel better"), and *expressive encouragement* ("the degree to which parents encourage children to express negative affect or the degree to which they validate child's negative emotional states") scales were combined to form *supportive reactions* (α = .93); and the *minimization* ("the degree to which parents minimize the seriousness the situation or devalue the child's problem or distressful reaction") and *punitive* ("the degree to which parents respond with punitive reactions that decrease their exposure or need to deal with negative emotions of their children") scales were combined to form *non-supportive reactions* (α = .77). The *distress reactions* ("the degree to which parents experience distress when children express negative affect") scale was retained for the analyses.

Laboratory Behaviors – 6.5 years

Play observation scale—Observed behaviors during the two peer free-play sessions were coded with an adapted version of Rubin's (2001) Play Observation Scale. Ten-sec intervals were coded for social participation (unoccupied, onlooking, solitary play, parallel play, group play) and the cognitive quality of play (functional, dramatic, constructive; exploration; games-with-rules). Based on the work of Coplan and colleagues (1994), the following variables were formed: *reticence* (unoccupied + onlooking/total number of intervals) and *group play* (all group behaviors/total number of intervals). Consistent with Coplan et al. (1994), group play was negatively related to reticence ($r(53) = -.43$, $p < .001$). Coders were trained to reliability, and 15% of the sample ($n = 10$) was coded for reliability. Kappa coefficients ranged from .71 (for reticence codes) to .93 (for group play codes).

Relational coding system—A coding system designed to assess *attention-seeking behaviors* (e.g., making loud noises), *aggression – verbal* (e.g., name calling), *aggression – physical* (e.g., hitting), and *destructive* (e.g., deliberate abuse of objects) behaviors, and was applied to the first free-play session. All codes were proportionalized by dividing the variable of interest by the total number of observations (e.g., number of aggressive-verbal behaviors / total number of 10-sec intervals). Coders were trained to reliability, and 16% of the sample ($n = 13$) was coded for reliability. Kappa coefficients ranged from .83 (attention seeking) to .98 (destructive).

There were no instances of aggressive-verbal observed, thus *aggressive/disruptive behaviors* composite was created by summing the standardized score for aggression – physical and the standardized score for destructive behavior ($r(51) = .78$, $p < .01$; α = .82).

Classroom Behaviors – 7 years

Teachers completed the Social Health Profile for Children (Werthamer-Larsson, Kellam, & Wheeler, 1991). This 40-item questionnaire asks teachers to rate target children on their social behaviors and academic ability on a Likert scale (0 = *Almost never*, 5 = *Almost Always*). The data from the sample were factor analyzed (Kaiser varimax rotation), and two factors of interest were created: *on-task classroom behavior* (e.g., "Self reliant", "Stays on task"; α = .92) and *disruptive behavior* (e.g., "Breaks rules", "Has trouble accepting authority"; α = .88) in the classroom.

Thus, seven independent variables: approach behavior (continuous measure with high scores indicating more approach), maternal emotion socialization beliefs (supportive, non-supportive, and distress), and the interaction between approach behavior and each maternal emotion socialization belief were examined as predictors of five dependent variables. The dependent measures included three laboratory assessments of social behavior (reticence, group play, aggressive-disruptive behavior) and two classroom-based assessments of social behavior (teacher-rated on-task classroom behavior, teacher-rated disruptive behavior).

RESULTS

Means and standard deviations for the predictor and outcome variables are presented in Table 1. Correlation coefficients were computed among all variables of interest (Table 2). Temperamental approach was not related to any of the emotion socialization factors. Maternal distress reactions was related to maternal non-supportive reactions; however, maternal distress reactions was left as a separate predictor given that it is conceptually distinct from non-supportive reactions, with non-supportive reactions reflecting a parent's tendency to react in a harsh, punitive manner to children's negative emotions, and distress reactions suggesting that parents respond to children's negative emotions with feelings or expressions of distress (Fabes et al., 2002). Furthermore, supportive reactions were negatively related to non-supportive reactions; although significantly and negatively related, the low-correlation suggests that supportive and non-supportive reactions are not mutually exclusive. Among the dependent variables, group play was negatively associated with reticence, thereby supporting the validity of these coding categories. Furthermore, teacher-rated disruptive behavior and teacher-rated on-task classroom behavior were negatively related to one another, offering evidence of discriminant validity.

