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Fearful temperament moderates the association between positive parenting and children's social competence during early childhood

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Fearful Temperament Moderates the Association between Positive Parenting and Children's
Social Competence during Early Childhood

A Thesis

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Master of Science
in
Psychology

by

Jessica M. Grande

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Abstract

Social competence during kindergarten has been linked to adaptive teacher-child and peer relationships. The quality of parents' interaction with their children during the toddler years may promote better social development placing children on a trajectory towards social competence. Quite possibly, children vary in how responsive they are to parenting efforts. This study evaluated the extent to which positive parenting predicted change in social competence from child age 3 to 4 among 137 parent-child dyads. Observational measures of positive parenting and fearful temperament were analyzed when children were 3-years of age. Teacher reports of social competence in the classroom were collected during the children's 4-year old assessment. Positive parenting was positively associated with children's level of social competence. No evidence emerged of fearful temperament as a moderator for the association between positive parenting and social competence. Regardless of children's temperament, all children benefit from positive parenting during early childhood.

Social competence, positive parenting, fearful temperament, early childhood

Fearful temperament moderates the association between positive parenting and children's social competence during early childhood

Social competence has been defined as effectiveness in social interactions (Rose-Krasnor, 1997). Children considered socially competent display the social skills necessary to engage in and sustain positive reciprocal interactions with peers and teachers (Howes & Phillipsen, 1998). These skills include cooperation, sharing and turn taking, or the skills necessary for positive reciprocal relations (Barnett, Gustafsson, Deng, Mills-Koonce, & Cox, 2012; Brownell, Svetlova, Anderson, Nichols & Drummond, 2013). Upon entry into kindergarten, socially competent children tend to be more well-liked by teachers and peers, have more friends, and receive more positive attention from teachers than children lacking social skills (Hamre & Pianta, 2001; Kochenderfer & Ladd, 1996; Ladd, Birch, & Buhs, 1999). Moreover, children rated as more prosocial during the preschool and kindergarten years have been found to demonstrate more academic success during the elementary school years (Izard et al., 2001; Ladd, 1990; Ladd et al., 1999).

The toddler years may be a particularly important time to study the emergence of social competence. During the toddler years, children's social environment largely consists of parents and siblings. Parents increasingly expect children to be able to regulate and manage their negative emotions and conflicts (e.g., Kopp, 1989). Children with siblings at home may have extra advantages in learning social skills for two reasons. First, children with siblings spend large amounts of time with each other and frequently engage in shared and coordinated play (e.g., Cutting & Dunn, 2006). The frequency with which children with siblings interact provides ample opportunities for children to practice negotiating and resolving play disputes. Second, since conflicts between siblings tend to occur frequently, parents have a number of opportunities to

teach conflict resolution and negotiation strategies (Dunn & Munn, 1987; Youngblade & Dunn, 1995).

Parents' early interactions with their children may provide meaningful experiences that instill appropriate social behavior. Theoretically, positive parenting is characterized by high levels of support, sensitivity, and explanations with comparatively low levels of intrusiveness and harshness. Positive parents teach socially competent strategies through instruction of social rules, and positively reinforcing adaptive behavior (e.g., Maccoby, 1992). Such parenting also gives insight to appropriate social interactions through modeling acceptable social behavior. Parents who consistently encourage their toddlers toward social interactions support the development of social competence (Brownell, Svetlova, Anderson, Nichols, & Drummond, 2013).

Children's temperamental characteristics also may affect how exposure to positive parenting influences social competence. While positive parenting should be associated with more social competence for all temperamental styles, individual differences in the intensity of fearful temperament may differentially affect children's acquisition of social competence. That is, temperamentally fearful children may be more sensitive to variations in parenting. As compared to other temperamental profiles, temperamentally fearful children seem to benefit most from mothers' use of positive parenting behaviors, like gentle discipline strategies, because such parenting is not overwhelming or distressing (Kochanska, 1997). In contrast, harsh and intrusive parenting may be overly stressful for fearful children and interfere with their ability to internalize mothers' requests (Kochanska, 1997). Additionally, such parenting could fail to model socially competent behaviors.

The goal of the present study was to evaluate the extent to which fearful temperamental characteristics moderates the association between positive parenting and social competence

during the toddler years. The following sections will first describe positive parenting and how parenting affects the development of social competence during the toddler years. Next, the role of children's fearful temperament as conditioning the impact of positive parenting on social competence will be described. Finally, the specific hypotheses to be tested will be summarized.

Positive parenting during the toddler years: Implications for the development of social competence

Exposure to positive parenting, or parenting that is warm and responsive, has been linked to better social competence because such parenting effectively promotes children's development of emotional and behavioral control (e.g., Kochanska, Coy, & Murray, 2001). While warmth and responsiveness are general characteristics of positive parenting, how such parenting manifests changes across development. During the infancy period, positive parenting involves promptly responding to babies' emotional cues. Parents' responses that are well timed, appropriate, and contingent teach infants that their emotional cues elicit a predictable response from parents (e.g., De Wolf & Van Ijzendoorn, 1997; Fraley, 2002). Thus, parents of infants are encouraged to promptly respond to infants emotional cues.

The toddler period represents an important shift in parenting prompted in large part by increases in children's mobility, communication, and cognitive skill (e.g., Kopp, 1989). Like infancy, positive parenting during the toddler years also involves clearly communicating expectations for children's behavior in a way that is respectful and supportive of children's emerging autonomy (Kochanska, 1997). As compared to infancy, prompt and contingent responding declines during toddlerhood as parents begin to selectively respond to children's emotional cues. Selectively responding to children's emotional cues reflects an active effort of parents to encourage and support autonomous emotional and behavioral control (Kopp, 1989).

With increases in children's bouts of unregulated negative affect and willful defiance, parents begin to set limits on children's behavior, restrict children's activities, and use punishment and/or discipline to correct misbehavior (e.g., Shaw & Bell, 1993).

Important for the development of social competence, an increase in children's unregulated anger and defiance, which often occurs during the toddler years, provides opportunities for parents to teach socially acceptable emotional and behavioral control. For instance, parents who clearly communicate their expectations for children's conduct and who provide explanations for their decisions teach children the consequences of misbehavior. Positive parenting during the toddler years, then, involves setting limits for children's conduct, explaining social rules (e.g., taking turns), and encouraging the use of compromise, sharing, and negotiation (Gardner, Sonuga-Barke, & Sayal, 1999). While bouts of unregulated negative affect often occurs when parents impose limits on children's behavior, such negative affect also is common during social interactions with siblings and peers. Play contexts are often fraught with disagreements and disputes over toys. Parents who actively monitor and supervise their children's interactions with siblings and peers also have a number of opportunities to teach turn-taking, sharing, and negotiation, or critical social competence skills.

Learning social competence during the toddler and preschool years is essential for a successful transition to kindergarten. Children who engage in more conflictual interactions with peers may be at greater risk for experiencing peer rejection during kindergarten (Lansford et al., 2010). For instance, a meta-analysis examining correlates of social status ratings of elementary school-aged (i.e., 5 to 12 years of age) found that children rated as popular were more socially skilled, had closer friendships, were more cognitively sophisticated, and used less aggression and social withdrawal during peer exchanges (Newcomb, Bukowski, & Pattee, 1993). Conversely,

rejected children were found to be most aggressive and withdrawn as well as less sociable and cognitively skilled than average children (Newcomb, Bukowski, & Pattee, 1993). Moreover, socially skillful children were found to be less likely to be rejected by their peers (Newcomb, Bukowski, & Pattee, 1993). However, temperamental characteristics of children may affect the children's ability to acquire social competence skills.

