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Don't Fret, Be Supportive! Maternal Characteristics Linking Child Shyness to Psychosocial and School Adjustment in Kindergarten

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Abstract The goal of this study was to explore the moderating role of maternal personality and parenting characteristics in the links between shyness and adjustment in kindergarten. Participants were 197 children enrolled in kindergarten programs (and their mothers and teachers). Multisource assessment was employed, including maternal ratings, behavioral observations, teacher ratings, and individual child interviews. Results indicated that shyness was associated with a wide range of socio-emotional and school adjustment difficulties in kindergarten. Moreover, support for the moderating role of parenting was also found. Relations between shyness and certain indices of maladjustment were stronger among children with mothers characterized by higher neuroticism, BIS sensitivity, and an overprotective parenting style, and weaker for mothers characterized by high agreeableness and an authoritative parenting style.

Keywords Shyness · Parenting · Personality · Internalizing problems

Shyness refers to wariness and anxiety in the face of social novelty and perceived social-evaluation and is characterized by an approach–avoidance conflict in such situations (Coplan et al. 2004). Thus, although shy children may desire social interaction, this social approach motivation is simultaneously inhibited by social fear and anxiety. There is growing evidence to suggest an underlying biological component related to shyness. For example, as compared to their nonshy peers, extremely shy children are thought to have a lower threshold for arousal in the central nucleus of the amygdala, and demonstrate increased heart rate acceleration to mild stress, higher early morning levels of salivary cortisol, and patterns of EEG responses characterized by greater right frontal activation (e.g., Henderson et al. 2004; Kagan 1997; Schmidt and Tasker 2000).

Shy children appear to be at increased risk for a host of social, emotional, and adjustment difficulties, particularly along the internalizing dimension (Rubin et al. 2002a). For example, from middle childhood through to adolescence, shyness becomes increasingly related to internalizing problems such as loneliness, depression, and social anxiety, as well as deficits in social competence, lower self-esteem, and peer rejection (e.g., Fordham and Stevenson-Hinde 1999; Prior et al. 2000). Moreover, shyness in early childhood appears to be a risk factor for the later development of anxiety disorders (e.g., Schwartz et al. 1999; Van Ameringen et al. 1998). Remarkably, Rapee and colleagues (Rapee et al. 2005) recently reported that 90% of an "extremely shy" (i.e., top 15% of the sample on scores of behavioral inhibition) group of preschool-aged children also met criteria for an existing anxiety disorder.

Researchers have postulated a number of risk and protective factors that may influence the life pathways of shy children (Rubin and Coplan 2004). In the current study, we focus specifically on maternal factors. Within the conceptual framework of "goodness-of-fit" theory (Thomas and Chess 1977), the goal of the present study was to explore the *moderating* role of maternal personality characteristics and parenting in the links between shyness and adjustment in kindergarten.

Shyness in Early Childhood

Young shy children appear to be at risk for adjustment difficulties when starting school (Coplan et al. 2001). It has

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been suggested that the increased demands of the early school environment may be particularly stressful for shy children and serve to exacerbate their feelings of social fear and self-consciousness (Evans 2001). For example, shy children speak less frequently than their peers at school and this quietness may be perceived by teachers as a lack of interest or understanding of the topic (Crozier and Perkins 2002). Moreover, even when given the opportunity to demonstrate their academic competence, shy children may evidence performance deficits because of stresses associated with test performance (Crozier and Hostettler 2003). Thus, it is not surprising that shyness in childhood has been associated with a lack of displayed academic competence (Coplan et al. 2001; Nelson et al. 2005).

Shyness in early education settings appears to be manifested behaviorally through the display of *reticent* behavior. Reticent behavior is considered a behavioral expression of a social approach–avoidance conflict, and includes the prolonged watching of other children without accompanying play (onlooking) and being unoccupied (Coplan et al. 1994). There is strong empirical support linking shyness with the display of reticent behavior in the classroom, both on the first day of school (Coplan 2000), as well as several months into the school year (Coplan et al. 2004). Perhaps as a result, shy children are also not considered attractive playmates by peers (Coplan et al. 2007). Even in early childhood, shyness and reticent behavior have been associated with peer rejection, exclusion, and victimization in preschool and kindergarten (Coplan et al. 2004; Gazelle and Ladd 2003; Hart et al. 2000; Perren and Alsaker 2006).

In and of themselves, poor quality relationships with peers are a significant risk factor for a host of negative outcomes in childhood (see Rubin et al. 2006, for a recent review). It seems likely that these difficulties with peers serve to exacerbate shy children's already existing tendency towards negative moods, worries, and fears (Stevenson-Hinde and Glover 1996). Results from several studies have subsequently linked shyness and reticent behavior with the overt display of anxious behaviors during play, parent/teacher ratings of anxiety and internalizing problems, as well as self-reported lower self-esteem (e.g., Coplan and Armer 2005; Coplan et al. 2004; Henderson et al. 2004; Spinrad et al. 2004).

Finally, the adjustment difficulties experienced by shy children do not go unnoticed by teachers. Shy young children require more attention from teachers (Coplan and Prakash 2003) and their behaviors are considered to be problematic and worthy of teacher intervention (Arbeau and Coplan 2007). These factors likely account for the finding that shy–withdrawn young children tend to form less close relationships with teachers (Rydell et al. 2005). This also does not bode well for shy children, as student–teacher relationships have important and unique implications for children's academic development, social development, and developmental psychopathology (Pianta 2006).