Regression analyses were conducted to examine (1) the separate contributions of observed temperamental approach at 4.5 years of age and emotion socialization beliefs as rated by mothers on the CCNES at 4.5 years; and (2) the moderated contribution of maternal emotion socialization beliefs on the relation between temperamental approach and observed behaviors with unfamiliar peers at 6.5 years and teacher-reported social behaviors at 7 years (Tables 3 and 4).

To avoid multicollinearity, maternal report of CCNES supportive reactions, distress reactions, non-supportive reactions, and observed temperamental approach were centered on their means before creating the interaction terms. Scatterplots of the data were examined, and two outliers (one case was 2 *SD*s above the mean on approach and one case was 1 *SD*

below the mean on approach behavior) were removed prior to data analysis. Listwise deletion was applied for all analyses, and sample sizes varied depending on the predictors and outcomes used in each analysis. For all regression analyses conducted, temperamental approach was entered on the first step, followed by maternal ratings on the CCNES on the second step, and then by the interaction term on the last step. Furthermore, child gender was controlled for in the regressions predicting teacher-reported classroom behaviors because gender differences were revealed in teacher-rated disruptiveness, $t(48) = 2.48$, $p < .05$; males $M = 1.18$, $SD = .89$; females $M = .70$; $SD = .40$, and teacher-rated on-task classroom behavior, $t(48) = -2.26$, $p < .05$; males $M = 3.12$, $SD = .93$; females $M = 3.67$; $SD = .76$.

Interactions were explored following the recommendations of Cohen, Cohen, West, and Aiken (2003). Specifically, for each interaction we restructured the equation to express the regression of the dependent variable (observed behavior in the laboratory or teacher-reported behavior in the classroom) on maternal emotion socialization beliefs for high- and low-approach behavior, with low-approach behavior defined as below 50th percentile on observed approach and high-approach behavior define as above the 50th percentile on observed approach.

Predicting Social Behavior in the Laboratory – 6.5 years

Reticence—A significant main effect was found for 4.5-year observed temperamental approach in the prediction of observed reticence, $R^2 \Delta = .14$; F Change = 7.89; $p < .01$. The presence of a negative beta weight, $\beta = -.37$, indicated that, as expected, those children who were observed to display less approach at 4.5 years displayed higher frequencies of unoccupied, onlooking behaviors with unfamiliar peers at 6.5 years. Thus, it appears that those children who avoid novelty display few instances of positive affect, and display greater shy behaviors exhibit similar behaviors among unfamiliar others 2 years later. No other main or interaction effects were found.

Group play—Although there were no main effects for temperamental approach behavior and maternal socialization beliefs in the prediction of group play among unfamiliar peers, one significant interaction effect was revealed. Maternal supportive reactions were found to moderate the relation between observed approach at 4.5 years of age and the frequency of group play with unfamiliar peers two years later, $R^2 \Delta = .13$; F Change = 6.98; $p < .01$. As shown in Figure 1, the strongest relation between maternal supportive reactions and observed group play was obtained for those children who were high in approach, simple slope = .16, $p < .05$, whereas the simple slope for the low-approach group = −.08, *ns*, was not significantly different from zero. Thus, it appears that, when mothers report they would respond in a sensitive, constructive manner to children's negative emotions, they bolster the development of cooperative, sociable play of their high-approach children. No other main or interaction effects were found.

Aggressive/disruptive behavior—There were no significant main or interaction effects when predicting aggressive/disruptive behavior in the laboratory from temperamental approach and maternal supportive, non-supportive, and distress reactions to children's negative emotions.

