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# Worries About Middle School Transition and Subsequent Adjustment: The Moderating Role of Classroom Goal Structure

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## Abstract

This longitudinal study had three objectives: (a) to identify different profiles of second-year middle school students (Grade 8) in terms of academic, emotional, and social adjustment; (b) to test the contribution of worries at the end of Grade 6 to distinguish these profiles; and (c) to examine the moderating effect of mastery (MG) and performance goal (PG) structures in language arts class (Grade 7). A total of 342 mother-adolescent dyads participated in the study. Cluster analyses revealed three adjustment profiles: a well-adjusted group (WA), a socioemotionally adjusted group (SEA), and a socially adjusted group (SA). Hierarchical multinomial regression analyses showed that students who expressed worries had a lower probability of being in the WA. However, students who had a teacher who emphasized

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MG had a greater probability of being in the WA. Finally, worries about peers and teachers lowered the probability of being in the WA for students exposed to PG. Results are discussed in light of their implications for the literature on student adjustment, the elementary-to-middle school transition, and classroom goal structure.

### **Keywords**

worries, middle school transition, goal structures, adjustment

The transition from elementary to middle school has long been recognized as a potentially anxiety-provoking turning point (Akos, 2002; Lord, Eccles, & McCarthy, 1994; Seidman, Allen, Aber, Mitchell, & Feinman, 1994; Simmons & Blyth, 1987; Zeedyk et al., 2003). Apart from the advent of pubertal development, it is a time of important changes in the school landscape for adolescents, most of whom enter an environment in which the school structure, educational approaches, and social life have been greatly transformed (Chung, Elias, & Schneider, 1998; Eccles & Roeser, 2003; Eccles et al., 1993; Midgley, Middleton, Gheen, & Kumar, 2002; Whitley, Lupart, & Beran, 2007). Young adolescents have to deal with new subjects with new demands, usually taught in larger classes. The elementary school teacher is replaced by a host of teachers who may be stricter, less available, and more inclined to emphasize performance and social comparisons. Finally, former classmates do not necessarily attend the same school—a school that is probably bigger, more bureaucratic, and more impersonal.

The research on sources of stress experienced by adolescents entering middle school suggests that the ability to adapt to new teaching and evaluative practices, maintain elementary school performance, and establish harmonious relationships with other students and adults at school are typical concerns at this time (Akos, 2002; Berndt & Mekos, 1995; Duchesne, Ratelle, Poitras, & Drouin, 2009; Mitman & Packer, 1982; Wenz-Gross, Siperstein, Untch, & Widaman, 1997; Zeedyk et al., 2003). Although the majority of adolescents appear to regard this educational step with optimism, others view it more negatively (Berndt & Mekos, 1995). For the latter, excessive worries about school may reinforce pathogenetic attributes that can be detrimental to several adjustment dimensions, including academic engagement, self-concept, and psychological well-being (Heubeck & O'Sullivan, 1998; Rudolph, Lambert, Clark, & Kurlakowsky, 2001; Smith Carter, Garber, Ciesla, & Cole, 2006; Wenz-Gross et al., 1997).

Surprisingly, little is known about the long-term contribution of worries prior to entering middle school on adjustment in middle school. Most studies have either evaluated worries after the transition has taken place or measured worries concomitantly with adjustment indices (e.g., Heubeck et O'Sullivan, 1998; Wenz-Gross et al., 1997). In addition, individual differences in adjustment were not considered. Accounting for these differences could bring new insights into the interplay between worries and subsequent adjustment. Finally, these studies largely neglected characteristics of the new school environment that is liable to either mitigate or strengthen the relationship between worries about middle school transition and adjustment. In recent years, growing evidence has shown that certain affective, cognitive, behavioral, and motivational characteristics of students are partly determined by the goal structures (GS) that teachers convey in the classroom (Meece, Anderman, & Anderman, 2006; Urdan & Midgley, 2003; Wolters, 2004). Considering that students' worries can undermine the quality of their adjustment to middle school, it appeared crucial to examine the extent to which their perceptions of classroom GS in the first year of middle school can compensate for, mitigate, or aggravate the individual consequences of these worries. This longitudinal study was conducted to determine the moderating effect of classroom GS in the first year of middle school language arts class (Grade 7) by examining the relationship between worries at the end of elementary school (Grade 6) and the academic, emotional, and social adjustment profiles of students in the second year of middle school (Grade 8).

## **Worries and Adjustment Across the Transition to Middle School**

Worry has been described as a cognitive element: a negative, uncontrollable chain of thoughts and images about future uncertain events (Borkovec, Robinson, Pruzinsky, & Depree, 1983). Although worry is frequently related to anxiety, research has shown that these two constructs are in fact independent (Davey, Hampton, Farrell, & Davidson, 1992). Research on worries identified three domains of worry in students with respect to the transition to middle school (e.g., Akos, 2002; Berndt & Mekos, 1995; Brown & Armstrong, 1982; Duchesne et al., 2009; Elias, Gara, & Ubriaco, 1985; Fenzel, 1989; Zeedyk et al., 2003): (a) *worries about academic demands*, bearing on the nature of tasks to be done in class and at home, classroom rules and routines, formal evaluation systems, and learning evaluation methods, (b) *worries about teachers*, involving exposure to excessively rigid teachers, unfair treatment by these teachers, and not getting enough attention,

and (c) *worries about peers*, such as fear of losing touch with friends from elementary school, difficulty in making new friends, and fears of being bullied by older students.

Some studies have supported an association between the emergence of worries or school-related stressors and student adjustment around the transition from elementary to middle school. Worries about academic demands and interpersonal relationships with teachers and/or peers were significantly and negatively related to social acceptance and academic self-concept and positively with internalized problems and school disengagement (Duchesne et al., 2009; Heubeck et O'Sullivan, 1998; Rudolph et al., 2001; Sim, 2000; Smith Carter et al., 2006; Wenz-Gross et al., 1997). Students who have a natural tendency to worry would also be more liable to engage in learning activities in order to avoid unfavorable judgments of their competencies (Duchesne & Ratelle, 2010). This inclination to avoid school work has been associated with a less favorable learning profile, particularly in terms of motivation, feelings of self-efficacy, and performance (e.g., Elliot & Church, 1997; Midgley & Urdan, 2001). Overall, these results suggest that students who have difficulty dealing with their worries about school are at greater risk for academic, social, and emotional adjustment problems as they enter middle school.