Temperament moderates the association between positive parenting and social competence

Broadly defined, temperament refers to individual differences in emotional reactivity and self-regulation which are assumed to have biological and genetic underpinnings (Rothbart, Ahadi, & Evans, 2000). Reactivity refers to individual differences in emotional arousal, including fear and distress (Rothbart, Ahadi, & Evans, 2000). Variations in the propensity to react to novelty or uncertainty with negative emotions may influence the acquisition of social competence. Negative emotions include sadness, fearfulness, and anger reactions. For instance, children with a propensity to react to novelty with fear, withdrawal, or sadness also may be more likely to withdraw from or avoid social situations (Rubin, Burgess, & Hastings, 2002). Children prone to anger reactivity may be more likely to react to limitations and frustration with negative emotional reactivity and anger (Campbell, Shaw, & Gilliom, 2000). While both fearful and angry reactions have the potential to undermine the quality of social interactions with peers, temperamentally fearful children typically attract less attention from parents or peers. Given their tendency to withdraw from new or uncertain situations, temperamentally fearful children may have less experience interacting with peers and be less socially competent.

Quite possibly, positive parenting may differentially affect children's development of social competence by level of temperamental fearfulness (e.g., Bates et al., 1998; Lengua, Wolchik, Sandler, & West 2000; Rubin, Burgess, & Hastings, 2002). While all children may benefit from

positive parenting, temperamentally fearful children may be more sensitive to variations in positivity. For instance, mothers engaging in positive parenting often comfort their children during times of distress or fearfulness. Yet, too much comfort or positive parenting could be intrusive. That is, too much positive parenting can reinforce children's fearful reactions and prevent children from learning independent coping (Rubin, Burgess, & Hastings, 2002). For instance, Kiel and Buss (2012) examined the impact of mothers' level of over-protection on children's social adjustment among fearful children. Kiel and Buss (2012) found that higher levels of maternal over-protection during low-threat contexts but not high-threat contexts when children were 2 years of age predicted shyer and more inhibited behavior at age 3. Quite possibly, mothers' overprotectiveness in low-threat situations reinforced children's fears, rather than alleviated them. Similarly, Rubin and colleagues (2002) found that overly protective and positive parenting predicted greater stability in socially reticent behaviors across the toddler and preschool years.

While positive parenting paired with over protection may negatively impact children's development of social competence, too little positive parenting also can be problematic. Mothers who respond to children's withdrawn and distress reactions by forcing children to engage socially also may disrupt children's acquisition of social competence because such parenting fails to let children set the pace for interaction. Fearful children may need extra encouragement to engage in social interactions, but too much encouragement can overwhelm children causing increases in distress and anxiety. In support of this interpretation, Kiel and Buss (2013) found that mothers who reported being more embarrassed by their toddler's display of shyness tended to be more controlling and forceful during their interactions with them. Such forceful parenting

lacks sensitivity to children's distress responses; as children's distress increases, their ability to autonomously navigate social interactions likely decreases.

Finding the balance between over and under protection seems to be critical. Fearful children may need extra encouragement to engage socially and may need extra coaching on how to socially interact with peers. Positive parenting, without high levels of intrusiveness, supports children's autonomy by allowing children to set their own pace in entering into social exchanges (Barnett, Gustafsson, Deng, Mills-Koonce, & Cox, 2012; Newton, Laible, Carlo, Steele, & McGinley, 2014; Brownell, Svetlova, Anderson, Nichols, & Drummond, 2013). Deater-Deckard and colleagues (2001) considered the extent to which variations in parenting affected children's adjustment. Using a twin design, the impact of differential parenting on preschool-aged children's social-emotional development was examined. Mothers were observed separately with each twin pair for 10 minutes. Children who experienced more negative parenting than their identical twin also exhibited more negative, non-compliant and less positive behaviors. Children who received positive parenting, were more responsive and less noncompliant, had fewer emotional and behavioral problems and more prosocial skills compared to their twin. That is, the twin who received more supportive and less punitive/intrusive forms of parenting also was rated as more emotionally positive and prosocial and less emotionally negative with fewer behavior problems (Deater-Deckard et al., 2001).

Associations between positive parenting and increased social skills highlight the importance of parenting during early childhood. Barnett and colleagues (2012) considered the stability of positive parenting over time. Using a longitudinal design, the impact of positive parenting on language development and social competence were examined. Laboratory visits were conducted when children were 12, 24 and 36 months of age. Mothers were observed with their children

during a 10-minute free-play interaction and a puzzle completion task. Children who experienced higher levels of positive parenting at 24 months had better language skills and were rated higher in social competence at 36 months of age, after controlling for the influence of earlier parenting during a 12 month assessment. Although Barnett and colleagues (2012) demonstrated a positive association between positive parenting and social competence from age 2 to 3, they did not consider the extent to which temperamental characteristics of children moderated the association. Quite possibly, temperamentally fearful children benefit more from positive parenting than less fearful children.

The present study evaluated the impact of positive parenting on social competence and also considered the extent to which the association between positive parenting and social competence varied by level of children's fearful temperament (see Figure 1). While positive parenting was expected to be positively correlated with social competence for all children, the magnitude of this association was expected to vary by children's temperamental fearfulness. After controlling for overall intrusiveness, more positive parenting was expected to predict greater increases in social competence for the most fearful children because such parenting would be most effective in socializing and modeling social competence for children with this temperamental propensity. The following hypotheses were evaluated:

1. Positive parenting observed when children are 3 years of age would be associated with higher levels of teacher reported social competence at age 4.
2. Fearful temperament observed when children are 3 years of age would moderate the association between positive parenting and social competence at age 4.

Methods

Participants

Mothers with children enrolled in Head Start and a younger child who turned 2 years of age during the course of the study were recruited to participate. Families completed 3 annual assessments over a 2 year period corresponding with the younger children's second, third, and fourth birthdays. A total of 168 families participated, which included mothers, preschool-aged children, and 2-year-old target children. One family was excluded because the target child was severely developmentally disabled, leaving a final sample of 167 families. All participating families resided in the greater New Orleans area and participated 1 to 3 years after Hurricane Katrina struck the Gulf Coast. Data collected from the second and third assessment was used in the current report. The only data used in the final assessment was based on teacher reports. Of the 167 original participants, 137 families (80%) had children enrolled in preschool and agreed to let teachers provide reports of their children's school behavior.

At the second assessment, mothers averaged 26.08 years of age ($SD = 3.38$ years), preschool children averaged 60.57 months ($SD = 7.44$) and target children averaged 35.55 months of age ($SD = 3.63$ months). Children were African-American (90.2%), White (4.9%), or Middle Eastern (1.2%). Of the 3-year old children assessed, 57.5 percent were female. On average, mothers had 3.19 children ($SD = 1.46$) and each household supported 4.35 people ($SD = 1.55$). Regarding mothers level of education, 52.7 percent of mothers graduated from high school and 33.9 percent of mothers were either married or living with a romantic partner at the time of the interview. Families were very poor, with an average income to needs ratio of 1.06 ($SD = .70$) and an average per capita income of \$2,801.

Procedures

Recruitment for the study took place at Head Start parent orientation meetings and at Head Start registration. Interested mothers completed a brief recruitment screener to determine eligibility. Mothers with eligible children and who were willing to participate were contacted by project staff and the study was explained to them. Interviews were scheduled for interested mothers. Interviews mainly took place in the families' homes, but a few were conducted in a lab setting or at Head Start centers at mothers' request (wave 1 only). Interviews lasted approximately 2.5 hours and consisted of three parts: a videotaped structured interview, a questionnaire completed by mothers, and a language assessment of the preschool-aged children. Mothers received \$100 for participating and children received a small toy worth about \$5. All interviews were scheduled within 1 month of the target children's second, third, and fourth birthdays. The same in home assessment procedures were used at each of the 3 assessments.