Predicting Behavior in the Classroom – 7 years

Teacher-rated disruptive behavior—In the prediction of teacher-reported disruptive behavior, observed temperamental approach was a main effect predictor of teacher-reported disruptive behavior, R^2 Δ= .09; F Change = 4.63; $p < .05$. The presence of a positive beta weight, β =.29, indicated that those children who were rated as higher on approach at 4.5 years were reported to display more disruptive behaviors in the classroom at 7 years. However, this effect was subsumed under a significant interaction effect between maternal non-supportive reactions and temperamental approach, R^2 Δ= .14; F Change = 9.17; $p < .01$. As shown in Figure 2, the strongest relation between non-supportive reactions and disruptive behavior was for the high-approach group, simple slope = .61, $p < .06$, whereas the simple slope for the low-approach group = −.17, *ns*, was not significantly different from zero. Therefore, those children who were observed to be more approach-oriented as preschoolers and had mothers who reported high levels of punitive, dismissive responses to their children's negative emotions were rated by teachers to display the highest levels of disruptive behavior in the classroom. There were no main or interaction effects for mother supportive or distress reactions.

Teacher-rated on-task classroom behavior—Observed temperamental approach was a main effect predictor of teacher-reported on-task behavior, R^2 Δ= .11; F Change = 5.87; $p < .05$. The presence of a negative beta weight, β = −.33, indicated that those children who were rated as lower on approach at 4.5 years were reported to display more on-task behaviors in the classroom at 7 years. There were no significant main or interaction effects for the three mother emotion socialization strategies.

DISCUSSION

The primary purpose of this study was to examine associations among preschool children's approach behavior, maternal emotion socialization, and social behaviors in the familiar and unfamiliar peer group during the early childhood years. It was expected that observed temperamental approach behavior at 4.5 years of age would positively predict sociable behavior and negatively predict wary behavior in the unfamiliar peer setting at 6.5 years. It was also expected that maternal emotion socialization beliefs would moderate the relation between approach behavior and later social behavior, although different associations were expected for high- and low-approach behavior. Some hypotheses were confirmed, thereby indicating that mothers' reactions to children's display of emotions affect the development of approach behavior.

As hypothesized and consistent with previous work (e.g., Rubin et al., 2002), lower scores on approach (indicating more inhibition) were longitudinally associated with the display of social reticence amongst unfamiliar others in the laboratory. In addition, teacher-rated on-task social behaviors were negatively predicted by approach behavior, indicating that children observed to be lower in approach at 4.5 years of age were rated by their teachers as more task persistent and academically inclined. Indeed, the extant literature suggests that solitary behavior is not only related with maladaptive behaviors; solitude has been associated with positive outcomes, such as academic achievement. For instance, Blair and colleagues

(2004) found a positive relation between maternal ratings of inhibited behavior and assessments of cognitive regulation measures. Furthermore, Coplan and colleagues (2001) reported an association between observed shy/withdrawn behavior and academic achievement for girls, and Gazelle and Spangler (2007) have reported similar findings for boys.

We also found that approach was a main effect predictor of outgoing, sociable behaviors. For instance, after controlling for gender, higher scores on approach behavior were associated with teacher ratings of disruptive behavior (e.g., yells at others) in the classroom. However, maternal non-supportive reactions were found to moderate the relation between temperamental approach and teacher-rated disruptive behavior, with the strongest positive relation between non-supportive emotion socialization reactions and teacher-rated disruptive behavior for those children highest in approach. Thus, it appears that emotion socialization may play an important role in modulating approach-oriented children's expressions of affect, with those parents who respond to emotions with punishment or criticism worsening the path for approach-oriented children. Indeed, this finding is consistent with research indicating that non-supportive emotion socialization practices are associated with, and predictive of, behavioral difficulties in the classroom setting (e.g., Eisenberg et al., 1999), as well as the extant literature indicating that harsh parenting practices can interact with children's temperament to predict later behavior (e.g., Rubin, Burgess, Dwyer, & Hastings, 2003).

