

RELATIONS OF AUTONOMY AND RELATEDNESS
TO SCHOOL FUNCTIONING AND PSYCHOLOGICAL ADJUSTMENT
DURING ADOLESCENCE

by

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ABSTRACT

One criticism of previous work in the field of adolescent development has been the paucity of research examining the unique and combined contributions of different developmental contexts on adolescents' functioning. In an attempt to address this issue, the current study examined adolescents' perceptions of autonomy and relatedness within parent, peer, and school contexts in relation to school functioning and psychological adjustment. Adolescents ($N = 478$) in Grades 8, 9, and 11 completed self-report questionnaires assessing feelings about their relationships with parents and peers, and perceptions of school. Teachers completed ratings of adolescents' strengths and competencies. Academic achievement was assessed using end of year school grades.

Results revealed several significant gender and grade differences. Whereas girls reported greater deidealization of their parents and peers, and higher quality of attachment to peers than did boys, boys reported being less dependent on their peers than did girls. Overall, adolescents in grade nine were more dependent on their peers and reported more trust and communication in their peer relationships than did adolescents in grade eight.

Correlational results indicated that school functioning was positively associated with school autonomy, parental attachment, peer attachment and school belonging, and that problems in psychological adjustment were negatively associated with peer autonomy, school autonomy, parental attachment, peer attachment, school belonging, and positively associated with parental autonomy. Results of the multiple regression

analyses indicated that autonomy and relatedness variables accounted for significant amounts of variance in GPA, teacher-rated school competencies, internalizing problems, and externalizing problems. Analyses also revealed variables which uniquely predicted areas of functioning across contexts and gender.

This cross-sectional study provides new theoretical insights regarding relations of autonomy and relatedness to school functioning and psychological adjustment during adolescence across multiple contexts. The findings contribute to a more thorough understanding of the dimensions of autonomy and relatedness that may have important implications for educators and parents of adolescents for improving educational practice and for promoting school success and positive adjustment.

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CHAPTER 1

Introduction

Autonomy and relatedness have been identified as two salient dimensions of adolescent development that have figured extensively throughout much of the research literature on adolescence (Douvan & Adelson, 1966; Hill, 1993; Hill & Holmbeck, 1986; Hodgins, Koestner, & Duncan, 1996; Ryan & Powelson, 1991; Silverberg & Gondoli, 1996). In recent years, there has been a burgeoning research literature exploring the role of autonomy and relatedness in the academic and behavioural functioning of adolescents (Armsden & Greenberg, 1987; Barber, 1997; Barber & Olsen, 1997; Eccles et al., 1993; Eccles & Midgley, 1989; Goodenow, 1993a, 1993b, 1994; Paterson, Pryor, & Field, 1995; Ryan & Powelson, 1991; Ryan, Stiller, & Lynch, 1994; Taylor & Adelman, 1990). In particular, Ryan and Powelson (1991) argue that needs for autonomy and relatedness are fundamental to successful school functioning and "represent significant influences on the affective and cognitive outcomes of education" (p. 64). Moreover, the negotiation of autonomy and relatedness has been a main issue in theories regarding the individuation process and adolescent-parental relationships (Blos, 1967; Chen & Dornbusch, 1998; Collins, Laursen, Mortensen, Luebker, & Ferreira, 1997; Eccles, Early, Frasier, Belansky, & McCarthy, 1997; Grotevant & Cooper, 1986; Havighurst, 1952, 1972; Hill & Holmbeck, 1986; Josselson, 1980).

Accordingly, current theory and research suggest that autonomy and relatedness play critical roles in school competence as well as general psychological adjustment during adolescence (e.g., Chen & Dornbusch, 1998; Eccles & Midgley, 1989; Eccles et al., 1993;

Ryan & Grolnick, 1986). Research findings are in concert in suggesting that, during adolescence, autonomy and relatedness are important predictors of academic, social, and emotional adjustment (e.g., Eccles et al., 1997). For instance, the early adolescent period coincides with several age-related declines in self-esteem, academic and behavioural functioning associated with school transitions, and with needs for more independence and autonomy (e.g., Eccles, et al., 1993; Eccles & Midgley, 1989; Roeser, Midgley, & Urdan, 1996; Savin-Williams & Small, 1986; Turner, Irwin, Tschann, & Millstein, 1994; Wenz-Gross, Siperstein, Untch, & Widaman, 1997). Moreover, those students who experience difficulties in school and may be "at risk" for dropping out of school, are likely to have poor interpersonal relationships with others, and weak attachments to family and school (Allen, Aber, Leadbeater, 1990; Kazdin, 1995; Parker & Asher, 1987). Indeed, researchers and theorists agree that adolescence is a crucial period in development in which biological, cognitive, emotional, and social contextual changes (e.g., times of school transitions, changes in the quality of relationships with parents and peers) pose challenges and stresses for adolescents that play an important role in an adolescent's adjustment (e.g., Berndt, 1979; Brown, 1990; Eccles et al., 1993; Fasick, 1984; Fuligini & Eccles, 1993; Isakson & Jarvis, 1999; Laible, Carlo & Rafaelli, 2000; Wentzel, 1996).

There are three contexts, namely schools, families, and peers, that have been identified by researchers as the major social arenas in which adolescents invest time and commitment and develop attitudes and beliefs that shape maturation and that are critical to emotional health development and adjustment in general (e.g., Blum & Rinehart, 1997; Brown, 1990; Eccles et al., 1997; Greenberger, Steinberg, & Vaux, 1982; Hill, 1993;

Isakson & Jarvis, 1999; Minuchin & Shapiro, 1983; Steinberg, 1993). The research on social contexts suggests that adolescents' experiences at school, with parents, and with peers, contribute to a developing sense of autonomy and relatedness that effect learning, motivation, psychological well-being, and achievement at school. Nevertheless, very few studies exist that have directly examined both the unique and combined effects of adolescents' experiences of autonomy and relatedness in relation to school functioning and psychological adjustment across multiple contexts during adolescence, despite the emergent literature highlighting the importance of autonomy and relatedness in education and development (e.g., Barber & Olsen, 1997; Eccles et al., 1997; Roeser, 1998). Instead, most researchers have focused their attention on examining selected aspects of autonomy or relatedness within a specific context, such as the family (e.g., Allen & Hauser, 1996; Fuhrman & Holmbeck, 1995), or school (e.g., Cotterell, 1992; Chen & Dornbusch, 1998), or peers (e.g., Gavin & Furman, 1989) and have overlooked the concurrent relations of autonomy and relatedness in parent, peer, and school contexts.