At the age 4 assessment (wave 3), mothers were asked for permission to contact teachers and teacher aides if their children were attending a preschool, day care, or child care setting. Once permission from mothers was granted, permission to contact teachers also was obtained from the school administrators. Of the original 167 families, 155 families (92%) participated in the wave 3 assessment. Of these families, data from 18 children (12%; final N=137) were excluded because the children had no teacher data. Reasons for exclusion included refusing to grant permission to contact teachers or that children were not attending a center based preschool, day care, or child care. Of the 137 children were enrolled in school type setting, 54 percent attended Head Start, 31 percent were enrolled in a pre-kindergarten class, and 15 percent were enrolled in day care. All teacher reports were collected in the spring semester closest to their actual assessment so that teachers had adequate knowledge of the target children. Teachers and

their aides completed questionnaires about participating children's social status and social adjustment. Teachers and teacher aides each received \$20 for completing questionnaires.

Prior to each interview, informed consent was obtained. Interviewers read the consent form to the mother slowly, stopping to answer questions as needed. Interviewers did not proceed until the informed consent had been signed and all questions had been answered. Mothers received a copy of the consent form which included all study contact phone numbers. At each consecutive wave, informed consent procedures were reviewed before commencing with the interview. Once consent was obtained, interviewers reviewed a list of activities that would occur during the interview. Each task was explained to mothers and questions were answered. Mothers were allowed to keep a copy of the activity list to follow along with the interview.

Positive and intrusive parenting as well as children's fearful temperament was measured using data collected from observational tasks at the age 3 assessments. Mother scores were derived from a puzzle completion task and matching game. First, mothers and children completed a puzzle in which mothers were asked to supervise their children while they solved a puzzle that was too hard for the children to complete on their own. The wooden puzzle pieces made up pictures of animals. Before beginning the task, mothers were positioned next to their children. Interviewers showed children the pieces and emphasized how the pieces fit on the board. Mothers were instructed to allow children to solve puzzles on their own, but offer any assistance that is necessary. The task lasted 5 minutes. Children completing the task before the time limit were directed to continue playing with the puzzle until the interviewer returned.

Second, mothers and children played a matching game. The matching game lasted 3 minutes, and occurred after the puzzle task. First, interviewers taught mothers how to play the game. Next, mothers were instructed to teach their children to play the game and continue

playing the interviewer returned. The matching game involved twelve cardboard game pieces with six different pairs of matching dinosaurs. Game pieces were jumbled and placed faced down. To play, each player takes turns picking two pieces to flip over face side up. If the pieces matched the player received a point. If the pieces did not match, the pieces were placed back faced down. Then the next player took a turn. The player who matched the most pieces at the end won. Mothers were instructed to keep playing until the interviewer returned 3 minutes later.

Temperament was measured using a scary lion mask. The lion mask was designed to elicit diverse responses in children's reactivity, specifically, regarding fear-inducing situations. Interviewers instructed target children to remain on the mat. Target children were positioned in one corner of a 54 inch square mat. A video camera was directly in front of the target children and the children's activity was tracked. To measure fearful reactivity, babysitters entered the room and knelt down on the opposite corner of the mat in front of the child. The babysitter engaged the target children in a conversation for 30 seconds. The babysitters introduced themselves and spoke in a happy tone while they smiled and leaned toward target children. When the conversation ended babysitters used a slow and ominous voice to instruct target children to stay on the mat. Babysitters exited the room and positioned the scary lion mask over their face. Babysitters reentered the room and knelt down where they were originally sat. Babysitters stared silently at target children for 30 seconds or until the apex of fear reaction is achieved. The apex of fear is achieved if the target children become extremely distressed (i.e., screams, trembles, runs away). After the 30 seconds, babysitters took the mask off while facing target children. Babysitters held the mask under their chin with both hands so that the mask was facing the children for 30 seconds. After 30 seconds, babysitters explained that they were just wearing a mask. Babysitters placed the mask in front of the target children and invited them to take a closer

look at the mask. Babysitters waited 15 seconds before touching the mask and inviting target children to touch the nose together. Target children were given 15 seconds to touch and manipulate the mask. Children interested in the mask were asked if they would like to try the mask on. The total mask exploration time lasted 15 seconds.

Two independent teams of undergraduate and graduate student coders rated parenting and children's temperament. Prior to coding either task, coders received a minimum of 20 hours of training and achieved an average inter-rater reliability estimate of .80 on training interactions. Twenty-five percent of all tasks were double coded to estimate inter-rater reliability. To monitor ongoing adherence to the coding procedures, coders attended weekly reliability meetings, and disagreements in coding were resolved. All coders were blind to the identity of families and to study hypotheses. Separate teams of coders rated the matching, puzzle and scary mask and attended separate reliability meetings.

Measures

Positive parenting. Positive parenting was defined as parenting which is emotionally positive, supportive and engaged, and promotes children's autonomy. Parenting scores were derived from observational ratings of mothers' behavior towards the target children during the puzzle and matching task. Trained observational coders rated mothers' behavior directed towards children using a modification of the global coding system developed in the NICHD Study of Early Child Care and Youth Development (NICHD, 1999). Similar coding systems have been used in studies for observation of mother-child interactions (i.e., Adi-Japha & Klein, 2009; Barnett & Scaramella, 2013). Studies with low-income African American dyads found significant statistical correlations in expected directions between observational measures of parenting and maternal self-report of parenting (i.e. Zaslow et al., 2006). Seven different

parenting codes were rated in terms of how characteristic each behavior was of mother during each of the interactional tasks. Codes were rated on a 7 point Likert scale, ranging from not at all (1) to very highly (7) characteristic of mothers.

Three codes measured positive parenting during each task: sensitivity/supportive presence, positive regard for the children, and stimulates cognitive development. The *sensitivity/supportive presence* code measured mothers' behaviors that are child-centered and includes evidence of mothers' awareness of their children's needs, moods, interests, and capabilities as well as mothers' contingent responses to children's distress and non-distress. The *positive regard* code measured mothers' expression of positive feelings towards their children, including affection, liking, appreciation, care, praise, concern, or support. *Stimulates cognitive development* measured the degree to which mothers support and encourage children's cognitive and language development. Behavioral indicators of stimulation of cognitive development included: labeling, encouraging children to speak, using of explanations, asking children questions, and responding to children's vocalizations. Interrater reliability for each puzzle task code was good with inter-class correlation coefficients of .78 for sensitivity/supportive presence, .89 for positive regard, and .77 for stimulation of cognitive development. Interrater reliability for each matching task code also was excellent with inter-class correlation coefficients of .87 for sensitivity/supportive presence, .85 for positive regard, and .80 for stimulation of cognitive development.

A Cronbach alpha coefficient was computed across the 6 items (3 ratings and 2 tasks) to ensure that scores are internally consistent for mothers. Results indicated that the rank order in mothers' ratings of positivity was consistent across the two tasks ($\alpha = .72$). Next, positive parenting scores for each task were created by first averaging codes within each task. Correlation

analysis between the score from the matching task and puzzle tasks indicated a moderate positive relationship ($r = .38$, $p < .01$) between positive parenting scores. With a good alpha coefficient and a moderate correlation coefficient, the two scores were averaged to create a single indicator of positive parenting ($M = 3.17$; $SD = 0.78$).

Fearful temperament. Fearful temperament was defined as children's propensity to react to novelty with distress (e.g., negative affect) and avoidance during a scary mask task. The task was adopted from the Laboratory Temperament Assessment Battery (LAB-TAB; Goldsmith & Rothbart, 1996). Similar tasks with scary masks have been found to reliably measure children's fearful temperament during early childhood (i.e., Kochanska, Coy & Murray, 2001; Zenter & Bates, 2008). Trained observational coders rated children's distress and avoidant behaviors during the scary mask task. Dividing each segment (baseline, mask on, mask under chin, and touching mask) into three 10-second epochs, coders rated the intensity of children's distress, avoidance, approach, startle, maternal involvement, positive involvement and intrusiveness. The only exception was that for the baseline segment, ratings were given for the entire segment, rather than the three different epochs. Two codes were used to measure fearful temperament: avoidance and distress.

