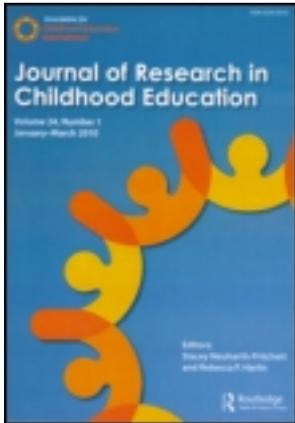


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### Shyness, Sibling Relationships, and Young Children's Socioemotional Adjustment at Preschool

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## Shyness, Sibling Relationships, and Young Children's Socioemotional Adjustment at Preschool

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The purpose of this research was to examine the moderating role of sibling relationship quality in the associations between shyness and indices of socioemotional adjustment in an early childhood education context. Participants were 79 children ages 4 to 6 ( $M = 4.74$  years) who had at least one sibling. Parents completed ratings of child shyness, sibling relationship quality was assessed with parent and child self-report, and teachers and children completed assessments of child socioemotional functioning at preschool. Among the results, shyness and sibling relationship quality uniquely predicted adjustment at preschool. In addition, positive sibling relationships moderated relations between shyness and indices of preschool adjustment. For example, among children with less positive sibling relationships, shyness was more strongly associated with indices of internalizing problems. In contrast, these associations were attenuated among children with more positive sibling relationships. Results are discussed in terms of the protective role siblings may play in shy children's socioemotional adjustment at preschool.

**Keywords:** preschool, social interaction, families, socioemotional learning

Shy children tend to be wary and anxious in social situations and are more likely to experience internalizing problems and difficulties in their peer relationships (Rubin, Coplan, & Bowker, 2009). However, results from recent studies suggest that the experience of positive relationships with "important others" (e.g., parents, teachers) may buffer shy children from negative adjustment outcomes in early education contexts (e.g., Arbeau, Coplan, & Weeks, 2010; Coplan, Arbeau, & Armer, 2008). To date, the potential protective role of the sibling relationship for young, shy children has not been considered. Sibling relationships provide an important and unique context for children's social and cognitive development (Brody, 1998). The goal of this study was to examine links between shyness, sibling relationships, and young children's adjustment in an early education context. In particular, we sought to explore the protective role of siblings in the socioemotional functioning of young, shy children at preschool.

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## SHYNESS IN EARLY EDUCATION CONTEXTS

*Shyness* refers to a temperamental disposition to be wary, fearful, and self-conscious when encountering novel social settings and situations of perceived social evaluation (Rubin et al., 2009). From a motivational perspective, shy children are thought to experience an approach-avoidance conflict, whereby their desire to approach others is simultaneously inhibited by social fear and anxiety (Coplan, Prakash, O'Neil, & Armer, 2004).

Early education contexts appear to be particularly stressful for young, shy children (Rimm-Kaufman & Kagan, 2005). Coplan and Arbeau (2008) postulated that the presence of a large peer group, increased demands for verbal participation, and high child-to-staff ratio may exacerbate shy children's feelings of social fear and self-consciousness in early childhood school environments. In early education settings, young, shy children rarely initiate conversations and social contacts and tend to hover on the edges of social interactions without joining in (Bohlin, Hagekull, & Andersson, 2005; Coplan, Debow, Schneider, & Graham, 2009; Coplan, Prakash, et al., 2004; Rimm-Kaufman & Kagan, 2005). Moreover, shyness in early childhood is concurrently and predictively associated with a range of negative adjustment outcomes (see Rubin et al., 2009, for a recent review).

For example, young, shy children are prone to internalizing such problems as anxiety, loneliness, and lower self-esteem (Coplan et al., 2008; Coplan, Findlay, & Nelson, 2004; Sanson, Pedlow, Cann, Prior, & Oberklaid, 1996; Spinrad et al., 2004). As well, shyness in early childhood is associated with poor peer relations, including peer rejection, exclusion, and victimization (Chen, DeSouza, Chen, & Wang, 2006; Gazelle & Ladd, 2003; Perren & Alsaker, 2006). Moreover, results from a growing number of studies suggest that extreme shyness in early childhood is predictive of the development of anxiety disorders (Chronis-Tuscano et al., 2009; Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2005).

