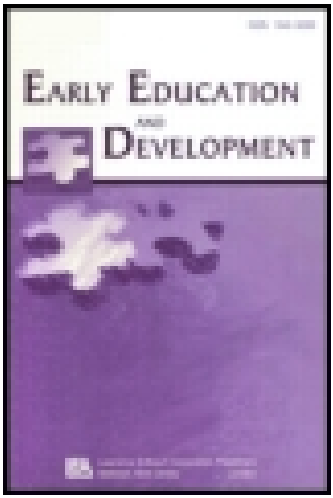

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Relationships Between Teachers and Preschoolers Who Are At Risk: Contribution of Children's Language Skills, Temperamentally Based Attributes, and Gender

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Relationships Between Teachers and Preschoolers Who Are At Risk: Contribution of Children's Language Skills, Temperamentally Based Attributes, and Gender

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Research Findings: The teacher–child relationship can provide an important support to young children who exhibit developmental risk. This research studied the contribution of children's language skills, temperamentally based attributes (shyness, anger), and gender to closeness and conflict in the teacher–child relationship for 133 preschoolers attending programs serving at-risk children. The results showed that both language comprehension (positive predictor) and shyness (negative predictor) were significantly linked to closeness in the teacher–child relationship. An additional result was that children who displayed greater anger within the classroom had relationships with their teachers characterized by higher levels of conflict, and both gender and language expression served as moderators for the relationship between anger and teacher–child conflict. *Practice or Policy:* These findings are important for considering how various skills and attributes of preschool children may contribute to their formation of trusting and secure relationships with their classroom teachers.

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From policy to research to classroom practice, experts agree that each student's success in school is a critical goal of the 21st century and recognize that such success requires students to achieve competence not only in the traditional academic domains but also in the social, emotional, and behavioral domains (see La Paro & Pianta, 2000; National Education Goals Panel, 1997). Experts also agree that efforts to ensure children's competence across these domains must begin as early as possible, ideally within the preschool years, as children's achievement of "readiness" by the advent of kindergarten serves as an important and reliable predictor of children's long-term schooling outcomes (Mashburn & Pianta, 2006; Shonkoff & Phillips, 2000; Snow, 2006).

The term *school readiness* is used by a range of constituents as a way to reinforce the importance of ensuring preschoolers' preparedness to engage in the formal learning experiences of the kindergarten context (see National Education Goals Panel, 1997). Nearly two decades ago, Aber and Allen (1987) described preschoolers' readiness as manifesting itself in their evolving desire to effectively and competently explore their environment and to form trusting relationships with adults, both of which are critical mechanisms for children's achievement of both cognitive and social competence (Lynch & Cicchetti, 1997). In this research, we focused on the second component of this definition, namely the quality of preschoolers' relationships with their teachers, focusing specifically on children who face elevated risks for later academic challenges. This is an important focus of investigation, given evidence showing that a child's opportunity to participate in a close and trusting relationship with a teacher may attenuate that child's risk for adverse academic and social outcomes (Borman & Overman, 2004; Meehan, Hughes, & Cavell, 2003; Pianta, Steinberg, & Rollins, 1995), particularly for a child who exhibits risk due to environmental factors (e.g., poverty) or developmental disabilities (Baker, 2006). Likewise, current theoretical perspectives emphasize the need to view school readiness through a developmental systems perspective that "highlights the central role of social relationships" to children's preparedness (Mashburn & Pianta, 2006, p. 152). This framework has important implications for the design of school readiness interventions such that enhancement of teacher–child relationships and relational processes within the preschool classroom is privileged to the same extent as children's academic accomplishments.

Nonetheless, to the present, relatively few studies have focused on the teacher–child relationship for preschool children attending at-risk programs despite its developmental significance both theoretically and in practical terms. Howes, Phillipsen, and Peisner-Feinberg (2000) studied teacher–child relationships longitudinally for 793 children starting in preschool to study consistency between children's relationships with their teachers over consecutive years of schooling; O'Connor and McCartney (2006) examined consistency between children's relationships with their mothers and their teachers for 419 children starting in preschool; Pianta, Nimetz, and Bennett (1997) studied teacher–child relationships for

55 preschoolers and how these related to kindergarten adjustment outcomes; and Rudasill, Rimm-Kaufman, Justice, and Pence (2006) studied the associations among shyness, language expression, and teacher–child relationships for 99 preschoolers. Of these studies, only Pianta et al. and Rudasill et al. focused exclusively on children attending at-risk preschool programs. Consequently, it is apparent that we know relatively little about these children's relationships with their classroom teachers.

TEACHER–CHILD RELATIONSHIPS AND DEVELOPMENTAL RISK

Consideration of the teacher–child relationship within the milieu of the preschool classroom is a timely one, as current estimates indicate that well over 75% of young children attend center-based care for some portion of the day (Barnett & Yarosz, 2004). Accreditation standards directed at preschool programs recognize the importance of ensuring the quality of children's relationships with their teachers (National Association for the Education of Young Children, 2005), and accumulating research has shown that high-quality teacher–child relationships correlate positively with young children's academic achievements and social competence (Baker, 2006; Birch & Ladd, 1997; Hamre & Pianta, 2005; Pianta, Hamre, & Stuhlman, 2003; Pianta et al., 1997). Impressively, measures of the quality of children's relationships with their teachers collected during kindergarten exhibit considerable explanatory power for predicting children's behavioral competence through the eighth grade (Hamre & Pianta, 2001).