Given that adolescents who are at risk for school failure and serious maladjustment in adulthood are a growing concern of school professionals, parents, and the community (Jenson, Walker, Clark, & Kehle, 1991; Reid & Patterson, 1991; Saleh, 1991; Sprick & Nolet, 1991), researchers are now calling for studies that examine the concurrent relations of autonomy and relatedness on academic functioning and psychological adjustment during adolescence (Barber & Olsen, 1997; Eccles et al., 1997; Minuchin & Shapiro, 1983).

The present study is a response to those calls and is designed to contribute to a better understanding of the relations of adolescents' experiences of autonomy and relatedness to

development across multiple contexts. In the current study I examine adolescents' perceptions of autonomy and relatedness systematically in parent, peer, and school contexts in order to determine the manner in which these two dimensions of adolescent development are associated with school functioning and psychological adjustment during adolescence.

Definition of Terms

The following definitions are put forward in order to provide the reader with an explanation of how specific terms are intended to be understood and used within the framework of the current study.

Autonomy

Autonomy is a term that has been used to indicate a variety of different ideas about freedom, independence-striving, self-direction, self-governance, and general control beliefs (Grolnick, Ryan & Deci, 1991; see Hill & Holmbeck, 1986 for a review; Ryan & Powelson, 1991; Ryan et al., 1994; Silverberg & Gondoli, 1996). Some researchers have used the term autonomy to convey the notion of an individual's capabilities to take responsibility and to make decisions for themselves while maintaining relationships with significant others (e.g., Collins, Laursen, et al., 1997; Crittenden, 1990; Hill & Holmbeck, 1986; Turner et al., 1994). In the present study, autonomy was uniquely defined within the contexts of parents, peers, and school. Following are the definitions of autonomy utilized in the present study.

Parental autonomy. Autonomy in relationships with parents, or parental autonomy, is a term that has been broadly defined in the adolescent research as emotional separateness, emotional distancing, disengagement from parents, and detachment from parents (Frank, Pirsch, & Wright, 1990; Herman, Dornbusch, Herron, & Herting, 1997; Lamborn &

Steinberg, 1993; Papini & Roggman, 1992, Ryan & Lynch, 1989; Steinberg & Silverberg, 1986; Turner, Irwin, Tschann, & Millstein, 1993). In the present study, parental autonomy refers to a sense of emotional separateness, and is based on Steinberg and Silverberg's (1986) conceptualization of Blos's (1967) theoretical perspective on individuation and the development of a distinct sense of self. According to Blos' (1967) theory of individuation-separation, differentiation is achieved when adolescents relinquish childish dependencies and conceptualizations of their parents and develop their individuality and a distinct sense of self or separateness while still maintaining their relationships with their parents. Thus, for the present investigation, parental autonomy was operationalized to indicate the degree to which an adolescent distinguishes or differentiates himself or herself from their parents (i.e., the extent which adolescents deidealize their parents, are less dependent on their parents, and feel individuated in their relationships with parents). In this study, parental autonomy was assessed using Steinberg and Silverberg's (1986) Emotional Autonomy Scale (EAS).

Peer autonomy. Autonomy in relationships with peers, or peer autonomy, is a term that researchers have used to represent concepts such as psychological control (e.g., Barber & Olsen, 1997), the extent of conformity to peers (e.g., Berndt, 1979), and resistance to peer pressure (e.g., Steinberg & Silverberg, 1986) rather than a direct assessment of emotional separateness. In the present study, peer autonomy was designed to parallel Steinberg and Silverberg's (1986) conceptualization of autonomy in relationships with parents. More specifically, the definition of peer autonomy in the present study is taken from Josselson's (1980) conceptualization of autonomy from peers. According to Josselson (1980), during middle adolescence, adolescents look for ways to distinguish themselves as

being different from their peers in order to achieve a sense of separateness from them.

Thus, in the present study, peer autonomy was operationalized to indicate the degree to which an adolescent distinguishes or differentiates himself or herself from their peers (i.e., the extent to which adolescents deidealize their peers, are less dependent on their peers, and feel individuated in their peer relationships). For the current study, peer autonomy was assessed via the Emotional Autonomy Scale - Peers (EASP). The EASP was developed by adapting questions on Steinberg and Silverberg's (1986) Emotional Autonomy Scale to assess autonomy in relationships with peer rather than with parents.¹

School autonomy. In the present study, I adopted Adelman and colleagues's (1986) conceptualization of school autonomy as perceptions of control over school outcomes (i.e., events, tasks, situations, rules) (Adelman, Smith, Nelson, Taylor, & Phares, 1986). Thus, school autonomy reflects beliefs about how much personal control students feel they have in school, such as being able to make choices and take part in making decisions (Adelman et al., 1986; Adelman & Taylor, 1990; Eccles, et al., 1993; Heavey, Adelman, Nelson, & Smith, 1989; Smith, Adelman, Nelson, Taylor, & Phares, 1987; Taylor & Adelman, 1990). It should be noted that, whereas peer autonomy and parental autonomy are intended to be parallel measures, school autonomy is uniquely operationalized for use in this study to indicate the degree to which adolescents feel they have some personal control or influence over school-related situations. School autonomy was assessed using the Perceived Control at School Scale (PCSS; Adelman et al., 1986).

¹Details of the Emotional Autonomy Scale - Peers are provided in Chapter Three.