Avoidance measured children's active attempts to increase their physical distance from the mask. Trained observers rated children's behavior during each epoch on a 4-point scale ranging from 0 (no evidence of avoidance) to 3 (active escape behaviors). During each of the segments in which the mask was present (i.e., mask on, mask under chin, and touching mask), raters coded children's behavior during each of the three 10-second epochs. The highest rating across the three epochs within each segment was used to measure children's peak avoidance within that segment. Scores from the three segments demonstrated a good consistency of

avoidance behaviors ($\alpha = .88$). A peak avoidance score was created by averaging across the peak intensity score for each segment.

Distress vocalizations were defined as children's negative vocalizations expressed during each of the three segments in which the mask was present. Like avoidance, distress intensity was rated on a 4-point scale ranging from: 0 (no distress) to 3 (full intensity crying/screaming). Trained coders rated each epoch for intensity of distress. The highest rating across the three epochs within each segment was used as an indicator of peak distress during that segment. Cronbach alpha coefficients were computed to estimate internal consistency of the distress ratings; results indicated a high degree of internal consistency ($\alpha = .82$). Next, peak ratings were averaged across the three segments to create an indicator of children's overall distress during the scary mask segments. The intensity of avoidance and distress scores were positively correlated ($r = .64, p < .01$) and averaged into a single fearful temperament score ($M = 0.66$; $SD = 0.48$).

Social competence composite: Teacher ratings. Social competence was defined as children's use of social skills which promoted positive reciprocal interactions with peers and teachers (Howes & Phillipsen, 1998). Four subscales derived from 3 questionnaires were used to measure children's social competence. These four indicators of social competence included social skills exhibited during interactions with teachers (e.g., compliant behavior and social competence) and during interactions with peers (e.g., sociability, social competence, and expressive behavior). Teachers and teacher aides independently completed the 3 questionnaires. Each of the indicators used to create the social competence construct will be described in turn.

Compliant behavior indicator: The *compliant* 10-item subscales measured how well children follow instructions from teachers (i.e., is obedient and compliant). Compliant behavior was measured using the Adaptive Social Behavior Inventory (ASBI; Hogan, Scott & Bauer,

1992) which is a 30-item questionnaire measuring children's expressive, compliant, and disruptive behavior in the classroom. The compliant subscale of the ASBI is a reliable measure of social competence with acceptable levels of reliability and validity in diverse samples including African American preschool children (e.g., Bryant, Burchinal, Lau & Sparling, 1994; NICHD, 1998). Items are rated on a 3-point Likert scale ranging from *rarely or never* to *almost always*. Items were scored such that higher scores indicated more social competence. Internal consistency of teacher and teacher aid ratings was good for the compliance scales ($\alpha = .89$; $\alpha = .87$, respectively). Items were averaged for each rater to create a teacher and teacher aid compliance index. Correlation analysis indicated a strong positive relationship between teacher and teacher aid compliance indexes ($r = .65$, $p < .01$). Teacher and teacher aid indexes were averaged to create a single indicator of compliance behaviors ($M = 1.43$, $SD = 0.37$).

Sociability indicator. Teachers and teacher aides rated children's sociability status by rating their general impression of the children's social behavior in school with their peers. This impression inventory was developed by study investigators to tap into teachers' overall impression of how well the children interacted with peers. Sample items include: "In general, this child is accepted.", "In general, this child is socially liked." The 5-item *sociability* subscale measured social competence at school. Items were rated on a 5-point Likert scale ranging from *not at all* to *always*. Items were scored such that higher scores indicated more social competence and popularity. Cronbach Alpha coefficients were computed across the 5 items to ensure that scores are internally consistent for each of the teacher and teacher aid ratings. Results indicated that the rank order of teacher and teacher aids' ratings of sociability were consistent across the two tasks ($\alpha = .83$, $\alpha = .74$, respectively). Ratings were averaged to create a sociability index for teacher and teacher aid separately. Correlation analysis indicated a strong positive relationship

between teacher and teacher aid sociability indexes. A single sociability score was created by averaging across the teacher and teacher aid indexes ($M = 2.93$, $SD = 0.61$).

Social competence indicator. Teachers and teacher aides completed the Social Competence and Behavior Scale (SCBE; LaFreniere & Dumas, 1996). The SCBE scale has good reported interrater reliability (r ranging from .78 to .91), internal consistency (α ranging from .80 to .92) and test-retest reliability (r ranging from .78 to .86). The 10-item social competence subscale was included as an additional indicator of social competence. While the social competence subscale was included in the study, one item was inadvertently left out of the survey. As a result, only 9 items were used to measure social competence. This subscale measures social behavior in children (i.e., accepts compromise, cooperates with others). Items are rated on a 3-point Likert scale ranging from *not true* to *very true*. Items were scored such that higher scores indicated more social competence. Cronbach alpha coefficients indicated good internal consistency of teacher and teacher aid social competence ratings ($\alpha = .85$, $\alpha = .79$, respectively). Teacher and teacher aid scores were created by first averaging scores for each rater. Correlation analysis between teacher and teacher aid scores indicated a moderate positive relationship ($r = .44$, $p < .01$) and were averaged into a single social competence indicator ($M = 1.39$; $SD = 0.32$).

Expressive behavior index. The *expressive* 13-item subscale measured prosocial outgoing behaviors (i.e., is sympathetic to other children's distress, tried to comfort others when they are upset). Expressive behavior was measured using the Adaptive Social Behavior Inventory (ASBI; Hogan, Scott & Bauer, 1992) which is a 30-item questionnaire measuring children's expressive, compliant, and disruptive behavior in the classroom. The expressive subscale of the ASBI is a reliable measure of social competence with acceptable levels of reliability and validity in diverse samples including African American preschool children (e.g., Bryant, Burchinal, Lau &

Sparling, 1994; NICHD, 1998). Cronbach alpha coefficients indicated a high degree of internal consistency in teacher and teacher aids ratings for the expressive scales ($\alpha = .87$; $\alpha = .87$, respectively). The items were averaged within each rater to create two indexes of teacher and teacher aid reported expressive scales. Correlation analysis between the teacher and teacher aid expressive scale indexes indicated a strong positive relationship ($r = .62, p < .01$). The teacher and teacher aid expressive index were averaged to create a single indicator of expressive behaviors ($M = 1.52$; $SD = 0.33$).

To create the overall score for social competence, the four subscales were correlated (i.e. compliant behavior indicator, sociability indicator, social competence indicator, expressive behavior indicator). The correlations among the social competence subscales were generally good, ranging from .48 to .76. Next, a Cronbach alpha coefficient was computed to evaluate the degree to which children's ratings were generally consistent across the different indicators of social competence. Results indicated excellent internal consistency across the four subscales ($\alpha = .85$). The four indicators were standardized and averaged to create a single indicator of social competence ($M = 0.00$; $SD = 0.86$). In order to ensure that the pattern of findings was consistent for the composite score and the individual components, statistical analyses were computed for both the social competence composite score as well as the individual indicators of social competence. Each subscale represents one indicator of the overall social competence construct.