A particularly important finding from the literature on teacher–child relationships is that for many students who are considered at risk, forming a secure and nurturing relationship with a teacher may offset preexisting problematic relationships and serve as a protective factor developmentally (Baker, 2006; Lynch & Cicchetti, 1997). Children who have insecure relationships with their primary caregivers show better school adjustment and improved academic and behavioral outcomes if they have experienced a positive and secure relationship with another significant adult in their life (Baker, 2006; Masten, Best, & Garmezy, 1990; Meehan et al., 2003; Mitchell-Copeland, Denham, & DeMulder, 1997). To illustrate, Mitchell-Copeland and colleagues found that preschool-age children who had positive, secure relationships with their teachers but impaired and insecure relationships with their parents exhibited more prosocial behaviors in the classroom relative to those students with less secure attachments to their teachers. This finding was most pronounced for students with insecure maternal attachments (relative to those with more secure maternal attachments), thus underscoring the potentially protective influence of a high-quality teacher–child relationship for pupils who are at risk due to adverse home circumstances (Borman & Overman, 2004).

Many researchers have couched their discussion of teacher–child relationships within the context of attachment theory (Howes & Hamilton, 1992, 1993; Pianta et al., 2003). In some ways, but certainly not all, the teacher–child relationship parallels the relationship between a child and his or her primary caregiver (Pianta et al., 1997). According to Bowlby (1970), specific qualities of the mother–child relationship are considered the driving force behind the creation of a child's internal working model, referring to a set of feelings, beliefs, and expectations that dictate behavior within relationships and that may be generalized across all contexts and relationships in the child's life (see Stuhlman & Pianta, 2001). Theoretically, children's internal working models influence characteristics of relationships they form with others, including teachers, thereby resulting in the possibility of resemblance between the quality of the teacher–child relationship and the mother–child relationship (Pianta et al., 2003).

There is an important distinction to be made, nonetheless, between parent–child and teacher–child relationships, given that not all relationships between individuals constitute an "attachment relationship" (Ainsworth, 1989). Specifically, secure attachment relationships are based on the "affectional bond," defined as "a relatively long-enduring tie in which the partner is important as a unique individual and is interchangeable with none other" (Ainsworth, 1989, p.711). According to Kesner (2000), the child–teacher relationship does not qualify as an attachment relationship due to its short duration, its narrow focus on school-related issues, and differences in the nature of physical proximity and the frequency of contact between the adult and child. Nonetheless, we can view the teacher–child relationship as "attachment-like" (Baker, 2006, p. 212), making it plausible to draw conceptual parallels between the importance of the quality of children's attachment relationships with primary caregivers and their relationships with teachers, including recognizing that the teacher–child relationship can provide a protective mechanism for children experiencing developmental risk.

OUTCOMES RELATED TO TEACHER–CHILD RELATIONSHIPS

The quality of teacher–child relationships is typically operationalized as a multidimensional construct that reflects the degree of closeness, dependency, and conflict within the interpersonal interactions between teacher and child (see Birch & Ladd, 1997; Pianta, 1994; Pianta et al., 1995). As described by Birch and Ladd, *closeness* refers to the degree of warmth and open communication between the teacher and child, *dependency* refers to the child's level of reliance on and possessiveness of the teacher, and *conflict* refers to the level of discord within teacher–child interactions. It is important to note that measures of these dimensions of the teacher–child relationship consistently show positive predictive value with children's short- and

long-term outcomes in both academic and social competencies (Birch & Ladd, 1997; Hamre & Pianta, 2001; Pianta et al., 1995).

The converse is also true, nonetheless, with studies showing that students who have problematic relationships with their teachers, as characterized by high levels of conflict and dependency, show an array of academic and behavioral problems and, ultimately, greater problems with school adjustment. Baker (2006) examined the impact of the teacher–child relationship on school adjustment for elementary-age children, finding that children with behavioral problems showed less ability to benefit from a close teacher relationship. However, Baker also demonstrated that high-quality teacher–child relationships served as a protective factor for those children who had high levels of negative behavior while in a close relationship with their teacher; specifically, these children were significantly better adjusted than those students who shared the negative behavioral characteristics but did not have a close relationship with the teacher.

PREDICTORS OF TEACHER–CHILD RELATIONSHIP QUALITY

Teacher–child relationships characterized by high levels of closeness and low levels of conflict afford positive benefit to children's short- and long-term achievements in both the academic and social realms. Given such benefits, it is important to identify attributes of schools, classrooms, teachers, families, and children that may affect the quality of the teacher–child relationship. Although it is evident from the literature that children's history of relationship quality (e.g., their attachment relationship with caregivers as well as previous attachment-like relationships with teachers) affords special explanatory value to characterizing the quality of children's relationships with teachers (e.g., O'Connor & McCartney, 2006; Pianta et al., 1997), additional factors also explain significant amounts of variance in relationship quality. These include, for instance, the length of the school day and time spent in the classroom (particularly for younger children in center-based care; see Goossens & van IJzendoorn, 1990), school relational climate (Mantzicopoulos, 2005), teacher years of experience (Stuhlman & Pianta, 2002), teacher race (Kesner, 2000), teacher attachment history (Kesner, 2000), teacher instructional practices (Mantzicopoulos, 2005), and level of educational attainment of children's parents (Ladd, Birch, & Buhs, 1999).