However, it is certainly not the case that all shy children experience adjustment difficulties in early education contexts. Accordingly, researchers have begun to explore various risk and protective mechanisms that may help to account for the heterogeneity of outcomes evident in the early school adjustment of shy children (Coplan & Arbeau, 2008). One area of focus has been the protective role of children's close relationships. For example, there is evidence to suggest that various qualities of parent-child relationships may serve to exacerbate (e.g., through overprotection or overcontrol) or attenuate (e.g., by providing warmth and support) associations between shyness and early school adjustment (e.g., Coplan et al., 2008; Early et al., 2002; Rubin, Burgess, & Hastings, 2002). Arbeau et al. (2010) reported that close teacher-child relationships served to reduce associations between shyness and early socioemotional adjustment in early elementary school. As well, the experience of a high-quality friendship also appears to be particularly helpful for shy children, whereas peer exclusion appears to have particularly detrimental effects (Gazelle & Ladd, 2003; Oh et al., 2008). To date, however, very little is known about how siblings may influence the early school adjustment of young, shy children.

## SHYNESS AND SIBLING RELATIONSHIPS

Overall, the experience of warm and intimate sibling relationships is positively associated with socioemotional adjustment in early childhood (e.g., Kim, McHale, Crouter, & Osgood, 2007; Dunn, Slomkowski, & Beardsall, 1994; Richmond, Stocker, & Rienks, 2005). In contrast, sibling

relationships that are characterized by more negative attributes, such as hostility and a lack of affection, appear to be related to psychosocial difficulties (e.g., Brody, 1998; Menesini, Camodeca, & Nocentini, 2010; Stocker, Burwell, & Briggs, 2002).

Arguments from various theoretical perspectives support the general importance of siblings for children's early school adjustment (Dunn & McGuire, 1992). For example, social learning theory (Bandura, 1977) suggests that social behaviors learned and practiced with siblings would be more likely to be repeated among peers at school. In support of this notion, Slomkowski and Dunn (1992) found consistencies in children's conflict-resolution strategies with siblings and peers. According to attachment theory (Bowlby, 1969), positive sibling relationships should promote peer interactions in other social contexts. Consistent with this idea, Lockwood, Kitzmann, and Cohen (2001) reported that sibling warmth was associated with more positive peer relations and greater social competence. Similarly, Menesini and colleagues (2010) found that bullying and victimization within the sibling relationship was associated with similar difficulties in the peer group. According to this carryover model, children will display similarities across their sibling and peer relationships, essentially because they would employ the same interaction strategies across these different relationships (McCoy, Brody, & Stoneman, 1994).

However, it must be acknowledged that empirical links between sibling relationships and child adjustment at school have been somewhat inconsistent (Dunn, 2007). Indeed, some researchers suggest that the asymmetry of sibling interactions and differences in reciprocity that exist across sibling versus peer relationships may offer unique contributions to children's socioemotional adjustment (Volling, Youngblade, & Belsky, 1997). Accordingly, the compensation model purports that children compensate for unsatisfactory relationships in one domain (i.e., the peer group) by putting more time and effort into relationships in another area (i.e., with a sibling) that provide emotional support (East & Rook, 1992). In support of this notion, some results indicating inverse relations between the quality of sibling and peer relations have been reported (e.g., Mendelson, Aboud, & Lanthier, 1994; Stocker & Dunn, 1990).

Our review of the literature did not reveal any studies specifically exploring the sibling relationships of shy children. Given that, overall, shy children are prone to forming less positive relationships with parents (Coplan et al., 2008), teachers (Rydell, Bohlin, & Thorell, 2005), and peers (Gazelle & Ladd, 2003), it can be speculated that shyness also would be negatively associated with sibling relationships. Of course, not all shy children would be expected to form negative relationships with their siblings. In this regard, we sought to explore the protective role of positive sibling relationships in shy children's adjustment at preschool.

It has been argued that positive sibling relationships serve to strengthen children's capacity to cope with stress and thus can serve to promote resiliency (Kramer, 2011). It has been further suggested that positive sibling relationships may be particularly beneficial for socially vulnerable children (Gass, Jenkins, & Dunn, 2007). East and Rook (1992) examined links between sibling and peer relationships among socially isolated and aggressive 6th-graders. Results indicated that isolated children with more sibling support were less anxious and less socially immature (although still not as well adjusted as average children).

Consistent with the theoretical assertion that positive sibling relationships might help to alleviate difficulties experienced in other social relationships (Kramer, 2011), we postulated that sibling relationships might have particularly important implications for the socioemotional functioning of shy children. For example, positive sibling relationships may help shy children feel less anxious among peers. In support of this notion, Nichols, Silk, Tan, and Garelik (2011) recently reported that, as compared to a nonanxious comparison group, the presence of a

sibling led to a greater increase in positive mood and greater reduction in negative affect among anxious children.

