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Parent and Peer Links to Trajectories of Anxious Withdrawal From Grades 5 to 8

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Abstract

Individual differences in trajectories of anxious withdrawal were examined from Grades 5 to 8 across the transition to middle school in a community sample (N = 283), using General Growth Mixture Modeling. Three distinct pathways of anxious withdrawal were identified: *low-stable* (78%), *high-decreasing* (12%), and *high-increasing* (10%). In Grade 6, relative to the *low-stable* class, greater peer exclusion and more free time spent with mother predicted membership in the *high-decreasing* class; higher peer exclusion predicted membership in the *high-increasing* class. Within the *high-increasing* class, the growth of anxious withdrawal was predicted by lower parental autonomy-granting, less free time with mother, both nurturing and restrictive parenting, and greater peer exclusion. Results highlight the role of both parent–child relationship and peer difficulties in increasing the adjustment risk among youth who are anxiously withdrawn prior to the middle-school transition.

Children who display anxious withdrawn behavior, defined as the consistent display across time and situations of shy, socially reticent behavior among peers (Rubin, Coplan, & Bowker, 2009), are at risk for a variety of socio-emotional adjustment difficulties during the childhood and adolescent years. Specifically, anxious withdrawn behavior has been linked empirically with loneliness (Boivin, Hymel, & Bukowski, 1995), low self-esteem (Crozier, 1995), low-quality friendships (Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006), peer rejection (Gazelle & Ladd, 2003), depression (Bell-Dolan, Reaven, & Peterson, 1993), and anxiety (Coplan, Prakash, O'Neil, & Armer, 2004).

Although earlier studies emphasized the relative stability of anxious withdrawal over time during childhood (Rubin, Chen, McDougall, Bowker, & McKinnon, 1995) and adolescence

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(Schneider, Younger, Smith, & Freeman, 1998), more recent efforts have focused on the identification of specific child characteristics and aspects of the child's social milieu that may contribute to the stability of withdrawal, that may serve to exacerbate it, or that may help deflect the child from a pathway of continuing withdrawal over time (Booth-LaForce & Oxford, 2008; Eggum et al., 2009; Oh et al., 2008). Two important factors appear to be parenting quality (see Rubin, Burgess, Kennedy, and Stewart, 2003 for review) and peer-group reactions to the anxious withdrawn child (Booth-LaForce & Oxford, 2008; Gazelle & Rudolph, 2004; Oh et al., 2008; Rubin, Wojslawowicz, et al., 2006). It is important to note that the majority of these studies have been conducted in the early childhood years, leaving the contribution of parents and peers to the development of anxious withdrawal among older children and adolescents virtually unknown. Further, few studies have examined, in a single investigation, the contributions of both parents and peers to the development of anxious withdrawal. Finally, extant studies have not focused on anxious withdrawn children's transition from smaller familiar elementary schools to larger unfamiliar middle schools—a transition that may be especially challenging for those who exhibit shy, socially anxious behavior (Barber & Olsen, 2004). Therefore, the present study was designed to address these gaps in the literature by examining both parenting quality and peer exclusion as predictors of distinct developmental pathways of anxious withdrawal from the last year of elementary school through the end of middle school.

THE PARENTS OF ANXIOUS WITHDRAWN CHILDREN AND ADOLESCENTS

A considerable literature underscores the contribution of parents to the development of anxious withdrawal in childhood and adolescence. Rubin, Burgess, Kennedy, and Stewart (2003) have synthesized this literature and proposed a theoretical model in which the development of anxious withdrawal may be rooted in infant dysregulated temperament coupled with insensitive parenting, which sets the stage for the development of insecure attachment with the primary caregiver (Bowlby, 1969) and the consequent development of the child's behavior within the peer group, including anxious withdrawal. According to attachment theorists, children develop an internalized view of themselves and the social world from their early relationships with primary caregiver(s). More specifically, children with parents who are warm and responsive in their interactions come to view themselves as competent and the world a safe place to explore. However, when parents are insensitive (intrusive, unresponsive), children come to view themselves in a negative light (low self-worth, incompetent) and the world as an unpredictable, dangerous place. These attachment-based internalized views, coupled with and serving to reinforce continuing temperamental characteristics (dysregulation, behavioral inhibition, wariness), provide the framework for the development of anxious withdrawn behavior in childhood and adolescence.

In fact, there is considerable empirical work linking insensitive parenting with the display of anxious withdrawal in childhood. Rubin, Burgess, and Hastings (2002) reported that socially reticent, shy, anxious behavior among preschoolers could be predicted from behavioral inhibition in toddlerhood that was exacerbated by a combination of maternal overcontrolling, intrusive, and highly affectionate parenting. Similar associations have been demonstrated in another study of preschool-aged children (Coplan, Arbeau, & Armer, 2008) and in older children (Degnan, Henderson, Fox, & Rubin, 2008). Moreover, Booth-LaForce and Oxford (2008) predicted anxious withdrawal in the school years from maternal insensitivity and dysregulated temperament in infancy. Although these links have been well established in populations of young children, there is a paucity of research examining the relations between parenting qualities and anxious withdrawal in the late childhood and early adolescent years. In the few studies that have been conducted during this period, similar patterns of parenting described with younger samples have been found, with intrusive,

controlling parenting predicting greater internalizing difficulties through the adolescent years (e.g., van Brakel, Muris, Bögels, & Thomassen, 2006).