Statistical Controls. Three statistical controls were considered. First, girls are consistently rated as more socially competent than boys and so child gender correlated with all study constructs. Second, in order to evaluate the extent to which parenting and fearful temperament predicted social competence in preschool, children's initial level of social competence was statistically controlled. Third, empirical evidence suggests that the impact of positive parenting

on children's social behaviors may vary based on the level of parental intrusiveness. That is, mothers' positive, yet overly intrusive, parenting may negatively impact temperamentally fearful children's development of social competence. Consequently, intrusive parenting was statistically controlled. The following section describes the measures of social competence and intrusive parenting measured when children were 3 years of age.

Social Competence: Mother ratings. Mothers completed a 10 item social competence subscale from the Social Competence and Behavior Evaluation Scale (SCBE, LaFreniere & Dumas, 1996). This subscale measures social behavior in children (i.e. accepts compromise, cooperates with others) and had demonstrated acceptable internal consistencies (ranging from $\alpha = .80$ to $\alpha = .82$, high inter-rater ($r = .83$ to $.87$), and test-retest reliability ($r = .82$; Kotler & McMahon, 2002). Sample items include "Accepts compromise," and "comforts or assists other children in need." Items are rated on a 3-point Likert scale ranging from *not true* to *very true*. Items were scored such that higher scores indicated more social competence. Cronbach alpha coefficients indicated good internal consistency of mothers social competence ratings ($\alpha = .73$). The 10 items were averaged to create a single indicator of mother ratings of social competence. Mothers ratings reported good levels of social competence at children age 3 ($M = 1.24$, $SD = 0.32$).

Intrusive parenting. The same coding system used to measure positive parenting also was used to rate intrusive parenting behaviors. Only the intrusiveness code, rated in the matching and teaching task was used. *Intrusiveness* measured mothers' behaviors that are parent-centered and included evidence of unwanted contact that interfered with the children's efforts by insisting or manipulating children's behavior. Interrater reliability for the intrusiveness code was excellent (puzzle task: $.88$; matching task: $.90$). Next, the scores on the two intrusiveness items were

correlated. Results indicated that these codes were statistically and significantly, albeit modestly, correlated ($r = .22, p < .001$). The intrusive parenting code rated in each task was averaged to create a single indicator of intrusive parenting. Mothers displayed moderate levels of intrusive parenting ($M = 3.74, SD = 1.02$).

Data analytic plan

Prior to testing study hypotheses, study constructs were examined to ensure that all constructs meet normality assumptions. Cronbach alpha coefficients and inter-rater reliability coefficients were used to measure internal consistency. Next, all study constructs were correlated to ensure that constructs were related in expected ways. For instance, positive parenting was expected to be positively correlated with social competence, indicating that mothers observed to be more positive during social interactions with their children also have children rated as more socially competent by teachers. In order to ensure no confounding effects of child gender, child sex was correlated with all study constructs.

Finally, hierarchical multiple regression equations were computed to test study hypotheses. Since the indicators of social competence were only weakly to modestly correlated with parenting, regression equations also were computed for each of the indicators of social competence. Thus, a total of 5 regression equations were computed. One regression used the social competence composite score and one for each of the four indicators of social competence. Prior to computing the regression equations the fearful temperament and positive parenting variables were grand mean centered. An interaction term was computed by multiplying fearful temperament by positive parenting. In the first step of the equation, statistical controls were entered. In all equations, mothers' rating of children's social competence at age 3 was entered to control for children's initial level of social competence. In addition, empirical research indicates

that fearful children often evoke more intrusive and over controlling parenting (i.e., Kiel & Buss, 2013). As such, levels of maternal intrusiveness measured at age 3 were statistically controlled. Finally, if child gender emerged as statistically and significantly correlated with study constructs, child gender will be statistically controlled and entered in this first step. In the next step of the regression equation, centered fearful temperament and positive parenting scores were entered. In the final step of the equation, the interaction term was entered. Consistent with expectations, a statistically significant change in R^2 was expected upon entry of the interaction term, the beta coefficient associated with the interaction term was expected to be statistically significant, and the overall model was expected to explain significant portions of the variance associated with children's social competence.

Statistically significant interaction terms were decomposed using the procedures outlined by Cohen and Cohen (1983) and Aiken and West (1991). To illustrate and test the significant interaction effect, separate regression lines are computed at one standard deviation below the mean of the predictor (e.g., fearful temperament), at the mean of the predictor, and one standard deviation above the mean of the predictor.

Results

First, descriptive statistics were computed to ensure that the distributional properties of these study constructs met normality assumptions and to check for outliers. Table 1 and 2 summarizes the means, standard deviations, and correlations among study constructs. An examination of the means and standard deviations indicated that all study constructs were normally distributed with the exception of fearful temperament. Mothers demonstrated low levels of positive parenting with small fluctuation in scores ($M = 3.17$; $SD = .78$), indicating that most mothers demonstrated very little positive parenting. Conversely, mothers demonstrated

moderate levels of intrusive parenting ($M = 3.74$; $SD = .1.02$). Fearful temperament scores were skewed such that the majority of children evidenced very little, if any, fearfulness (see Table 1). Logarithmic transformations help correct for normality (Tabachnick & Fidell, 2007). To reduce the level of skewness, the fearful temperament score was log transformed ($M = .66$, $SD = .48$). All other constructs demonstrated skewness and kurtosis in acceptable ranges.

Next, scores were evaluated for the potential of out-of-range values and outliers. Only one outlier emerged. While mothers' generally demonstrated very little positive parenting during their interactions with their children (see Table 1), one score had the potential to be considered an outlier ($z = 4.06$). This parent scored well above average on positive parenting behaviors. The outlier was retained for further analysis for two reasons a) removing the score did not alter the results and b) the score reflected a positive parenting that was within the range of possible. The social competence scores were normally distributed as indicated by acceptable skewness and kurtosis (see Table 1)

Next, bivariate correlations were computed among constructs to evaluate whether the pattern of associations among study constructs were consistent with expectations (see Table 2). Consistent with expectations, positive parenting was positively correlated with the overall social competence construct ($r = .24$; $p < .01$), indicating that higher levels of positive parenting were associated with higher levels of social competence. In contrast, fearful temperament was not statistically significantly correlated with either positive parenting or the social competence

Table 1

Summary of Descriptive Statistics among Study Constructs

Variable	M	SD	Range		Skewness	Kurtosis
			Minimum	Maximum		
1. Positive Parenting (age 3)	3.17	0.78	1.33	6.33	0.27	0.83
2. Fearful Temperament (age 3)	0.66	0.48	0.00	1.39	-0.05	-1.46
3. Social Competence Composite (age 4)	0.00	0.86	-2.36	1.57	-0.48	-0.45
4. Compliant Behavior Indicator (age 4)	1.43	0.37	0.50	2.00	-0.33	-0.93
5. Sociability Indicator (age 4)	2.93	0.61	1.20	4.00	-0.44	-0.37
6. Social Competence Indicator (age 4)	1.39	0.32	0.67	2.00	-0.16	-0.85
7. Expressive Behavior Indicator (age 4)	1.52	0.33	0.46	2.00	-1.12	1.31
8. Mother Ratings of Social Competence (age 3)	1.24	0.32	0.20	2.00	-0.04	0.51
9. Intrusive Parenting (age3)	3.74	1.02	1.00	7.00	0.59	0.50
10. Child Gender	0.43	0.50	0.00	1.00	0.31	-1.93

Table 2

Bivariate Correlations among Study Constructs

Variable	1	2	3	4	5	6	7	8	9
1. Positive Parenting (age 3)	1.00								
2. Fearful Temperament (age 3)	-.01	1.00							
3. Social Competence Composite (age 4)	.24**	.13	1.00						
4. Compliant Behavior Indicator(age 4)	.30**	.13	.82*	1.00					
5. Sociability Indicator (Age 4)	.20*	.12	.91*	.64**	1.00				
6. Social Competence indicator (age 4)	.23*	.11	.89*	.73**	.72**	1.00			
7. Expressive Behavior Indicator (age 4)	.11	.08	.83*	.48**	.76**	.61**	1.00		
8. Mother ratings of social competence (age 3)	.11	-.06	.06	.02	.01	.05	.14	1.00	
9. Intrusive Parenting (age 3)	-.48**	-.02	-.12	-.21*	-.08	-.16	.02	-.07	1.00
10. Child Gender	-.16	.08	-.18*	-.23**	-.09	-.21*	-.10	-.09	.10

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

construct. The lack of a statistical association at mean levels of fearful temperament is not incompatible with a moderational hypothesis.

