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Shyness and engagement: Contributions of peer rejection and teacher sensitivity

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Abstract

This study tested a longitudinal model of mediated moderation for the role of temperament and shyness in the development of young children's ($n = 960$, aged 54 mos. to 1st grade [$SD = 1.08$ at 54 mos.]) peer relationships at school and linkages to subsequent academic engagement. Teacher sensitivity was examined as a parallel predictor of peer relationship effects and subsequent engagement, and we examined whether or not adverse effects of shyness on peer relationships and adjustment were stronger in classrooms where teachers displayed lower sensitivity. Findings indicated that peer rejection mediated the association between children's shyness at preschool age and engagement in first grade and that teacher sensitivity, although not directly related to peer rejection, was positively related to engagement. Finally, teacher sensitivity moderated the association between shyness, peer rejection, and classroom engagement. Results suggested that teacher sensitivity plays a role in linkages between shyness and peer rejection. Teacher sensitivity may moderate effects on engagement and function as an important aspect of supportive contexts for shy children.

Keywords: Shyness, Social withdrawal, Teacher sensitivity, Academic engagement, Peer rejection

The classroom context is a central developmental setting for most children in industrialized countries. As children navigate transitions from the smaller peer groups typically experienced in home and early childhood settings, aspects of children's temperament affect a new set of more complex social interactions and subsequent adjustment patterns as they attempt to adapt to new developmental challenges. Researchers have described *child by environment* models (or, alternatively, child and environment/context models: Coie et al., 1993; Ladd, 2003) that help explain these complex interactions. These models describe sets of interactions between characteristics of the child (e.g., shy, withdrawn behavior) and those of the social environment or context (e.g., school peer relations) and may also include a focus on the origin of these factors as within the child, within the context, or both. Research on children's adjustment in the school context has been a particularly appropriate area for the application of these models, but few studies have included examinations of interactions between children's temperament and the social context of the classroom, and links to subsequent school adjustment.

In this study, we present a model that examines potential contributions for both child and contextual factors to classroom

adjustment. We present a mediation model where temperamental shyness, typically viewed as a factor located within the child, plays a potential causal role in the development of peer relationships at school. Within this model, the contextual effects of these peer interactions are, in turn, likely to impact (i.e., mediate the effects of shyness on) children's academic engagement (Figure 1). We also tested the idea that teacher sensitivity is an additional, parallel contextual factor where peer relationship effects likely also mediate linkages between sensitivity and subsequent adjustment. Finally, we hypothesized that the potentially adverse effects of temperament on peer relationships and adjustment will be stronger within classrooms where teachers display lower levels of teacher sensitivity—a finding that would be consistent with a moderating role for teacher effects on this set of linkages.

Temperament, peers and adjustment

Temperament, or the pattern of reactivity displayed by children in response to environmental stimuli (Kagan & Fox, 2006), is one aspect of children's behavioral tendencies that has been linked to early school and academic adjustment. Shyness or

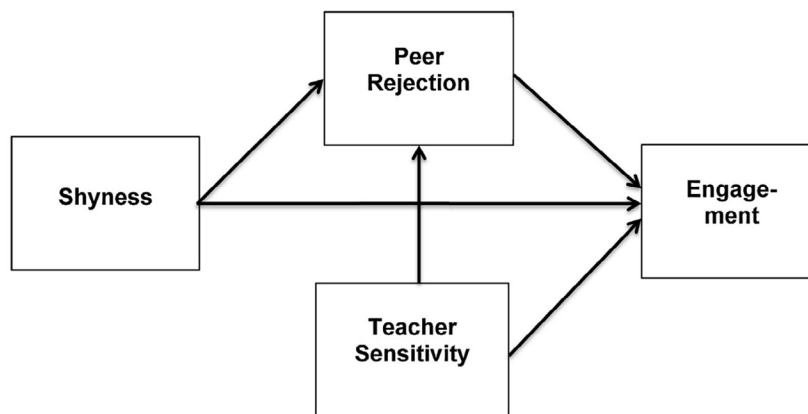


Figure 1. Conceptual/structural model.

social withdrawal, in particular, is one behavioral pattern linked to temperamental reactivity (Kagan, 1992) that has received specific attention as a potential causal factor in the development of children's peer relationships and subsequent adjustment at school entry. Shy children display a greater tendency to withdraw from unfamiliar adults and peers and show social reticence. This tendency to withdraw from social interactions has been associated with fewer peer interactions and, consequently, poorer social competence (Rudasill & Konold, 2008; Wichmann, Coplan, & Daniels, 2004) and peer relations (Cillessen, van Ijzendoorn, Van Lieshout, & Hartup, 1992b; Gazelle et al., 2005; Rubin, Chen, & Hymel, 1993) in the classroom. The literature suggests that shyness often limits children's interactions with peers in the classroom, hindering their social skills practice, and suppressing their engagement in classroom discourse (Hughes & Coplan, 2010).