Moreover, as described earlier, shy children tend to display a lack of social competence and are prone to peer relationship difficulties in early education contexts (Coplan & Arbeau, 2008). Sibling relationships also provide a unique context for acquiring and implementing the social skills and prosocial behaviors (Vandell & Wilson, 1987) that may translate to more positive relationships for children at child care or preschool (McCoy et al., 1994). Indeed, at least some evidence suggests that shy children's positive social experiences with children outside of school might generalize to the preschool context (Coplan, Schneider, Matheson, & Graham, 2010).

Finally, there is reason to speculate that younger and older siblings may serve to ameliorate the socioemotional functioning of shy children. For example, there is some evidence to suggest that shy children may benefit from social interactions with younger playmates (Furman, Rahe, & Hartup, 1979). In this situation, young, shy children may take a more assertive role, which may contribute to more confidence in their social abilities and interactions. Accordingly, having a younger sibling or playmate may be beneficial for shy children. However, it can also be speculated that an older sibling may model socially appropriate behaviors, assume a caretaking role, and offer warmth and support to the younger, shy sibling (Dunn & Munn, 1986). In this regard, the establishment of a positive relationship with an older sibling may provide shy children with an additional "secure base" from which they can derive increased confidence to explore other social opportunities in other settings (Coplan et al., 2008; Mendelson et al., 1994).

## THIS STUDY

The central goal of this study was to examine links between shyness, sibling relationships, and the socioemotional and peer functioning of preschool children. Drawing upon the extant literature (Rubin et al., 2009), we expected shyness to be negatively associated with indices of preschool adjustment (e.g., prosocial behaviors, perceived social competence), and positively related to internalizing problems at preschool (e.g., anxiety, social withdrawal, loneliness). Overall, in support of the carryover model, positive sibling relationship quality also was predicted to be associated with better preschool adjustment (e.g., Richmond et al., 2005).

We also sought to explore the moderating role of sibling relationships in the association between shyness and preschool adjustment. Aspects of sibling relationships that were considered included the quality of the sibling relationship and the relative effects of having an older versus younger sibling. Specifically, we postulated that among children with fewer positive sibling relationships, shyness would be more strongly associated with indices of preschool maladjustment (i.e., exacerbating effect). In contrast, among children with more positive sibling relationships, these associations were expected to be attenuated (i.e., buffering effect).

## METHOD

### Participants

Participants were 79 children (35 girls, 44 boys) ranging in age from 3.8 to 6.7 years ( $M = 4.74$ ,  $SD = .66$ ), recruited from preschool/daycares in and around Ottawa, Ontario. To be included in

the study, children had to have at least one sibling.<sup>1</sup> Sixty-three children had one sibling, 14 had two siblings, and 2 had three siblings. In cases of more than one sibling, the sibling closest in age to the target child was included.<sup>2</sup> The siblings included 44 girls and 35 boys and ranged in age from 6 months to 17 years ( $M = 5.15$  years,  $SD = 3.27$ ). Nineteen sibling dyads were “girl/girl,” 19 were “boy/boy,” and 41 were mixed-sex. There were 39 children with a younger sibling, 37 with an older sibling, and three sets of twins. Age differences between the focal children and their siblings ranged from 0 (in the case of a twin) to 13.1 years ( $M = 2.82$ ,  $SD = 1.83$  years). The sample was more than 80% White, with a variety of other ethnicities also represented (e.g., 6% Asian, 3% Hispanic, 2% Black). Approximately 10% of mothers and fathers had completed high school, 55% of mothers and 53% of fathers had a college/university degree, and 34% of mothers and 32% of fathers had a graduate-level degree.

### Procedure

Data for this study were collected in 2009. After receiving the necessary ethical clearance and obtaining permission from preschool/daycare directors and teachers ( $n = 12$ , all female<sup>3</sup>), parents were sent information and informed consent letters asking permission for them and their children to participate in the study, and a preliminary demographics questionnaire. Participating children with siblings were interviewed individually in a quiet location at the preschool; the interviews generally lasted about 10 minutes. Children were invited to participate in the interview, and two children declined (for these children, only data from parents and teachers’ measures were included in the study). Interviews were conducted by three female research assistants (psychology department graduate students) who had received extensive training (from the second author) in interviewing young children.