Researchers have also considered the contribution of specific child characteristics to the teacher–child relationship, although this corpus of work has primarily involved students within the elementary grades. The available literature shows that three characteristics warrant consideration: (a) children's language competence, (b) children's temperamentally based attributes, and (c) children's gender. Concerning children's language competence, children who exhibit depressed language skills characteristically are more withdrawn, are less sociable, exhibit lower

self-esteem, and have more difficulty regulating their emotions within their classrooms (Fujiki, Brinton, & Clarke, 2002; Fujiki, Brinton, Morgan, & Hart, 1999; Jerome, Fujiki, Brinton, & James, 2002), any one of which might serve to undermine the quality of the teacher–child relationship (see Howes et al., 2000). Additionally, language serves as a primary mechanism through which relationships are formed between individuals (Pence & Justice, 2007); consequently, children who exhibit language-skill deficits may have more difficulty developing relationships with others within their classrooms, including their teachers. Lending support to this hypothesis, in a study of kindergarten children, Birch and Ladd (1997) found that measures of closeness, dependency, and conflict in the teacher–child relationship accounted for 3% to 5% of the variance in children's language skills as measured by standardized tests. It is important to note that one can expect an increased incidence of language problems within preschool programs serving pupils who are at risk, as eligibility for these programs is typically based on family socioeconomic status, which is a well-established marker for depressed language performance (see Fazio, Naremore, & Connell, 1996; Mistry, Biesanz, Taylor, Burchinal, & Cox, 2004) and elevated risk for language-based learning difficulties (Catts, Fey, Zhang, & Tomblin, 2001). Language-skill difficulties are prominent among preschoolers of low socioeconomic status, most notably in the area of vocabulary (see Whitehurst, 1997); it thus seems important to question whether at-risk preschoolers' language competence may be associated with the quality of their relationships with teachers.

Children's verbal behaviors within the classroom may reflect their language competence, but they also may reflect temperamentally based attributes. That is, although children with language-skill difficulties show an increased rate of verbal reticence (Fujiki et al., 1999), not all children who are verbally reticent have depressed language skills. Rather, we can view these children as shy (Evans, 1996), a temperamentally based attribute related to over-control that can also cause difficulties in forming relationships (Rudasill et al., 2006). Children who display shy behaviors, by definition, withdraw from new situations and unfamiliar peers and behave hesitantly toward new adults. Such temperamentally based tendencies can cause difficulty for children in their efforts to develop social skills (Coplan, Gavinski-Molina, Lagacé-Séguin, & Wichmann, 2001) and can result in anxiety and other school adjustment problems (Coplan & Armer, 2005). Shy children show less instrumental coping (e.g., are less likely to take action in a constructive manner when confronted with a problem), are less likely to seek support from teachers in early childhood classrooms, and have been shown to have lower social status in the classroom (Eisenberg, Shepard, Fabes, Murphy, & Guthrie, 1998). It is interesting that these child attributes share the same behavioral expression as behaviors seen in children with depressed language skills (Fujiki et al., 1999), suggesting the importance of examining whether shyness might moderate the relation-

ship between language competence and the teacher–child relationship; that is, it is possible that being shy and exhibiting language-skill difficulties would present a cumulative risk to the preschool teacher–child relationship. Lending support to this point, Rudasill and colleagues showed that shy preschoolers with less developed language skills exhibited greater dependency in their relationships with teachers relative to those with well-developed skills.

An additional temperamentally based attribute, that of behavioral under-control, may also influence the teacher–child relationship for preschool children. Previous research has suggested that under-controlled behavior, operationalized here as anger, may affect the quality of the teacher–child relationship and, ultimately, children's school readiness (e.g., Baker, 2006; Murray & Murray, 2004). Children with anger problems show difficulty managing or regulating intense negative emotions. Unregulated anger is problematic for young children; specifically, children who exhibit high levels of unregulated anger prior to school are more likely to be viewed as oppositional by their kindergarten teachers (Denham, Blair, Schmidt, & DeMulder, 2002) and to experience difficulty in social relationships with peers well into middle childhood (Eisenberg et al., 1998). In this research, we considered the extent to which preschool children's expression of anger within the preschool classroom was associated with teacher–child relationship quality, drawing upon studies of elementary school children suggesting that children's negative behavioral expressions, including hostility, within the classroom elevate conflict between teachers and pupils (e.g., Howes et al., 2000).