Another relevant aspect of parent–child relationships during the late-childhood to early-adolescent period concerns the negotiation of the child's emerging autonomy needs, a critical task that has been linked to numerous indices of adolescent adjustment (see Laursen & Collins, 2009, for review). Parents' role in this process consists of striking a balance between encouraging adolescent independence while maintaining a supportive connection when needed, a balance that bolsters adolescent self-esteem, ego development, and social functioning (e.g., Allen, Hauser, Bell, & O'Connor, 1994; McElhaney & Allen, 2001). However, overcontrolling intrusive parenting, which has been linked with anxious withdrawal at earlier ages, may communicate to the adolescent that they are ill-equipped to navigate the world, perhaps resulting in feelings of lower self-worth and anxiety about asserting independence, and contributing further to anxious withdrawn behavior. The connection between parental autonomy-granting and adolescents' anxious withdrawal has not been established in the literature, although Allen, Hauser, Eickholt, Bell, and O'Connor (1994) found that adolescents who had difficulty establishing autonomy with their parents were more likely to report internalizing problems and to exhibit depressive symptoms.

THE PEER RELATIONSHIPS OF ANXIOUS WITHDRAWN CHILDREN AND ADOLESCENTS

Peers are known to play a pivotal role in the development of anxious withdrawal (see Rubin, Bukowski, & Parker, 2006, for review), especially in relation to exclusion from the peer group. For example, Gazelle and Ladd (2003) examined trajectories of peer exclusion and reported that children rated by teachers as displaying high levels of anxious solitude (shy behavior with familiar others) were significantly more excluded by the peer group (compared with the mean), and were subjected to greater levels of exclusion from kindergarten to Grade 4. In addition, both Oh et al. (2008) and Booth-LaForce and Oxford (2008) found that peer exclusion was higher among children increasing in social withdrawal from Grades 5 to 8 and Grades 1 to 6, respectively.

Peer exclusion also appears to play a role in exacerbating anxious withdrawal and internalizing problems. Gazelle and Ladd (2003) reported that anxious withdrawn children who were excluded by their peers were reported to suffer from higher levels of internalizing difficulties from kindergarten to Grade 4 than were anxious withdrawn children who were not excluded by their peers. Similar results have been reported among older children in Grades 5 and 6 (Gazelle & Rudolph, 2004). Further, in a recent experimental manipulation with school-aged children (Gazelle & Druhen, 2009), anxious solitary third-graders who were excluded by peers were observed to be more socially helpless and responded with more emotional distress to a perceived exclusion by a peer than did nonwithdrawn children, thereby lending further support to the potentially damaging effects of peer exclusion on the emotional well-being of withdrawn children.

ADVANCES IN THE ASSESSMENT OF LONGITUDINAL PATTERNS OF ANXIOUS WITHDRAWAL

Recent approaches to the identification of trajectory patterns via techniques such as General Growth Mixture Modeling (GGMM) or Latent Class Growth Analysis have contributed to advances in the study of anxious withdrawal over time (Booth-LaForce & Oxford, 2008; Eggum et al., 2009; Oh et al., 2008). Booth-LaForce and Oxford (2008) studied children from Grades 1 to 6 and found three distinct anxious withdrawal trajectory classes: (a) a *normative* class in which children were consistently low in anxious withdrawal, (b) an

increasing class of children who became increasingly withdrawn over time, and (c) a *decreasing* class of children who were highly withdraw initially but who became less withdrawn over time. They reported that the increasing trajectory of withdrawal was predicted by preschool dysregulated temperament, insensitive parenting, and less-secure attachment. They also reported that children on this pathway were more excluded by their peers than were the other children during the elementary school years. Oh and colleagues (2008) reported three similar trajectory classes: *low-stable, increasing,* and *decreasing* in a sample of students Grades 5 through 8. In the Oh et al. (2008) study, increasing anxious withdrawal was predicted by such factors as friendlessness, friendship instability, and peer exclusion/victimization. The third study (Eggum et al., 2009) is less relevant in this context because it focused on younger children (ages 4.5–7 years) and on child-focused predictors of withdrawal trajectories such as negative emotionality, impulsivity, attentional control, and ego resiliency. Regardless, it is significant that somewhat similar trajectory patterns of withdrawal were found in this study as well.

OVERVIEW OF THE PRESENT STUDY

In summary, the first aim of the present study was to identify pathways of anxious withdrawal from the last year of elementary school through the end of middle school, a transition that is stressful for most adolescents (Harter, 1981; Simmons, Rosenberg, & Rosenberg, 1973; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991) and that may be a particularly vulnerable time for anxious withdrawn youth due to increasing social-emotional difficulties (Barber & Olsen, 2004; Rubin et al., 2003). We hypothesized that three trajectory patterns (*low stable, increasing, decreasing*) would emerge, based on the prior literature.

The second aim was to examine a set of covariates to identify those factors that predicted distinct trajectory class membership and to examine the ways in which these factors buffered or exacerbated developmental pathways (i.e., slope) of anxious withdrawal within trajectory class (class-specific associations). Guided by previous research, our covariates of interest were mothers' nurturance (warm, supportive parenting), restrictiveness (controlling, overprotective parenting), parental power (low autonomy-granting), free time spent with mother, and peer exclusion. Given that the consequences of anxious withdrawal appear to be greater for boys than girls (Rubin et al., 2003), sex was included as a control variable in each set of analyses.