*Using a person-centered approach to study adjustment.* The above-cited studies use a variable-centered approach to examine the relationship between worries and adjustment. This approach posits that individuals differ quantitatively on one or more variables of interest, and that the relationships between the variables apply to the entire sample studied (Magnusson, 1998). Although useful to determine the contribution of one or more independent variables on a specific dimension of adjustment, the analysis models stemming from this approach are inappropriate for capturing the multidimensional nature of adjustment, not to mention that they could mask significant individual discrepancies in adjustment patterns (Roeser, Eccles, & Strobel, 1998; Bergman, von Eye, & Magnusson, 2006). An alternative would be to apply a person-centered approach, where the psychological processes are not considered to occur independently, and where patterns or configurations are relatively heterogeneous across individuals (Bergman, 2001). Methodologically speaking, this approach uses procedures (e.g., cluster analysis) that enable identifying subgroups of individuals with distinct profiles, and to which individuals who share a same configuration of characteristics may be assigned (Bergman et al., 2006).

Our aim here was to identify heterogeneous profiles of the continuous adjustment variables and to examine their relationships with worries around the middle school transition. Although studies have shown that school worries are negatively associated with adjustment, we may posit that the direction and

strength of this relationship may vary across students. For example, some students may be academically and socially well adjusted, yet still have emotional problems. Another goal of this study was to examine the role of environmental variables that can protect students against the harmful effects of worries on adjustment. One such factor is classroom GS.

## **Classroom Goal Structure and Student Adjustment**

According to the theory of achievement goals (Ames, 1992a, 1992b; Ames & Archer, 1988; Elliot, 1997), the type of GS that teachers encourage guides students' degree of involvement, the cognitive strategies they use to complete their tasks, their self-perceptions as learners, and their motivation to learn (Elliott, 2005). GS fall into two categories: mastery and performance goal structures (Meece et al., 2006). The distinction between these structures is based on the six dimensions of the TARGET system (Ames, 1992a, 1992b; Epstein, 1989): Tasks (task type and organization), Authority (autonomy granted to students), Recognition (feedback on behaviors), Grouping (organization and types of groups), Evaluation (procedures and criteria used), and Time (management of learning time). Teachers who encourage mastery GS provide diversified and stimulating learning opportunities, emphasize effort, support student autonomy, encourage students to use self-reference criteria, and realize that mistakes are part and parcel of the learning process. In contrast, teachers who use performance GS tend to group students by ability, value students who succeed over other students, extend privileges to students with better grades, and use evaluation procedures that encourage students to compare themselves with their classmates (Kaplan, Middleton, Urdan, & Midgley 2002; Meece et al., 2006). These teachers implicitly convey to their students that they must above all show that they can succeed in order to be judged favorably and receive the teacher's attention.

The research has repeatedly supported the relevance of this conceptualization by showing that certain sociocognitive and academic characteristics are associated with GS in the classroom. Mastery GS have been related to feelings of self-efficacy, intrinsic motivation, the use of effective learning strategies, school engagement, perseverance in completing challenging academic tasks, and decreases in depressive symptoms over time (Kaplan & Maehr, 1999; Linnenbrink, 2005; Patrick, Anderman, & Ryan, 2002; Roeser & Eccles, 1998; Skaalvik, 1997; Turner et al., 2002; Urdan & Midgley, 2003; Wolters, 2004). Inversely, being exposed to performance GS was associated with increased anxiety during exams, disruptive behaviors, limited efforts in difficult tasks,

procrastination, cheating, and depressive symptoms (Anderman, Griesinger, & Westerfield, 1998; Kumar, Gheen, & Kaplan, 2002; Midgley & Urdan, 2001; Skaalvik, 1997; Roeser & Eccles, 1998; Wolters, 2004). Overall, these studies underscore the importance of classroom GS for multiple aspects of student functioning and adjustment.

We propose that the long-term association between specific worries about the transition to middle school and posttransition adjustment is moderated by their perceptions of classroom GS in the first-year middle school language arts class. GS cover some of the critical components of teaching practice that have the potential to promote adjustment in more vulnerable students (e.g., Kumar et al., 2002). It would therefore be reasonable to assume that cognitive constructions such as worries and perceived GS could interact and partly account for student adjustment. Worries about anticipated difficulties could direct the students' attention toward certain aspects of the classroom (e.g., task assignments, autonomy, grouping practices) that would affect their responses to learning situations, and ultimately their adjustment, depending on whether these aspects are interpreted as dangers or reassurances. This notion stems from research which has shown that more anxious individuals tend to concentrate selectively on threatening rather than neutral stimuli (see Kendall, Hedtke, & Aschenbrand, 2006).

Finally, we focused on language arts as a subject mainly because language learning is not just a school subject, but also serves as a vector for learning other subjects, and that successful language learning predicts academic self-concept, social acceptance, healthy emotions, and persistence in school (e.g., Lipka & Siegel, 2006; Duchesne, Vitaro, Larose, & Tremblay, 2008; Vitaro, Brendgen, Larose, & Tremblay, 2005). Thus, when students enter middle school and manage to pass an important subject like language arts, their worries might lessen, and at the same time, they might feel more confident about dealing with most academic challenges. This feeling could in turn be positively associated with global adjustment over time.

Based on this proposition, three scenarios are possible. The first, called the *protecting effect*, proposes that worries about the transition to middle school do not contribute to posttransition adjustment problems in students who perceive that their language arts teacher encourages mastery GS. Students who report a lot of worries and who perceive that their teacher encourages mutual support and respect among students, conveys the idea that students can succeed if they make an effort, and defines success as progress made, would feel reassured and would consider that their worries were unfounded (e.g., "In this class, I can make mistakes without being judged;" "In this class, the students help each other"). Feeling secure, these students might have better cognitive

(concentration, attention, and self-regulation), behavioral (effort, perseverance, cooperation, and mutual support) and emotional (low evaluative anxiety) dispositions to perform school tasks and achieve significant learning. Ultimately, self-representations that are constructed or consolidated in a pivotal school subject in middle school could transcend the limited context of a particular class and contribute to overall student adjustment by enabling a feeling of being able to deal with the demands of a situation, to respond appropriately to stressful events, and to establish healthy relationships.