Shyness and social withdrawal have been directly linked to differences in academic adjustment, including lower classroom engagement (Hughes & Coplan, 2010) and achievement (Hughes & Coplan, 2010; Lerner, Lerner, & Zabski, 1985). The specific processes by which shyness/withdrawal might be linked to such outcomes in these contexts have also received research attention. Findings from these studies indicate that children displaying higher levels of shyness and social withdrawal in elementary school tend to experience greater peer rejection and victimization (Cillessen, Terry, Coie, & Lochman, 1992a; Cillessen et al., 1992b; Gazelle et al., 2005; Rubin et al., 1993). Additional findings suggest that this may occur because, as children reach elementary school age, shy and withdrawn patterns of social interaction appear increasingly atypical to peers and thus shy children tend to become less preferred as playmates (i.e., rejected) within class-room groups (Younger, Schwartzman, & Ledingham, 1985). Peer rejection and associated victimization levels have subsequently been linked to a range of academic difficulties, including lower classroom engagement (Buhs, Ladd, & Herald, 2006); less accepted, less engaged children are also less likely to have access to social and instrumental support from peers in the classroom (Wentzel, 1996) and are thus less likely to experience adaptive adjustment (DeRosier, Kupersmidt, & Patterson, 1994; DeRosier & Mercer, 2009). Taken together, these processes associated with social withdrawal/shyness and peer relationship difficulties at school indicate that negative peer relations are likely an important, additive, causal aspect of poorer school adjustment. Peer relationships are, however, not the only important social relationship or context in classrooms likely to contribute to social and academic adjustment for withdrawn children—teacher-child relationships have also figured prominently in models of young children's school adjustment.

Potential contributions of teacher-child relationships and processes to shy children's classroom adjustment and social behavior

may be viewed as parallel to the role of that support from parent-child contexts may play (Hastings, Nuselovici, Rubin, & Cheah, 2010). Shy and withdrawn children also tend to have fewer interactions and less close relationships with teachers (Rimm-Kaufman & Kagan, 2005; Rudasill, 2011; Rudasill & Rimm-Kaufman, 2009; Rydell, Bohlin, & Thorell, 2005). If these interaction patterns are typical for children who are more withdrawn, then it appears likely that they would also receive less support from many teachers and may thus be less likely to show adaptive school adjustment patterns. Not all shy children, however, display such patterns, and research findings examining teacher-child relationships indicate that shy children, in addition to interacting less overall, also tend to engage in less conflict with teachers (Rudasill & Rimm-Kaufman, 2009). Further empirical evidence suggests that teachers who show more sensitive teaching styles and behaviors and/or create more sensitive classrooms may provide a supportive context for withdrawn children that can ameliorate the link between shyness and poorer school adjustment (Avant, Gazelle, & Faldowski, 2011; Gazelle, 2006; Pianta, 1999). Teachers who are consistently warm, positive, and respond appropriately to children's cues may also help children develop better self-regulation and autonomous classroom behaviors—skills that are likely to benefit shy children in particular (Arbeau, Coplan, & Weeks, 2010; Pianta, La Paro, Payne, Cox, & Bradley, 2002).

Constructs that are accurate indicators of the overall social and relational context of the classroom that teachers create and model may thus be important indicators of resources shy/withdrawn children may access as they attempt to adapt to challenging social contexts at school (Farmer, 2000; Farmer, MacAuliffe, & Hamm, 2011; Pianta, Belsky, Vandergrift, Houts, & Morrison, 2008a). If teachers are more sensitive in their interactions with children and create a more supportive classroom in general, then evidence suggests that this context may reduce both the impact of peer relationship problems and the likelihood of disengagement for shy/withdrawn children. Given the current research literature, it seems likely that there are links between children's shy/withdrawn behavior and school adjustment. There have been few studies to date, however, of the potential links between shyness, peer relationships, and school adjustment within models that also consider teacher sensitivity as a predictor of school adjustment and a potential moderator of the association between shyness, peer relationships, and adjustment.