Relatedness

Relatedness is a term commonly used throughout the research literature to refer to feelings of close interpersonal attachments and bonds with others that are thought to contribute to an individual's emotional well-being and positive adjustment (Ryan & Powelson, 1991). The concept of relatedness reflects the idea of secure and satisfying connections with others that are established through an individual's needs for contact, support, and validation (Goodenow, 1993a, 1994; O'Brien, 1989; Roeser et al., 1996; Ryan & Powelson, 1991). In the school context, relatedness refers to the "social bonding which connects the student to the school, the sense of attachment and commitment felt by students who believe that others in the school, both peers and adults, care about them, respect them, and are interested in their welfare" (Goodenow, 1994, p. 3). In the present study, relatedness was operationalized in parent and peer contexts to indicate the degree to which an adolescent feels a sense of emotional connection and feels accepted, supported, and cared for in his or her relationships with parents and peers. Relatedness was operationalized for use in the school context to indicate the degree to which an adolescent feels connected with, or attached to, his or her school and feels validated and respected within school. Relatedness was assessed in this study using two measures (1) Armsden and Greenberg's (1987) Inventory of Parent and Peer Attachment (IPPA), and (2) Goodenow's (1993a) Psychological Sense of School Membership (PSSM) questionnaire.

School Functioning

School functioning is a general term that refers to students' skills of an academic, motivational, and interpersonal nature associated with his or her learning and behaviour at

school. Throughout the research literature, students' school functioning has been assessed through various indices connected with learning, ability to cope with failure, academic engagement, and achievement or grades (e.g., Eccles et al., 1997; Ryan et al., 1994; Wentzel, 1993). In this study, two dimensions of school functioning were assessed, namely school competencies and academic achievement.

School competencies. In the present study, school competencies were operationalized to indicate the degree to which an adolescent exhibits abilities in school of a social, behavioural, and academic nature. School competencies were assessed using teacher-ratings of students' strengths in four areas (Frustration Tolerance, Social Skills, Task Orientation, and Peer Social Skills) obtained from the Teacher-Child Rating Scale (T-CRS; Hightower et al., 1986).

Academic achievement. Academic achievement was operationalized in the present study by using academic grade point average (GPA). GPA has been utilized by numerous researchers as a means for measuring a student's academic achievement in school (e.g., Berndt, Laychak, & Park, 1990; Foley & Epstein, 1992; Grolnick et al., 1991; Roeser & Eccles, 1998; Wentzel, 1993; Wentzel & Caldwell, 1997). In this study, a composite GPA score was calculated from students' end of the year report card grades that was based on the average grade obtained in four core academic classes (i.e., english, mathematics, science, and one of history, geography or senior social science course). The average grade was converted to a 13-point grading scale (e.g., Roeser et al., 1997; Wentzel, 1993; Wentzel & Caldwell, 1997).

Psychological Adjustment

In the present study, I use the term psychological adjustment to refer to the quality of adolescents' social and emotional functioning. This definition is in accordance with the way in which other researchers in the field of adolescent development refer to psychological and social functioning (e.g., Barber & Olsen, 1997). In the research literature, psychological adjustment is typically represented through an individuals' socioemotional behaviours and has included a wide range of measures of problems associated with self-esteem, self-concept, feelings of depression, anger, internalizing and externalizing behaviours, self-restraint, anxiousness and loneliness in its assessment (e.g., Achenbach, 1991; Barber & Olsen, 1997; Conger, Conger, & Scaramella, 1997; Larose & Boivin, 1998; Larson, 1997; Merrell, 1989; Quay & Peterson, 1987; Roeser & Eccles, 1998; Wentzel & Feldman, 1996). In general, better psychological adjustment is indicated by fewer symptoms or low level manifestations of negative problems (e.g., Larson, 1997; Wenz-Gross et al., 1997), or the absence of psychological problems (Kazdin, 1993). In this study, the term psychological adjustment was operationalized to indicate the degree to which an adolescent exhibits internalizing and externalizing problem behaviours. More specifically, individuals with better psychological adjustment were those who reported fewer internalizing and externalizing problem behaviours. Psychological adjustment problems were assessed using self-reports of internalizing problem behaviours (anxiety, withdrawal, depression, and somatic complaints) and externalizing problem behaviours (delinquency and aggressiveness) on the Youth Self-Report (YSR; Achenbach, 1991).

Significance of the Study

In the present study, I seek to understand the extent to which adolescents' experiences of autonomy and relatedness in parent, peer, and school contexts are associated with educational and behavioural outcomes during adolescence. The present investigation will contribute new information to the research literature which attempts to discern the way in which different social contexts of parents, peers, and school are associated with adolescents' academic and emotional functioning (e.g., Barber & Olsen, 1997; Feldman & Elliott, 1990). This cross-sectional study, including students in grades eight, nine, and eleven, has the potential to provide new theoretical insights regarding relations of autonomy and relatedness to school functioning and psychological adjustment during adolescence across multiple contexts. Moreover, it is hoped the findings of this investigation will provide a more thorough understanding of autonomy and relatedness during adolescence, and thus provide future direction for educational practice for the purpose of improving school performance of adolescents.

CHAPTER 2

Review of the Literature

Overview

The review of the literature is organized into three main sections. First, I briefly introduce some of the research and theory on autonomy and relatedness during adolescence. In this section I also present the central themes associated with autonomy and relatedness across different developmental contexts. Next, I give a detailed review of several studies in which autonomy and relatedness have been investigated in the contexts of parents, peers, and school. In this section, I describe the major findings from studies in the area and discuss the specific limitations of that research. Finally, I present the problem statement and hypotheses that directed the current investigation.