As a final consideration, we also considered how preschoolers' gender might relate to their relationships with their teachers. Studies of elementary students characteristically have shown that boys exhibit less closeness and more conflict in their relationships with teachers (Baker, 2006; Birch & Ladd, 1997, 1998; Hughes, Cavell, & Willson, 2001; Kesner, 2000; Murray & Murray, 2004), and data available in Baker, Hughes et al., and Murray and Murray have shown these differences to be characterized by small (for closeness) to medium-size (for conflict) effects for boys versus girls in kindergarten through fifth grade. Given the tendency for boys to exhibit differences in both language competence (see Pence & Justice, 2007) and control attributes (see David & Murphy, 2007) relative to girls, this study considered whether gender moderated the relationships between language competence and the teacher–child relationship and between temperamentally based child attributes and the teacher–child relationship. In sum, the questions addressed in this study were threefold: (a) To what extent do preschoolers' language skills, temperamentally based attributes, and gender predict teacher–child relationship quality? (b) To what extent does child gender moderate the relations between language skills or temperamentally based attributes and teacher–child relationship quality? (c) To what extent do child temperamentally based attributes moderate the relations between language and teacher–child relationship quality?

METHOD

Participants

Participants were 133 preschoolers attending preschool programs serving at-risk pupils in a single mid-Atlantic state; 16 lead teachers within these programs also participated. The programs were affiliated with either Head Start (6 classrooms) or state-funded pre-kindergarten programs supported through earmarked state funding or Title I funds (10 classrooms). Both programs required children to meet specific risk factors to be eligible, with low-income status being the primary factor (although other risks make children eligible). The state-funded pre-kindergarten program was designed to provide greater participation in preschool for 4-year-olds residing in lower income households but whose income was too high to qualify for Head Start (as well as children exhibiting other family risks, including homelessness, child abuse, limited parental education, family stress, health and developmental concerns, or limited understanding of English). The classrooms were located in two distal regions of the state. Eight classrooms were located in a rural setting (median household income = $30,000), whereas eight were in a light industrial/suburban area within commuting distance of a major urban center (median household income = $52,000).

Children's participation in this study spanned an academic year. At the start of the study, the children (74 boys, 59 girls) ranged in age from 39 months (3 years, 3 months) to 59 months (5 years, 11 months), with a mean age of 52.6 months (4 years, 4 months; $SD = 3.5$ months). All of the children spoke English as their native language. The median annual household income for the children (as reported by 104 parents) was $31,460, and the mean was $34,655 ($SD$ = $20,488, range = $900–$87,538, as calculated for 103 parents with removal of an extreme outlier). In all, 75% of families had annual household incomes less than $40,000, and the household income for children attending Head Start was significantly lower than that for those attending the state-funded programs, $t(102) = 2.55$, $p < .05$. The majority of mothers held a high school diploma as their highest degree (79%); an additional 11% had an associate's degree and another 4% had a bachelor's degree (the remainder had graduate training). In terms of ethnicity, 92 (69%) of the children were White, 27 (20%) were African American, 11 (8%) were Hispanic, 1 (0.8%) was Asian, and 2 (2.2%) were of other ethnicities or had missing data for this variable.

Of the 16 teachers in the sample, 1 was an African American woman, and 15 were White, non-Hispanic women. They ranged in age from 22 to 56 years (M = 42.5, $SD = 9.9$) and had between 1 and 31 years of experience in the classroom (M = 13.7, $SD = 9.4$). Twelve (75%) of the teachers held university degrees.

Procedures

Teachers and children participated in a series of activities that spanned the entire academic year in a larger study investigating the relationship between characteristics of classroom instruction and children's language development. We describe here those procedures directly relevant to this research. In the fall of the year, teachers completed a portfolio of questionnaires to provide information about themselves, their relationships with pupils, and characteristics of children in their classrooms. This included the Student–Teacher Relationship Scale–Short Form (STRS; Pianta, 2001) and the Child Behavior Questionnaire (CBQ; Rothbart, 1996).

Also in the fall of the year, the child participants were individually tested in a 40-min session by trained research assistants. Children were tested in quiet locations in their schools. The test sessions included administration of the Fluharty Preschool Speech and Language Screening Test, Second Edition (Fluharty-2; Fluharty, 2001) and the Peabody Picture Vocabulary Test–III (PPVT–III; Dunn & Dunn, 1997). For the present research, only children who had complete data sets for all four measures (STRS, CBQ, Fluharty-2, and PPVT) served as participants. Additional details for each of these measures are provided below.

STRS. The 15-item short form of the STRS (Pianta, 2001) was used to measure the quality of the teacher–child relationship as perceived by the teacher, focusing specifically on closeness and conflict. Teachers completed this measure for 10 randomly selected students in their classrooms in November, approximately 3 months into the academic year.

The STRS is organized to provide a series of statements to which teachers respond as they consider characteristics of their relationship with a particular pupil, with responses ranging from 1 (*definitely does not apply*) to 5 (*definitely applies*). High scores on the Closeness subscale characterize positive, warm, trusting relationships and open communication between the teacher and student, with items such as "This child openly shares his/her feelings and experiences with me" and "If upset, this child will seek comfort from me." High scores on the Conflict subscale characterize antagonistic and discordant relationships, with items such as "This child and I always seem to be struggling with each other" and "This child easily becomes angry with me." Calculations of internal consistency made on the present sample showed alpha coefficients of .76 for the Closeness subscale and .89 for the Conflict subscale.