The Role of Maternal Characteristics in the Development of Child Shyness

Notwithstanding the growing empirical literature linking shyness in early childhood with adjustment difficulties, not all young children who are shy develop problems later on (e.g., Arcus 2001). In the present study we explored the *moderating* effect of mothers on the outcomes of shy children, which can be construed as a child temperament x family environment interaction (Rothbart and Bates 2006).

The role of parental socialization practices in the development of shyness has received increased research attention in recent years (Burgess et al. 2005), including a few studies related to interaction effects between child shyness and family environment variables (e.g., Crockenberg and Leerkes 2006; Early et al. 2002; Leve et al. 2005). We propose that a child shyness x maternal characteristics interaction can best be elucidated within the rubric of *goodness-of-fit* theory. The principle of goodness-of-fit (Thomas and Chess 1977) holds that socialization effects depend upon child temperamental characteristics (e.g., Rothbart and Ahadi 1994). In the current study, we speculated that there are certain maternal parenting styles and personality traits that would represent a particularly "good fit" or "bad fit" for temperamentally shy children. In this regard, we identified constellations of maternal characteristics that we predicted would act as either negative moderators (i.e., *exacerbating* process) or positive moderators (i.e., *buffering* process) of the "risk factor" of shyness for socio-emotional and school adjustment difficulties.

Parenting styles Most of the recent research related to parenting styles and child shyness has focused on overprotective parenting (Rubin and Burgess 2002). Parents who are *overprotective* tend to overmanage situations for their child, restrict child behaviors, discourage child independence, and direct child activities. Overprotective parenting is believed to undermine the development of necessary coping strategies in shy children and thus maintain or exacerbate social wariness (Rubin and Burgess 2002). Results from several recent studies have documented a relation between overprotective parenting and social wariness in early childhood (e.g., Lieb et al. 2000; Rubin et al. 2001). Moreover, Rubin et al. (2002b) reported that shyness at age 2-years was predictive of anxiety during free play with peers at age 4-years only for children with more overprotective (and intrusive) parents.

In contrast, parents who engage in *authoritative* parenting exercise control in combination with warmth, nurtur-

ance, democracy, and open parent–child communication (Baumrind 1971). An authoritative parenting style is generally considered advantageous to many aspects of child development (e.g., Lamborn et al. 1991), and may be particularly beneficial in the socialization of emotion regulation (Sheffield Morris et al. 2007). Moreover, Coplan et al. (2004) reported a negative association between shyness and maternal authoritative parenting among preschool children. Thus, it was speculated that for shy children, authoritative parenting would be particularly helpful whereas overprotective parenting would be particularly problematic.

Maternal personality We also postulated that certain maternal personality characteristics would serve to create a particularly adaptive or maladaptive family environment for shy children (Rapee 1997; Wood et al. 2003). For example, a person high in *neuroticism* is characterized as emotionally unstable, nervous, self-conscious, insecure, and prone to psychological distress such as anxiety and excessive worry (e.g., Jorm et al. 2000; Weinstock and Whisman 2006). Neurotic individuals also tend to employ maladaptive parenting behaviors (e.g., Metsäpelto and Pulkkinen 2003), including being overprotective (Kendler et al. 1997). Thus, it can be speculated that neurotic mothers of shy children might be more likely to model and reinforce anxious behaviors.

Agreeableness concerns the ability to control emotions and avoid emotional outbursts. Agreeable individuals tend to be trusting, altruistic, modest, and have more warm, sensitive and responsive interactions (i.e., more authoritative) with their children (Metsäpelto and Pulkkinen 2003). It can be speculated that the warm and responsive interactive nature of agreeable parents, accompanied by the modeling and socialization of positive emotion regulation skills, would create a particularly positive environment for shy children.

Shy children might also benefit from having mothers high in *extraversion*. Extraverts tend to be more talkative, outgoing, adventurous, and assertive than their peers. Moreover, extraverted parents are more likely to encourage independence in their children (Losoya et al. 1997). Thus, an extraverted mother may be particularly helpful to shy children by providing a strong model of outgoing social behaviors.

Finally, we further speculated that maternal approach and avoidance tendencies would influence outcomes associated with young children's shyness. Such feelings are believed to be regulated by the *behavioral inhibition system* and *behavioral activation system* (BIS/BAS; Gray 1987). Individuals with higher BIS sensitivity tend to become emotionally distressed in highly threatening situations, and higher BIS has been related to neuroticism, anxiety, depression and negative affect. In contrast, higher BAS sensitivity contributes towards impulsiveness, approach behaviors and goal-directed activity, and is related to extraversion and positive affect (e.g., Carver 2004; Jorm et al. 2000; Meyer et al. 2005).

It has been speculated that parental BIS sensitivity may influence the degree to which children focus on threats and perceived dangers in their own environment (Carver 2004). This may promote child withdrawal and avoidance of negative outcomes, particularly during emotionally challenging situations. In contrast, as with extraversion, mothers high in BAS may model risk-taking and approach behaviors that may be particularly important for shy children to acquire.

The Current Study

The goal of the present study was to explore the moderating role of clusters of maternal personality and parenting characteristics in the associations between shyness and indices of adjustment in kindergarten. In order to accomplish this goal, we followed a sample of children over the course of a kindergarten school year. Mothers provided assessments of their personality characteristics and parenting styles. For this reason, we felt it was particularly important to have multisource assessments of shy–reticence (i.e., maternal ratings, behavioral observations, teacher ratings) and outcome indices of psychosocial and school adjustment (i.e., maternal ratings, child self-reports, teacher ratings).