Second, the *aggravating effect* proposes that worries would be negatively related to adjustment in students who perceived that their teacher fostered performance GS. Students who perceive that their teacher places more emphasis on competition and conveys that success results more from personal aptitudes could interpret these messages as particularly threatening, as they would confirm their pretransition fears (e.g., “In this class, the workload is heavy”; “In this class, the students work on their own”). The products of these worries and performance GS would therefore interfere with motivation and learning, and subsequently adjustment. Last, the third scenario would be a *direct effect*, as the GS in the first year of middle school could also contribute to student adjustment independently of the degree of pretransition worries. The notion of a unique and independent contribution of GS pervades the empirical research on achievement goal theory (e.g., Linnenbrink, 2005; Wolters, 2004). Thus, exposure to mastery GS would foster the acquisition of skills and affects liable to contribute to positive adjustment, whereas a climate based on performance GS could interfere with adjustment through more negative behavior and affect patterns.

## The Current Study

This study had three objectives. The first was to identify different profiles in second-year middle school (Grade 8) students in terms of academic, emotional, and social adjustment. Due to the exploratory nature of this objective, no specific hypotheses were formulated. However, other researchers (Chung et al., 1998; Roeser, Eccles, & Freedman-Doan, 1999) have demonstrated more than one adjustment pattern in adolescence. The second objective was to examine the contribution of worries at the end of elementary school (Grade 6) to distinguish adjustment profiles in Grade 8. According to the proposal that worries about school, teachers, and peers should be assessed from multiple perspectives (Smith Carter et al., 2006), worries were assessed based on perceptions by students and their mothers. The purpose of considering these two perspectives was to determine the extent to which they make



distinct contributions to subsequent adjustment. A high level of worries about entry into middle school was expected to increase the probability of being in a less well-adjusted profile in Grade 8. Although there is no empirical evidence to justify the choice of the mother as an information source, studies on emotional problems in children suggest considering two aspects. First, some preadolescents do not have the cognitive or verbal skills to correctly understand and describe their own subjective experience (Ollendick, Grills, & King, 2001). This could explain the markedly poor agreement between reports by children and other informants (Achenbach, McConaughy, & Howell, 1987) and the even poorer agreement between reports by children and clinicians than between parents and clinicians (Grills & Ollendick, 2003). Second, a child's emotional distress would be more difficult to detect in a structured environment such as a classroom (Ward, Sylva, & Gresham, 2010). For all these reasons, the mother could provide a valid source of complementary information about the worries of her child.

The third objective was to determine the moderating effect of GS in first-year middle school language arts class (Grade 7) on the relationship between worries about the transition to middle school and adjustment profiles after the transition. The three postulated effects (i.e., protecting, aggravating, and direct) are tested below. Finally, students' gender, overall academic performance, symptoms of anxiety, and the presence of sociofamilial adversity, including family status and income, as well as perceived GS in eighth grade were used as control variables. The literature has repeatedly reported associations between these variables and adjustment outcomes in middle and high school (e.g., Duchesne et al., 2008; Roeser & Eccles, 1998; Wood, 2006). In addition, taking into account GS in Grade 8 removed potentially confounding effects between variables.

## **Method**

### *Participants and Procedure*

The sample for this study comprised of 342 adolescent-mother dyads (163 boys, 176 girls; 3 unspecified). At the departure point of the study, or the sixth grade of elementary school, the average age of adolescents was 11.83 years ( $SD = .46$ ). Most adolescents were born in the province of Quebec (92%), spoke French at home (96.8%), and lived with both biological parents (68.60%). On average, mothers were aged 40.35 years ( $SD = 4.66$ ). They declared a median family income of US\$50,000 to US\$59,999. The median family income for Quebec was US\$59,000 at the time (Statistics Canada,

2009). This study was conducted as part of a longitudinal study on transition and adaptation to and perseverance in middle school. The participants were selected jointly with Quebec's Ministry of Education, Leisure and Sport (MELS) to constitute a representative sample of sixth grade students attending French public schools in Quebec during the 2005-2006 school year. The sample was stratified by gender, socioeconomic status, and geographic location (rural vs. urban areas). Participation in the study required consent by both the adolescents and their mothers.

In April 2006 (final year of elementary school, Grade 6), 2007 (first year of middle school, Grade 7), and 2008 (second year of middle school, Grade 8), participants were invited to complete a questionnaire at home designed to gather information about the transition to middle school. The questionnaire was offered in two formats: pencil and paper or computerized. In the sixth grade, the mother's questionnaire included questions about sociodemographic issues (family income and family status) as well as items designed to assess their adolescent's academic performance and the worries they had expressed about entering middle school. Adolescents completed a questionnaire that measured anxiety and a scale on worries about the middle school transition. One year later (Grade 7), adolescents also reported on the GS that their first-year middle school French teacher established in class. Finally, 2 years after entering middle school (Grade 8), adolescents completed measures targeting academic, social, and emotional dimensions of their adjustment as well as the GS perceived in their French class.

Of the variables used in this study, the percentage of missing values ranges from 1.46% (Worries perceived by mothers) to 37.43% (Academic performance in eighth grade). Several researchers (e.g., Kline, 2005; West, 2001) have pointed out the importance of estimating missing values rather than losing participants, particularly when data are missing at random. Loss of participants can affect the data analysis and results interpretation. In this study, missing data were estimated with the Expectation-Maximization (EM) algorithm using SAS statistical software, version 9.2. This procedure, which is applicable when values are missing at random, replaces missing data with expected values.