An interaction effect was also revealed in the prediction of social behavior with unfamiliar peers. Specifically, maternal supportive emotion socialization strategies moderated the relation between approach and group play in the laboratory, with the strongest (and positive) relation between supportive emotion socialization beliefs and group play for the children who were high in approach at 4.5 years. However, when mothers reported low levels of supportive reactions, high-approach children engaged in the lowest proportion of group play with unfamiliar others (in fact, lower than those rated to be low in temperamental approach at 4.5; see Figure 1). Thus, it appears that mothers who respond to their approach-oriented children's negative emotions in a sensitive (e.g., reassuring) and constructive (e.g., teaching coping skills) manner are bolstering their children's emotional competence, which likely contributes to the development of social competence (Denham, Bassett, & Wyatt, 2007). Moreover, it may be that these sensitive mothers are encouraging their high-approach children to be outgoing and sociable, as well as equipping them with the tools to skillfully engage with unfamiliar others.

The findings indicate that one's environment (parenting) can ameliorate or exacerbate the effects of temperament on later social behavior. Taken together, it seems that mothers who endorse parenting emotion socialization beliefs characterized as warm and sensitive bolster their children's approach orientation in a positive fashion, as illustrated in approach-oriented children's engagement in social interaction in the unfamiliar peer group. By contrast, mothers who respond to their approach-oriented children's negative emotions with punishment may hinder their social development, possibly by not effectively teaching them how to regulate their negative emotions and behavior (e.g., Eisenberg & Fabes, 1994). These regulatory skills are extremely important for preschool-aged children, as they will likely

need to utilize these tools as they adjust to the demands of the school environment (e.g., Raver, 2002). Moreover, earlier research has shown that high-approach/exuberant children with difficulty regulating emotions are at greater risk for externalizing problems (Stifter et al., 2008). Perhaps, maternal non-supportive reactions are the mechanism through which exuberant children develop poor regulatory strategies.

Mothers' self-reported responses to their children's emotions not only contribute to children's functioning in the unfamiliar setting, but the familiar setting as well. Variations in temperamental approach appear to contribute to young children's adjustment in the school setting (e.g., Coplan & Arbeau, 2008; Henderson & Fox, 1998). It may be that mothers' beliefs about how emotions should be socialized prepare children for the demands of the structured school environment. This may be especially true for approach-oriented children who are likely to be required to be more compliant and less exuberant in the classroom. Thus, parents can play an important role in preparing their children for the demands of school simply by assisting their children – through sensitive, constructive parenting – to alter their outgoing nature to fit with their environment. Indeed, further research devoted to uncovering the ways that parents assist their children to modulate behavioral and affective expressions may inform school readiness programs of the future.

The behaviors children exhibit in the familiar setting are likely to be those that determine (in part) socioemotional development over time, as these are the behaviors exhibited among the child's peer milieu; and peer reputation has been shown to predict later psychosocial functioning (e.g., Gest, Sesma, Masten, & Tellegen, 2006). Moreover, evidence suggests the cumulative effects of solitude and exclusion by the peer group predict higher levels of depressive symptoms in the classroom than solitary children who were not excluded by their peers in the elementary school years (Gazelle & Ladd, 2003); future research is required to determine if similar patterns hold true for excluded, approach-oriented children.

Although the present study examined an area of research that is understudied, there were several limitations. First, the sample was small and homogeneous; therefore, the generalizability of the findings in the present study is limited and replication is needed. Second, due to the small sample size, we were unable to examine how these effects may have differed for boys and girls. This would be an important next step for future research, as it has been documented that the meaning of approach-related behaviors (e.g., aggression, shyness) differs for males and females (Stevenson-Hinde & Glover, 1996). Third, we did not examine children's regulatory ability, only approach tendency; and it has been demonstrated that the trajectory for children who are low or high on approach, but good at regulating their emotions, is quite different from children who are also low or high on approach, but poor emotion regulators (Rubin et al., 1995; Stifter et al., 2008). Therefore, future research should attempt to capture children's emotion reactivity and regulatory ability, in addition to assessments of temperamental approach behavior.