To begin with, we hypothesized that shy–reticence would be associated with multiple indices of maladjustment in kindergarten. Drawing upon previous research in this area, we expected shy–reticence to be associated with greater internalizing problems (e.g., anxiety, emotion symptoms), social dissatisfaction (e.g., loneliness, lower perceived peer acceptance), and difficulties with peers (e.g., peer exclusion), and poorer school adjustment (e.g., academic deficits, low perceived academic competence, lower school liking, less positive relationships with teachers).

We further speculated that the combination of maternal neuroticism, BIS sensitivity, and overprotective parenting would represent a particularly maladaptive family environment for shy children. We labeled this cluster of maternal characteristics as *fretful* parenting. We also proposed that certain maternal characteristics would serve to "buffer" shy children from negative adjustment outcomes. In this regard, we explored the combination of maternal agreeableness and authoritative parenting style, labeled *warm/supportive* parenting, as well as the aggregate of maternal extraversion and BAS sensitivity, labeled *uninhibited* parenting. It was hypothesized that relations between shy–reticence and indices of maladjustment would be stronger among children with mothers who reported higher levels of fretful parenting

(i.e., exacerbating process), and weaker among children with mothers who reported higher levels of warm/supportive and uninhibited parenting (i.e., buffering process).

Methods

Participants

The participants in this study were 197 children (103 boys, 94 girls, M_{age}=64.13 months, SD=4.85 months). Children were enrolled in kindergarten programs in 15 public schools located in a mid-sized city in southeastern Ontario, Canada. Parental consent was sought through sending home information letters with children from school. Parents and children were not compensated for their participation. The overall consent rate was estimated at about 65%.

The sample was 70% Caucasian, with a variety of other ethnicities also represented (e.g., 17% Asian, 5% Black). The public school board from which the sample was drawn did not permit the collection of information regarding parental employment status and income. However, approximately 17% of mothers and 19% of fathers had completed high school, 69% of mothers and 61% of fathers had a college/university degree, and 11% of mothers and 16% of fathers had a graduate level degree. Thus, participants appeared to be of varied socioeconomic status.

Procedure

This was a short-term longitudinal study, with data collected at three time periods over the course of a single kindergarten school year. Multisource assessment was employed, including maternal ratings, behavioral observations, teacher ratings, and individual child interviews. At Time 1 (October/November), mothers rated their personality and parenting styles and their child's shyness. At Time 2 (January), observations of children's reticent behavior at school were collected and teachers rated children's shy–reticent behaviors at school. At Time 3 (May/June), children's socio-emotional and school adjustment were assessed using parent-ratings, teacher-ratings, and child interviews.

Measures

Time 1 At the start of the school year, mothers completed the *Child Social Preference Scale* (CSPS; Coplan et al. 2004) to assess child *shyness* (7 items, α=0.88, e.g., "My child seems to want to play with others, but is sometimes nervous to"). Coplan and colleagues (2004) reported good psychometric properties and validity for the CSPS.

Mothers also rated their own personality using the *BIS/BAS Scales* (Carver and White 1994). The BAS subscale items (13 items, α=0.77) assess orientation towards drive, reward, and fun, and the BIS subscale items (7 items, α=0.74) assess orientation towards punishment. An additional measure of maternal personality was provided by the *Ten Item Personality Inventory* (TIPI; Gosling et al. 2003), a brief but psychometrically sound assessment of the Big Five personality characteristics. Of interest for the present study were the subscales of *neuroticism* (two items, r=0.48), *agreeableness* (two items, r=0.40), and *extraversion* (two items, r=0.49).

Finally, mothers rated their parenting styles with the *Parenting Styles and Dimensions Questionnaire* (Robinson et al. 2001). Of particular interest for the present study was the subscale of *authoritative* parenting with items pertaining to warmth, reasoning, and democratic participation (15 items, α=0.81). *Overprotective* parenting was assessed by having parents respond to five items originally developed by Nelson and colleagues (Nelson et al. 2006; see also Coplan et al. 2004). These five items (e.g., "I get anxious when my child tries to do something new or difficult"; "I readily intervene if there is a chance my child will fail at something") loaded onto a single factor (with loadings ranging from 0.70 to 0.74) and were subsequently tallied to yield a summary score of maternal *overprotective parenting* (α=0.73).

Time 2 A few months into the school year, children's behaviors during indoor free play were observed and coded over a 3- to 4-week period using an adapted version of the *Play Observation Scale* (POS; Rubin 2001). Observational data were collected by six trained research assistants. Each child was observed (in random order) for a series of 10-s intervals on at least three separate days until a total of 15 min (90 coding intervals) were collected per child. For each coding interval, the child's predominant free-play behavior was recorded (for a more detailed description, see Coplan 2000). Of particular interest for the present study was the behavioral code of *reticent* behavior, which consisted of onlooking (e.g., watching other children without accompanying play) and remaining unoccupied (e.g., wandering aimlessly, staring off into space). Before the start of data collection, inter-rater reliability was computed for pairs of researchers based on 540 codes of data (90 min) coded live at a separate facility from children not involved in the study. For observed reticent behavior, Cohen's kappa between pairs of observers were all above 0.85. Observers met regularly during data collection to discuss any issues arising and to reduce rater drift.

During this same time period, teachers rated children's shy–reticent behavior in class using the *Social Competence Inventory* (Rydell et al. 1997). This rating scale was originally designed to assess the broader constructs of prosocial orientation and social initiative. However, five items from the social initiative subscale were selected on a

conceptual basis because of their more specific assessment of shy (e.g., "hesitant with peers") and reticent behaviors ("is more often a spectator than a participant while others play"). Results from factor analyses indicated that these 5 items loaded on a single factor (factor loadings ranged from 0.78 to 0.90). These items were subsequently tallied to yield a summary score of teacher-rated *shy–reticent* behaviors (α=0.89).