CBQ. In the fall of the academic year, teachers also completed selected portions of the CBQ (Rothbart, 1996) for each of their students. The CBQ provides a comprehensive examination of temperamental characteristics of children aged 3 to 7 years, examining five separate dimensions of temperament. For the present

study, children's scores on the Anger/Frustration and Shyness scales were used. The Anger/Frustration scale examines negative affectivity when children's ongoing activities or goals are interrupted and is measured using a series of statements rated on a scale of 1 (*extremely untrue of the child*) to 7 (*extremely true of the child*). A sample item is "Has temper tantrums when s(he) doesn't get what s(he) wants" (Rothbart, Ahadi, Hershey, & Fisher, 2001). The internal consistency estimate for the Anger/Frustration scale as described by Rothbart et al. based on mother ratings was .80; the alpha coefficient for the present sample of teacher respondents was slightly lower, at .74. The Shyness scale examines speed of approach and discomfort in social situations; a sample item is "Often prefers to watch rather than join other children playing" (Rothbart et al., 2001). The internal consistency estimate for the Shyness scale based on mother ratings was .92, similar to that seen in this study as calculated for teachers (.96).

Fluharty-2. Approximately 4 to 6 weeks into the fall of the academic year, students were administered the Fluharty-2 to provide estimates of their receptive and expressive language skills. Scores from the Describing Actions subtest were used in this study to provide an index of children's expressive language skills. Standard scores were used for all analyses and are based on a scale for which M = 10 and SD = 3.

PPVT–III. At the same time the Fluharty-2 was administered, the PPVT–III (Dunn & Dunn, 1997), a measure of single-word receptive vocabulary, was also administered. This individually administered test provides an estimate of an individual's language comprehension. Standard scores were used for all analyses, based on a scale for which M = 100 and SD = 15.

RESULTS

Preliminary Findings

Examination of descriptive findings showed that children's relationships with their preschool teachers were generally close (M = 4.4, SD = 0.5, range = 3–5) and free of conflict (M = 1.7, SD = 0.88, range = 1–4.3). Mean CBQ ratings for children's anger and shyness fell near the midpoint of the 1-to-7 rating scale (M = 3.4, SD = 1.13, range = 1.2–6.3, for anger; M = 3.4, SD = 1.36, range = 1–6.5, for shyness). Language expression scores ranged from 5 to 13, with a mean of 7.9 (SD = 2.94); children in this sample averaged language expression scores about two thirds of a standard deviation below national norms. Language comprehension scores ranged from 40 to 131, with a mean of 95.0 (SD = 14.8); the average score for this sample was about one third of a standard deviation below national norms.

In light of the considerable literature showing differences in the quality of teacher–child relationships for boys and girls, we examined teacher ratings of closeness and conflict separately by gender for this preschool sample (see Table 1). Teacher ratings of conflict were significantly higher for boys than for girls, $F(1, 132) = 7.15$, $p = .008$. This difference was consistent with a medium effect, $d = 0.46$ (95% confidence interval [CI] = 0.12 to 0.81), with effect size estimates calculated using Cohen's *d* (with bias corrected based on Hedges & Olkin's, 1985, factor) and 95% CIs. No significant differences were observed for teacher ratings of closeness for boys compared to girls, $F(1, 132) = 2.36$, $p = .13$; the effect size index was consistent with a small effect such that teachers provided higher ratings of closeness with girls, $d = –0.28$ (95% CI = –0.62 to 0.06). Note that for closeness, the 95% CI included zero, thus undermining the confidence we can attribute to the small effect size characterizing differences in teacher ratings of closeness for boys and girls.

Table 2 presents bivariate correlations for relations among the study variables. As these data show, teacher ratings of closeness within the teacher–child relationship were negatively related to teacher ratings of conflict ($r = –.34$, $p < .01$). Closeness within the teacher–child relationship was negatively associated with children's shyness ($r = –.26$, $p < .01$) and positively associated with children's receptive language skills ($r = .29$, $p < .01$). Consistent with previous reports in the literature on teacher–child relationships for school-age pupils (e.g., Birch & Ladd, 1998; Henricsson & Rydell, 2004), higher teacher–child conflict was linked to higher levels of child expression of anger ($r = .67$, $p < .01$).

Children's Language Skills, Temperamentally Based Attributes, and the Teacher–Child Relationship

Table 3 presents results of regression analyses that examined associations between child characteristics (gender, temperamentally based attributes, language skills)

TABLE 1
Descriptive Statistics by Gender for Teacher–Child Relationships, Temperamentally Based Attributes and Language Skills

	Boys		*Girls*		
Variable	*M*	*SD*	*M*	*SD*	*M Diff*
Teacher–child relationship					
Closeness	4.29	0.54	4.43	0.44	0.28
Conflict	1.91	0.97	1.51	0.69	0.46
Temperamentally based attribute					
Anger	3.65	1.16	3.18	1.03	0.47
Shyness	3.43	1.41	3.34	1.29	0.09
Language skill					
Expression	8.08	3.03	7.69	2.82	0.39
Comprehension	93.4	15.5	96.9	13.8	0.24

TABLE 2
Bivariate Correlations Among Key Study Variables

Variable	*1*	*2*	*3*	*4*	*5*	*6*
1. Teacher–child closeness	—	–.34**	–.15	–.26**	.13	.29**
2. Teacher–child conflict		—	.67**	–.15	.02	–.05
3. Child anger			—	–.16	–.03	–.12
4. Child shyness				—	–.08	–.21*
5. Language expression					—	.23**
6. Language comprehension						—

Note: Closeness and conflict scores were from the Student–Teacher Relationship Scale–Short Form; anger and shyness scores from the Child Behavior Questionnaire; expression score from the Fluharty Preschool Speech and Language Screening Test, Second Edition; and comprehension score from the Peabody Picture Vocabulary Test–III.