We hypothesized that relatively high and increasing anxious withdrawal would be predicted by mothers' less nurturing and more restrictive parenting, greater parental power (indicating less autonomy-granting), and greater peer exclusion. We did not have a specific hypothesis about amount of free time spent with mother, which could reflect a positive mother–child relationship. Alternatively, in the context of restrictive parenting and low autonomy-granting, a greater amount of free time spent with mother at this age might indicate parental overinvolvement, a characteristic we would expect to be associated with anxious withdrawal.

METHOD

Participants

Following approval from all universities' Institutional Review Boards, participants were drawn from a larger longitudinal study (N = 1,459) in which fifth-grade students in eight public elementary schools were followed throughout middle school years (Grades 6 and 8) in the Washington, DC, metropolitan area, and for whom written parental consent and child assent were obtained (consent rate = 84%). The mean age of the sample at the start of the

study (fall, Grade 5) was 10.23 years (SD = .48): boys, M = 10.23 years (SD = .45), and girls, M = 10.21 years (SD = .51). As they moved to three middle schools in Grade 6, we followed the participants longitudinally. The subsample for the present study, who participated in more intensive data collection efforts in our lab, comprised 283 children (152 girls) with nonmissing data for predictor variables (i.e., parenting, peer exclusion) but not necessarily for anxious withdrawal, which was handled via missing-data procedures within GGMM. Children in this subsample, compared with those in the larger sample, were not significantly different on peer exclusion in Grade 6 or anxious withdrawal at four of the five time points. For one of the time points, anxious withdrawal was higher in the subsample than in the larger sample (analyses available on request). The subsample differed significantly from the larger sample in race/ethnicity, $\chi^2(4) = 39.11$, $p < .001$, with more White and fewer Hispanic participants (subsample vs. larger sample: 53% vs. 43% White, 8% vs. 21% Hispanic, 11% vs. 16% African American, 19% vs. 16% Asian, and 9% vs. 4% other). These differences reflect, in part, specific challenges in enlisting Hispanic families to visit our lab.

Procedure

During the fall (November or December) and spring (April or May) semesters of Grades 5 and 6, and during the spring of Grade 8 (April or May), participants completed a battery of group-administered questionnaires in their classrooms. The questionnaires identified the behavioral characteristics of each participant. In addition, data on children's perceived parent–child relationships and mothers' self-reports about their parenting were obtained from the Grade 6 participants during laboratory visits, which occurred typically between the fall and spring school assessments.

Measures: School

Extended Class Play (ECP; Wojslawowicz Bowker, Rubin, Burgess, Booth-LaForce, & Rose-Krasnor, 2006)—Participants completed an extended version of the Revised Class Play (RCP; Masten, Morison, & Pellegrini, 1985). Children were instructed to pretend to be the directors of an imaginary class play and to nominate their classmates for various roles. Similar to the original RCP procedure, Grade 5 children were instructed to nominate one boy and one girl within their classroom for each role. Items were added to the original RCP to more fully capture different types of aggression, assess peer exclusion, and better distinguish between exclusion and anxious withdrawal. To adjust for an increased number of peers and changes in classrooms that occur throughout the day, Grade 6 and 8 children could nominate up to three same-sex and three opposite-sex peers across the entire grade for each role. In all grades, only nominations for participating children were considered, and to eliminate possible sex-stereotyping, only same-sex nominations were utilized (Zeller, Vannatta, Schafer, & Noll, 2003). All item scores were standardized within sex and within classroom (Grade 5) or within grade (Grades 6, 8) to adjust for class size differences. The ECP yields five factors from 30 items: aggression, shyness/withdrawal, victimization/exclusion, popularity/sociability, and prosocial behaviors. This factor structure was based on confirmatory factor analyses on more than 1,800 children in fifth and sixth grades (Wojslawowicz Bowker et al., 2006). Construct validity was demonstrated via significant associations between the ECP factors and corresponding behavioral and social characteristics (e.g., teacher and parent ratings of shy/anxious behavior on the Teacher–Child Rating Scale and the Parent–Child Rating Scale were most strongly related to the ECP shyness/withdrawal factor; Burgess, Rubin, Wojslawowicz, Rose-Krasnor, & Booth, 2003).

Anxious Withdrawal and Peer Exclusion—In the present report, the ECP subscale score for shyness/withdrawal (referred to hereafter as *anxious withdrawal*) was used at all five data points. Items were, "Someone who gets nervous about group discussion,"

"Someone who is very shy," "Someone who talks quietly or rarely," and "A person who hardly ever starts up a conversation." A subset of the ECP victimization/exclusion items denoting peer exclusion in the fall of Grade 6 was used herein (items: "Someone who is often left out," "Someone who has trouble making friends," Someone who can't get others to listen"). Oh, Rubin, Rhee, Jung, and Booth-LaForce (2009) found that in a sample of fifth graders, the peer exclusion scale was positively related to social withdrawal and victimization, negatively related to prosocial behavior and popularity, and not related to aggression or dominance. Internal consistency (Cronbach's alphas) of the variables was as follows: anxious withdrawal: Grade 5 Fall: .83; Grade 5 Spring: .87; Grade 6 Fall: .85; Grade 6 Spring: .91; Grade 8 Spring: .90; Peer Exclusion, Grade 6 Fall: .78. The anxious withdrawal correlations between time points were as follows: Grade 5 Fall–Grade 5 Spring $r = .90$ ($p < .001$); Grade 5 Spring—Grade 6 Fall $r = .69$ ($p < .001$); Grade 6 Fall–Grade 6 Spring $r = .79$ ($p < .001$); Grade 6 Spring–Grade 8 Spring $r = .65$ ($p < .001$).