Toward A Conceptual Framework For Research on Autonomy and Relatedness in Multiple Contexts

Amidst the concern of researchers for the emotional health and well-being of adolescents in relation to schooling, there have been increasingly more studies examining varying aspects of children's and adolescents' school experiences (i.e., opportunities for student decision making and choice; evaluation and teaching practices), and interpersonal relationships (i.e., feelings of belongingness, perceived social support from parents, teachers, and peers) in association with academic performance and social adjustment (e.g., Eccles, Lord, & Midgley, 1991; Eccles & Midgley, 1989; Goodenow, 1993a; Kasen, Johnson, & Cohen, 1990; Roeser et al., 1996; Roeser & Eccles, 1998; Wentzel, 1994, 1997, 1998). These researchers have focused on the links between adolescent development and the ways in

which school contexts and socialization experiences meet adolescents' psychological needs for autonomy and relatedness.

For example, the longitudinal work of Eccles and her colleagues (Eccles, Lord, et al., 1991; Eccles et al., 1993; Eccles & Midgley, 1989; Eccles, Midgley & Adler, 1984) has provided considerable evidence to suggest that the fit or match between the developmental needs of adolescents and their environment is important to school adjustment. Their theoretical approach has been used to explain some of the difficulties adolescents experience in junior high or middle school environments. Specifically, Eccles and colleagues argue that a developmental stage-environment mismatch places adolescents at risk for negative motivational, behavioural, and psychological outcomes at school, such as poor school performance, greater school misconduct and negative relationships with teachers (Eccles, Lord, et al., 1991; Eccles et al., 1993; Eccles & Midgley, 1989; Roeser & Eccles, 1998). Based on longitudinal studies, these researchers claim that many of the negative outcomes (e.g., decreases in motivation, declining self-esteem) that predispose adolescents for declines in academic and behavioural functioning in school, result because adolescents' experiences in schools and families do not match their physiological, psychological, and cognitive developmental needs (e.g., Eccles et al., 1993). Moreover, the developmental needs of adolescents that have been suggested from that literature include needs for autonomy in relation to schools and families, and needs for emotionally supportive relationships with parents and teachers. It should be noted, however, that much of the research on developmental stage-environment fit has focused primarily on the developmental needs of early adolescents in family and school contexts and thus has failed to address other important

contexts of adolescents, such as peers.

A second body of research complementary to that of Eccles and her colleagues has drawn attention to the influence of different social developmental contexts on individuals' experiences of autonomy and relatedness in association with learning and development. In a review of the research on autonomy and relatedness in relation to school-related functioning, Ryan and Powelson (1991) put forth the argument that school environments that provide for relatedness and support for autonomy are essential for positive school functioning and psychological well-being. That is, these researchers posit that psychological needs for autonomy and relatedness are important to educational processes (see Ryan & Powelson, 1991 for a review). Ryan, Stiller, and Lynch (1994), for instance, have extended the study of autonomy and relatedness by examining how early adolescents' relationships with parents, teachers, and peers predict school-related functioning and adjustment. Ryan and his colleagues found that early adolescents' "representations of relationships with teachers, parents, and peers have direct significance for adaptive functioning in school and for self-esteem in early adolescence" (Ryan et al., 1994, p. 243). Specifically, Ryan et al.'s research findings indicated that the quality of interpersonal relationships with parents and teachers was associated with educational outcomes and predictive of better school motivation and adjustment, whereas relatedness to friends was associated with greater self-esteem. Moreover, these researchers' findings suggest that relationships with parents, teachers, and peers are differentially related to school-related functioning and self-esteem during early adolescence.

Researchers have recently begun to explore various dimensions of autonomy and

relatedness both within and across multiple social and developmental contexts, such as families, peers, siblings, neighbourhoods, and schools in relation to adolescent functioning (e.g., Barber & Olsen, 1997; Eccles et al., 1997; Isakson & Jarvis, 1998). For example, Eccles et al., (1997) investigated adolescents' experiences of connection, behavioural regulation, and support for autonomy in association with academic performance, feelings of depression, and antisocial behaviour. These researchers found evidence indicating that the varying dimensions of autonomy and relatedness in different social contexts were related to adolescent functioning in important ways. More specifically, experiences of connection, regulation, and autonomy in the family, peer, and school contexts predicted better school performance and fewer problems. Thus, it can be surmised that a research approach that utilizes a multicontextual design is useful for disentangling the manner in which experiences of autonomy and relatedness in different contexts relate to school functioning and psychological adjustment during adolescence. There is, however, a paucity of research to date that has examined all three contexts of adolescents collectively.

Although it is well documented that there are changes in academic and psychological adjustment during early adolescence that occur during periods of transition from elementary (grades K-6) to middle school (grades 7-9) (Eccles et al, 1984; Eccles, Buchanan, Flanagan, Fuligni, Midgley, & Yee, 1991; Eccles et al., 1993; Eccles & Midgley, 1989; Roeser & Eccles, 1998; Simmons & Blyth, 1987), considerable less research has been conducted on school transitions from grade eight to grade nine (e.g., Isakson & Jarvis, 1999), or that has focused on a cross-section of grades in school. Therefore, the present study will not only examine the effects of parent, peer, and school contexts in relation to adolescents'

experiences of autonomy and relatedness, but will target specific grade levels in varying school contexts (i.e., elementary school, high school). This approach will allow for the examination of differences across a wider range of grades and school contexts.

The conceptual framework for the current study integrates both theory and research on individuation and developmental tasks of adolescence that pertain to autonomy (e.g., Blos, 1967; Hill & Holmbeck, 1986; Josselson, 1980; Steinberg, 1990), and relatedness (e.g., Armsden & Greenberg, 1987; Hill & Holmbeck, 1986; Ryan & Powelson, 1991; Ryan et al., 1994) in family, peer, and school contexts (e.g., Barber & Olsen, 1997; Eccles et al., 1997; Goodenow, 1993a, 1993b, 1994; Ryan et al., 1994; Wentzel, 1996). Accordingly, studies that stem from the examination of normal developmental trajectories of adolescent adjustment and school functioning in relation to autonomy and relatedness are of theoretical relevance in the current study. Whereas research has typically emphasized either autonomy or relatedness in a specific context of adolescents, the current study provides the framework for assessing both autonomy and relatedness across a variety of salient contexts in relation to educational and psychological outcomes. Following, I present both theory and research on autonomy and relatedness in each of the contexts around which this study is organized.