While previous work (Avant et al., 2011) examined related longitudinal models of peer and classroom effects with anxious-solitary children, the current study examined potential linkages between shy children (a set of behaviors related to, but distinct from, anxious-solitude) in a younger age-range that encompassed school entry—a timespan likely to contain a range

of challenges particularly stressful for shy children (Coplan & Arbeau, 2008). We also made a more focused examination of whether or not the level of social and emotional support teachers foster in classrooms might be associated with more negative social outcomes for shy children. Avant et al. (2011) growth analyses used an index of classroom emotional climate/support that did not distinguish between teachers' display of behavior management and sensitivity. While that strategy was effective for their goals, our model allows for a more direct examination of the potential contributions of teachers' levels of social and emotional sensitivity that are relatively distinct from the levels of control they exhibited. In the current study, we examine links between shyness, peer rejection, and engagement, with teacher sensitivity included first as a contributor/mediator of peer rejection and engagement, then as a moderator of these links.

The current study

Justification of methods

We tested our set of hypotheses and the attendant model (Figure 1) that explored this specific set of potential contributions to classroom engagement in first grade and operationalized our constructs with a range of observational data, parent reports and child self-reports. The transition from kindergarten to first grade is an important developmental challenge for children and this period was the focus of the current study. Children's temperament in these early school years is an important predictor of school social and academic function and the shift to the greater academic focus and attendant cognitive and behavioral demands of first grade may be a stressful transition for children with less adaptive temperament and associated behaviors (Coplan & Arbeau, 2008; Martin, 1988; Rudasill & Rimm-Kaufman, 2009). Additionally, longitudinal findings suggest persistent school adjustment trajectories are likely being formed during this developmental time period (Entwisle, Alexander, & Olson, 2005). Understanding the potential impact of temperament and social relationships in the classroom across this specific time span is thus a central goal for developmental researchers.

Shyness and withdrawn behavior were measured via maternal reports when children were preschool age (4.5 years). Mothers' reports are widely used in assessments of children's temperament. Mothers are a particularly appropriate source of information on child temperament because parent/mother knowledge of children's attitudes and behaviors extends across multiple contexts and time periods (Rothbart & Bates, 2006).

Peer acceptance/rejection indexes classmates' attitudes toward peers as potential play and workmates (i.e., peer liking/disliking). Peer rejection not only serves as a marker for the level of associated negative vs. positive peer behaviors (e.g., victimization) and social overtures that a student is likely to receive (Bukowski & Hoza, 1989), it has also been consistently linked to children's access to social and instrumental resources and classroom engagement (Buhs & Ladd, 2001; Ladd, Herald-Brown, & Reiser, 2008; Wentzel & Caldwell, 1997). While peer ratings are a desirable source of peer acceptance information, teacher raters (as used here) also provide accurate ratings of peer sentiments in early childhood, and this method was more feasible and efficient for the current, large-scale sample (Coie & Dodge, 1988; Ladd & Profilet, 1996).

Observations of children's classrooms were conducted to capture global ratings of classroom quality, including Teacher Sensitivity. Observers rated teacher behaviors using scales where greater responsiveness to student requests and developmentally appropriate responses to behavioral cues were indicators of high sensitivity. Such observations are likely the best choice for estimates of teacher behaviors and classroom climates because they avoid

problems with biases often present in teacher and younger students' ratings of teacher behavior and classroom environments.

Engagement was examined here via classroom observations. These time-sampled observations also helped provide less biased estimates of children's academic and social engagement in the classroom. Such indices have proven useful as estimates of the degree to which students are self-directed, compliant and supportive of the positive social and academic goals of the classroom. The measures used here to test the current model represent data drawn from parents, teachers, and observers and decrease shared-source variance problems.

Analytic plan

The hypothesized linkages presented here were tested within a conceptual framework and analytic model (Figure 1) that allowed us to examine a potential mediating role for peer rejection in the relationship between teacher/classroom sensitivity and shy/withdrawn temperament and classroom engagement. This model, tested with structural equations modeling (SEM), also allowed us to perform multiple group comparisons of the resulting structural model across groups differing on levels of teacher sensitivity, thus enabling examination of whether or not sensitivity moderates the mediating associations between shy/withdrawn behavior, peer rejection and engagement (Figure 3). Classrooms that vary in the level of sensitivity were observed (i.e., high sensitivity, moderate sensitivity, low sensitivity groups) and allowed us to test for the potential attenuation of the linkages between shy/withdrawn behavior, peer rejection, and engagement.