## Measures

*Worries about the middle school transition—Grade 6.* Worries were self-reported by adolescents using a measure specifically developed for this study and inspired by other studies on students' worries (e.g., Berndt & Mekos, 1995; Wenz-Gross et al., 1997). This 8-item scale assessed the degree of worries concerning (a) *academic demands* (4 items, e.g., "I am worried that the

work I will have to do in middle school will be too difficult”), (b) *relationships with teachers* (2 items, e.g., “I am worried that the teachers will not be interested enough in me”), and (c) *relationships with peers* (2 items, e.g., “I am worried that I won’t be able to make new friends”). Participants indicated on a 5-point scale ranging from 1 (*does not correspond to what I think at all*) to 5 (*corresponds exactly to what I think*) the extent to which each item reflected their feelings. Mothers completed a version of this measure containing the same items but worded slightly differently (e.g., “My child is worried that the work in middle school will be too difficult;” “My child is worried that the teachers will not pay enough attention to him or her;” “My child is worried about not being able to make new friends”).

Exploratory factor analyses with oblimin orthogonal rotation (see Widaman, 1993 for details) were performed on the eight items in the adolescent’s scale and the eight items in the mother’s scale (factor structure and loadings for items are available on request). Analysis of the adolescent’s scale identified a factor solution in which the saturation coefficients for items varied from .39 to .86. For the mother’s scale, the analysis showed a two-factor orthogonal solution, with Factor 1 comprising items in the dimension *academic demands* and Factor 2 comprising items in the dimensions *relationships with teacher* and *relationships with peers*. The first factor showed saturation coefficients ranging from .64 to .89. The saturation coefficients of the four items in the second factor varied from .34 to .99. In light of these results, worries were regrouped into a single dimension for adolescents (Social-Academic worries) and two distinct dimensions for mothers (Academic worries and Social worries). Each dimension was calculated from the mean scores on items. Coefficient alphas for these scores were .87 for Social-Academic worries, .75 for Academic worries, and .91 for Social worries.

**Sociofamilial adversity—Grade 6.** Sociodemographic data on family composition (e.g., intact, nonintact) and family income were gathered on the mothers and transformed. These indicators are important precursors of the high school experience (e.g., Alexander, Entwisle, & Horsey, 1997). Thus, a score of 0 (*low risk*) was attributed to families made up of two natural parents and a score of 1 (*higher risk*) was assigned to any other family configuration (e.g., single, blended). For the family income indicator, a score of 1 denoted a family situated in the lowest quartile and 0 for higher quartiles. These two binary variables were then regrouped to create a variable called a sociofamilial adversity index for use as a control variable. Studies using similar procedures have found links between such adversity indices and various social, academic, and emotional adjustment indicators in children and adolescents (e.g., Duchesne et al., 2008; Mâsse & Tremblay, 1999).

**Anxiety—Grade 6 to Grade 8.** Adolescents' anxiety symptoms were measured yearly using the Worry/Oversensitivity subscale of the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978). This Self-Report subscale included 12 items (e.g., "I get nervous when things do not go the right way for me"), where adolescents indicated whether each statement applied to them on a yes/no scale. "Yes" indicates that the item was descriptive of the child's feelings. The French-Canadian version of this subscale yielded a Cronbach's alpha of .81 and a test-retest Pearson's correlation coefficient of .61 after 6 months (Turgeon & Chartrand, 2003). Indices of internal consistency for these scores were .73 in Grade 6, .79 in Grade 7, and .82 in Grade 8.

**Academic performance—Grade 6 to Grade 8.** Overall academic performance of adolescents was assessed annually by mothers on a 7-point scale ranging from 1 (*did not succeed at all academically*) to 7 (*succeeded extremely well academically*). Summary statistics for these scores are presented in Table 1.

**Goal structures in French class—Grade 7 and Grade 8.** Adolescents' perceptions of GS were measured with the Teacher Mastery Goal and Teacher Performance Goal scales of the Patterns of Adaptive Learning Scales (Midgley et al., 2000). Items addressing mastery GS (5 items) assessed the extent to which adolescents perceived that their teacher emphasized engaging in academic work in order to develop competence (e.g., "My French teacher gives us time to really explore and understand new ideas"). Items addressing performance GS (3 items) assessed the extent to which adolescents perceived that their teacher emphasized comparisons among students in the class (e.g., "My French teacher tells us how we compare to other students"). Participants responded to these items on a 5-point Likert-type scale ranging from 1 (*not at all true*) to 5 (*very true*). Internal consistency coefficients of .83 for a mastery GS and .79 for a performance GS have been reported (Midgley et al., 2000). In the present study, these coefficients were .82 and .63 for mastery and performance GS in Grade 7, and .85 for mastery GS and .64 for performance GS in Grade 8. Mastery and performance scores in Grade 8 were used as control variables.

**Adjustment—Grade 8.** Adolescents' perceptions of adjustment at the end of the second year of middle school were assessed using a short version of the Student Adjustment to College Questionnaire (SACQ; Baker & Siryk, 1989). Although the original 69-item questionnaire was designed specifically for college populations, many of the items apply equally well to middle school (Duchesne, Ratelle, Larose, & Guay, 2007). A total of 21 items of the SACQ were retained to assess three dimensions of adjustment over the three last months: *Academic adjustment* assessed the feeling of being able to adjust to the various demands in terms of homework, class work, and exams (10 items,

Table 1. Means, Standard Deviations, and Bivariate Correlations between Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Gender <sup>a</sup>	—																	
2. Adversity (G6)	-.04	—																
3. Anxiety (G6)	-.14	.12	—															
4. Anxiety (G7)	-.20	.09	.53	—														
5. Anxiety (G8)	-.22	.14	.51	.65	—													
6. Academic performance (G6)	-.13	-.10	-.05	-.01	-.05	—												
7. Academic performance (G7)	-.24	-.09	-.01	.05	.07	.66	—											
8. Academic performance (G8)	-.33	-.07	.07	.17	.05	.68	.72	—										
9. Social worries (M)	-.08	.16	.30	.19	.18	-.20	-.24	-.08	—									
10. Academic worries (M)	-.06	.14	.28	.21	.26	-.39	-.35	-.27	.62	—								
11. Soc.-Academic worries (A)	-.15	.16	.60	.39	.41	-.24	-.18	-.11	.41	.39	—							
12. Mastery (G7)	.03	.02	-.06	-.04	-.05	.05	-.01	.14	.07	.04	-.01	—						
13. Performance (G7)	.04	.05	.01	.10	-.02	-.01	-.06	-.09	.06	.06	.10	.15	—					
14. Mastery (G8)	-.11	.04	-.08	-.09	-.11	.01	-.01	.08	.08	.11	-.05	.34	.11	—				
15. Performance (G8)	.01	.14	-.01	-.01	.05	-.10	-.10	-.10	.04	.20	.11	.01	.34	.02	—			
16. Social adjustment (G8)	.20	-.07	-.33	-.23	-.26	.26	.27	.34	-.20	-.22	-.30	.26	.08	.17	-.06	—		
17. Academic adjustment (G8)	.09	-.06	-.23	-.21	-.38	.36	.36	.49	-.06	-.16	-.41	.21	-.07	.26	-.13	.44	—	
18. Emotional adjustment (G8)	.19	-.25	-.37	-.45	-.58	.19	.17	.13	-.18	-.21	-.43	.15	-.07	.14	-.18	.42	.63	—
M	.48	.31	1.39	1.39	1.40	5.44	5.15	5.11	1.76	2.15	2.72	3.79	2.07	3.88	2.05	4.30	3.58	3.70
SD	.50	.38	.23	.24	.25	1.16	1.09	1.16	.80	1.00	.94	.84	.77	.86	.76	.56	.69	.75