Figure 1 illustrates the conceptual framework for this study.

Autonomy and Relatedness in the Parental Context

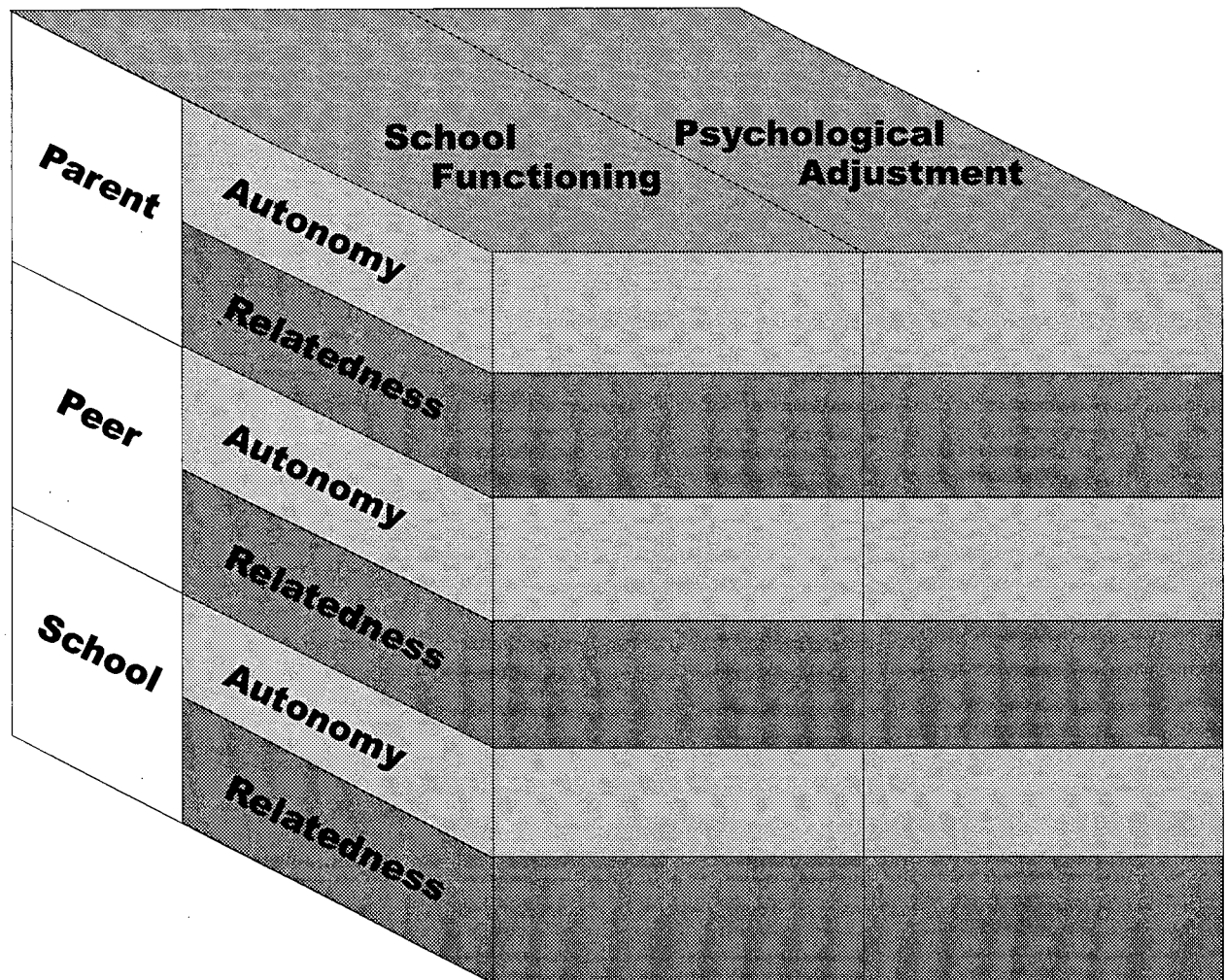
Theoretical background. The development of autonomy is a critical developmental milestone of the teenage years (Collins, Gleason, & Sesma, 1997; Douvan & Adelson, 1966; Hill & Holmbeck, 1986; Silverberg & Gondoli, 1996; Steinberg, 1990). Blos (1967) was one of the first theorists to highlight the importance of the development of autonomy in

Figure Caption

Figure 1. A conceptual framework and purpose of the study.

A Conceptual Framework of the Study¹⁷

To examine the extent to which adolescents' perceptions of autonomy and relatedness in parent, peer, and school contexts are associated with educational and behavioural outcomes.



adolescence. More specifically, he posited that it is during adolescence in which the "second individuation process" occurs. During this process, the adolescent "takes increasing responsibility for what he does and what he is, rather than depositing this responsibility on the shoulders of those under whose influence and tutelage he has grown up" (Blos, 1967, p. 168). Proponents of this perspective assert that growth towards autonomy involves psychological changes in the adolescent's relationships with his or her parents as the adolescent becomes increasingly differentiated from a past or present relational context and begins to see himself or herself as being psychologically separate and distinct from his or her parents (Blos, 1967; Josselson, 1980; Mazor & Enright, 1988).

Theoretically, individuation results from the development of more sophisticated and complex cognitive abilities and represents a push towards independence as adolescents begin to assume more responsibility by taking part in decisions and processes affecting their lives (Blos, 1967). This change occurs, however, in contexts in which adolescents maintain significant attachments and connections with their parents and significant others (Hill & Holmbeck, 1986; Fuligni & Eccles, 1993; Grotevant & Cooper, 1986; Lamborn & Steinberg, 1993; Lapsley, 1990; Quintana & Lapsley, 1990; Ryan & Lynch, 1989; Steinberg, 1990; Steinberg & Silverberg, 1986). Indeed, some researchers assert that adolescents want a balance of independence from and connectedness with their parents (e.g., Fuligni & Eccles, 1993; Geuzaine, et al., 2000; Silverberg & Gondoli, 1996). Thus, within the parental context, although adolescents become more psychologically independent in their relationships with their parents, they do not sever attachments (Hill & Holmbeck, 1986).