Method

Participants

Participants for this study were part of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD). This large longitudinal study followed a sample of children ($n = 1364$) from birth through age 15. A more complete overview and additional details, including sample selection, a complete list of study measures and procedure descriptions is available at the NICHD website (<https://www.nichd.nih.gov/research/supported/Pages/seccyd.aspx>) (NICHD Early Child Care Research Network, 1993).

Data for this study were obtained from Phase II, where children were followed from age 54 months through first grade ($n = 1226$, 48% female, age $SD = 1.08$ years at 54 mos.). The gender distribution of the final sample in our study ($n = 925$, 50% female) was not statistically different from the original sample, $z = .82$, $p = .41$, 95% CI [.47, .53]. The majority of children were European-American ($n = 773$), followed in frequency by African American ($n = 102$), Asian ($n = 13$), and other ($n = 37$). The mean family income when children were in first grade was \$67,189 ($SD = \$51,177$), which was not statistically different from the dropped-out cases, $t(981) = 1.25$, $p = .21$. Teachers, on average, had 14.5 years of teaching experience ($SD = 9.5$), 96% were females, and 94% were European-American.

Measures

Temperament

Children's temperamental shyness was assessed through mother report on the Children's Behavior Questionnaire (CBQ; Rothbart, Ahadi, & Hershey, 1994) when children were approximately 54 months of age. Mothers rated children's behavior on a 7-point Likert scale ranging from 1 (extremely untrue) to 7 (extremely true). The Shyness subscale (10 items) measures a child's

slow or inhibited approach in situations involving novelty or uncertainty. Sample items include "Acts shy around new people" and "Gets embarrassed when strangers pay a lot of attention to her/him" (Rothbart et al., 1994). Internal consistency (Cronbach's alpha) for this subscale with the current sample was .87.

Teacher sensitivity

Teacher sensitivity was measured from observations of first-grade classrooms using global ratings in the Classroom Observation System (COS-1), developed for the SECCYD (see also Pianta, LaParo, & Hamre, 2008, for a description of the Classroom Assessment Scoring System—a closely related, widely used protocol based on the COS-1). Teacher Sensitivity refers to the extent to which teachers display awareness of academic and emotional student needs and respond to those needs. Scoring took place during three observational cycles; the first two were 10-min periods immediately following a 34-min behavioral rating period, and the third was a 15-min observation. Scoring was based on a seven-point scale with values from 1 = "Uncharacteristic" to 7 = "Extremely Characteristic." Ratings were then averaged across the three cycles. Inter-rater, live reliability was estimated at .84 (Pearson's r) for a subsample ($n = 46$) of the observations.

Classroom engagement

Children's academic and social engagement in the first grade classroom was measured using behavioral ratings within the Classroom Observation System (COS-1). Academic and social engagement was comprised of observer ratings of active (physical and oral involvement; e.g., raising a hand, reading aloud) and passive engagement (appearing to pay attention without physical activity; e.g., listening, watching) in activities assigned or directed by the teacher. Observations occurred during two 34-min cycles where the frequencies of specific behaviors were coded in 30-s observe/30-s record intervals for three 10-min periods. The Engagement score used here is the sum of two separate scores, one for active and one for passive engagement. The raw scores (i.e., original valences) for active and passive engagement were highly and inversely correlated ($r = -.89$). Interrater, live reliability estimates ranged from .88 to .92 (Pearson's r) for a subsample ($n = 46$) of the observations.

Peer rejection

Peer rejection was assessed through teacher reports in first grade using three items; one from a sociometric status questionnaire (Cillessen et al., 1992a) and two items from another measure tapping peer acceptance/rejection (Ladd, 1983). Teacher ratings of children's peer relationships, similar to those used here, have demonstrated acceptable psychometric properties. Cross-informant comparisons examining concordance between peer, parent, and teacher ratings suggest reasonable levels of agreement among the rater groups (Ladd & Kochenderfer-Ladd, 2002).

Teachers indicated the target child's peer acceptance/rejection level by responding to the statements "This child is disliked by peers," using a 7-point Likert-type scale (1 = almost none, 4 = average, 7 = unusually large number), "children do not like to play or work with this child," and "children like to play or work with this child" (reversed) using a 5-point Likert-type scale (1 = none, 3 = some, 5 = nearly all). This reverse-scored item represented a good conceptual fit with the "disliking" items because a child who is explicitly rated as having no peers who like to play or work with him/her is similar to a child who is indicated as disliked. In both cases, the child is not sought out for inclusion in peer social activities. This parallels classic approaches where rejected children are categorized as those receiving higher negative ratings and lower positive ratings (Coie, Dodge, & Kupersmidt, 1990).