a. Boys serve as the reference group. M = mother's report in Grade 6. A = adolescent's report in Grade 6. G = grade. All correlations greater than .10 are significant at the .05 level.

e.g., “I have been keeping up to date with my academic work”); *Social adjustment* assessed students’ perceptions of socializing with peers and staff at the school (4 items, e.g., “I have friendly relationships with several people at school”); and *Personal-emotional adjustment* assessed general affective status (e.g., anxiety, distress) and physical status (e.g., somatic symptoms; 7 items, e.g., “I have been feeling in good health”). Participants rated each item on a 5-point scale ranging from 1 (*doesn’t apply to me at all*) to 5 (*applies to me very well*). The psychometric properties of the SACQ have been demonstrated in both the English (e.g., Palladino Schultheiss & Blustein, 1994) and French version (Duchesne et al., 2007; Larose, Soucy, Bernier, & Roy, 1996). In the present study, internal consistency indices for *Academic adjustment* were .85, .72 for *Social adjustment*, and .81 for *Personal-emotional adjustment*.

## Results

A first set of analyses was conducted to meet the first objective, which was to identify the presence of adjustment profiles of adolescents at the end of the second year of middle school. These profiles were analyzed based on three adjustment indices: academic, social, and emotional. Multinomial regression analyses were then run to meet the two remaining study objectives: (a) to examine the contribution of worries about the middle school transition on adolescent adjustment 2 years posttransition, and (b) to determine a potential protecting or aggravating role of the GS in French class in the first year of middle school.

### *Analysis of Adjustment Profiles in the Second Year of Middle School*

The presence of adolescent adjustment profiles was explored with latent class cluster analysis (Tryon, 1939) using Ward’s method incorporating squared Euclidean distance (Chulef, Read, & Walsh, 2001). For practical reasons, two- to four-group models (or profiles) were explored. The optimal number of profiles was based on dendrograms and two statistical indices, the pseudo  $F$  and the pseudo  $T^2$ . A three-group solution was found to be optimal (pseudo  $F = 202$ , pseudo  $T^2 = 55.7$ ) compared to the two-group (pseudo  $F = 236$ , pseudo  $T^2 = 82.9$ ) and four-group model (pseudo  $F = 183$ , pseudo  $T^2 = 51.3$ ).

The first group, called the well-adjusted group (WA), was made up of adolescents who presented the highest mean on each of the three adjustment indices (Academic adjustment = 4.33/5; Social adjustment = 4.68/5;

Personal-emotional adjustment = 4.47/5). A total of 102 adolescents fell into this group, or 29.8% of the sample. The second group, the socioemotionally adjusted group (SEA), contained adolescents with a high mean on the social adjustment ( $M = 4.19$ ) and personal-emotional indices ( $M = 3.79$ ), but a lower mean on the academic adjustment index ( $M = 3.44$ ). This group was also the largest, containing 132 adolescents, or slightly over one third of the sample (38.6%). The third group, the socially adjusted group (SA), included adolescents who presented high mean on the social adjustment index ( $M = 4.07$ ), but also the lowest mean on the Academic ( $M = 3.06$ ) and Personal-emotional indices ( $M = 2.85$ ). A total of 108 adolescents belonged to this group (31.6%).

A nonparametric analysis based on the chi-square test was performed to compare the distribution of boys and girls across the three adjustment groups. Results revealed gender differences, particularly in the SA and SEA,  $\chi^2(2, 342) = 10.99, p < .01$ . Although the proportion of girls to boys was relatively equivalent in the WA (52.90% girls vs. 47.10% boys), girls were overrepresented in the SA (63.90% vs. 36.10%) and boys in the SEA (57.60% vs. 42.40%).

### *Examination of the Predictive Model of Adjustment Profiles in Second-Year Middle School*

Preliminary analyses were conducted to determine the bivariate correlations between the pretransition variables (gender, sociofamilial adversity, anxiety, academic performance, and worries) and posttransition variables (anxiety, academic performance, and GS in the first 2 years of middle school and adjustment indices in second year of middle school). The results indicate that the majority of correlations are significant (90/153), with coefficients varying from weak to high (see Table 1). Given the magnitude of the three measured relationship between the variables anxiety ( $r$ 's = .51-.65) and academic performance ( $r$ 's = .66-.72), a global score based on the means of scores was used as a control variable in subsequent analyses for (a) anxiety and (b) academic performance.

Hierarchical multinomial regression analyses were conducted to determine the contribution of worries, GS, and their interactions to explain adolescent adjustment profiles. The comparison of profiles was defined such that a given group was compared to a reference group, in this case, the SA. The analyses were then modeled to test the direct and moderating contributions of GS in French class. The variables were introduced in four successive steps. The first step involved the control variables: gender, sociofamilial adversity,

anxiety symptoms, academic performance, and mastery and performance goal scores in eighth grade. Worries perceived by mothers (Social and Academic worries) and worries reported by adolescents (Social-Academic worries) in sixth grade were added in the second step. Mastery and performance goal scores in the seventh grade were introduced in the third step. In the fourth and final step, a series of two-way interactions between worries (Grade 6) and goals emphasized by French teachers (Grade 7) was tested to determine the moderating effect of GS on the relationship between worries and adjustment profiles (Grade 8). Six interaction effects were tested: (a) Social worries perceived by mothers  $\times$  Mastery GS, (b) Social worries perceived by mothers  $\times$  Performance GS, (c) Academic worries perceived by mothers  $\times$  Mastery GS, (d) Academic worries perceived by mothers  $\times$  Performance GS, (e) Social-Academic worries perceived by adolescents  $\times$  Mastery GS, and (6) Social-Academic worries perceived by adolescents  $\times$  Performance GS. Results are presented in Table 2.