### Measures

**Shyness.** Mothers completed the Child Social Preference Scale (CSPS; Coplan, Prakash, et al., 2004) to assess child shyness (seven items,  $\alpha = .88$ , e.g., “My child seems to want to play with others, but is sometimes nervous to”). This scale has been used in several studies with young children and has demonstrated good psychometric properties ( $\alpha$ ’s = .86–.89), as well as consistent associations with other parental assessments of child shyness, teacher ratings of child anxiety, and behavioral observations of children’s free-play behaviors (e.g., Coplan et al., 2008; Coplan, Prakash, et al., 2004).

**Sibling relationship quality.** The child interviews included three assessments, one of which was an assessment of sibling relationships quality using the Quality of Relationship Scale (QRS; Ross, Woody, Smith, & Lollis, 2000). Children were shown two paper puppets, each of which represented their sibling (matched for gender and hair color), and were read two opposing statements, one for each puppet (e.g., “Erin is mean to me” vs. “Erin is not mean to me”). Children chose the one that was most like their sibling and then indicated the degree of similarity (*a lot* or *a little*). Children also responded to the same 11 items from their own perspective (e.g., “I am a good brother/sister” vs. “I am not a good brother/sister”). Item ratings were averaged to create a single score, with higher scores indicating a warmer and closer sibling relationship ( $\alpha = .91$ ).

Parents rated their children's relationship with their sibling by using a parental version of the sibling appraisal subscale. This scale included the same 11 items from both children's perspectives rated on a 4-point Likert-type scale. Items were averaged to create a single score for parents' perception of their child's relationship with their sibling, with higher scores indicating a more positive sibling relationship ( $\alpha = .87$ ). In the current sample, self- and parent-rated sibling relationship quality were significantly and positively correlated ( $r = .24, p < .05$ ).<sup>4</sup>

The QRS has been used in several studies with preschool and elementary school children (e.g., Ross, Ross, Stein, & Trabasso, 2006; Ross, Stein, Trabasso, Woody, & Ross, 2005). The child version has demonstrated strong psychometric properties ( $\alpha$ 's ranging between .80 and .85; test-retest reliability estimates ranging between .50 and .91), whereas the parent-rated version has demonstrated more moderate internal consistency ( $\alpha = .68-.70$ ) and test-retest reliabilities estimates (.63-.82.) (Ross et al., 2000).

*Adjustment at preschool.* Preschool teachers completed the Child Behavior Scale (CBS; Ladd & Profilet, 1996) designed to assess young children's social adjustment and behavior problems. The full CBS consists of six subscales. In this study, to reduce workload for teachers, they were only asked to complete four subscales that were of particular conceptual interest: prosocial behavior (seven items; e.g., "helps other children,"  $\alpha = .88$ ); social withdrawal (six items; e.g., "solitary child,"  $\alpha = .83$ ); anxiety (four items; e.g., "appears miserable, unhappy, tearful or distressed,"  $\alpha = .71$ ); and excluded by peers (seven items; e.g., "peers refuse to let child play with them,"  $\alpha = .88$ ). This scale has excellent psychometric properties and has been used extensively with young children; furthermore, the subscales have been previously shown to be valid (e.g., associated with observed behaviors) and reliable ( $\alpha$ 's ranging from .78 to .95) (e.g., Booth-LaForce & Oxford, 2008; Ladd & Profilet, 1996).

Self-perceptions were assessed during the child interviews using the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (PSPCSA; Harter & Pike, 1984). To reduce the time demand for children, we administered the subscale by assessing perceived peer acceptance (six items; e.g., "This girl/boy gets asked to play with others/this girl/boy gets lonely sometimes because other kids don't get ask her/him to play,"  $\alpha = .63$ ). This scale is one of the most commonly cited and extensively employed tools to assess young children's perceptions of their competencies and relationships (Byrne, 1996), and has been found to have moderate to good internal consistency (e.g.,  $\alpha = .72-.78$ ; Coplan et al., 2008; Coplan, Closson, & Arbeau, 2007; Harter & Pike, 1984).

Finally, loneliness also was assessed during the child interviews using the Loneliness and Social Dissatisfaction Scale for Young Children (LSDYC; Cassidy & Asher, 1992), which includes 16 items (e.g., "Do you have kids to play with at school?,"  $\alpha = .73$ ). This scale has been used in several studies with young children and has demonstrated good psychometric properties ( $\alpha = .76-.91$ ) and a consistent factor structure across samples (e.g., Booth-LaForce & Oxford, 2008; Cassidy & Asher, 1992).