Time 3 Near the end of the school year, assessments of children's socio-emotional and school adjustment were collected. Mothers completed the *Strength and Difficulties Questionnaire* (Goodman 2001). For the current study, we were particularly interested in the subscales assessing child *emotion symptoms* (5 items, α=0.74, e.g., "Many worries, often seems worried") and *peer problems* (5 items, α=0.69, e.g., "Picked on or bullied by other children"). Concurrently, teachers completed the *Child Behavior Scale* (Ladd and Profilet 1996), designed to assess young children's social adjustment and behavior problems. Of particular interest for the present study were the subscales of *excluded by peers* (seven items, α=0.90, e.g., "peers refuse to let this child play with them"), and *anxious with peers* (four items, α= 0.84, e.g., "Cries easily").

Teachers also completed the *Student–Teacher Relationship Scale* (Pianta 2001), a norm-referenced and widely used measure of teacher–child relationships with excellent psychometric properties (e.g., Hamre and Pianta 2001). For the purposes of the present study, we were primarily interested in the subscale assessing *close teacher–child relationships* designed to measure the degree of warmth and affection as well as open communication between teachers and children (11 items, α=0.84). Finally, teachers provided a rating scale assessment of child early academic skills (Coplan et al. 2001), including language, reading/writing, math, science, motor skills, and reasoning (9 items α=0.94).

Finally, trained female research assistants interviewed children individually. Measures included: (1) the *Loneliness and Social Dissatisfaction Questionnaire for Young Children* (Cassidy and Asher 1992) to assess child loneliness (16 items, α=0.76); (2) the *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* (Harter and Pike 1984) to assess *perceived cognitive competence* (6 items, α=0.74), and *perceived peer acceptance* (6 items, α=0.72); and (3) the *School Liking and Avoidance Scale* (Ladd et al. 2000) to assess *school liking* (9 items, α=0.83).

Creation of Aggregate Variables

Child shyness/reticence Conceptually, we were interested in creating a multisource assessment aggregate of shyness and social reticence. Results from factor analysis indicated that maternal-rated shyness, observed reticent behavior, and teacher-rated shy–reticent behavior all loaded on a single factor (with factor loadings ranging from 0.65 to 0.76). Factor scores were saved to create a composite score representing child *shyness/reticence*.

Maternal characteristics Results from factor analyses of maternal personality and parenting variables provided empirical support for our three conceptually derived "clusters" of parenting characteristics. The first factor, labeled *fretful* parenting, consisted of maternal neuroticism, BIS, and overprotective parenting (factor loadings from 0.66 to 0.85). The second factor, *warm–supportive* parenting, included maternal agreeableness and authoritative parenting (factor loadings of 0.79 and 0.73, respectively). The final factor, *uninhibited* parenting, consisted of maternal BAS and extroversion (factor loadings of 0.75 and 0.89, respectively).

Child psychosocial and school adjustment Several additional aggregate variables were created to allow for multisource assessment of indices of child psychosocial and school adjustment. To begin with, maternal-rated child emotion symptoms and teacher-rated child anxiety (r=0.37, p<0.001) were combined to create an aggregate variable of child *internalizing problems.* Results from factor analysis indicated that parent-rated child problems with peers and teacher-rated child peer exclusion loaded on one factor (factor loadings of 0.75 and 0.79) whereas child-reported loneliness and perceived peer acceptance (reverse scored) loaded on a separate factor (with factor loadings of 0.76 and 0.81). As such, two separate summary scores were computed, representing *peer difficulties* and *social dissatisfaction*, respectively. Finally, we also sought to create a more global multisource index of school adjustment that did not include variables related to social interaction with peers. Indices of school adjustment included close teacher–child relationships, child academic skills, child perceived academic competence, and child school liking. Results from factor analysis indicated that these four variables loaded on a single factor (factor loadings from 0.58 to 0.67), and a composite score was created representing child *school adjustment*. Summaries of the aggregate variables are provided in Table 1.

Results

Preliminary Analyses

There were no significant correlations between parental education and child shy–reticence or either of the maternal

Table 1 Summary of aggregate variables and descriptive statistics

Aggregate	Variables included	Source of assessment
Child shyness/reticence	Shyness (*M*=2.27, SD=0.83)	CSPS-Mother
	Reticent behavior (*M*=.11, *SD*=.12)	POS-Observed
	Shy–reticent behavior (*M*=2.37, *SD*=.95)	SCI-Teacher
Maternal characteristics		
Fretful	Maternal neuroticism (*M*=3.09, SD=1.31)	TIPI-Mother
	Maternal BIS (*M*=2.95, SD=0.49)	BIS/BAS-Mother
	Overprotective parenting (*M*=2.27, SD=0.68)	PSDQ-Mother
Warm/supportive	Maternal agreeableness (*M*=2.27, SD=0.83)	TIPI-Mother
	Authoritative parenting (*M*=4.03, SD=0.43)	PSDQ-Mother
Uninhibited	Maternal extraversion (*M*=4.47, SD=1.57)	TIPI-Mother
	Maternal BAS (*M*=3.03, SD=0.42)	TIPI-Mother
Child outcomes		
Internalizing	Anxiety (*M*=1.27, SD=0.43)	CBS-Teacher
	Emotion symptoms (*M*=1.54, SD=1.67)	SDQ-Mother
Peer difficulties	Peer exclusion (*M*=1.25, SD=0.27)	CBS-Teacher
	Problems with peers (*M*=1.46, SD=1.69)	SDQ-Mother
Social dissatisfaction	Loneliness (*M*=1.36, SD=0.31)	LSDQ-Child
	(*reversed*) Perceived peer-acceptance (*M*=2.44, SD=0.62)	PSPCSA-Child
School adjustment	Close teacher relationship (*M*=4.11, SD=0.60)	STRS-Teacher
	Academic skills (*M*=3.31, SD=0.79)	ASC-Teacher
	Perceived academics (*M*=3.50, SD=0.42)	PSPCSA-Child
	School liking (*M*=2.78, SD=0.36)	SLAS-Child