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

TABLE 3
Associations Between Teacher–Child Relationships and Children's Gender, Temperamentally Based Attributes, and Language Skills

	Teacher–Child Closeness			*Teacher–Child Conflict*		
Variable	*B*	*SE*	*p*	*B*	*SE*	*p*
Block 1: Child characteristics						
Boy (1)/Girl (0)	–0.08	0.08	.361	0.17	0.12	.153
Temperamentally based attribute						
Anger	–0.06	0.04	.102	0.50**	0.05	.000
Shyness	–0.08**	0.03	.008	–0.03	0.04	.482
Language skill						
Expression	0.01	0.01	.404	0.01	0.02	.754
Comprehension	0.01*	0.00	.026	0.00	0.00	.744
Block 2: Gender × Language						
Boy × Expression	0.04	0.03	.175	–0.03	0.04	.480
Boy × Comprehension	–0.00	0.01	.911	–0.00	0.01	.767
Block 3: Gender × Temperament						
Boy × Anger	–0.14	0.08	.067	0.31**	0.11	.005
Boy × Shyness	–0.04	0.06	.541	–0.05	0.09	.557
Block 4: Temperament × Language						
Anger × Expression	0.01	0.01	.859	–0.04*	0.02	.034
Anger × Comprehension	0.00	0.00	.649	0.00	0.00	.436
Shyness × Expression	–0.02	0.01	.163	0.01	0.02	.540
Shyness × Comprehension	0.00	0.00	.957	0.00	0.00	.262

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

and children's relationships with teachers. Block 1 included estimates (*B*, *SE*, and *p*) for the magnitude and direction of the associations between each child characteristic (entered simultaneously in the model) and closeness and conflict with teachers. Results indicated that shyness and language comprehension were associated with the closeness of the relationships between children and their teachers. Specifically, less shy children (i.e., those who were bold) and children with better language comprehension skills had closer relationships with their teachers compared to shyer children and children with lower language comprehension skills. The total percentage of variance (adjusted R^2) in teacher–child closeness that was explained by the five predictors entered in Block 1 was 12.4%.

Children who expressed greater anger in their classroom behaviors had relationships with their teachers characterized by higher conflict compared to children who expressed less anger. The total percentage of variance in teacher–child conflict that was explained by the five predictors in Block 1 was 43.9%, with children's anger accounting for all but 5% of this explained variance in teacher–child conflict. It warrants note that the previously described significant differences between boys and girls in their conflict with teachers were no longer significant with the inclusion of the other covariates. This suggested that the greater conflict experienced by boys compared to girls was, in part, mediated by the differences in language and temperamentally based attributes between boys and girls.

Moderated Effects of Gender on Teacher–Child Relationships

Additional analyses included in the regression models examined potential moderated effects of children's gender on the associations between children's language skills and teacher–child relationships (Block 2) and on the associations between temperamentally based child attributes and teacher–child relationships (Block 3). Table 1 presents means and standard deviations for each measure of language and temperament separately for boys and girls. Block 2 (see Table 3) examined the extent to which the associations between language skills and teacher–child relationships were different for boys and girls by testing the interactions between gender and language expression and gender and language comprehension. The coefficients for these interactions were not statistically significant, which indicated that the association between children's language skills and the quality of children's relationships with their preschool teachers did not differ significantly for boys and girls. In Block 3 of the analyses, the interaction between gender and language entered in Block 2 was replaced with the interaction between gender and temperamentally based child attributes (anger and shyness) to examine whether the associations between temperament and teacher–child relationships were different for boys and girls. Results showed that the interaction between gender and anger was

significantly associated with teacher–child conflict, indicating that anger had a stronger association with conflict ratings for boys than for girls (see Figure 1).

Moderated Effects of Language on Teacher–Child Relationships

Block 4 examined whether the associations between children's temperamentally based attributes and teacher–child relationships depended upon children's language abilities. Interactions between children's language skills (expression and comprehension) and their temperamentally based attributes (anger and shyness) were entered into the models, and results identified one significant interaction: The positive association between anger and conflict was moderated by children's expressive language abilities. As shown in Figure 2, for children with low expressive

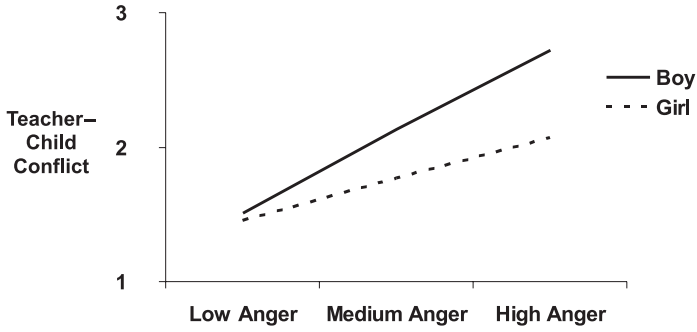

FIGURE 1 Moderated effects of gender on the association between anger and teacher–child conflict.