## RESULTS

### Preliminary Analyses

Demographic variables were largely unrelated to study variables. *Maternal education* was significantly and positively correlated with parent-rated sibling relationship quality ( $r = .24, p < .05$ ).

TABLE 1  
Correlations Between Study Variables

	2	3	4	5	6	7	8
1. Shyness	.04	.11	.24*	.24*	-.20+	-.10	.10
2. Sibling relationship (parent-rated)		.24*	.09	.11	.01	.04	-.28**
3. Sibling relationship (child-rated)			.03	.11	-.10	.13	-.38***
4. Anxiety				.40***	-.09	-.03	.14
5. Social withdrawal					-.14	-.07	.12
6. Prosocial behavior						.10	-.27
7. Perceived acceptance							-.09
8. Loneliness							

+ $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Child age was significantly and negatively correlated with loneliness ( $r = -.30, p < .01$ ) and positively correlated with prosocial behavior ( $r = .47, p < .01$ ). In terms of sibling characteristics, results indicated only a significant effect of sex composition for prosocial behavior,  $F(2, 76) = 3.57, p < .05$  (girls with a female sibling were significantly more prosocial than boys with a male sibling). No age spacing effects were found. Because no consistent pattern of correlations was found, these variables were not controlled for in subsequent analyses. Finally, results from a series of  $t$  tests revealed no significant birth order effects. Children with older versus younger siblings did not differ significantly in terms of shyness, sibling relationship quality, or socioemotional outcomes.

Correlations between all study variables are displayed in Table 1. For the most part, results were consistent with hypotheses. For example, shyness was significantly and positively correlated with teacher-rated anxiety and social withdrawal, and the negative relations between shyness and prosocial behavior approached significance. As well, self- and parent-rated sibling relationship quality were significantly and negatively correlated with loneliness (but not with other indices of socioemotional functioning). Also of note, shyness was not significantly associated with either self-reported or parent-rated sibling relationship quality.

### Hierarchical Regression Analyses

To address the main research question pertaining to the moderating role of sibling characteristics in the associations between shyness and socioemotional outcomes, a series of hierarchical regression analyses were performed. At Step 1, the “main effect” variables were entered (i.e., shyness, sibling relationship quality). At Step 2, the interaction effect (Shyness  $\times$  Sibling) was entered. Separate equations were computed for parent- versus child-reported sibling relationship quality to predict each of the outcome variables. The  $N$ 's for each analysis vary slightly as a function of missing data. To ease presentation (and because “main effect” correlations between shyness and sibling relationship quality and outcome variables are already displayed in Table 1), only results related to the interaction terms are summarized in Table 2.

Results indicated a significant interaction between shyness and parent-rated sibling relationship quality in the prediction of teacher-rated anxiety. This interaction effect was decomposed using simple slopes analyses (Aiken & West, 1991) and is displayed in Figure 1. At lower levels of sibling relationship quality, shyness was positively associated with anxiety at preschool.

TABLE 2  
Results of Hierarchical Regression Analyses Predicting Indices of Adjustment From Interactions Between Shyness, Self, and Parent-Rated Sibling Relationship Quality

Dependent Variable	Two-Way Interaction Terms ( $sr^2$ )	
	Shyness $\times$ Sibling Relationship (parent-rated)	Shyness $\times$ Sibling Relationship (child-rated)
Anxiety	.057*	.000
Social withdrawal	.000	.001
Prosocial behavior	.000	.015
Perceived peer acceptance	.002	.014
Loneliness	.000	.073**

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

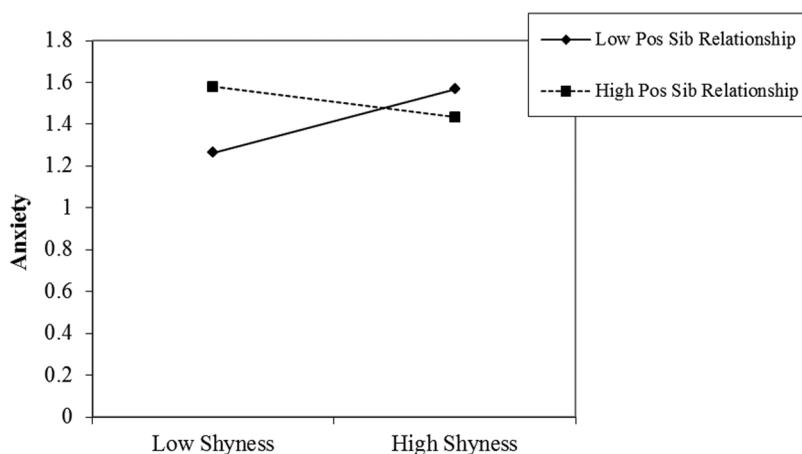


FIGURE 1 Interaction between shyness and parent-rated sibling relationships quality in the prediction of teacher-rated anxiety. Note. Pos Sib = positive sibling.