CSPS Child Social Preference Scale, 5-point scale, *POS* Play Observation Scale, proportion of observed intervals, *SCI* Social Competence Inventory, 5-point scale, *TIPI* Ten Item Personality Scale, 7-point scale, *BIS/BAS* BIS/BAS Scales, 5-point scale; *PSDQ* Parenting Styles and Dimensions Questionnaire, 5-point scale, *CBS* Child Behavior Scale, 5-point scale, *SDQ* Strength & Difficulties Questionnaire, 3-point scale, *LSDQ* Loneliness and Social Dissatisfaction Questionnaire, 3-point scale, *PSPCSA* Pictorial Scale of Perceived Competence and Social Acceptance for Young Children, 4-point scale, *STRS* Student–Teacher Relationship Scale, 5-point scale, *ASC* Academic Skills Checklist, 5-point scale, *SLAS* School Liking and Avoidance Scale, 3-point scale

parenting aggregates (fretful, warm/supportive, uninhibited). As such, parental education was not controlled for statistically in subsequent analyses. As well, results from a series of *t*-tests indicated that there were no significant differences for any of these variables as a function of child gender.

Inter-Associations Between Variables

The correlations between all study variables are displayed in Table 2. Child shyness/reticence was significantly and positively associated with internalizing problems and peer difficulties, and significantly and negatively related to school adjustment. Overall, the three maternal parenting factors were not associated with child shyness or child outcome variables, with the exception of a significant (albeit modest) and negative correlation between warm–supportive parenting and peer difficulties. Finally, results also indicated moderate but statistically significant inter associations between the various indices of adjustment (in theoretically expected directions).

Table 2 Correlations between variables

Variables	2	3	4	5	6	7	8
1. Shyness/reticence	0.04	−0.06	0.04	0.34***	0.32***	0.06	−0.26***
2. Fretful parenting		−0.21**	0.10	0.04	0.04	0.02	−0.02
3. Warm/supportive parenting			0.05	−0.10	−0.15*	−0.12	0.04
4. Uninhibited parenting				−0.02	−0.04	0.01	−0.13
5. Internalizing					0.36***	0.18*	−0.25***
6. Peer difficulties						0.19*	−0.24***
7. Social dissatisfaction							−0.38***
8. School adjustment							

***$p<0.001$
**$p<0.01$
*$p<0.05$

Hierarchical Regression Analyses

Overview The primary goal of the present study was to explore the interactive relations between child shyness/reticence and maternal parenting in the prediction of indices of adjustment. To accomplish this goal, a series of hierarchical regression analyses was computed following procedures outlined by Aiken and West (1991). Separate equations were computed to predict each of the four indices of adjustment (i.e., internalizing problems, peer difficulties, social dissatisfaction, and school adjustment). The "main effects" variables (standardized) of child shyness/reticence, fretful parenting, warm–supportive parenting, and uninhibited parenting were entered together in Step 1. At Step 2, the two-way interaction terms (shyness by parenting–multiplicative products) were entered (shyness × fretful, shyness × warm/supportive, shyness × uninhibited). The "main effect" associations between shyness and child outcomes as well as parenting factors and child outcomes are already displayed in Table 2. As such, and to ease presentation, only results pertaining to interaction effects are presented in Table 3 and described below. Significant interactions were explored statistically using simple slope analyses (Aiken and West 1991).

Shyness x fretful parenting Significant interaction effects between shyness and maternal fretful parenting were observed in the prediction of child internalizing problems and social dissatisfaction (see Table 3). Results from follow up simple slopes analyses illustrated a pattern consistent with an *exacerbating* process. Shyness was *more* strongly associated with both internalizing problems and social dissatisfaction at *higher* levels of fretful parenting scores (see Fig. 1).

Table 3 Results of regression analyses predicting indices of adjustment from interactions between child shyness/reticence and parenting (fretful, warm/supportive, uninhibited)

Dependent variable	Interaction terms (sr^2)		
	Shy × fretful	Shy × supportive	Shyness × uninhibited
Internalizing	0.023*	0.038**	0.002
Peer difficulties	0.010	0.050***	0.001
Social dissatisfaction	0.030*	0.001	0.001
School adjustment	0.001	0.022*	0.006

Internalizing: overall R^2 =0.181, $F(7,189)$=5.97, p<0.001; peer difficulties: overall R^2 =0.161, $F(7,189)$=5.17, p<0.001; social dissatisfaction: overall R^2 =.045, $F(7,189)$=1.82, p<.05; school adjustment: overall R^2 =.113, $F(7,189)$=3.46, p<.01
***p<0.001
**p<0.01
*p<0.05