Measures: Laboratory (Grade 6 Only)

Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985)—The NRI was used to assess the youths' perceptions of their relationships with parents. The 33-item Likert-type questionnaire, which asks participants to rate statements about their relationships from 1 (*little or none*) to 5 (*most*), includes 11 conceptual subscales that load on three factors (Burk & Laursen, 2005; Furman, 1996): (a) *social support* (companionship, instrumental help, intimacy, nurturance of the other, affection, reliable alliance, satisfaction, enhancement of worth), (b) *negativity* (punishment, conflict), and (c) *relative power*. The NRI has been used from Grade 2 through college (Furman, 1996). Factor scores for mother–child relationships are stable across 1- and 2-year periods during early adolescence ($r = .52–.67$; Laursen, DeLay, & Adams, 2010). Intraclass correlations between mother and adolescent reports of NRI factor scores are high ($r = .50–.51$) and the shared portion of relationship perceptions accounts for most of the variance in child outcomes, indicating that child reports are not biased predictors (Burk & Laursen, 2010). Evidence for the construct validity of the NRI comes from significant correlations between observed parent–adolescent interactions and NRI factor scores (Furman & Buhrmester, 2009). Further, East (1991) found that parents' and children's (Grade 6) perceptions of and agreement about support in their relationship were significantly related to children's aggressive, withdrawn, or sociable behavior. Changes in the people on whom children rely for support follow expected developmental patterns from Grades 2 to 8 (Buhrmester & Furman, 1987).

Parental power and free time with mother—Of the factors from the NRI, only the relative power scale, indicative of mothers' parental power and low autonomy-granting, was used (items: "How often does this person tell you what to do? How often is this person the boss in your relationship? How often does this person take charge and decide what should be done?; $\alpha = .72$). Regarding the construct validity of this scale, Furman and Buhrmester (1985) found expected differences in Grades 5 and 6. Specifically, adults were perceived to have more power than friends and siblings, friends had equal power, and siblings had more or less power depending on their age relative to the participant. In addition to the relative power scale, a single background item from the NRI (Item 1), "How much free time do you spend with your mother?" was used to indicate amount of free time spent together, from 1 (*none*) to 5 (*almost all*).

Child-Rearing Practices Report Questionnaire (CRPR-Q; Rickel & Biasatti, 1982)—CRPR-Q is an adaptation of the original 91-item Block (1965) Child Rearing Practices Q-Sort, which assesses parents' child-rearing attitudes, values, and behaviors. Rickel and Biasatti (1982) established the reliability and validity of a 40-item Likert-scale, from 1 (*strongly disagree*) to 6 (*strongly agree*), modification of the original measure via

factor analysis and cross-validation of the measure across two samples. The resulting questionnaire yields two latent factors: *Nurturance* (item examples: "I talk it over and reason with my child when s/he misbehaves," "I respect my child's opinion and encourage him/her to express it"; $\alpha = .85$) and *Restrictiveness* (item examples: "I control my child by warning him about the bad things that can happen to him," "I prefer that my child not try things if there is a chance s/he will fail"; $\alpha = .82$). Block (1965) reported test–retest reliability on the CRPR of .71 over 1 year, and .64 to .66 over 3 years, and Roberts, Block, and Block (1984) reported significant consistency in parents' responses over 9 years from age 3 to 12. The construct validity of the CRPR-Q has been demonstrated via significant associations of the two summary scores with parents' observed behavior with their school-aged children, and significant differences in these scores between parents of sociometrically popular and rejected children (Deković, Janssens, & Gerris, 1991).

Data Analyses

A GGMM approach (B. Muthén, 2004) was employed to examine simultaneously in one model (a) the developmental trajectory of anxious withdrawal for each individual by estimating latent variables (i.e., the intercept and linear slope), (b) a latent variable "class membership" of individuals exhibiting similar patterns of anxious withdrawal trajectories, and (c) the extent to which these latent variables (intercept, slope, class membership) were associated with the predictor covariates (e.g., parent and peer factors). Data analysis was conducted using *MPlus Version 5.1* (L. K. Muthén & Muthén, 1998–2007).

Prior to performing the GGMM analyses it was necessary to determine whether the base (unconditional) model should include nonlinear as well as linear terms. Although a quadratic unconditional model had a moderately better fit than a linear model, the subsequent GGMM analyses failed to yield a satisfactory fit using a quadratic model when the latent variables and covariates were included. Therefore, following B. Muthén's (2004) guidance, we used the intercept +linear growth model as the baseline unconditional model to subject to GGMM, a model that is consistent with the extant literature regarding social withdrawal trajectory patterns (e.g., Booth-LaForce & Oxford, 2008; Eggum et al., 2009; Oh et al., 2008).