However, at increasing levels of positive sibling relationship quality, this association was attenuated (i.e., protective role).

A significant Shyness  $\times$  Child-Rated Sibling Relationship Quality interaction also was found in the prediction of child-reported loneliness. Results from simple slopes analyses are displayed in Figure 2. A similar pattern was observed. At lower levels of self-rated sibling relationship quality, there was a positive association between shyness and loneliness. However, this relation was again attenuated with increasing levels of positive sibling relationship quality.

## DISCUSSION

The goal of this research was to examine links between shyness, sibling relationships, and young children's adjustment at preschool. In particular, we were interested in exploring the protective

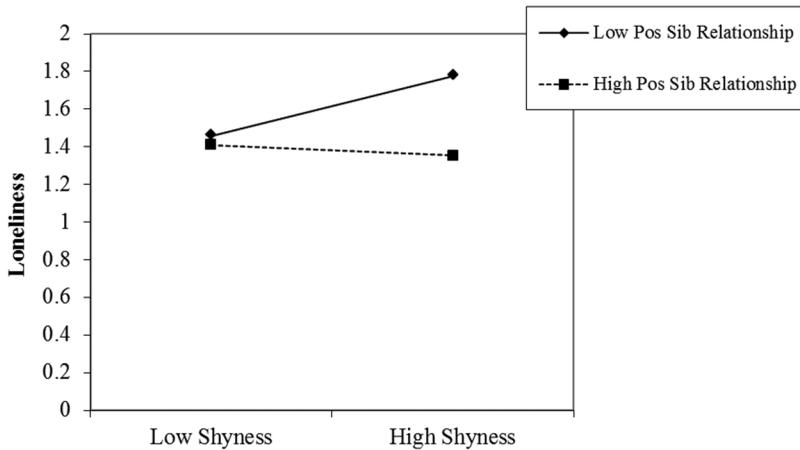


FIGURE 2 Interaction between shyness and child-rated sibling relationships quality in the prediction of child-rated loneliness. *Note.* Pos Sib = positive sibling.

role of siblings in shy children's socioemotional functioning. Overall, results indicated that shyness and sibling relationship quality were uniquely associated with different aspects of adjustment at preschool. Shyness was related to teacher-rated anxiety and social withdrawal, whereas children with closer sibling relationships reported being less lonely at preschool. In addition, some preliminary support was found for the notion that a close sibling relationship may buffer shy children from some negative socioemotional outcomes in early education contexts. Among children with closer sibling relationships, relations between child shyness and indices of internalizing problems at preschool (e.g., anxiety, loneliness) were attenuated. In contrast, more negative sibling relationships seemed to exacerbate these associations.

### Shyness and Preschool Adjustment

Independent of sibling relationship quality, shyness was found to be associated with indices of maladjustment at preschool. Overall, parent-rated shyness was significantly and positively associated with teacher-rated anxiety and social withdrawal. These findings add to the growing literature linking shyness and adjustment difficulties in early education contexts, particularly along the internalizing dimension (e.g., Coplan et al., 2008; Gazelle & Ladd, 2003). For instance, results from several studies report associations between shyness and reticent/withdrawn behavior (e.g., "hovering"), in unfamiliar and familiar settings, as early as the preschool age (e.g., Chen et al., 2006; Coplan, Prakash, et al., 2004). Before considering effects related to sibling relationships, we consider the implications of these findings for shy children's adjustment at preschool.

It has been suggested that the transition to early education contexts appears to be particularly stressful for shy children (Coplan & Arbeau, 2008). Our findings suggest that stresses evoke

anxiety in shy children and that they respond by withdrawing from social interactions. Children who do not frequently interact with peers may miss out on the positive benefits of the peer group, an important and unique context for the development of social, social-cognitive, emotional, and linguistic skills (Rubin, Bukowski, & Parker, 2006). Indeed, social withdrawal (i.e., a lack of social interactions) in childhood is associated with an increased risk for a host of negative outcomes (Rubin et al., 2009). As well, subclinical levels of anxiety in childhood are a significant risk factor for the development of later clinical anxiety disorders (Banerjee & Henderson, 2001; Goodwin, Fergusson, & Horwood, 2004).