On a related note, the ratings of temperamental approach behavior were assessed at 4.5 years of age; thus, the behaviors observed were likely the product of both disposition and environment. It is relatively well-accepted that temperament influences parenting (e.g., Bell & Chapman, 1986) and parenting may influence dispositional traits, such as reactivity (e.g.,

Crockenberg, 1987); thus, by 4.5 years of age, it is difficult to disentangle the effect of biology, the effect of parenting, or the cumulative effect of both. As a result, future studies should attempt to assess these constructs earlier in life.

Furthermore, it would be important for future studies to consider examining parents' reactions (both reported and observed) to children's *specific* emotions rather than an aggregate of negative emotions. In particular, examining maternal reactions to approach-oriented children's displays of happiness and anger may be particularly important, as these emotion systems tend to be dysregulated in this subgroup of children. Similarly, an examination of parents' responses to low-approach-oriented children's display of fear or anxiety would be fruitful. The assessment of emotion socialization to specific emotions may be critical to understanding the findings of the present study. For instance, it may be that parents respond to children's display of anger differently from how they respond to children's display of fear. Moreover, parents will likely differentiate their response to specific negative emotions depending on their children's propensity to display these emotions. The feasibility to address these noted caveats seems entirely possible by examining the emotion socialization process at a more precise level.

In conclusion, our findings contribute to the growing body of literature regarding the role parents play in the development of children's high- and low-approach behavior (e.g., Dennis, 2006; Rubin et al., 2002). The present study is one of very few examining the role of parenting in the developmental outcomes of temperamental approach behavior, such as social interactions in the familiar and unfamiliar peer group, and provides evidence that processes in the family can shape children's temperamental tendencies (for better or for worse) thereby influencing socioemotional behaviors exhibited in different contexts.

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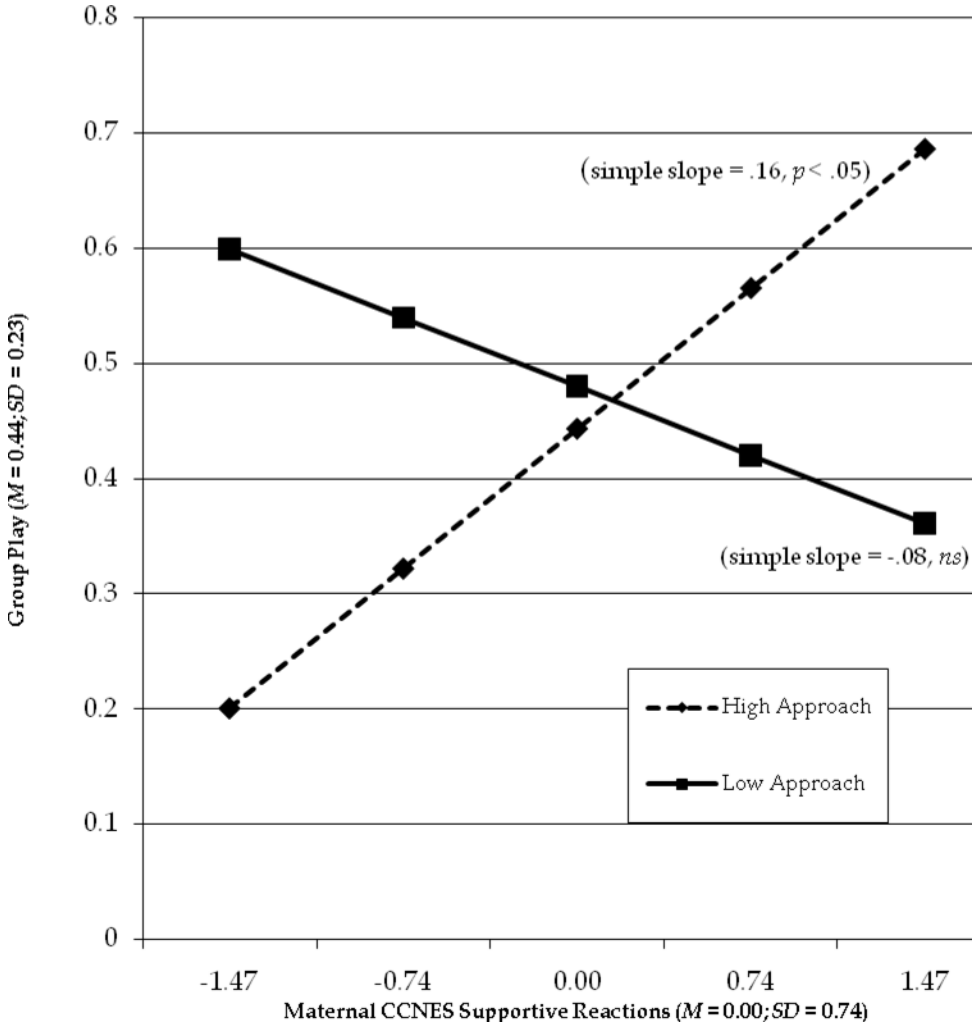