In order to rule out the possibility that positive parenting, fearful temperament and social competence varied systematically by child gender, all study constructs were correlated with children's gender. While children's gender was not statistically and significantly correlated with parenting indicators or fearful temperament, children's gender was statistically and significantly correlated with the overall social competence construct ($r = -.18; p < .05$), indicating that boys were rated as less socially competent than girls. After further examination of child gender and the individual indicators of social competence, results indicated that child gender was significantly correlated with the social competence indicator ($r = -.21; p < .05$) and compliant behavior ($r = -.23; p < .05$) subscales only, suggesting that boys demonstrated less social competence and compliance at school than girls did.

Evaluation of study hypotheses

The first regression equation estimated the impact of mothers' positive parenting and children's fearfulness on overall social competence. In the first step, child gender, age 3 ratings of children's social competence and mothers' intrusive parenting were statistically controlled. Child gender demonstrated a trend toward statistical significance ($\beta = -.17; p < .10$), indicating that boys demonstrated less social competence (see Table 3). In the next step of the equation, the main effect of positive parenting, but not fearful temperament, was statistically significant ($\beta = .21; p < .05$; see Table 3). In addition, a statistically significant change in R-square emerged, indicating that positive parenting explained significant portions of the variance associated with social competence (see Table 3). Contrary to expectations, the interaction term was not

statistically significant ($\beta = .13$; $p = .14$), providing no evidence that the impact of mother's positive parenting on children social competence varied by level of fearful temperament.

Table 3

Summary of Regression Analysis Considering Fearful Temperament as a Moderator of the Association of Positive Parenting and Social Competence

<i>Social Competence Composite Age 4</i>			
Child age 3:	ΔR^2	F_{ch}	β
Step 1:	0.05	1.95	
Child Gender			-0.17+
Mother Ratings of Social Competence			0.03
Intrusive Parenting			-0.10
Step 2	0.05*	3.54*	
Positive Parenting			0.21*
Fearful Temperament			0.14
Step 3	0.02	2.18	
Positive Parenting x Fearful Temperament			0.13
Total R^2 :	0.11		

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

Next, regression equations were re-estimated for each of the social competence subscales (see Table 4). Four regression equations were computed to predict children's compliant behavior, sociability, social competence indicator, and expressive behaviors. In each regression equation, child gender, mothers' ratings of social competence at age 3, and mothers' intrusive parenting

were statistically controlled. Main effects of positive parenting and children's fearful temperament (grand mean centered) were evaluated in step 2. Two-way interactions between positive parenting x fearful temperament were evaluated in step 3.

The first regression predicted children's compliant behaviors. In the first step, mothers intrusive parenting was significantly associated with children's compliant behaviors ($\beta = -.20$; $p < .05$). A trend towards statistical significance emerged for child gender ($\beta = -.23$; $p < .10$). In the second step, positive parenting was positively significantly associated with children's compliant behaviors ($\beta = .21$; $p < .01$), indicating that more positive parenting behaviors were associated with more compliant behaviors from children. The beta coefficient for fearful temperament was statistically significant at the trend level ($\beta = -.15$; $p < .10$). In addition, a statistically significant change in R-square emerged, indicating that higher levels of positive parenting explained significant portions of the variance associated with compliant behaviors (see Table 4). In step 3, the beta coefficient associated with the positive parenting x fearful temperament interaction term was marginally statistically significant ($\beta = .16$; $p < .06$). This interaction term was decomposed by calculating the simple slopes of the association between positive parenting and compliant behaviors at 1 standard deviation above the mean, at the mean, and 1 standard deviation below the mean of fearful temperament (Aiken & West, 1991; Cohen & Cohen, 1983). Positive parenting was statistically significantly associated with all levels of observed fearful temperament (see Figure 2). That is, at 1 standard deviation above the mean of fearful temperament the association between positive parenting and compliant behaviors was statistically significant ($t = 4.68$; $p < .01$). At mean levels of fearful temperament the positive parenting was statistically significantly associated with compliant behaviors ($t = 4.58$; $p < .01$). At 1 standard deviation below the mean of fearful temperament, the slopes for the association

between positive parenting and compliant behaviors were statistically significant ($t = 2.14$; $p < .05$). Significant slopes indicate that increases in positive parenting were associated with similar increases in children's compliant behaviors. Although all children benefit from positive parenting, the strength of association between positive parenting and compliant behaviors increased with levels of fearful temperament. That is, at higher levels of fearful temperament the strength of the relationship between positive parenting and children's compliance behaviors increased, indicating that highly fearful children were most compliant. At lower levels of fearful temperament the strength of the association between positive parenting and children's compliance behaviors decreased.

Second, a regression equation was computed to predict children's sociability. In step 1, none of the beta coefficients associated with the statistical controls were statistically significant. In step 2, the beta coefficient associated with positive parenting was statistically significant ($\beta = .20$; $p < .05$), indicating that more positive parenting was associated with more sociability behaviors in children at age 4. The beta coefficient associated with fearful temperament was not statistically significant. Moreover, a significant R-square in step 2 indicated that higher levels of positive parenting explained significant portions of the variance associated with sociability (see Table 4). In step 3, the beta coefficient associated with the positive parenting x fearful temperament interaction was not statistically significant ($\beta = .13$; $p = .14$).

Next, a regression equation predicting children's scores on the social competence indicator (derived from the SCBE measure) was computed. In step 1, only the beta coefficient associated with child gender was statistically significant ($\beta = -.19$; $p < .05$), indicating that boys were associated with lower teacher ratings on the social competence subscale. In step 2, none of

Table 4

Summary of Regression Analysis Considering Fearful Temperament as a Moderator between Positive Parenting and Individual Components of Social Competence at age 4

	<i>Compliant Behavior Indicator</i>			<i>Sociability Indicator</i>			<i>Social Competence Indicator</i>			<i>Expressive Behavior Indicator</i>		
	ΔR^2	F_{ch}	β	ΔR^2	F_{ch}	β	ΔR^2	F_{ch}	β	ΔR^2	F_{ch}	β
Step 1:	0.09*	4.25*		0.01	0.55		0.06+	2.59+		0.03	1.14	
Child Gender			-0.23+			-0.08			-0.19*			-0.08
Mother Ratings of Social Competence			-0.02			-0.01			0.01			0.13
Intrusive Parenting			-0.19*			-0.07			-0.14			0.04
Step 2	0.06*	4.03*		0.05*	3.05*		0.04+	2.38+		0.02	1.41	
Positive Parenting			0.21*			0.20*			0.16			0.13
Fearful Temperament			0.15+			0.13			0.13			0.09
Step 3	0.02+	3.37+		0.02	2.12		0.00	0.47		0.01	1.21	
Positive Parenting x Fearful Temperament			0.16+			0.13			0.06			0.1
Total R^2 :	0.17			0.08			0.10			0.06		

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

the beta coefficients were statistically significant. Finally, the positive parenting x fearful temperament interaction was entered, but the beta coefficient associated with this interaction term was not statistically significant ($\beta = .06$; $p = .49$).