Accordingly, our findings highlight the importance of the early identification of shy children at preschool by teachers. It has been suggested that because of their quiet and unassuming nature, shy children may go unnoticed by teachers (Rimm-Kaufman & Kagan, 2005). Notwithstanding, although continuing efforts are required to raise awareness in this area, some recent research findings suggest that early childhood educators may be becoming increasingly aware of the potential negative social, emotional, and academic implications of childhood shyness (e.g., Arbeau & Coplan, 2007; Arbeau et al., 2010).

### Shyness and Sibling Relationships

To begin with, overall, children with more positive sibling relationships (as rated by parents and children) reported lower levels of loneliness at preschool. These findings are consistent with previous research indicating a negative link between sibling relationship quality and internalizing problems (e.g., Dunn et al., 1994). However, strong support for the carryover model was not found, in that aside from an association with loneliness, sibling relationship quality was unrelated to indices of socioemotional functioning at preschool. The nature of the associations between sibling relationships and peer relationships may be more complex and involve other additional factors, such as child temperament (McCoy et al., 1994) and parent-child relationships (Richmond et al., 2005).

It was of interest to note that in this study, we did not find any significant birth order effects with regard to shyness, sibling relationships, and indices of socioemotional functioning at preschool. Results from some previous studies have suggested that later-born siblings tend to be more socially skilled and well liked among peers as compared to first-borns (e.g., Kitzmann, Cohen, & Lockwood, 2002). However, results from a growing number of sibling studies suggest that it is not “static” variables (e.g., birth order, age spacing), but instead the quality of sibling relationships that is most important for children’s socioemotional functioning (Dunn et al., 1994; Gass et al., 2007; Kim et al., 2007). Notwithstanding, it is possible that our relatively small sample size limited our power to detect birth order effects.

It was of interest to note that contrary to predictions, shyness was not significantly related to sibling relationship quality. Accordingly, shy children were neither more nor less likely to have a positive relationship with their sibling. It can be speculated that because siblings spend so much time together (particularly in early childhood), most interactions between shy children and their siblings take place in familiar contexts that may serve to reduce shy children’s social unease. However, it is not appropriate to draw any conclusions regarding these “nonsignificant” associations—as subsequent studies (with larger samples) are clearly required. Moreover, it is possible that certain characteristics of the sibling (e.g., age, sex, temperament) may be

particularly influential in terms of their contributions toward the relationship quality of shy children with their siblings.

*Protective role of siblings.* The primary goal of this research was to examine the moderating role of sibling relationship quality in the association between shyness and socioemotional functioning. Parental ratings of sibling relationship quality moderated the relation between shyness and teacher-rated anxiety at preschool. As well, child-reported sibling relationship quality moderated the relation between shyness and child-reported loneliness. In both cases, the strength of the positive association between shyness and indices of internalizing problems increased among children with less positive sibling relationships (i.e., exacerbating effect). In contrast, among children with more positive sibling relationships, associations between shyness and internalizing difficulties were attenuated (i.e., protective effect). Thus, there was at least some evidence to suggest that shy children who formed a closer and more supportive relationship with their sibling were “shielded” from some of the negative outcomes typically experienced by shy children at preschool.

Some differences were noted in the findings between child-reported and parent-reported sibling relationship quality. One explanation of these differences may be related to shared-method variance (Ross et al., 2005), as sibling relationship quality and loneliness were child-report measures. Nevertheless, our findings are consistent with the notion that sibling relationships may serve a protective role for socially vulnerable children (East & Rook, 1992) and provide some of the first evidence to suggest that more positive sibling relationships may be particularly beneficial to shy children at preschool. Our findings also share conceptual similarity with a number of recent studies indicating that other relationships with significant others may serve a particularly important protective role for shy children. As described earlier, there is evidence to suggest that positive relationships with parents, peers, and teachers may buffer shy children from some socioemotional difficulties in early education contexts (Arbeau et al., 2010; Coplan et al., 2008; Gazelle & Ladd, 2003).

Mendelson and colleagues (1994) suggested that sibling relationships may involve their own internal working models. As such, in the case of more positive sibling relationships, aside from a context for acquiring and implementing social skills, children also may develop confidence and trust. For shy children, these experiences might be particularly germane and lead them to feel more confident and emotionally secure at preschool when interacting with peers.