The 5-point scale values were transformed to a 7-point scale using a linear transformation (IBM/SPSS, 2012). While the scale anchors differed slightly, higher scores for both scales indicated that a greater proportion of the peer group disliked/rejected the target child. Internal consistency (Cronbach's alpha) for this subscale with the current sample was .78. Teacher ratings of children's peer relationships, similar to those used here, have demonstrated acceptable psychometric properties. Cross-informant comparisons examining concordance between peer, parent, and teacher ratings suggest reasonable levels of agreement among the rater groups (Ladd & Kochenderfer-Ladd, 2002).

Results

Analytic models

Bivariate correlations (Table 1) indicated significant associations between shyness and peer rejection, $r = -.08, p < .05$, and shyness and classroom engagement, $r = .08, p < .05$. Teacher sensitivity was negatively associated with peer rejection, $r = -.07, p < .05$, and positively associated with classroom engagement, $r = .20, p < .01$. Peer rejection was also negatively associated with classroom engagement, $r = -.18, p < .01$. This pattern of correlations supported our contention that shyness would be a significant predictor of peer rejection and engagement and that teacher sensitivity would covary with peer rejection and classroom engagement, although the link between shyness and peer rejection was in the opposite direction of what we predicted (see the Discussion section).

The conceptual linkages described in Figure 1 were examined for fit to the data using SEM (full information maximum likelihood method; Mplus, ver. 6: Muthén & Muthén, 2012). The initial model was estimated with data drawn from the entire sample and included linkages between shyness (at 4.5 years) and first-grade teacher sensitivity as predictors of first-grade classroom engagement with mediating links between both predictors and

Table 1. Descriptive statistics and correlations among study variables.

| | Shyness | Peer rejection | Teacher sensitivity | Engagement |
|------------------------|-------------|----------------|---------------------|--------------|
| Shyness | — | | | |
| Peer rejection | -.08* | — | | |
| Teacher sensitivity | .02 | -.07* | — | |
| Engagement | .08* | -.18** | .20** | — |
| <i>n</i> | 925 | 912 | 925 | 925 |
| <i>M</i> (<i>SD</i>) | 3.53 (1.10) | 1.78 (1.26) | 5.32 (1.15) | 55.90 (4.72) |
| Min. | 1.00 | 1.00 | 1.33 | 28.00 |
| Max. | 6.00 | 7.00 | 7.00 | 60.00 |
| Skewness (<i>SE</i>) | .12 (.08) | 1.54 (.08) | -.59 (.08) | -1.86 (.08) |
| Kurtosis (<i>SE</i>) | -.27 (.16) | 1.38 (.16) | -.03 (.16) | 4.49 (.16) |

* $p < .05$

** $p < .01$

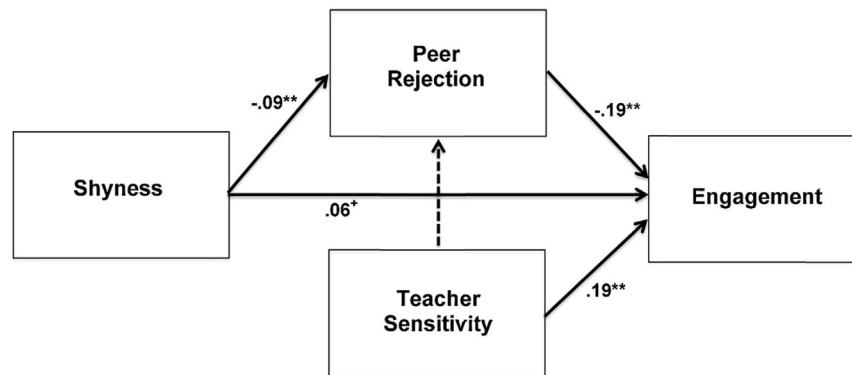


Figure 2. SEM results, standardized path coefficients. Solid lines indicate pathways with significant parameter estimates. Dashed lines indicate non-significant pathways. + $p = .06$; ** $p < .01$

concurrent (first grade) peer rejection (Figure 2). The estimated model was just-identified.