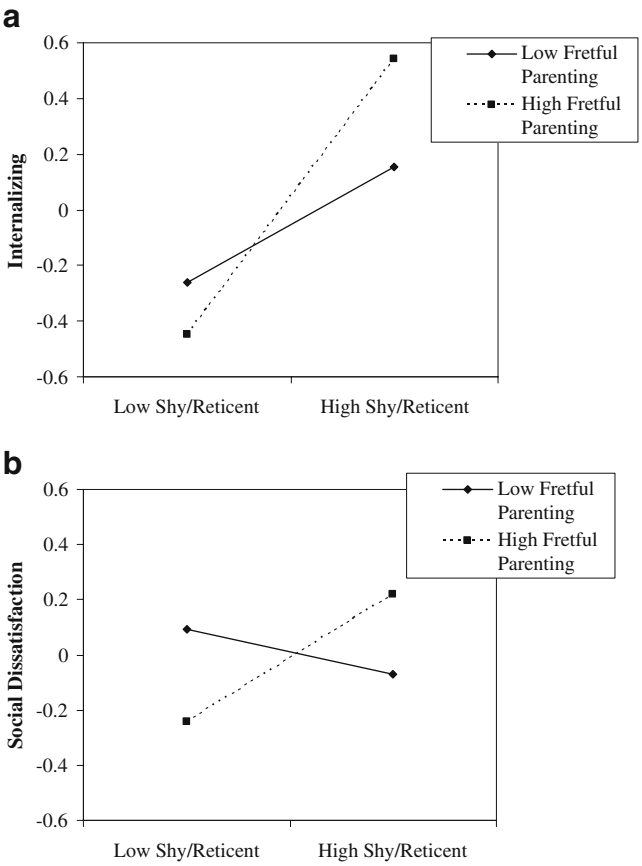

Fig. 1 Interactions between shyness/reticence and maternal fretful parenting in the prediction of child **a** internalizing problems; and **b** social dissatisfaction

Shyness x supportive parenting Significant interaction effects between shyness and maternal warm/supportive parenting were observed in the prediction of child internalizing problems, peer difficulties, and school adjustment (see Table 3). Results from follow up simple slopes analyses illustrated a pattern consistent with a *buffering* process. Shyness was *more* strongly associated with internalizing problems, peer difficulties, and school adjustment (negative association) at *lower* levels of warm/supportive parenting scores (see Fig. 2).

Shyness x uninhibited parenting As indicated in Table 3, there were no significant interactions between shy and maternal uninhibited parenting in the prediction of child adjustment outcome variables.

Shyness as moderator? When evaluating a significant interaction between two continuous variables, the decision as to which one is treated as the *moderator* for simple slopes analyses should be made on a theoretical basis

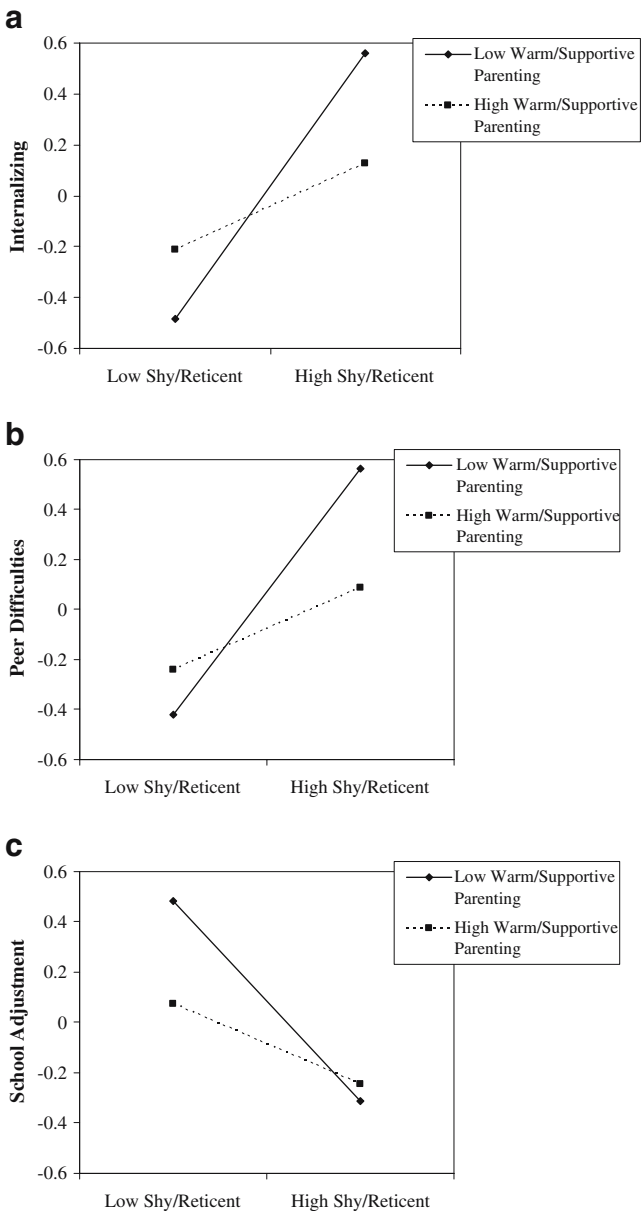

Fig. 2 Interactions between shyness/reticence and maternal warm/supportive parenting in the prediction of child (**a**) internalizing problems; (**b**) peer difficulties; and (**c**) school adjustment

(Aiken and West 1991). For this reason, we elected to explore the moderating role of parenting in the relation between shyness and indices of adjustment. However, from a statistical standpoint, it must be acknowledged that either variable can serve as the potential moderator. In this regard, we re-computed simple slopes analyses for statistically significant interactions treating *shyness* as the moderating variable in the relations between parenting and adjustment outcomes. We describe these results only briefly.

For interactions involving shyness and *fretful* parenting, results appeared to be consistent with the notion that the *combination* of shyness and fretful parenting is particularly problematic. At lower levels of child shyness, fretful parenting was not significantly associated with child internalizing problems or social dissatisfaction. However, with increasing child shyness scores, fretful parenting became increasingly associated with these negative outcomes.