In the GGMM analyses, time was centered at the Grade 5 Fall time point, and paths from the latent intercept to the observed items were constrained to be 1 for each time point. The paths from the latent linear slope to the observed items were constrained to be 0, 1, 2, 3, and 7, which corresponds to the Grade 5 Fall, Grade 5 Spring, Grade 6 Fall, Grade 6 Spring, and Grade 8 Spring time points, respectively. Parent–child relationship and peer exclusion variables were included in model building as a means of improving model fit and accuracy of assignments of individuals to valid classes (B. Muthén, 2003). Intercorrelations among these variables are presented in Table 1. Because a major goal of the study was to identify factors that related to the transition period wherein children moved from elementary to middle school, we defined the growth function (i.e., slope) with middle school entry (Grade 6, fall semester) covariates including parent–child relationship characteristics (i.e., nurturance, restrictiveness, parental power, free time spent with mother), and peer exclusion. Sex of child was included in the model as a control variable for the intercept and slope. During data analysis and model selection, interaction effects between covariates were considered, but none was significant, or there was a convergence issue (e.g., negative variances) that precluded further analyses. Therefore, the final model chosen as the optimal solution excluded interactions.

Missing Data—The *MPlus* program uses full-information maximum-likelihood (FIML) estimation, operating under the assumption that data are missing at random or random after

incorporating other variables measured in the study (Arbuckle, 1996; Little, 1995). Little's MCAR test (Little & Rubin, 1987) revealed that the trajectory data were missing completely at random, $\chi^2(21) = 20.88$, $p = .47$. Given that the FIML procedure allows partial data on the trajectory variables (i.e., anxious withdrawal) but not missing data on predictor variables (B. O. Muthén & Shedden, 1999), the sample included only those with nonmissing data for parent and peer predictor variables but who had 39% missing data for the trajectory variables. FIML is a robust and accurate estimator of results when up to 50% of data are missing completely at random, even in very small samples (Graham, 2009).

RESULTS

The results are presented in three parts, although all questions were addressed simultaneously via GGMM model testing. First, we describe distinct developmental trajectories of anxious withdrawal. Second, we describe parent–child relationship characteristics and peer exclusion as factors differentiating trajectory classes. Third, we describe parent and peer predictors of patterns of growth in anxious withdrawal within each class.

Trajectories of Anxious Withdrawal

Based on the intercept + linear growth model, GGMM tested whether the entire sample consisted of two or more distinct subgroups that had different patterns of anxious withdrawal trajectories. We estimated fit indices for 1 (unconditional model)-to-k + 1 class-solution models (see Table 2). Because models with different numbers of classes are not nested, a model comparison was conducted using a series of fit indices including the Bayesian Information Criterion (BIC; Schwartz, 1978), the sample size adjusted BIC (SSA BIC; Sclove, 1987), and the Akaike Information Criterion (AIC; Akaike, 1987), as well as convergence. Lower scores represent better fitting models. Entropy refers to the average classification accuracy in assigning individuals to classes; values range from 0 to 1, with higher scores reflecting a better accuracy in classification of class membership. As shown in Table 2, the Bootstrapped Lo-Mendell-Rubin (LMR) likelihood ratio of model fit indicated that the fit improved when more latent classes were included. However, the LMR likelihood ratio test of model fit indicated that the increment of estimate from a model with three classes to a model with four classes was not significant. Also, convergence issues (e.g., negative variances, correlations >|1|) were encountered during the four-class model estimation. Thus, the three-class model was chosen as optimal in that it best balanced goodness-of-fit, parsimony, and interpretability.

Three distinct trajectory classes of anxious withdrawal were identified: (a) a *low-stable* anxious withdrawal trajectory, comprising 220 children (78% of the sample) whose anxious withdrawal scores started low in the fall of Grade 5 and remained low throughout elementary and middle school; (b) a *high-decreasing* anxious withdrawal trajectory, comprising 34 participants (12% of the sample) who exhibited the highest level of anxious withdrawal in the fall of Grade 5 and decreased thereafter through to the Grade 8 spring assessment; and (c) a *high-increasing* trajectory, comprising 29 participants (10% of the sample) whose anxious withdrawal scores were relatively high in the fall of Grade 5 (i.e., higher than the low-stable class and lower than the decreasing class) and increased through Grade 8, and who eventually displayed the highest levels of anxious withdrawal in the spring of Grade 8. Model-estimated mean trajectories for the three-class general growth mixture solution are presented in Figure 1. Latent class descriptive statistics for covariates included in the model are presented in Table 3.