Finally, the impact of mothers' parenting and children's fearful temperament on children's expressive behavior was computed. After controlling for child gender, mothers' intrusive parenting, and social competence at age 3, neither positive parenting nor fearful temperament ratings accounted for statistically significant portions of the variance associated with expressive behavior (see Table 4). Similarly, the beta coefficient associated with the positive parenting x fearful temperament interaction term was not statistically significant ($\beta = .09$; $p = .27$).

Discussion

Understanding how fearful temperament influenced the expected association between positive parenting and the development of social competence was the primary goal of the current study. First, positive parenting, net of intrusive parenting, was expected to predict increases in children's social competence from age 3 to 4. Results largely supported this hypothesis. When considering the broader social competence construct, positive parenting at age 3 predicted more social competence at age 4. Considering the specific indicators of social competence, results indicated that exposure to more positive parenting was associated specifically with more compliant behaviors and sociability in the classroom. Second, in terms of gains in social competence, temperamentally fearful children were expected to benefit most from exposure to more positive parenting. Little evidence that fearful temperament moderated the impact of positive parenting on overall levels of social competence emerged. When considering the

specific indicators of social competence, the association between positive parenting and compliance was strongest for the most fearful children. The following sections will discuss on the implications of these findings for understanding the development of social competence as well as alternative mechanisms by which fearful temperament affects emerging social skills.

Positive parenting leads to increases in social competence during early childhood

Positive parenting has been found to be associated with more social competence during early childhood (e.g., Barnett et al., 2012; Brownell et al., 2013). Consistent with prior research, observed positive parenting when children were 3 years of age was found to predict better social competency from teachers one year later. Further, positive parenting was associated with higher ratings in three of the four social competency indicators. That is, mothers who were rated as more positive during interactions with their 3 year old children also had children who were rated as more compliant, more socially skilled (i.e., social competence indicator), and more sociability/popularity by teachers during preschool. Interestingly, positive parenting did not predict children's overall expressive behavior as rated by teachers. Expressive behavior measured children's comforting, emotionally warm and supportive, as well as prosocial behaviors in the classroom.

Theoretically, exposure to emotionally warm and positive parenting should be linked to more emotionally warm and supportive child behavior. That is, mothers who are emotionally warm and supportive encourage and validate children's emotions (e.g., Denham, Renwick & Holt, 1991). Interestingly, mothers in the current study, demonstrated very little warmth and support during their interactions with their preschool aged children. That is, overall ratings of positive parenting were very low. Positive parenting consisted of positive regard (e.g., affection), sensitivity-support (e.g., child-centered), and stimulates cognitive development (e.g., encourages

language development). Although scores from two different interactional tasks were used, average scores were in the “mildly characteristic” range. Thus, one reason why positive parenting did not predict expressive behavior could be that mothers did not demonstrate enough warmth, support and positivity. The extent to which mothers’ behaviors observed during these two interactional tasks represents reality for children’s development of comforting and sympathy (e.g., expressive behavior) may require exposure to higher levels of positive parenting.

Temperamentally fearful children need positive parenting more than less fearful children to develop social competence

In addition to expecting positive parenting to enhance children’s social competence, children more prone to fearful reactions were expected to benefit more from exposure to positive parenting than less fearful children. Little support for this hypothesis emerged when considering either the overall construct of social competence or the individual indicators of social competence with one exception. Positive parenting predicted more compliant behaviors for the most temperamentally fearful children. Of all the indicators of social competence, compliance is the one indicator that was most distally related to typical operational definitions of social competence. Social competence was defined as social skills needed to promote effective and positive social interactions. While teachers are more likely to respond to children who are compliant and follow teacher directions, classroom compliance requires children to listen, comprehend, and follow directions (Kaler & Kopp, 1990; Rimm-Kaufman, LaParo, Downer & Pianta, 2005). In other words, to inhibit social behavior. It is perhaps not surprising, then, that positive parenting predicted classroom compliance among the most temperamentally fearful children.

With regard to the role of parenting on the other dimensions of social competence, two possibilities for the unexpected pattern of results exist. First, quite possibly, temperamental fearfulness does not moderate the association between positive parenting and social competency. That is, positive parenting may promote social competence regardless of children's temperamental characteristics such that all children benefit from exposure to positive parenting. Alternatively, the measure of fearful temperament may be inadequate. That is, as compared to other studies of fearful temperament, the measurement approach used in the current study was overly simplistic. As will be described, previous research typically relies on multiple methods to measure fearful temperament; the current study used a single observational paradigm. Second and related to the first, children demonstrated very low levels of fearfulness. Finally, studies examining the role of fearful temperament on social-emotional adjustment indices rarely rely on low income, ethnic minority samples. Thus, very little is known regarding variability in fearful temperament across various sample characteristics.

Child temperament is a complex construct with various methods of measurement (i.e., Zenter & Bates, 2008). Fearful temperament, in particular, has been conceptualized as: (a) behavioral inhibition (e.g., Fox et al., 2001), (b) dysregulated fear in low threat situations (e.g., Buss et al., 2013; Morales, Perez-Edgar & Buss, 2014), and (c) social reticence, or shyness and social anxiety (e.g., Hane, Cheah, Rubin & Fox, 2008; Rubin, Cheah & Fox, 2001). Unfortunately, the various conceptualizations and methods for operationalizing fearful temperament create heterogeneity in how fearful temperament is measured (Buss, 2011), making it difficult to generalize findings. Methodological issues may partially account for the lack of statistical moderation. Fearful scores demonstrated low variability and may lack sensitivity to differentiate between low and high fearfulness. That is, our task may have been inadequate to

evoke the full range of fearfulness. In the present study, only one paradigm was used to elicit fearful behaviors from toddlers. Other studies use many observational paradigms and/or parent report for their children's fearful temperament. A greater variety of fear tasks may be necessary to discriminate across fearful temperaments. For instance, Kochanska's work has combined laboratory observations (e.g., risk room, scary mask paradigms) and maternal reports to create a fearful temperament score (e.g., Kochanska, 1995; Kochanska, 1997; Kochanska, Coy & Murray, 2001). Other studies measuring toddler fearful temperament used several laboratory observational paradigms used to elicit fear. The different scales are averaged and standardized (i.e., Feng et al., 2008; Kiel & Buss, 2010). Since only one fearful temperament task was used, comparing raw scores for variability differences in samples is difficult.

Third, previous studies examining the impact of temperament on social adjustment often rely on middle-class White samples. As such, very little is known regarding normative variability in fearful temperament for children of other ethnic groups or socioeconomic status. Families of the participating children were primarily African-American and socio-economically disadvantaged. Children residing in socio-economically disadvantaged neighborhoods may be exposed to more environmental stressors (e.g., exposure to violence, deviant peers groups, residential overcrowding, or victimization) than more affluent children (Ingoldsby & Shaw, 2002). It is possible that with increased exposure to dangerous and fearful events, children may become de-sensitized to scary events and blunt their emotional reactions. Thus, the generally low fearfulness scores may have occurred because the children were exposed to more scary events and did not find the fearful temperament task threatening, or if they did, the children blunted their emotional reactions. As a result, the fearful temperament task was not able to discriminate

between children who are temperamentally fearful and blunting emotional reactions from those who were less fearful.

Alternatively, parents who reside in socio-economically disadvantaged neighborhoods may actively socialize children to suppress fearful reactivity. In other words, fearful expressions may represent a vulnerability that parents consciously attempt to minimize. Children residing in dangerous neighborhoods who display fear behaviors may be more likely to be victimized by more aggressive peers. In studies of early emotion socialization using primarily low income African American toddlers, boys have been found to receive very little response from mothers to their sadness and/or anxiety reactions (Chaplin, Casey, Sinha & Mayes, 2010). Moreover, mothers who were less responsive to their 4-year-old children's distress also were found to have children who were less emotionally expressive two years later (Chaplin, Cole and Zahn-Waxler, 2005). Quite possibly, children residing in socio-economically disadvantaged families may receive less parental response to fearful reactions at an early age, reducing the frequency with which fear reactions are exhibited.