For interactions involving shyness and *supportive* parenting, results predicting internalizing problems and peer difficulties were also as expected. At lower levels of child shyness, supportive parenting was not significantly associated with child internalizing problems or peer difficulties. However, with increasing child shyness scores, supportive parenting became increasingly *negatively* associated with these problematic outcomes. However, results predicting school adjustment were less clear. In this case, at *lower* levels of child shyness, supportive parenting was actually significantly and *negatively* related to school adjustment. With increasing child shyness scores, this association decreased and became nonsignificant.

Discussion

The primary goal of this study was to explore the moderating role of maternal characteristics in the relations between shyness and adjustment in early childhood. Overall, a multisource assessed composite of shyness–reticence predicted a range of social, emotional, and school adjustment difficulties in kindergarten.

Consistent with previous research in early childhood settings (e.g., Coplan et al. 2004), shy–reticence was associated with internalizing problems, difficulties with peers and teachers, as well as lower perceived and demonstrated academic competence, and lower school liking. Although the magnitude of these associations was moderate (i.e., correlations in the 0.30 range), shyness does appear to place children at least at some increased risk for experiencing difficulties across several domains of adaptation in kindergarten. Moreover, the nature of these specific difficulties may also pose additional risk for shy children in the longer term.

For example, "subclinical" levels of anxiety in early childhood are considered a risk factor for the later development of internalizing disorders (e.g., Goodwin et al. 2004). As well, shy and anxious children may be particularly vulnerable to the negative effects of peer exclusion (Gazelle and Ladd 2003). Finally, problems with teacher–child relationships, poorer academic performance, and school disliking are by themselves important indicators of concurrent and future school adjustment (Hamre and Pianta 2001).

Notwithstanding these linear associations, a number of significant child temperament by parenting interactions

were also observed. The pattern of these results indicated that the relations between shyness and psychosocial *difficulties* in kindergarten (i.e., internalizing problems, social dissatisfaction, peer difficulties) were particularly pronounced among children with mothers higher in *fretful* parenting (neurotic, high BIS, overprotective) and lower in *warm/supportive* (i.e., agreeable, authoritative style) parenting. However, results predicting school *adjustment* (e.g., positive teacher–child relationships, academic skills) were less clear, with the combination of warm–supportive parenting and *low*–shyness apparently associated with a *lack* of school adjustment.

Moderating Role of Maternal Characteristics

We explored the moderating role of three conceptually identified and empirically verified clusters of maternal characteristics in the relations between shyness and adjustment in kindergarten. We must begin by acknowledging that underlying causal mechanisms cannot be ascertained from our results. For example, our decision to treat "parenting variables" as the *moderators* in our analyses was based on our theoretical approach. However, many other conceptual interpretations of these findings are possible. For example, it may be that child temperament characteristics (i.e., shyness) serve to moderate the relation between parenting characteristics and child outcomes. Moreover, parents might even play more of a reactive role, responding differently to shy children who are experiencing more/less difficulties at school. Within these constraints, we consider each of our shyness by parenting interactions in turn.

Fretful parenting We speculated that the combination of maternal neuroticism, BIS sensitivity, and overprotective parenting style (fretful parenting) would create a particularly maladaptive family environment for shy children. Findings with regard to this particular parenting cluster appeared to be the most consistent. Among children with more fretful mothers, shyness was more strongly associated with internalizing problems and social dissatisfaction. The strength of these associations was significantly reduced among children with less fretful mothers. This pattern of results suggests that maternal fretful parenting has an *exacerbating* effect on the relations between shyness and adjustment to kindergarten. Overall, shy children were more likely to experience difficulties with peers, teachers, and academics in kindergarten. However, the composite measure of fretful parenting did not demonstrate any significant linear associations with any of the outcome variables explored in this study. Moreover, fretful parenting itself was only associated with certain negative outcomes (i.e., internalizing problems, social dissatisfaction) at higher levels of child shyness. As well, among less fretful mothers, shy children were not more likely to also feel anxious and lonely. Taken together, these results are certainly consistent with the notion that fretful parenting creates a family environment that is a particularly "bad fit" for shy children.

Mothers high in neuroticism and BIS sensitivity might be more likely to model anxious behaviors and highlight risks and dangers in the environment to their shy child (Carver 2004; Jorm et al. 2000). Moreover, the tendency to overprotect children, perhaps by intervening too early and too often, or simply removing the child from socially challenging and stressful environments, may inhibit the shy children's development of appropriate coping strategies (Rubin and Burgess 2002).

We speculate that the family environment created by fretful mothers exacerbates shy children's responses to the stresses of the school environment. Shy children with more fretful mothers may not develop appropriate coping strategies, which may serve to compound the difficulties that shy children already experience when starting kindergarten. This appears to increase the risk of shy children to experience anxiety and other internalizing problems, as well as feeling worse about their peer relationships at school.

Warm/Supportive parenting We also postulated that maternal agreeableness and an authoritative parenting style (i.e., warm/supportive parenting) might buffer shy children from negative adjustment outcomes. Results indicated several significant interactions between shyness and warm/supportive parenting. However, the pattern of these results provided somewhat mixed empirical support for our hypothesized conceptual model.

Among mothers who were more warm/supportive parents, relations between shyness and internalizing problems and peer difficulties were significantly less pronounced. That is, having a warm/supportive mother appears to reduce the risk for certain indices of psychosocial maladjustment associated with being shy in kindergarten. Alternatively, it can also be speculated that shy children were particularly susceptible to the negative adjustment outcomes associated with having a mother low in warmth and support.