Parent and Peer Predictors of Latent Class Membership

In GGMM model testing, multinomial logistic regression analyses were conducted to test which parent and peer predictors discriminated class membership. This required predicting the probability of class membership in a given group versus a designated reference group. First, the *low-stable* class was chosen as the reference group. Then the reference group was switched to the *high-decreasing* class so that contrasts between those whose high anxious withdrawal increased and decreased could be assessed. Results revealed that peer exclusion in Grade 6 uniquely differentiated both the *high-decreasing* and *high-increasing* classes from the *low-stable* class (i.e., the reference group). Peer exclusion (est. = 4.488, $SE = 1.024$, $p < .001$; odds ratio = 88.99) and free time spent with mother (est. = .957, $SE = 0.507$, $p = .05$; odds ratio = 2.60) in the fall of Grade 6 differentiated membership in the *high-decreasing* trajectory group from membership in the *low-stable* reference group. In other words, individuals who scored higher on peer exclusion and those who spent more time with mothers were more likely to be in the *high-decreasing* class than in the *low-stable* class. Peer exclusion in the fall of Grade 6 also differentiated membership in the *high-increasing* class from membership in the *low-stable* class (est. = 1.740, $SE = .661$, $p < .01$; odds ratio = 5.70). Those who scored higher on peer exclusion were more likely to be in the *high-increasing* group than in the *low-stable* group. Additional analyses were conducted using the *high-decreasing* class as the reference group. Peer exclusion (est. = −2.757, $SE = .700$, $p < .001$; odds ratio =.06) and free time spent with mother (est. = −1.202, $SE = .540$, $p < .05$; odds ratio =.30) distinguished members of the *high-increasing* class from members of the *high-decreasing* class. Those who scored lower on peer exclusion and those who spent less free time with mother were more likely to be in the *high-increasing* group than in the *high-decreasing* group. Sex did not significantly predict class membership.

Parent and Peer Predictors of Growth Rate Within Class

In the GGMM model, latent class membership and growth parameters (intercept and slope) were regressed simultaneously on the set of parent and peer covariates. Evaluation of the ways in which decreases or increases in anxious withdrawal within each trajectory class were predicted by parent and peer variables (see Table 4) revealed that for children in the *high-increasing* group, increasing levels of withdrawal were significantly predicted by higher parental power, lower amount of free time spent with mother, both nurturing and restrictive parenting, and greater peer exclusion after the transition from elementary to middle school in the fall of Grade 6. Although the *low-stable* class was characterized by a relatively consistent low level of anxious withdrawal over time, greater peer exclusion and more free time spent with mother significantly predicted increasing anxious withdrawal after the school transition. There were no significant predictors of within-class growth in anxious withdrawal among those in the *high-decreasing* class.

DISCUSSION

Research over the past few decades has confirmed that children who exhibit anxious withdrawn behavior are at risk for a variety of social-emotional difficulties, and that both parent–child relationship characteristics and peer exclusion are linked with the maintenance or exacerbation of anxious withdrawal (Rubin et al., 2009). Unlike most of these prior studies of relatively young children, we addressed a number of significant gaps in the extant literature by focusing on youth longitudinally from the late-childhood to early-adolescence period during a stressful transition time (from elementary school to middle school). In addition, we considered both parent–child and peer influences simultaneously, and we studied these influences in relation to heterogeneity in longitudinal patterns of anxious withdrawal.

As predicted in our first aim, we found three distinct trajectory classes of anxious withdrawal (*high-increasing, high-decreasing*, and *low-stable*) in our sample of older children and adolescents, replicating prior reports (Booth-LaForce & Oxford, 2008; Oh et al., 2008). Also, we demonstrated that high levels of peer exclusion are a risk factor for high anxious withdrawal at the middle-school transition, regardless of whether the trajectory increased or decreased during the middle-school years. However, we also found that both latent class membership and trajectory growth within these high anxious withdrawal classes were predicted by different sets of parent–child relationship variables.

Membership in the *high-increasing* class (10% of the sample) was predicted by lower time spent with mother (compared with the *high-decreasing* class). Growth in anxious withdrawal was predicted by restrictive and nurturing parenting, low parental autonomy-granting (i.e., higher parental power), low amount of time spent with mother, and peer exclusion. These latter results are consistent with prior research linking peer exclusion to increasing anxious withdrawal (Booth-LaForce & Oxford, 2008; Gazelle & Druhen, 2009; Gazelle & Ladd, 2003; Gazelle & Rudolph, 2004; Oh et al., 2008).

These results also are consistent with reports of intrusive, overcontrolling parenting among young anxious withdrawn children (Coplan et al., 2008; Degnan et al., 2008; Rubin et al., 2002). As well, they align with reported links between more general internalizing difficulties and parental control in early adolescence (Allen, Hauser, Eickholt, et al., 1994; van Brakel et al., 2006). However, the present study demonstrates the importance of these aspects of parenting in relation to anxious withdrawal specifically in an older sample. In this context, it is also worth highlighting the importance of including developmentally appropriate aspects of parenting (i.e., autonomy granting; Allen, Hauser, Bell, et al., 1994; Laursen & Collins, 2009) as an influence on anxious withdrawal in late childhood and early adolescence.

An unexpected finding was that the increase over time in anxious withdrawal in the *high-increasing* group was predicted by maternal nurturance as well as by the hypothesized restrictive parenting, a result that was not found in the other groups. Although we are not certain of the meaning of this result, we speculate that the mothers of these increasingly withdrawn children reinforce, and thereby exacerbate their children's anxious withdrawn behavior via their support and attention. Indeed, the literature shows that children's anxious withdrawal is predicted by high levels of maternal warmth and protectiveness in addition to controlling/intrusive behavior (see Hastings, Nuselovici, Rubin, & Cheah, 2010, for a discussion of oversolicitous parenting).