Results drawn from the complete dataset (Figure 2) indicated that shyness was negatively associated with peer rejection (standardized path coefficients: $-.09$, $p < .01$) and positively predicted engagement ($.06$, $p = .06$), albeit at a non-significant level, indicating that children scoring higher on shyness may have tended to score lower on peer rejection and higher on engagement. Peer rejection, in turn, was an independent, negative predictor of engagement ($-.19$, $p < .01$), indicating that children who were reported as less liked by peers also tended to display lower levels of classroom engagement. Teacher sensitivity was not associated with peer rejection but was a positive predictor of engagement ($.19$, $p < .01$). Children from classrooms where observations revealed higher levels of sensitivity tended to be rated higher on classroom engagement. Follow-up analyses were conducted to examine potential moderating effects of teacher sensitivity for the linkages between shyness and the classroom engagement outcome, with peer rejection as a potential mediator, by estimating a simplified model (Figure 3) for high, moderate, and low teacher sensitivity groups. Participants were split into groups using a standard deviation cut-off such that cases from classrooms displaying sensitivity values greater than one standard deviation above the mean were categorized as *high sensitivity*, those within a range of one standard deviation above or below the mean were rated as *moderate sensitivity*, and those greater than one standard deviation below the mean were rated as *low sensitivity*. Results from this just-identified model comparison indicated that parameter estimates differed across the groups. In the *low* and *moderate sensitivity* groups, shyness was not a significant predictor of either peer rejection or engagement, but peer rejection was negatively associated with engagement (standardized path coefficients), moderate group = $-.21$, $p < .01$, low group = $-.22$, $p < .01$. For the *high sensitivity* group, in contrast, shyness predicted engagement ($.15$, $p = .07$), albeit at a nonsignificant level, and also predicted peer rejection, $-.19$, $p = .01$. Peer rejection did not predict engagement. These results indicate that, for children in low and moderate teacher sensitivity classrooms, higher levels of peer rejection predict lower levels of engagement, while for children in high sensitivity classrooms, higher levels of shyness predict greater engagement and lower levels of peer rejection.

Discussion

Three primary findings emerged from this study. First, peer rejection mediated the association between children's shyness at preschool age and engagement in first grade. Second, we found that teacher sensitivity, although not directly related to peer rejection, was positively related to engagement. Third, teacher

sensitivity moderated the association between shyness, peer rejection, and engagement. Each of these findings, discussed in greater detail below, represents a significant addition to the current literature on the development and potential effects of shyness in elementary school contexts.

Our full model tested peer rejection as a potential mediator between preschool levels of shyness and engagement in first grade, and included parallel linkages from teacher sensitivity to peer rejection and, in turn, to engagement. Although we expected to find evidence supporting peer rejection as a mediating process, the direction of the associations found in our model was contrary to our hypothesis. That is, we expected greater shyness to predict lower engagement, and that the mechanism of this association would be a positive link between shyness and peer rejection. Instead, we found that shyer students tended to be less rejected and that lower levels of rejection were associated with greater engagement. Significant estimates of (partial) mediation were consistent with the premise that lower levels of rejection may, in part, support greater engagement for shyer children. Shyness, especially at less extreme levels, may indicate children who are more sensitive and attuned to the needs and behaviors of others (Kagan & Fox, 2006) and thus more likely to maintain positive peer relations. Indeed, research suggests that shyness and inhibition to unfamiliar stimuli (a strong correlate of shyness) may be protective factors for negative behavior (Kochanska, 1991, 1993, 1995; Kochanska, Gross, Lin, & Nichols, 2002). Kochanska (1995), for example, found that young children who were more inhibited were also more likely to comply with maternal directions. Kochanska et al. (2002) also showed that displays of guilt in young children were positively related to their temperamental fearfulness. This may generalize to behavior in school settings where shyer children's inhibited behavior keeps them from engaging in acts that may foster peer rejection (e.g., aggression).

Our finding that shyness was negatively related to rejection may also be viewed as incongruent with prior work showing that shy children tend to be less socially skilled and less likely to behave prosocially (Eisenberg et al., 1996) than their less shy peers. However, our study differed in several key ways that may explain this incongruence. First, shyness, rated here by mothers, may tend to more strongly reflect shyness with strangers (Eisenberg, Shepherd, Fabes, Murphy, & Guthrie, 1998) rather than behavior at school. Indeed, evidence suggests that children's shyness as rated by teachers, but not parents, is associated with school-based outcomes, such as language and attention skills (Rudasill et al., 2014). Second, as mentioned above, the children in this study did not display high levels of shyness overall; thus, our analyses may reflect results for a group of children with fewer extremely shy children. Finally, because teachers' ratings were the source of peer rejection assessments in this study, it is