Figure 1.
Group play as a function of maternal CCNES supportive reactions at high and low approach.

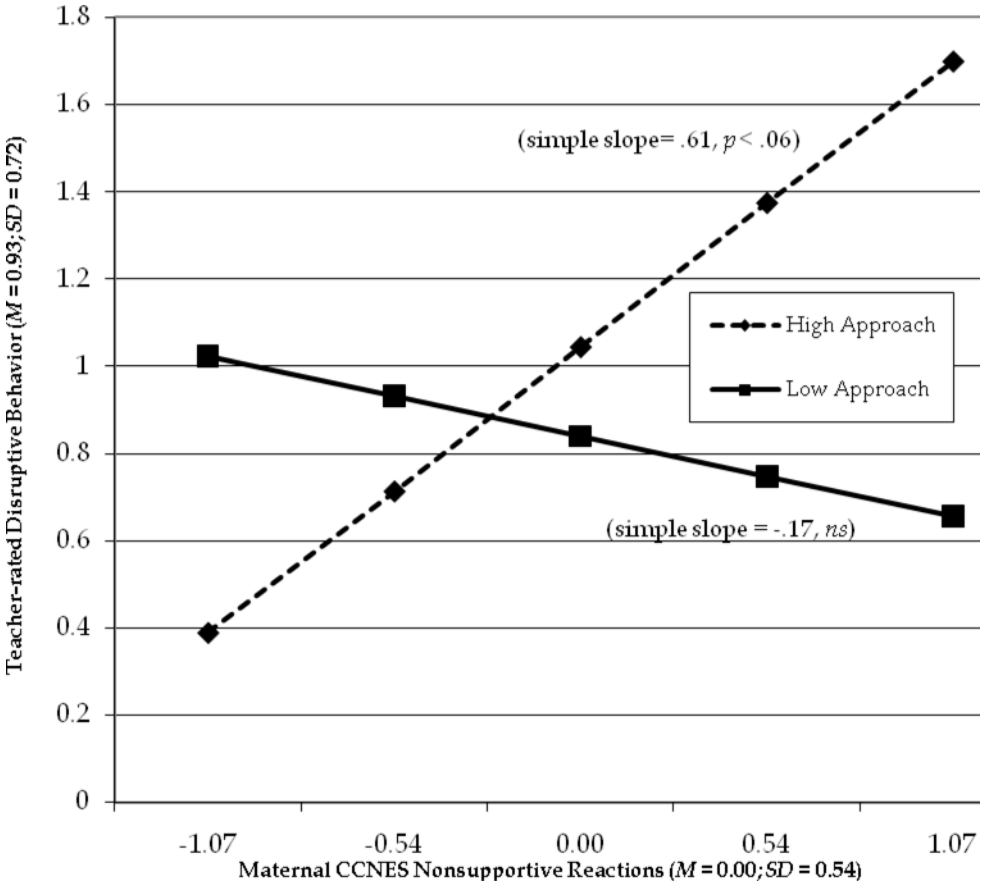

Figure 2.