Unlike the majority of longitudinal studies of anxious withdrawal that have focused on the stability or increase in withdrawal over time, we also identified a decreasing pattern of withdrawal for children who were initially high on our anxious withdrawal measure and investigated the predictors of this trajectory. Of particular note is that membership in the *high-decreasing* class (12% of the sample) was predicted by higher levels of both peer exclusion and free time spent with mother, especially in comparison with the *low-stable* class, but also the *high-increasing* class. We did not have a specific hypothesis about amount of free time spent with mother, because we reasoned that this variable could be indicative of a positive mother–child relationship, or could indicate developmentally inappropriate overinvolvement. In fact, we found that free time with mother was positively correlated with nurturing and negatively correlated with parental power, suggesting a positive interpretation (see Table 1). However, the results for the *high-decreasing* class suggest to us that involvement (i.e., time spent) with mother may serve as a substitute for lack of social connectedness with peers and may, in some sense, make up for being excluded by peers, thereby serving to ameliorate anxious withdrawal over time. Further, these results suggest that young adolescents who have less involvement with their mothers and are excluded by

their peers, as found in the *high-increasing* class, may be especially at risk for further difficulties.

By contrasting the two trajectory classes exhibiting high anxious withdrawal, we attempted to identify factors that might buffer children from continuing on this path. Although peer exclusion was an important factor in both the *high-increasing* and the *high-decreasing* groups, the differences between them in patterns of supportive parenting provide clues about the roles of both parent–child and peer relationships in decreasing or increasing anxious withdrawal in this developmental period and highlight the importance of considering both parent and peer influences in the same analyses.

Strengths and Limitations

One of the strengths of the study was the inclusion of multiple informants and, in particular, reliance on peers as the source for anxious-withdrawal and peer-exclusion data, and both mothers and youth for parent–child relationship data. A second strength was the use of GGMM techniques to identify heterogeneity in trajectories of anxious withdrawal over time. It is particularly noteworthy that the three trajectory classes we found are very similar to those reported by Booth-LaForce and Oxford (2008), Oh et al. (2008), and Eggum et al. (2009). These similarities add to our confidence in the results.

A limitation of the study is that the parent and peer data were collected only in Grade 6. Although this timing gave us a window of opportunity in terms of evaluating some important factors purported to affect anxious withdrawal, at a time when children were making a significant transition from elementary to middle school, it is also the case that additional data points would have allowed us to evaluate a more complete picture of the relation between these predictors and both class membership and growth of anxious withdrawal over time. A second limitation involves the absence of data on friendship participation. Recent results suggest that when previously friendless withdrawn and rejected children acquire a new friend, the downward spiral of loneliness and depression is reversed (Bukowski, Laursen, & Hoza, 2010). Friendship might disrupt high increasing withdrawal patterns in a similar way.

Implications for Research, Policy, and Practice

Our findings suggest several important directions for future research, including the need to include measures from multiple social domains and informants. Our results also point to “time spent with mother” as a significant predictor of decreasing anxiously withdrawn behavior. However, our data do not allow us to know how or why mothers may achieve such an effect. Anxiously withdrawn children may turn to mothers to compensate for poor relations with peers, or they may prefer their mothers’ company, presumably because it is less anxiety provoking. The match between children’s and parents’ preferences for the amount of parental involvement may be an important moderator of the relation between that involvement and subsequent adjustment (Trost, Biesecker, Stattin, & Kerr, 2007).

Our findings also have relevance for the development of intervention programs that target anxiously withdrawn children. The current study adds to now converging evidence from several investigations indicating that anxiously withdrawn children are at risk for increases in withdrawal as a result of peer exclusion, friendship difficulties, and insensitive/intrusive parenting (Booth-LaForce & Oxford, 2008; Eggum et al., 2009; Oh et al., 2008). These factors both provide a profile that may be helpful in targeting children who are most in need of intervention as well as a set of attributes that may provide an avenue for intervention. Further, these common findings support the need for multilevel interventions that encompass individual child characteristics, relationship and peer group dynamics, and

parent–child interactions occurring at home or community contexts (e.g., Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2005).

In conclusion, our results contribute to a growing body of literature on longitudinal patterns of anxious withdrawal and identification of predictors of these trajectory patterns. Perhaps the most important lesson to be learned from this study is that developmentally relevant parent–child relationship characteristics as well as peer exclusion in late childhood and early adolescence are linked in significant ways to a pattern of increasing anxious withdrawal. The unexpected interplay of peer exclusion and free time spent with mother in characterizing the different trajectories leads us to reflect on the importance of considering the multiple interconnected aspects of adolescents' social experiences in our future work.