**WA (vs. SA).** Results of the first step (control variables) showed that sociofamilial adversity, anxiety, academic performance, and mastery GS in eighth grade contributed to the adolescent's probability of being in the WA. More specifically, high sociofamilial adversity and the presence of anxiety symptoms decreased the probability of being in the WA (*odds* = .01,  $p < .01$ , and *odds* = .02,  $p < .01$ , respectively). In contrast, high academic performance and perceptions of classroom mastery GS increased the probability of being in the WA (*odds* = 3.69,  $p < .001$ ).

Of the three variables introduced in the second step, only worries perceived by adolescents had a significant effect. More precisely, adolescents who expressed worries about the academic demands of middle school and interpersonal relationships with teachers and peers had a lower probability of being in the WA in second-year middle school (*odds* = .45,  $p < .01$ ). Neither of the two domains of worry as perceived by mothers (Social and Academic worries) contributed to distinguish WA from SA. Results in Step 3 indicated that the probability of being in the WA was stronger for adolescents who had been exposed in first year middle school to a French teacher who emphasized classroom mastery GS (*odds* = 1.63,  $p < .05$ ). Performance GS made no significant contribution.

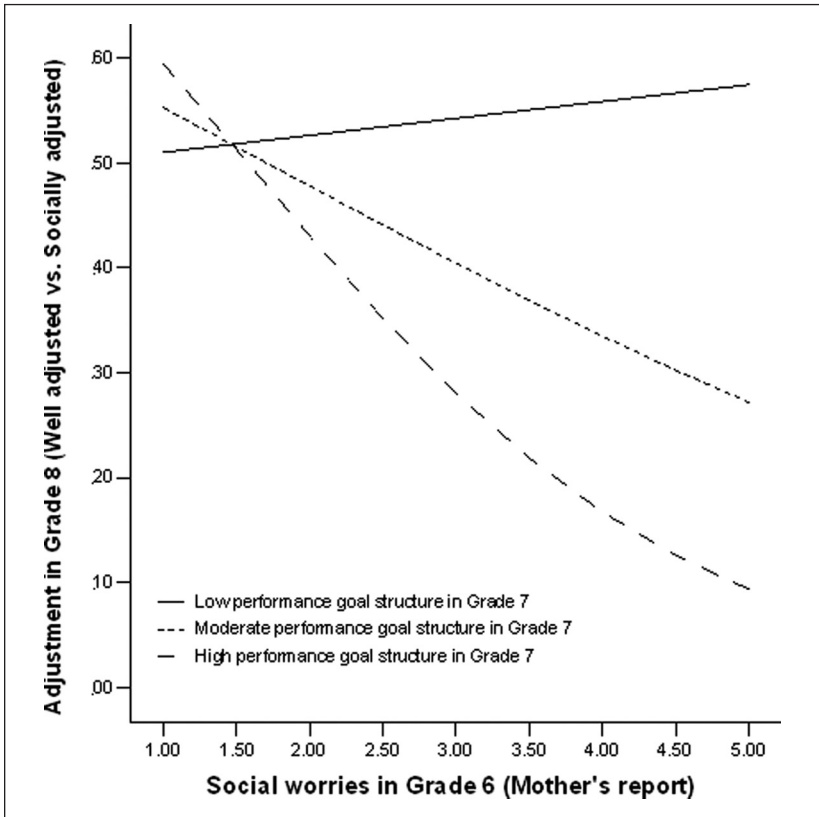
The interaction terms entered in step 4 showed a significant two-way interaction between adolescents' worries about peers and teachers as perceived by mothers and performance GS in French class (*odds* = .33,  $p < .05$ ). This effect was broken down to determine the degree of exposure to performance goals—weak (25th percentile), moderate (50th percentile), or high (75th percentile)—for which the worries that adolescents expressed in sixth year about social



**Table 2.** Summary of multinomial logistic regression analyses predicting adjustment group membership in Grade 8.

	Overall model statistics			Group-specific odds estimate			
	$\chi^2$ -change (df)	p	Nagelkerke R <sup>2</sup> -change	Predictor $\chi^2$ (df)	p	Well-adjusted group (WA)	Socioemotionally adjusted group (SEA)
STEP 1/Control variable	168.40 (12)	.01	.44				
Gender				8.63 (2)	.01	1.69	2.40**
Sociofamilial adversity (Grade 6)				5.05 (2)	.08	0.01**	0.13**
Anxiety (Grades 6–8)				83.83 (2)	.01	0.02**	0.09**
Academic performance (Grades 6–8)				52.08 (2)	.01	3.69**	1.20
Mastery goals in the French class (Grade 8)				6.57 (2)	.05	1.58*	1.41*
Performance goals in the French class (Grade 8)				2.82 (2)	.24	0.70	0.79
STEP 2/Worries (Grade 6)	16.49 (6)	.01	.03				
Social worries (M)				2.64 (2)	.27	1.58	1.03
Academic worries (M)				2.77 (2)	.25	1.51	1.26
Social-Academic worries (A)				10.86 (2)	.01	0.45**	0.88
STEP 3/Goal structures in the French class (Grade 7)	9.93 (4)	.01	.02				
Mastery goals				7.50 (2)	.02	1.63*	1.59*
Performance goals				3.17 (2)	.21	1.17	0.79
STEP 4/Interactions	14.35 (12)	.01	.03				
Social worries (M) × Performance				7.54 (2)	.02	0.33*	0.46*
Social worries (M) × Mastery				0.16 (2)	.92	1.19	1.04
Academic worries (M) × Performance				2.32 (2)	.32	1.54	0.86
Academic worries (M) × Mastery				1.86 (2)	.39	0.70	1.04
Social-academic worries (A) × Performance				0.41 (2)	.82	1.13	1.18
Social-Academic worries (A) × Mastery				3.35 (2)	.19	1.35	1.52

Note. The Socially adjusted group (SA) serves as comparison group for model test and odds ratios. Boys serve as the reference group for gender. M = mother's report, A = adolescent's report. Final model =  $-2 \log \text{likelihood} = 537.95$ ;  $\chi^2(34) = 209.16$ ,  $p < .01$ ; Nagelkerke  $R^2 = .52$ ;  $*p < .05$ ;  $**p < .01$ .