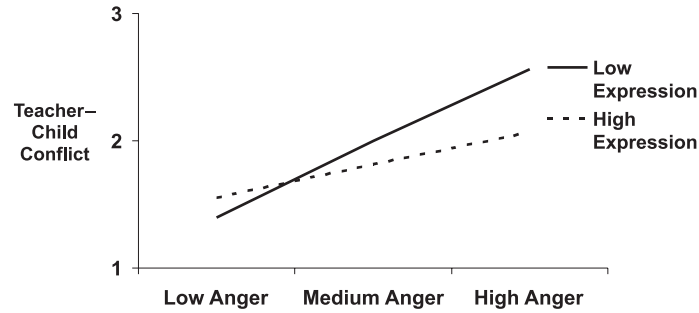

FIGURE 2 Moderated effects of expressive language on the association between anger and teacher–child conflict.

language abilities (5 or lower on the Fluharty-2 subtest), there was a significantly stronger relation between anger and conflict compared to children with high expressive language abilities (10 or higher on the subtest).

DISCUSSION

This research studied the quality of preschool children's relationships with their teachers, examining in particular the contribution of three child characteristics to relationship quality: language competence (expression, comprehension), temperamentally based attributes (shyness, anger), and gender. This study focused specifically on studying these characteristics for pupils attending programs designed to alleviate some of the risks associated with developmental disadvantage. The availability of such programs is increasing, in part due to theoretical and empirical indicators that high-quality preschool experiences can improve the school readiness of disadvantaged children (Meisels, 2006). Presently, the research community is keenly interested in improving its understanding of the preschool classroom context, including how relational processes between teachers and children can both mediate and moderate pupils' growth within these programs. The present study contributes to this accumulating literature by increasing researchers' understanding of the relationships between teachers and children within at-risk preschool programs, showing that specific child characteristics are associated with the relationships children hold with their teachers. In the next several paragraphs, we consider four major findings of this study.

First, this study contributes to the relatively small literature that has sought to characterize the quality of the teacher–child relationship for preschoolers attending at-risk programs. As noted in the introduction, few studies have studied teacher–child relationships for preschoolers generally, with even less considering children exhibiting developmental risk. Exceptions include Pianta et al. (1997), which studied the teacher–child relationship for 55 preschoolers and its relationship to kindergarten adjustment outcomes; and Rudasill et al. (2006), which studied the associations among shyness, language expression, and teacher–child relationships for 99 preschoolers. The present study shows that we may characterize the relationship between preschoolers at risk and their preschool teachers as generally close ($M = 4.4$, $SD = 0.5$) and free of conflict ($M = 1.7$, $SD = 0.88$). Compared to results available in the extant literature, mean ratings for closeness were slightly higher than those reported by kindergarten teachers for 206 children ($M = 3.73$, $SD = 0.73$; Birch & Ladd, 1997), and mean ratings for conflict were slightly lower ($M = 1.96$, $SD = 0.96$; Birch & Ladd, 1997). The normative references on the STRS instrument (Pianta, 2001), based on a multistate diverse sample of more than 1,000 pupils, showed significant differences in teacher ratings of closeness for 4- and 5-year-olds compared to older students (>5 years). The present research consid-

ered in light of this extant work suggests that preschoolers' relationships with teachers may be of slightly higher quality, particularly in terms of closeness, than those experienced by children in the later grades. This finding converges with classroom observational data from large-scale studies indicating that preschool classrooms provide "moderately high emotional support" to children (La Paro, Pianta, & Stuhlman, 2004, p. 420).

Second, this study reveals gender effects remarkably similar in magnitude to effects reported for older pupils within the elementary grades; that is, there was a moderate effect size difference for teacher reports of conflict for boys versus girls, and a small effect size difference for teacher reports of closeness. It is important to note that we can interpret these effects for our preschool at-risk sample in light of available reports for school-age pupils; specifically, our reanalysis of the data available in Baker (2006), Hughes et al. (2001), and Murray and Murray (2004) shows effect size estimates that are small for closeness and medium for conflict when comparing boys versus girls in kindergarten through fifth grade. The present research shows that these differences are similar in magnitude for preschoolers, demonstrating continuity from preschool through the elementary grades in these characteristics of the teacher–child relationship. Nonetheless, an additional important finding emerged in our study, namely that these gender effects appear to be mediated, at least in part, by differences in temperamentally based child attributes and language skill characteristic of the genders. That is, we found children's language comprehension and shyness to serve as unique predictors for teacher–child closeness and children's anger to serve as a unique predictor for teacher–child conflict; when entered into a single model, children's gender no longer provided explanatory value to the teacher–child relationship.