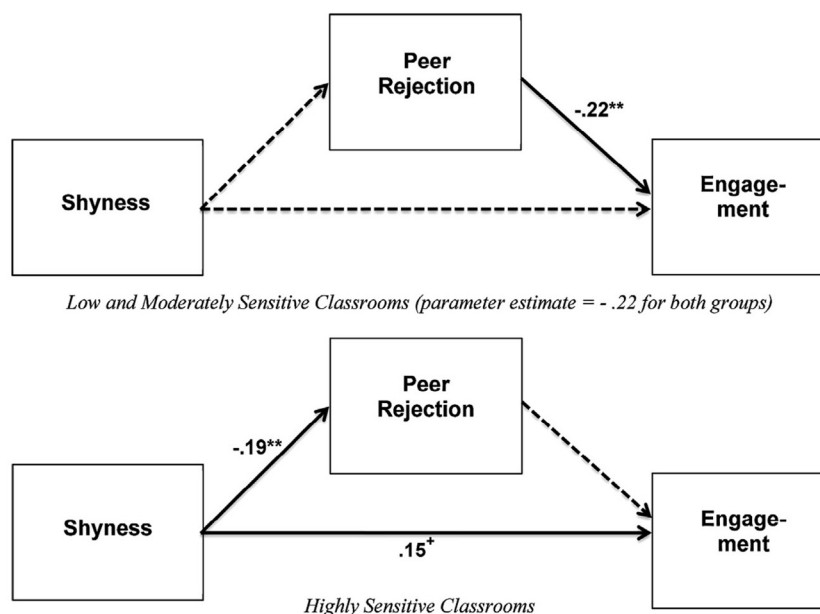


Figure 3. SEM Moderation model results: Parameter estimates from multi-group model estimations using data drawn from high, moderate and low classroom sensitivity groups, standardized path coefficients. Solid lines indicate pathways with significant parameter estimates. Dashed lines indicate nonsignificant pathways. + $p = .07$; ** $p < .01$

possible that teachers rated quieter and more reserved children as better liked by peers. While teacher ratings of children's peer attitudes are typically concordant with peer ratings, teachers' preferences for more controlled classroom social behavior may have affected their rejection ratings. In addition to this aspect of the ratings, shy/withdrawn behavior may also simply not be strongly associated with peer rejection for children at this age (Rubin et al., 1993).

Our finding that teacher sensitivity was positively related to engagement is also compelling, particularly because teacher sensitivity and engagement were assessed via observations of classrooms and of children's behavior. Findings from extant literature (Downer, Rimm-Kaufman, & Pianta, 2007; Hamre & Pianta, 2005; Mashburn et al., 2008; Rimm-Kaufman et al., 2002; Pianta et al., 2002) consistently suggest an important role for classroom quality as a support for children's engagement and associated academic outcomes. Downer et al. (2007), for example, found that high-quality classroom interactions (such as those associated with teacher sensitivity) predicted children's engagement in third grade for academically at-risk students. In a study of kindergarten children (Ponitz, Rimm-Kaufman, Grimm, & Curby, 2009) also found that classroom quality (including emotional, instructional, and organizational support) positively predicted children's behavioral engagement in the classroom. Our findings are consistent with this existing evidence and the link between teacher sensitivity and engagement in our model further elaborates and supports this line of empirical findings.

We also found that teacher sensitivity moderated the associations between shyness, peer rejection, and engagement. In classrooms classified as highly sensitive (i.e., observed sensitivity scores more than one SD above the mean) shyness was negatively related to rejection and positively associated with engagement. In less sensitive classrooms (i.e., those having moderate or low levels of sensitivity), peer rejection was negatively related to engagement. Thus, teacher sensitivity appears to be protective for shy children's rejection and may eliminate negative associations between peer rejection and engagement that are present in low and moderately sensitive classrooms. The link between shyness and engagement is consonant with Rimm-Kaufman et al. (2002) findings that showed bolder (i.e., not shy) kindergarten

children were more often off-task or unengaged in classroom activities than their shyer peers, and that teacher sensitivity ameliorated this association. Our findings differed, however, in that Rimm-Kaufman et al. (2002) examined the differential effects of teacher sensitivity on shy vs. bold children's classroom behavior while we examined the differential effects of shyness on children's classroom behavior (engagement) for associations with varying levels of teacher sensitivity. Both sets of results, however, support the broader contention that children's shyness may foster engagement by discouraging misbehavior. In addition, teacher sensitivity may be protective for shy children's engagement, reflective of a sensitive teacher's attunement to children's behavioral cues. One final point relevant to the link between shyness and engagement that may be important to discuss here comes from a potential limitation of our engagement measure. This measure is a composite of observations of active (e.g., answering teacher questions) and passive (e.g., listening, appropriately attending to class activities) forms of engagement. It may be that shyer students were primarily displaying passive engagement while less shy children were more actively engaged. Future models may be able to tease out this distinction and examine potential differences in how these forms might be differentially linked to classroom adjustment.