**Figure 1.** Probability of belonging to the well-adjusted group in Grade 8 as a function of Social worries in Grade 6 and performance goal structure in Grade 7

relationships in middle school would increase the probability of their being in the WA in second-year middle school (see Flom & Strauss, 2003). Figure 1 shows that worries about peers and teachers as perceived by mothers are weakly predictive of being in a WA group for adolescents who were exposed to moderate and high levels of Performance GS. This suggests that being exposed to a French teacher who emphasizes social comparisons, ability, and grades can hinder the subsequent adjustment of adolescents who were worried about social relationships prior to entering middle school.

SEA (vs. SA). Results showed that the variables in the first step of the regression model (control variables) contributed to differentiate adolescents

in the SEA from peers in the SA. A significant gender effect was detected, with boys having a higher probability than girls of being in the SEA rather than the SA ( $odds = 2.40, p < .01$ ). Moreover, perceptions of classroom mastery GS in eighth grade increased the probability of being in the SEA ( $odds = 1.41, p < .05$ ). However, this probability was weaker for adolescents exposed to high sociofamilial adversity ( $odds = .13, p < .01$ ) and who reported anxiety symptoms ( $odds = .09, p < .01$ ). Academic performance and performance GS in eighth grade did not contribute to the probability of being in either group (SEA or SA).

The addition of variables concerning worries about the middle school transition (Step 2) did not make a significant contribution, suggesting that the probability of being in any of these groups is independent of the degree of worries expressed at the end of elementary school. However, the scores for mastery and performance GS introduced in the third step of the regression model made a significant contribution, which was particularly attributable to mastery GS ( $odds = 1.569, p < .05$ ). Adolescents who perceived that their French teacher in first-year middle school emphasized effort, progress, and improvement had higher odds of being in the SEA than the SA in second-year middle school. Step 4 also revealed an interaction effect, identical to that in Figure 1, that social worries as perceived by mothers negatively affect the probability of belonging to the SEA.

## **Discussion**

This longitudinal study contributes in at least four ways to the advancement of the knowledge on the role of worries about the middle school transition in posttransition adjustment. First, the results support the existence of diverse patterns of adjustment in the second year of middle school. Second, they suggest a long-term association between adolescents' worries and adjustment. Third, they support the hypothesis of a direct effect of classroom mastery GS in French class on adolescents' subsequent adjustment. Finally, the results support the hypothesis of an aggravating effect of performance GS in French class, as worries about the middle school transition predict lower adjustment in adolescents who perceived performance GS.

### *Adjustment Profiles in Second-Year Middle School*

The approach used in this study to identify different groups of adolescents based on academic, social, and emotional adjustment indices allowed identifying three distinct profiles. The first profile (WA) includes students who

judge themselves highly capable of coping with school demands, have generally positive affects, and consider that they have satisfactory relationships with peers and teachers. The second profile (SEA) includes students who perceive themselves as well adjusted socially and emotionally, but who had slightly more difficulty dealing with teachers' demands (e.g., homework, class work, formal exams). The third profile (SA) includes students who feel they are well integrated socially. However, compared to their WA and SEA peers, the SA students appear to be less well adjusted in terms of school and emotions. These results are consistent with those of other studies (e.g., Chung et al., 1998; Roeser et al., 1999), and they suggest that adjustment is a complex process that differs across adolescent subgroups. However, it is surprising to find that none of these profiles are clearly demarcated in terms of social adjustment, especially given that some adolescents experience considerable social difficulties, such as exclusion and victimization (Arseneault, Bowes, & Shakoor, 2010). We cannot exclude the possibility that the items retained to assess social adjustment, which emphasize more positive aspects such as sustaining friendships at school, were insufficiently sensitive to capture differences across our sample.

When adjustment profiles were examined for gender differences, more boys were found in the SEA, whereas girls were overrepresented in the SA. The discrepancy between these two profiles was particularly apparent in the emotional dimension of adjustment. Considering that this aspect of adjustment concerns the degree of distress and certain affective problems that are similar to certain typical manifestations of anxiety and depression, it is possible that this difference could be partly explained by the greater tendency of girls than boys to present these problems at the onset of adolescence (e.g., Graber, 2004). This tendency could be partly explained in turn by the greater concern of girls to please their parents and teachers, particularly in terms of academic performance (Pomerantz, Altermatt, & Saxon, 2002). Faced with actual or anticipated failure, girls might be more likely to feel that they had disappointed these adults, predisposing them to subsequent emotional problems.

### *Main Effects of Worries and GS*

Worries about the transition to middle school as reported by adolescents were linked to adjustment in second-year middle school (Grade 8). Other studies have shown that school-related worries were associated with social, academic, and emotional adjustment (Duchesne et al., 2009; Smith Carter et al., 2006; Wenz-Gross et al., 1997). However, the present study sheds light on the overall contribution of students' worries 2 years after they entered

middle school. The fact that worries are linked to the risk of presenting adjustment problems could be explained by the motivational orientations of more anxious students. Many researchers contend that some students are motivated mainly by the desire to reduce the negative impact of an anticipated failure and to preserve a projected social image (e.g., Elliot, 2005; Harackiewicz, 2008). This type of orientation generally translates into lower expectations of success, decreased efforts, less engagement in nonroutine tasks, reluctance to seek help, and cheating. Studies have shown that this avoidance tendency is detrimental to school learning because it has been positively associated with anxiety, for example (Duchesne & Ratelle, 2010), and negatively to feelings of academic confidence, intrinsic motivation, and performance (e.g., Elliot & Church, 1997). It is therefore likely that academic difficulties would not only confirm the worries that students had immediately prior to entering middle school but would also contribute to their adjustment problems.