Thus, our third major finding is that children's language skills and temperamentally based attributes are associated with qualities of the teacher–child relationship within the preschool classroom. Considering the contribution of language competence, comprehension rather than expression emerged as a predictor of children's closeness with their teachers, showing that children's verbal ability has unique bearing on the nature of children's relationships with their teachers. Within the preschool classroom, one can assume that it is through language that children and teachers build their relationships with one another, and our findings suggest that children with better linguistic competence are more successful in doing so. Although it is not clear why comprehension rather than expression emerged as a positive predictor, experts have suggested that children's receptive language abilities serve as a better reference for their overall language competence (see Bee et al., 1982). This is particularly true for preschool-age children, whose receptive language abilities tend to be significantly more advanced than their expressive abilities (Pence & Justice, 2007). It also may be that the receptive vocabulary measure used in this study provided a better estimate of children's underlying language competence, which, in turn, appears to provide an important advantage to chil-

dren's formation of close relationships with their teachers. Nonetheless, we must also emphasize that the directionality of these findings is unclear, such that we must consider that closer teacher–child relationships may foster accelerated language development.

Children's shyness also served as a unique, albeit negative, predictor of close relationships between children and teachers, a finding similar to that reported previously by Rudasill et al. (2006). Shyness in a child appears to be detrimental to the teacher and child's ability to form a close relationship, likely because a child's shyness within the classroom setting manifests itself as verbal reticence (Evans, 1996). Children who are shy may be unlikely to initiate communication with teachers, and likewise, teachers may seldom initiate or sustain communication with children who are shy. As a result, shy children and their teachers have relatively few opportunities to develop and maintain a relationship. Combined with our significant finding for language comprehension, the results of this study suggest that children's verbal behaviors in the classroom are associated with the quality of their relationships with teachers; moreover, the findings suggest that language-skill deficits and verbal reticence may serve as risk factors to the preschool child in ways not previously understood. That is, whereas language-skill deficits and verbal reticence may undermine a child's language progress within the classroom (Evans, 1996) and elevate a child's risks for language-based learning difficulties (Catts et al., 2001), they may also compromise a child's opportunities to develop the strong relationships with his or her classroom teachers that are known to buffer some of the risks associated with verbal deficits.

The fourth major finding concerns the contribution of the temperamentally based attribute of under-control, operationalized in this study as anger, to conflict within the teacher–child relationship within the preschool classroom. Previous studies have shown that children who present behavioral challenges within the classroom often exhibit more conflict within their relationships with teachers compared to children without such challenges (e.g., Baker, 2006; Birch & Ladd, 1998). Although this study did not look at behavioral problems per se, the way in which temperamentally based under-control (i.e., anger) manifests itself in the classroom context may look similar to the behavioral problems (e.g., outbursts, low compliance) shown in other studies to be linked to elevated levels of conflict between teachers and children. Two related findings warrant special consideration. First, this study shows that gender moderates the relationship between anger and teacher–child conflict, indicating that elevated rates of anger have a significantly stronger influence on conflict with teachers for boys than girls. These findings show that compared to girls, angry boys are at particular risk for being in conflict with their preschool teachers. Second, this study shows that children's language expression moderates the relationship between anger and conflict, such that depressed language expression coupled with higher levels of anger is associated with greater teacher–child conflict. Thus, angry children who are unable to adequately express

their feelings experience greater conflict in their relationships with teachers. Both findings lend support to the importance of helping young children improve their ability to regulate their emotions in the early years of schooling. They also point to the need not only to consider emotional regulation by itself as possibly influential to the teacher–child relationship, but also to consider how difficulties across different domains of development (i.e., temperamentally based attributes and language skills) can have synergistic influences on children's early school experiences.

Several limitations of this work require mention. First, the methods of data collection used in this study may have influenced the findings. This study relied on teacher reports for describing both their relationships with children in their classrooms as well as children's temperamentally based attributes. Although teacher ratings are commonly used in studies of relationships between teachers and children as well as of temperamental qualities within the classroom, the use of multiple methods for characterizing relationship quality and children's attributes (e.g., direct observations of teacher–child interaction, use of multiple informants) would ensure the validity and accuracy of teacher-report methods (Baker, 2006). Likewise, we must also point out that the use of teachers as informants for both the teacher–child relationship and children's temperamentally based attributes introduces shared method variance as a possible alternative relationship between these study variables. For this reason, our findings might be expanded with use of alternative measures. A second limitation concerns the sample. This sample comprised 133 children who were all English-speaking attendees of at-risk preschool programs in a single state. It is unclear whether the findings of this work will generalize to children in different settings or those who exhibit cultural and linguistic differences from our participants. The children in this sample, as a group, resided in households with slightly higher incomes than might be seen in other programs serving at-risk pupils. Likewise, the teachers in this sample were primarily White and were relatively experienced educators. We do not know whether the results reported here would be replicated for samples of teachers who differ demographically or who have less experience working with young children.

In sum, this study offers insights into the relationships between preschool children attending at-risk programs and their teachers, and it demonstrates how specific features of children, including their language competence, temperamentally based attributes, and gender, are associated with relational processes within their classrooms. Given the significance of the teacher–child relationship to children's academic and social achievements in the short and long term, particularly for children who exhibit developmental vulnerability, teachers within at-risk preschool programs must be vigilant toward recognizing characteristics of children that present special challenges to the formation of close and resilient relationships with pupils. Professional development that helps teachers to develop and strengthen relationships with pupils, particularly those who exhibit language-skill deficits or challenging temperaments, may provide an important mechanism for leveraging

the potential of preschool programs to reduce disparities among children and elevate children's readiness for academic success.

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