Teacher sensitivity also appears to support greater engagement by children with more peer rejection; although peer rejection and engagement were negatively associated in classrooms with moderate and low levels of teacher sensitivity, classrooms with high teacher sensitivity did not display that linkage. This finding is novel as there do not appear to be any published examinations of teacher sensitivity as a potential moderator of peer rejection effects on classroom engagement. However, recent research by Thomas, Bierman, Thompson, and Powers (2008), and the Conduct Problems Prevention Research Group suggests that classroom quality may play a central role in supporting more positive peer interactions. Their findings revealed cumulative effects for classroom quality (and familial factors) that predicted children's aggressive behavior with peers. Other research links children's peer acceptance/rejection and subsequent engagement in the classroom. In a study of middle-school students, peer support was positively related to behavioral and emotional

engagement in school (Li, Lynch, Kalvin, Liu, & Lerner, 2011). In an examination of classroom engagement as a mediator between teacher-student relationship quality and peer acceptance, Hughes and Kwok (2006) showed that engagement in first grade predicted peer acceptance in second grade. Indeed, concatenations between positive peer relations and classroom engagement are expected, given theoretical and empirical evidence that children who feel safe and supported in school are likely to enjoy and participate more in school-based activities (Connell & Wellborn, 1991; Furrer & Skinner, 2003; Ladd, Birch, & Buhs, 1999).

Despite the novel and significant findings uncovered here, our study was limited by the fact that we did not have direct measurements of engagement, teacher sensitivity, or peer rejection immediately at school entry. The approach that we used here and limitations within the dataset also produced findings that were variable-centered rather than person-centered. Future studies could incorporate designs that identify adjustment patterns for specific subtypes of shy/withdrawn children and track development more precisely from school entry onward and, if possible, over longer time spans. Our study would also have been strengthened by using peer nomination or rating data for the peer rejection construct, had these indices been available. Using peers as raters allows access to aspects of peer attitudes perhaps not available to teacher raters. While teachers are relatively accurate estimators of peer rejection, using peer data or data drawn from multiple sources to tap children's peer rejection sentiments would have allowed for a more robust index of peer attitudes. The time frame within which the data were collected also limited our design and findings. More consistent and frequent data collection points would have allowed for more detailed investigation of potential causal linkages between shyness, peer and teacher effects, and adjustment outcomes (e.g., examining patterns of associations between growth curves) and a precise examination of potential effects at the transition to first grade. It is also important to examine potential moderation by factors linked to gender—such effects might be expected due to gender differences (i.e., girls tend to form closer relationships with teachers and boys tend to form conflictual relationships with teachers) that consistently emerge in findings about teacher-child relationships, Baker, 2006; Ewing & Taylor, 2009; Hamre & Pianta, 2001; Silver, Measelle, Armstrong, & Essex, 2005). Future research could be designed to examine potential gender effects and also whether or not similar models are applicable to older age groups (e.g., adolescents).

In sum, findings from the current study extend the literature describing potential developmental trajectories and associated outcomes for shy and withdrawn children. As shy children enter elementary school it is clear that, despite a consistent pattern of findings indicating greater risk for more highly withdrawn children, we should expect heterogeneous patterns of adjustment and differential interactions between these behavior patterns and the classroom social context. School classrooms are diverse contexts for development and our findings suggest that supportive contexts such as those provided by more sensitive teachers tend to provide beneficial effects on several levels, including ameliorating the negative effects of peer rejection, perhaps especially for those children who are more shy. The pattern of interactions we describe here may indicate the importance of stressing more sensitive social and academic support for all children, but our findings appear to indicate that such support may play an especially important role for shy children. Teachers who create a classroom context that is especially sensitive and supportive likely create more effective and responsive environment for students, but those aspects of their interactions with students may be more critical and beneficial to students who are shy (or have other social and emotional challenges). A rising tide of

support may float all classroom "boats," but some students may benefit more than others. This could be an especially important message for teacher-training programs and for school administrators seeking to create better social and academic adjustment outcomes for younger elementary school students.

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