The results also revealed that students who perceived that their French teacher established GS that fostered effort, improvement, autonomy, and collaboration were more liable to be in the WA or SEA, independently of the degree of worries about entering middle school. These results support the hypothesis of a direct effect of mastery GS on student adjustment. As others have shown (e.g., Linnenbrink, 2005; Wolters, 2004), mastery GS foster motivation to learn, self-regulation, and well-being in class. This suggests that students who perceived these goals at the beginning of middle school, particularly in a pivotal school subject like language arts, will benefit from this exposure, irrespective of the amount of worries they expressed or felt about the middle school transition. Students' reading, speaking, and writing competencies and the self-confidence that they would acquire or build in such learning climates would therefore be positively associated with student adjustment, even beyond the first year of middle school.

### *Moderating Effects of GS*

Of the 12 interactions tested in this study, two were significant. In both cases, the results support the hypothesis of the aggravating effect of a performance environment, and worries about teachers and peers, as reported by mothers, decreased the probability of being in the WA or SEA for students who perceived that language arts teachers placed emphasis on performance GS in the first year of middle school. Social-related stress was closely related to low social self-concept as well as depressive symptoms (Wenz-Gross et al., 1997). It is therefore likely that students who perceive that they have poor

relationships, feel sad, or have low self-concept would also express the most worries about being unable to cope with a new social reality. Faced with a performance GS in a key subject area (like language arts) where education messages and practices seem to be centered on success and interpersonal comparisons (Meece et al., 2006; Wolters, 2004), these students may feel less valued than their classmates, belittled in comparison, and hence have less fun and develop fewer friendships with their peers. This feeling could then exacerbate the worries they had before entering middle school, which would in turn influence their adjustment to middle school.

Finally, the results showed that the perspectives of mothers and their children on the children's worries were related to adjustment in second-year middle school. Although these results did not enable determining which of these sources would more accurately assess children's worries, they offer empirical support for the proposition of Smith Carter and colleagues (2006) that accounting for multiple perspectives could allow complementary and nuanced conclusions on adjustment. Nevertheless, further research is needed to confirm these results.

### *Implications*

The results of this study have important implications for preventive and remedial interventions in schools. First, it would be advisable to take measures at the beginning of the transition from elementary to middle school, given that students' worries around this time appear to contribute to the quality of their adjustment 2 years later. Apart from programs designed to prepare students for the middle school transition (e.g., visits to the new school, visits by middle school students to elementary schools, information sessions for parents), it would be useful to set up more individualized follow-up systems outside the classroom for students who display certain symptoms of anxiety. It has been estimated that about 1 in 7 students presents these symptoms throughout elementary school (Duchesne, Larose, Vitaro, & Tremblay, 2010). These students could benefit particularly from cognitive-behavioral interventions involving relaxation, problem-solving skills, correcting erroneous thoughts, modeling, role playing, and reinforcement (see Weissman, Antinoro, & Chu, 2009).

Second, teachers in first-year middle school language arts class who want to help their students adjust would gain by being informed on the consequences associated with the GS they promote in class. This information could be conveyed during professional development courses or information sessions provided to school staff. On the one hand, this training could

underscore the need to present learning situations that incorporate diversified and stimulating tasks, support student autonomy, and value their efforts, progress, and perseverance in completing complex tasks. As many have stressed (Kaplan et al., 2002; Linnenbrink, 2005; Midgley & Edelin, 1998; Poulin, Duchesne, & Ratelle, 2010), this type of climate could facilitate student adjustment through the quality of their cognitive engagement (concentration, self-regulation) and their ability to solve problems and cooperate with their classmates. On the other hand, this training could also raise teachers' awareness that typical performance GS in language arts class can be detrimental for students who are more anxious. Messages that promote success and social comparison can negatively affect students' feelings of being able to cope with teachers' demands, motivation in class, interactions with peers, and psychological well-being.

### *Limitations and Future Research Directions*

Although this study has several distinct features that distinguish it from previous research on worries about middle school entry (e.g., longitudinal design, pretransition assessment, two information sources, person-centered approach, accounting for the learning climate, inclusion of potential confounding variables), the results should be interpreted in light of certain limitations. First, with the exception of worries evaluated from the mother's perspective, the central variables evaluated in this study are based entirely on self-report measures by young adolescents. This procedure can either inflate or deflate observed relationships between variables, thus leading to both Type I and Type II errors. Future studies should include diversified information sources (e.g., teachers or external observers) to measure GS and other adjustment indices (e.g., grade-point average, absenteeism rates, use of special education services), which could allow confirming or qualifying the results of this study.

Second, the GS perceived by the students were measured in the context of first language teaching. Therefore, these perceptions cannot be generalized to all school subjects. Future studies should include other subjects in order to examine their contribution to subsequent student adjustment. Third, the subscales evaluating the adjustment indices did not specifically address language arts as a subject. This could explain in part the modest relationships between GS and adjustment. In future, studies could consider the subject being taught, in terms of both the classroom climate and student adjustment. Fourth, the classroom climate was approached from the perspective of GS. Other components such as teacher support, peer support, and consistency in classroom

rules were also related to adjustment during the middle school years (e.g., Roeser, Eccles, & Sameroff, 1998; Way, Reddy, & Rhodes, 2007). Therefore, it is possible that these components played a role in the perceptions of GS and adjustment. We recommend that future studies explore this possibility. Finally, studies have shown that anxiety tends to aggregate in families where anxious children are at higher risk to interact with parents who are themselves anxious (e.g., Ballash, Leyfer, Buckley, & Woodruff-Borden, 2006). It would therefore be useful to consider parental anxiety as a potentially confounding variable, especially as it could color how their children assess anxiety.

In conclusion, this study showed that (a) students have distinct adjustment profiles in the second year of middle school, (b) worries about the middle school transition were associated with adjustment problems in the second year of middle school, (c) perception of mastery GS in the first year of middle school language arts class was positively related to student adjustment one year later, irrespective of the presence of certain risk factors prior to the transition, and (d) students whose mothers perceived certain worries about peers and teachers were at greater risk for adjustment problems if they felt they had been exposed to performance GS in language arts class.

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