Strengths, limitations and future directions

The present investigation had a number of strengths and weaknesses. First, independent reporters were used for all constructs. Positive parenting and fearful temperament were rated by different groups of trained coders and mother, teacher, and teacher aide ratings were used for social competence. While reducing the possibility of perceptual biases inflating correlations, the use of independent sources to measure study constructs also may result in overly conservative estimates of associations across study constructs (e.g., Podsakoff et al., 2003). Second, positive parenting was assessed during two behavioral tasks in order to increase the variability of mothers' positive parenting across different contexts. Third, the sample characteristics represent

an important departure from previous studies. Children from dangerous low-income neighborhoods are exposed to more fearful contexts (e.g., neighborhood violence) at different rates than middle-class children. It is possible that exposure to more dangerous contexts may suppress observed fearful reactivity in the face of novelty for low-income children. Finally, intrusive parenting was controlled. This is particularly salient for this sample as mothers were less warm and responsive to their children, which may reinforce children fearfulness.

The present study is not without limitations. First, the measurement of fearful temperament relied on children's reactions during a single task and may not have been sufficiently stressful to discriminate across variations in fearful temperament. Second, mothers' ratings of social competence at age 3 were statistically controlled, but mothers' ratings differed from teacher ratings. Third, mothers' and teachers' ratings were not statistically significantly correlated indicating that mothers and teachers rated children's social competency differently. The lack of statistical association may have occurred because mothers and teachers based their ratings of children's behaviors on different contexts or because children's social behavior changed substantially across the one year period. Future studies are needed to examine contextual differences in children's social behavior.

Despite limitations of this study, results highlight the importance of positive parenting in the development of social competence during early childhood. Regardless of children's temperament, all children benefitted from positive parenting, even parenting that was only modestly positive. Being able to maintain positive reciprocal interactions is an important component of children's school readiness. Children that are better equipped at initiating and maintaining positive relationships may have some of the skills needed to adapt to the demands of school.

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Appendix

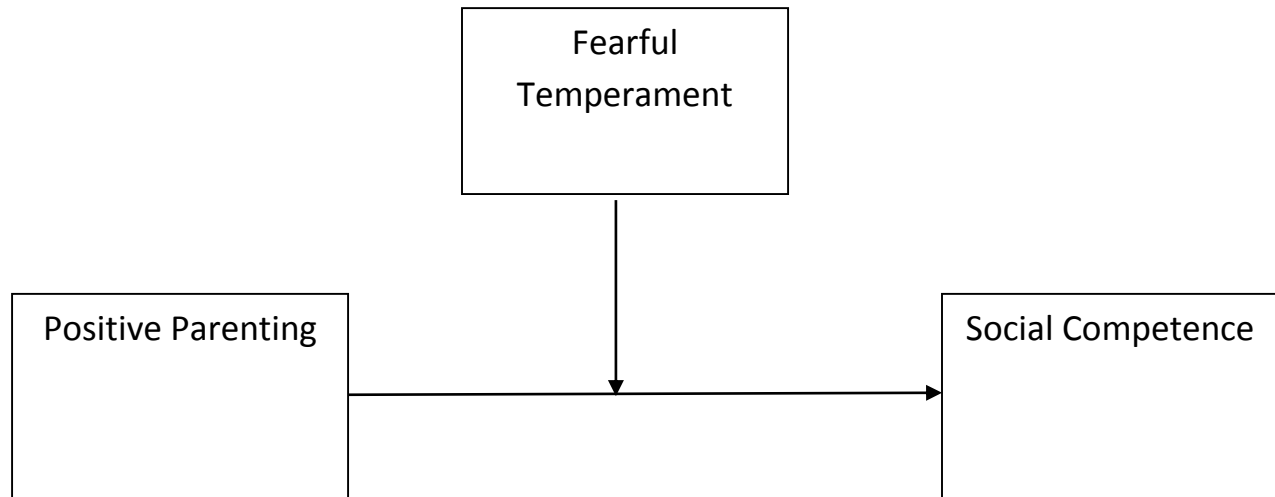


Figure 1. Fearful Temperament Moderates the Association Between Positive Parenting and Social Competence.

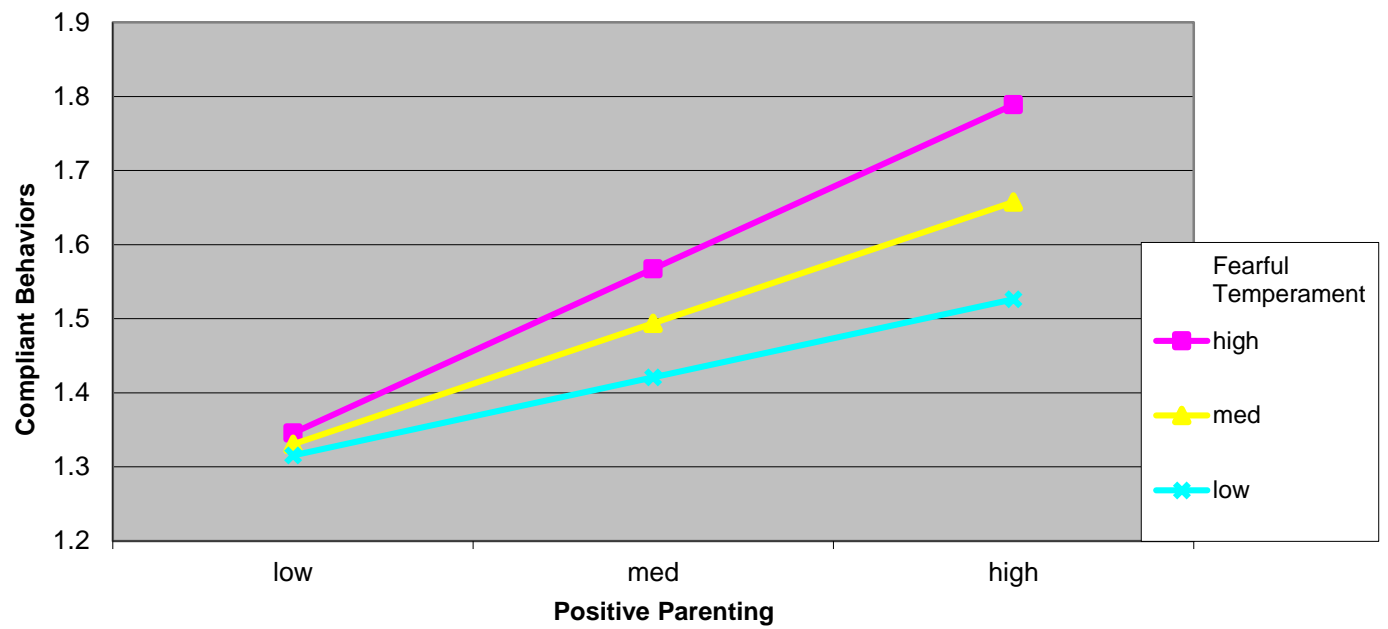


Figure 2. Graphic Decomposition of Positive Parenting x Fearful Temperament Interaction.

Vita

Jessica M. Grande graduated Magna Cum Laude from Loyola University New Orleans in 2009. Currently, she is working toward her PhD as an Applied Developmental Psychology graduate student at the University of New Orleans under the supervision of Dr. Laura Scaramella. Her research interest includes the influence of parenting on children's adaptive behaviors that promote academic success. Jessica's current research examines interactive effects of temperament and parenting in the development of social skills during early childhood.