Studies relating parental autonomy and relatedness to school functioning and psychological adjustment. A number of studies exist examining autonomy and relatedness in regard to adolescent-parent relationships during early adolescence (e.g., Fuhrman & Holmbeck, 1995; Lamborn & Steinberg, 1993; Papini & Roggman, 1992; Ryan & Lynch, 1989; Steinberg & Silverberg, 1986). Overall, researchers have examined associations between parental autonomy and psychological adjustment and well-being (see Hill, 1993 for a review). For example, Steinberg and Silverberg (1986) examined adolescents' emotional autonomy from parents in a large sample of 865 10 to 16 year olds from grades 5 through 9. Information was obtained from self-reports using the Emotional Autonomy Scale (a measure developed by the researchers) in conjunction with two other measures of autonomy (i.e., resistance to peer pressure and self-reliance). Higher scores on the emotional autonomy scale were indicative of greater autonomy from parents. Their findings indicated that older adolescents were more autonomous from their parents than were younger adolescents. Moreover, girls scored higher than boys on the overall measure of emotional autonomy from parents. Adolescents were then categorized as either high or low in autonomy from parents and peers, based on a median split on scores of emotional autonomy and peer resistance. Findings across the grade levels indicated differences in the number of adolescents who were parent-oriented (low autonomy from parents/high autonomy from peers) in grade 5 to the number of adolescents who were peer-oriented (high autonomy from parents/low autonomy from peers) in grade 9 for both girls and for boys, and thus, suggested a shift from parental to peer relationships as adolescents matured. Specifically, older adolescents were found to be more emotionally autonomous from their parents and less autonomous from their peers

than were adolescents in grade five.

Ryan and Lynch (1989) investigated the relation between emotional autonomy from parents and adolescents' feelings of relatedness to their parents in a sample of youth from grades 7 ($N = 148$), grades 9 through 12 ($N = 193$), and undergraduate levels ($N = 104$). All adolescents completed Steinberg and Silverberg's (1986) measure of emotional autonomy along with measures of parental attachment (Epstein, 1983; Greenberg, 1982). An additional measure of self-concept was used in the older adolescent sample. Ryan and Lynch found that emotional autonomy was negatively associated with the quality of adolescents' attachment to their parents. That is, the investigators found that adolescents who reported high levels of emotional autonomy from parents also reported feeling more insecure and less connected to their parents. In contrast to Steinberg and Silverberg's (1986) findings, early adolescent boys scored higher than girls on emotional autonomy from parents.

Lamborn and Steinberg (1993) found further evidence of the importance of autonomy and relatedness in association with measures of adjustment and academic competence. These researchers hypothesized that greater feelings of emotional autonomy from parents and parental support would predict better adjustment and academic competence. Lamborn and Steinberg's study was undertaken in a large sample of approximately 8,700 adolescents, ranging in age from 14 to 18 years, from grades 9 through 12. Adolescents completed self-report measures of emotional autonomy from parents, parental relationship support, adjustment and competence (e.g., self-esteem, school deviance, peer conformity, drug and alcohol use, antisocial behaviour, depression, academic self-competence, grade-point average). Adolescents were then categorized into four groups based on their scores on

measures of emotional autonomy from parents and relationship support. The researchers found that adolescent boys and girls who scored high on emotional autonomy from parents also reported more behaviour problems in school and internal distress than adolescents who scored low on emotional autonomy. Higher levels of relationship support also predicted fewer behaviour problems and better academic competence. Age and gender differences were found with respect to scores on emotional autonomy and relationship support. Specifically, emotional autonomy from parents increased with age whereas parental relationship support decreased. Girls reported higher levels of emotional autonomy and relationship support with parents than did boys. However, these researchers found that among those adolescents who reported high levels of both emotional autonomy and relationship support, also had higher scores on measures of academic competence, and reported more behaviour problems. Thus, it appears that the balance of autonomy with relationship support may have some beneficial as well as some deleterious effects on adolescent functioning.

Other research findings seem to contradict the deleterious effects of high levels of emotional autonomy from parents on adolescent psychological and academic functioning, and suggest that the relation between autonomy and functioning is mediated by the familial context in which they occur. Fuhrman and Holmbeck (1995), for example, examined relations between emotional autonomy from parents, adjustment (i.e., competence, grade point average, internalizing problems, externalizing problems), and family variables (i.e., parent-adolescent conflict, family cohesion, parental control, maternal warmth) in a sample of 96 adolescents, ranging in age from 10 to 18 years old. These researchers found that high

emotional autonomy from parents was associated with fewer teacher-reported externalizing problems, higher scores of competence and higher school grades in family situations characterized by more adolescent-parent conflict and low maternal warmth. In contrast, higher emotional autonomy from parents was associated with more problem behaviours in less stressful family situations characterized by less conflict and greater maternal warmth. These researchers suggested that greater emotional autonomy may be adaptive because of its association with positive adjustment in less supportive family situations.

Other researchers examining factors associated with competence and well-being have found that maintaining close emotional connections and attachments to others is important for adolescent social and emotional adjustment (Papini, Roggman, & Anderson, 1991; Ryan & Powelson, 1991; Wentzel & Feldman, 1996).