More agreeable mothers may promote positive emotion regulation in shy children (Sheffield Morris et al. 2007). Moreover, a supportive and authoritative parenting style promotes the development of social skills (Metsäpelto and Pulkkinen 2003) which would serve shy children particularly well. In concert, the improved emotional and social skills might serve to ameliorate the quality and quantity of shy children's social interactions with peers. These positive relationships at school might in turn serve to "protect" against the negative emotions and poorer self-perceptions that may accompany shyness.

However, results regarding the prediction of overall positive school adjustment were less clear. On the one hand, a similar argument can be postulated in terms of the potential "protective role" of supportive parenting for shy children. That is, across the entire sample, shyness was negatively related to the composite measure of school adjustment. However, although this significant association remains at lower levels of supportive parenting, with increasing supportive parenting the negative relation between shyness and adjustment diminishes.

In contrast, results from simple slopes analyses where *shyness* was considered the moderating variable suggested a somewhat different interpretation. That is, among non-shy children, supportive parenting actually predicted *lower* school adjustment; whereas among more shy children, this association was attenuated and no longer statistically significant. Thus, in this case, it appeared that the effects of this parenting cluster were more pronounced at *lower* levels of child shyness. These findings could be interpreted to suggest that the combination of low shyness and highly supportive parenting may actually have *negative* implications for children's overall school adjustment.

It has been previously postulated that some highly sociable children are at risk for *externalizing* difficulties (e.g., Rubin et al. 1995). Less positive relationships with teachers and poorer academic performance are outcomes typically related to children with tendencies towards externalizing problems (Dodge et al. 2006). In the present sample, extremely "non-shy" children may have been more likely to experience poorer school adjustment if they also had parents who focused more on warmth and support as opposed to, for example, stricter discipline. These issues clearly warrant future investigation.

Uninhibited parenting Finally, contrary to initial expectations, maternal uninhibited parenting (i.e., extraverted and high BAS) was *not* found to moderate (i.e., buffering effect) the associations between shyness and indices of adjustment in kindergarten. It had been speculated that extraverted and high BAS mothers might be particularly helpful to shy children as models of sociable and risk-taking behaviors (e.g., Carver 2004). However, it has also been suggested that extraverted parents may create an environment that is overly stimulating for their children (Kochanska et al. 1997). This might be particularly true for shy children. Moreover, extraverted parents may also have tendencies to be permissive (Metsäpelto and Pulkkinen 2003), which may not provide enough structure to support shy children's social needs. Thus, maternal modeling of non-shy behaviors in and of itself may not be enough to assist shy children, who may benefit more from the emotional and social support inherent in an authoritative parenting style. Clearly, further research is required to explore these possibilities in more detail.

Limitations and Future Directions

There are some limitations that need to be considered in the interpretation of our results, which are suggestive of areas of future research attention. To begin with, these findings need to be replicated in samples reflecting greater socioeconomic and ethnic diversity, as shy and anxious behaviors may be responded to quite differently and have different implications in different cultural contexts (Chen et al. 1995). Moreover, despite statistically significant findings, the overall small effect sizes observed in the current study suggest that there are other important constructs to be considered in the developmental pathways of shy children.

For example, noticeably lacking in the current study was information regarding the personality characteristics and parenting styles of *fathers*. There have only been a handful of studies exploring the role of fathers in the development of children's shyness and social anxiety (e.g., Greco and Morris 2002). Thus, it will be important for future researchers to explicitly explore how fathers' personality and parenting characteristics (both alone and in combination with mothers) influence the development and outcomes of shyness in their sons and daughters.

In addition, although we identified and explored three specific clusters of maternal characteristics in the current study, there are likely other personality and parenting styles that also impact upon the development of shy children. Moreover, other characteristic parenting behaviors (e.g., sensitivity; Early et al. 2002), parental beliefs (Rubin and Mills 1990) and qualities of the parent–child relationship (e.g., mother–child attachment quality; Calkins and Fox 1992) have also been linked to the developmental course of shyness and social withdrawal.

It was also somewhat surprising to note a lack of significant *linear* associations between maternal characteristics and child shyness. Future research should consider having parents complete a measure of adult shyness themselves, in order to explore the direct associations between parental and child personality traits. In this vein, it is possible that there was some bias in our sample selection. For example, the most overprotective and anxious parents of the most shy children may not have opted to participate in the study. However, it should be noted that the means of all variables in the present study were consistent with previous assessments in other unselected samples.

It will also be important to consider the longer term outcomes associated with shyness and fretful parenting in early childhood. In particular, multiple assessments of parenting, shyness, and adjustment outcomes should be undertaken in order to assess the dynamic and transactional interplay between parenting beliefs and behaviors, child temperament, and child adjustment outcomes.

Finally, given the potentially large number of extremely shy young children that may also suffer from concurrent anxiety disorders (Rapee et al. 2005), it is important to consider the implications of the results of the current study for early intervention and prevention. Our results provide some preliminary evidence to suggest that intervening directly with parents may be an effective strategy in improving outcomes for shy/anxious young children (see also Lafreniere and Capuano 1997). In support of this notion, Rapee et al. (2005) recently reported that compared to a monitoring group, extremely shy preschoolers whose parents participated in a parenting education and training intervention had a significantly greater reduction in clinically diagnosed anxiety disorders at one year post intervention. Taken together, these findings suggest that parents should be additionally included in ameliorative intervention and prevention programs designed to improve the developmental trajectories of shy and anxious young children.

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