Teacher-rated disruptive behavior as a function of maternal CCNES non-supportive reactions at high and low approach.

TABLE 1

Descriptive Statistics for Predictor and Outcome Variables

Variable	*M*	*SD*	*Minimum*	*Maximum*
Predictors				
Observed				
Children's approach	0.00	4.25	−13.70	6.78
Maternal Report				
CCNES supportive reactions 5.51	0.74	2.67	6.70	
CCNES non-supportive reactions	2.55	0.54	1.63	4.50
CCNES distress reactions	2.95	0.47	2.17	4.33
Outcomes				
Observed in the unfamiliar context				
Reticence	0.08	0.07	0.00	0.34
Group play	0.44	0.23	0.01	0.92
Aggressive/disruptive behavior	−0.30	1.06	−0.85	3.86
Teacher report in the familiar				
Disruptive classroom behavior	0.93	0.72	0 .33	4.17
On-task classroom behavior	3.41	0.88	1.44	4.69

Note. $n = 50 – 63$

TABLE 2

Correlations Between Predictor and Outcome Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.
Predictors									
Observed									
1. Children's approach	–	−.12	−.001	−.24	−.35**	.01	.14	.27	−.32*
Maternal Report									
2. CCNES supportive reactions		–	−.25*	−.14	.12	.10	.16	.15	−.14
3. CCNES nonsupportive reactions			–	.36**	.02	−.04	−.18	.14	−.14
4. CCNES distress reactions			–	.23	−.09	.22	−.22	.12	
Outcomes									
Observed behavior in the unfamiliar context									
5. Reticence					–	−.43**	−.03	−.17	.11
6. Group play						–	.14	.15	−.11
7. Aggressive/disruptive behavior							–	.10	−.18
Teacher report in the familiar context									
8. Disruptive classroom behavior								–	−.69**
9. On-task classroom behavior									–

Note. $n = 50 – 63$

* $p < .05$.

** $p < .01$.

TABLE 3

Regression Analyses Predicting Laboratory Behaviors

Predictors	Reticence			Group Play			Aggressive/Disruptive		
	R	ΔR^2	β	R	ΔR^2	β	R	ΔR^2	β
Children's approach	.37	.14*	−.37	.02	.000	−.02	.15	.02	.15
Distress reactions	.40	.02	.15	.10	.009	−.10	.31	.07	.28
Approach × Distress	.47	.06	−.31	.10	.001	.04	.37	.04	.24
Children's approach	.37	.14*	−.37	.02	.000	−.02	.15	.02	.15
Supportive reactions	.38	.005	.07	.10	.01	.10	.24	.03	.18
Approach × Supportive	.40	.01	−.12	.37	.13*	.36	.25	.006	.08
Children's approach	.37	.14*	−.37	.02	.000	−.02	.15	.02	.15
Nonsupportive reactions	.37	.001	.03	.05	.002	−.04	.23	.03	−.17
Approach × Nonsupportive	.41	.03	.18	.15	.02	−.14	.25	.009	−.10

* $p < .05$.

** $p < .01$.

TABLE 4

Regression Analyses Predicting Classroom Behaviors

Predictors	Classroom Disruptive			Classroom On-task		
	R	ΔR^2	β	R	ΔR^2	β
Children's approach	.43	.09*	.29	.45	.11*	−.31
Distress reactions	.47	.03	−.19	.46	.006	.08
Approach × Distress	.47	.002	.05	.49	.03	−.22
Children's approach	.43	.09*	.29	.45	.11*	−.31
Supportive reactions	.46	.02	.15	.47	.02	−.33
Approach × Supportive	.47	.008	.09	.47	.000	−.14
Children's approach	.43	.09*	.29	.45	.11*	−.31
Nonsupportive reactions	.46	.03	.17	.48	.03	−.17
Approach × Nonsupportive	.60	.14*	.38	.53	.05	−.22

*$p < .05$.

**$p < .01$.