Shy children appear to be particularly sensitive and at elevated risk for the negative effects of poor quality relationships with parents (e.g., Coplan et al., 2008), teachers (Arbeau et al., 2010), and peers (Gazelle & Ladd, 2003). Overall, difficulties in sibling relationships may mirror similar difficulties in the peer groups (Menesini et al., 2010). However, our findings suggest that shy children also may be particularly vulnerable to deleterious outcomes when they experience more negative sibling relationships.

There is some preliminary support for “peer-based” interventions as a strategy for increasing the social interactions and socioemotional functioning of shy children at preschool (Coplan et al., 2010). As well, the involvement of parents also promotes better outcomes for young, shy children (Rapee et al., 2005). Our findings suggest that intervention programs designed to help extremely shy children adapt to early education settings also might benefit from involving siblings. For example, along with encouraging competent social interactions between siblings, intervention programs also might aim to establish warm and supportive sibling relationships. At least some

preliminary evidence suggests that intervening can “improve” the quality of sibling relationships for young children (Kennedy & Kramer, 2008). It remains to be seen whether this type of intervention might be particularly beneficial for shy children at preschool.

## LIMITATIONS AND FUTURE DIRECTIONS

Results from this study add to the growing literature linking shyness to adjustment difficulties in early education settings. Moreover, our findings provide the first evidence that the quality of sibling relationships might serve a protective role in the preschool adjustment of young, shy children. These findings have potentially important implications for the development of intervention programs designed to help young, shy children make the transition to early education contexts. Some limitations must be acknowledged, however.

To begin with, the correlational nature of this thesis research does not allow us to draw conclusions of a causal nature. Although these results could be interpreted in terms of the “protective” role of sibling relationships for shy children, other explanations cannot be discounted. For example, it may be the case that shy children who were less anxious at preschool also go on to form more positive relationships with their siblings. Moreover, other factors (e.g., parenting) may cause children who are shy to be lonely at school and to form less positive relationships with their siblings. Longitudinal studies are clearly called for to further clarify the relations between sibling relationship quality and preschool adjustment.

In addition, the relatively small sample size in this study likely limited our ability to detect certain associations (particularly with regard to interaction effects). The sample size also restricted the exploration of interaction effects involving child age and sex, as well as characteristics of the sibling pairs (e.g., same-sex vs. opposite sex, age-spacing, birth order, etc.). It also would be of interest to include a comparison sample of only children. Future research also should consider exploring other aspects of the sibling relationship (e.g., conflict), as well as additional outcome variables that may be related to shyness (e.g., academic achievement), as well as constructs that may influence the sibling relationship and child outcomes (e.g., parent-child relationships).

Finally, some sociopolitical and cultural issues should be considered in the contextual interpretation of our findings. For example, although there continues to be overall growth in the general population, there is considerable variability across the globe, resulting in declines in family sizes in some areas and growth in others (Bongaarts, 2009). It remains to be seen how having siblings, versus being an only child, might affect the social lives of shy children. Given the additional and valuable social experiences offered by sibling interaction and the previously described benefits of both older and younger siblings for shy children, it can be speculated that the very presence of a sibling, overall, would serve a positive function for shy children.

Cultural differences in family size also should be considered. For example, due to the “one-child-per-family” policy implemented in China about 30 years ago, the vast majority of children in that country grow up without any siblings (Chen, Chen, Li, & Wang, 2009). Moreover, there appear to be cross-cultural differences in the meaning and implications of shyness. For example, shyness in China appears to be viewed more positively and is associated with more positive outcomes (Chen et al., 2009; Chen et al., 2006). In this regard, it will be important for future researchers to address the role of between-culture differences as well as within-classroom ethnic diversity in the early school adjustment of shy children.

## NOTES

1. There were five instances in which both siblings from the same family were given consent to participate in the study. To avoid statistical problems of nonindependence, one child from each of these five sibling pairs was randomly selected to be the “focal child,” whereas the other was excluded from the study.
2. This was done for consistency purposes and because relationships with siblings closer in age were thought to more closely simulate children’s peer relationships.
3. Unfortunately, no additional demographic or work-related information was available from teachers.
4. Ross, Woody, Smith, and Lollis (2000) also reported a significant (albeit moderate) correlation between child- and maternal-reported sibling relationship quality but also found differences in the patterns of associations between these two variables and other outcome variables. Accordingly, because parents and children display some degree of agreement but also express unique perspectives on sibling relationship quality, these two assessments were kept separate for the current analyses.

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