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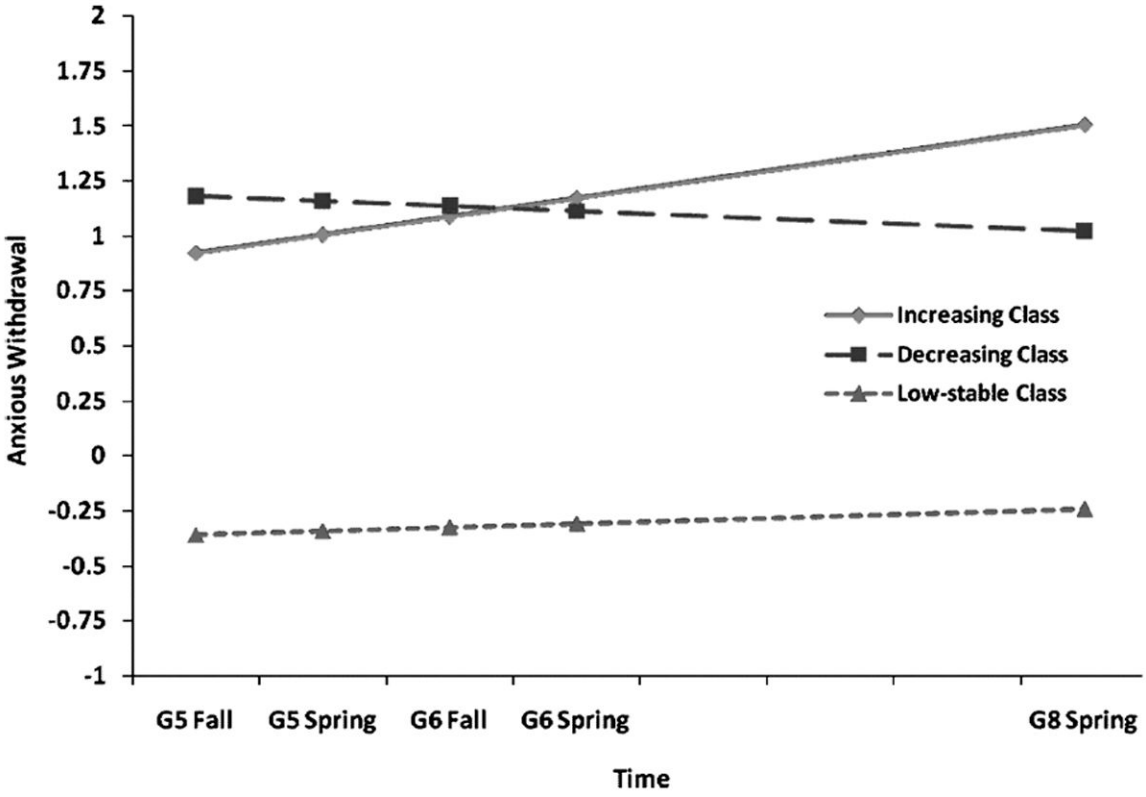

FIGURE 1.
Estimated means of anxious withdrawal for the three-class solution from general growth mixture modeling analysis. *Note:* G = grade. (Figure appears in color online.)

TABLE 1

Intercorrelations Among Predictor Variables

Variables	2	3	4	5
1. Parental power	−.12*	−.03	.16**	−.05
2. Free time with mother		.14*	.06	−.04
3. Nurturance			−.09	−.01
4. Restrictiveness				.05
5. Peer exclusion				

* $p < .05$.

** $p < .01$.

TABLE 2

Model Comparisons: Fit Indices for General Growth Mixture Models

Class	Log Likelihood	No. of Parameters	BIC	SSA BIC	AIC	Entropy	LRT (p for k − 1)	BLRT (p for k − 1)
1 (Unconditional Model)	−1084.850	12	2237.445	2199.393	2193.700	—	—	—
2	−992.135	16	2074.598	2023.862	2016.271	0.98	0.034	.000
3	−944.112	20	2001.132	1937.712	1928.223	0.97	0.164	.000
4	−912.523	24	1960.538	1884.433	1873.047	0.95	0.060	.000

Note: BIC = Bayesian information criterion; SSABIC = sample-size adjusted BIC; AIC = Akaike Information Criterion; LRT = likelihood ratio test; BLRT = Bootstrap likelihood ratio test; Entropy = classification accuracy in assigning participants to classes.

TABLE 3

Descriptive Statistics for Covariates by Trajectory Classes

Covariates	Increasing[a] M/% (SD)	Decreasing[b] n = 34 (12%) M/% (SD)	Low-Stable[c] n = 220 (77.7%) M/% (SD)
Sex (female)	55.2%	41.2%	55.5%
Parental Power	3.86 (.88)	3.60 (.84)	3.80 (.83)
Free Time With Mother	3.45 (.87)	4.09 (.75)	3.79 (.82)
Nurturance	5.37 (.50)	5.43 (.36)	5.49 (.46)
Restrictiveness	3.46 (.80)	3.47 (.71)	3.44 (.73)
Peer Exclusion	0.03 (.35)	1.08 (1.14)	−0.25 (.37)

[a] $n = 29$ (10.2%).

[b] $n = 34$ (12%).

[c] $n = 220$ (77.7%).

TABLE 4

Parameter Estimates for Three-Class General Growth Mixture Model With Covariates

	Increasing Class		Decreasing Class		Low-Stable Class	
Parameter	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Intercept						
Sex	0.591	0.430	0.418	0.692	−0.007	0.051
Slope						
Sex	−0.146	0.099	0.039	0.208	0.015	0.011
Parental Power	0.085***	0.010	−0.050	0.070	−0.001	0.006
Free Time With Mother	−0.220***	0.013	0.026	0.086	0.015*	0.006
Nurturance	0.258***	0.018	0.030	0.215	−0.001	0.005
Restrictiveness	0.072***	0.015	−0.012	0.143	−0.009	0.007
Peer Exclusion	0.500***	0.033	0.046	0.046	0.028*	0.013

* $p < .05$.

*** $p < .001$.