Papini and Roggman (1992), for example, explored relations of attachment to parents to dimensions of competence and emotional well-being in a longitudinal study involving 47 preadolescents. Students in grade six were followed over the transition period from elementary school to grade seven in junior high school. Data were collected at three points in time -- at the end of the sixth grade, at the beginning of seventh grade, and at the end of the seventh grade. The researchers hypothesized that strong parental attachments, operationalized as psychological security, in terms of acceptance, trust, and communication (Armsden & Greenberg, 1987), would be associated with higher levels of self-competence and positive behavioural conduct, and lower levels of depression and anxiety. Students completed self-report questionnaires assessing self-worth (e.g., scholastic competence, behavioural conduct), emotional well-being (e.g., depression, anxiety), and parental

relationships (e.g., attachment, emotional autonomy). Support was found for the hypothesis that competence and well-being would be significant and positively related to higher levels of parental attachment. Moreover, emotional autonomy was found to be significantly and positively related to internalizing problems and significantly and negatively related to parental attachment. Taken together, these findings indicate that adolescents who report higher levels of behavioural and psychological problems also report lower levels of parental attachment. Thus, it appears that during adolescence, better parental attachments are associated with positive behaviours and academic competence. Papini and Roggman's findings are consistent with those of other researchers that suggest that close relationships with parents may help to buffer adolescents from negative behaviours and emotional problems, such as depression and anxiety (Papini et al., 1991; Wentzel & Feldman, 1996).

Additional evidence for the positive relation between parental relatedness and psychological well-being was found in a cross-sectional study of attachment relations conducted by Greenberg, Siegel, and Leitch (1983). Specifically, Greenberg et al. examined the quality of parent and peer attachments in association with self-concept and life satisfaction in a sample of 213 adolescents, ranging in age from 12 to 19 years. The researchers hypothesized that (1) attachments to parents and peers would be positively associated with adolescent well-being, and (2) parental attachments would be a more powerful predictor of well-being than would peer attachments. Adolescents completed questionnaires designed to assess both positive and negative life events, self-concept, life satisfaction, and attachments to parents and peers. The quality of attachment to parents and peers was assessed using the Inventory of Adolescent Attachment (IAA; Greenberg, 1982).

Results revealed that adolescents' attachment to parents was positively and significantly related to well-being (i.e., self-esteem and life satisfaction). Thus, these results indicate that adolescents who perceive their relationships with their parents as positive, also report better adjustment.

Although previous studies examining autonomy and relatedness have focused more often on psychological adjustment outcomes, rather than on school outcomes during adolescence, researchers are now beginning to examine the relation of adolescents' relationships with parents to school functioning. For example, a recent study by Eccles and her colleagues (1997) examined parental relatedness, in terms of experiences of connection and support, in association with school and psychological outcomes. The researchers followed 1,387 seventh grade adolescents over one year and hypothesized that experiences of connection in the family would predict positive school-related functioning and less involvement in problem behaviour. The findings from their study revealed that parent connection (i.e., emotional closeness and support from parents) was positively associated with academic performance and negatively associated with problem behaviour and depressive affect for both girls and boys. These results are consistent with those of Ryan and his colleagues (Ryan et al., 1994) in which relatedness to parents was found to be an important predictor of school functioning and academic engagement in school. Thus, the findings by Eccles et al. (1997) support the hypothesis that relatedness in the parental context is important to adolescent school and psychological functioning, especially during the early adolescent period of development.

Summary. The group of studies reviewed in the preceding section provide some empirical support for the view taken that both autonomy and relatedness play a role in adolescent development as adolescents seek to establish individuality and connectedness in their relationships with parents (Grotevant & Cooper, 1986; Silverberg & Gondoli, 1996). Although emotional autonomy provides adolescents with the opportunity to develop greater separateness and individuality (Blos, 1967; Steinberg, 1990), it also predicts less relatedness and insecurity in adolescent-parental relationships (Frank et al., 1990; Lamborn & Steinberg, 1993; Ryan & Lynch, 1989), and greater susceptibility to peer pressure (Steinberg & Silverberg, 1986). Moreover, when considered in contexts of supportive relationships with parents, high levels of emotional autonomy were found to have positive associations with problem behaviours (e.g., Fuhrman & Holmbeck, 1995; Lamborn & Steinberg, 1993).

Steinberg and Silverberg's (1986) preliminary work examining emotional autonomy from parents during early adolescence demonstrates that significant changes occur in autonomy development in relationships with parents. Their research and subsequent findings have spurred considerable debate over the meaning and function of emotional autonomy in adolescent development. On the one hand, Steinberg and his colleagues (Lamborn & Steinberg, 1993; Steinberg & Silverberg, 1986) posit that adolescents can become emotionally autonomous from their parents without becoming detached from them. They suggest that emotional autonomy represents individuation and relinquishing of childhood conceptions of, and dependencies on parents that are associated with developing a more individuated sense of self. On the other hand, Ryan and Lynch (1989) interpret emotional autonomy to mean detachment or "the loss of developmentally appropriate attachments" (p.

354) because of its association with less positive outcomes in adolescence. However, recent advances in research on the nature of the adolescent developmental period reveal that adolescence is not the widespread tumultuous period that was once described in the literature and that adolescents and their parents have supportive relationships which involve both autonomy and relatedness (Allen & Hauser, 1996; Feldman & Elliot, 1990; Hill, 1993; Hill & Holmbeck, 1986; Offer & Schonert-Reichl, 1992). Overall, considering the important changes that occur in the development of autonomy during adolescence, further examination of the links between emotional autonomy and relatedness in relationships with parents is clearly warranted.

The parental context is an especially important arena in which to study age and gender differences in autonomy and relatedness because of normal developmental changes that occur in adolescent-parental relationships throughout this period (Blos, 1967; Collins, Laursen, et al., 1997; Hill & Holmbeck, 1986; Josselson, 1980). As seen throughout the research in this section, findings have been equivocal with respect to age and gender differences during adolescence. Steinberg and his colleagues (Lamborn & Steinberg, 1993; Steinberg & Silverberg, 1986) found that emotional autonomy increased with age, and girls scored higher than boys on emotional autonomy. In contrast to Steinberg and Silverberg's (1986) findings, Ryan and Lynch (1989) failed to find age differences, and boys in their sample scored higher than girls on emotional autonomy. Moreover, Lamborn and Steinberg (1993) found that emotional autonomy increased with age while parental relatedness decreased during middle adolescence, and girls reported higher relationship support than boys. But, no age and gender differences in relatedness were found among early and middle

adolescent age ranges by Papini and Roggman (1992) or Greenberg et al., (1983). Thus, it is not yet clear whether there are age-related and gender differences that extend across early and middle adolescence with respect to autonomy and relatedness with parents. Such findings indicate that further research is needed to examine gender and age separately in analyses.

In summary, the results from the studies reviewed in this section are important because they shed light on the meaningful connection between autonomy and relatedness in the parental context. The findings add to the growing body of research that takes into account how different contexts uniquely and collectively contribute to adolescent development and predict successful school functioning (e.g., Eccles et al., 1997; Kenny, Lomax, Brabeck, & Fife, 1989; Wentzel, 1998). Studies of autonomy and relatedness in the parental context are best explicated through an examination of the association between these two dimensions of development in relation to adolescents' functioning. It should be noted, however, that few of the previous studies have included comprehensive measures of school-related functioning and adjustment. Indeed, scant research exists that has examined academic correlates directly in association with autonomy and relatedness. Thus, one goal of the present research is to expand the understanding of the associations among autonomy and relatedness, and adolescents' school functioning and adjustment by including a larger corpus of dimensions of school functioning and adjustment than included in previous research.

Autonomy and Relatedness in the Peer Context

Theoretical background. Researchers have documented the importance of the adolescent peer group as a context for development and adjustment (see Brown, 1990 for a

review), and because it provides a "bridge from childhood dependencies to a sense of autonomy and connectedness with the greater social network" (Gavin & Furman, 1989, p. 827). It has been well established that during adolescence, the salience of peer relationships increases, in part, as a result of adolescents' striving for autonomy from parents (Allen et al., 1990; Armsden & Greenberg, 1987; Brown, 1990; Collins, Gleason, et al., 1997; Gavin & Furman, 1989; Hill, 1993). Thus, adolescents' relationships become less centred on their families as the "balance of influence on social development shifts progressively from parents to the peer group" (Hill, 1993, p. 75). Indeed, peer relationships expand to occupy a central role in the lives of adolescents (Brown, 1990; Fuligni & Eccles, 1993; Goodenow, 1993a; Hill, 1993; Shulman, 1993; Steinberg & Silverberg, 1986). For instance, adolescents spend more time in socializing and leisure activities with peers than with parents, and become more dependent on peers for advice and support on personal matters (e.g., Fuligni & Eccles, 1993). Thus, in studies examining changes in parent-adolescent relationships, researchers have also examined the role that peers play in adolescent development (e.g., Blain, Thompson, & Whiffen, 1993; Chen & Dornbusch, 1998; Gavazzi, Anderson, Sabatelli, 1993).

The peer group provides a social context within which adolescents can develop a strong sense of self and explore their individuality as they establish psychological separateness and independence from parents (Allen, Aber, & Leadbeater, 1990; Eccles, Buchanan, et al., 1991; Fuligni & Eccles, 1993; Shulman, 1993). Peer relationships are considered to be fundamental to an individual's social and emotional development throughout childhood and adolescence and influence academic and social functioning in school (Berndt et

al., 1990; Oldenburg & Kerns, 1997; Wentzel & Caldwell, 1997). For example, those individuals who have poor peer relationships in childhood are more likely to exhibit problem behaviours in adolescence (Allen et al., 1990; Gillmore, Hawkins, Day, & Catalano, 1992; Oldenburg & Kerns, 1997; Parker & Asher, 1987; Savin-Williams & Berndt, 1990) and risk academic failure (Allen, Kuperminc, Philliber, & Herre, 1994; Wentzel, 1998).

Consequently, the peer context becomes increasingly important as the adolescent becomes less dependent on parents and more susceptible to the influence of peers (Berndt, 1979; McCord, 1990; Steinberg & Silverberg, 1986).

Some theorists of adolescence suggest that the individuation process repeats itself with peers and that greater psychological differentiation from peers similar to that which occurs with parents, should take place in adolescence (e.g., Josselson, 1989). According to Josselson (1980) adolescents begin to differentiate themselves from their peers and relinquish dependencies on their peers. Moreover, according to individuation theory, peer dependencies that merely replace childhood dependencies on parents may result in unhealthy psychological adjustment and dependencies (Blos, 1967). As can be surmised, less differentiation from peers may indicate failure of individuation and unhealthy adjustment that, in turn, could lead to greater susceptibility to peer pressure. Although some degree of psychological autonomy from peers appears to be necessary, researchers also acknowledge the importance of peer relationships in providing secure and close attachments that partly replace psychological dependence on parents (e.g., Collins, Gleason, et al., 1997).

In recent reviews of the literature on socializing influences in education, researchers have suggested that peers have an influence on adolescents' school-related functioning, in

terms of learning, motivation, and behaviour in school (e.g., Minuchin & Shapiro, 1983; Wentzel, 1991) and contribute to the adolescents' sense of belonging or attachment to school (e.g., Goodenow, 1992). Moreover, researchers have shown that similarities, such as shared interests and common attitudes among friends, can exert pressure and influence behaviour of adolescents in antisocial situations (e.g., Berndt, 1979; Berndt et al., 1990; Brown, Clasen, & Eicher, 1986; Gillmore et al., 1992; McCord, 1990). Indeed, the nature and function of peer relationships have important implications for adolescents' functioning at school.

Studies relating peer autonomy and relatedness to school functioning and psychological adjustment. Findings from studies examining the influence of peers, peer pressure and peer conformity among adolescents have provided empirical evidence demonstrating that peers influence adolescents' school adjustment (e.g., Berndt, 1979; Berndt, 1999; Berndt et al., 1990; Brown et al., 1986). For example, in an experimental study designed to examine the influence of peers on behaviour and achievement during early adolescence, Berndt et al. (1990) examined peer pressure in relation to students' motivation to achieve during early adolescence. These investigators used six hypothetical dilemmas in which students were making choices between either doing their school work or doing other activities that would interfere with that work. In a pretest, eighth grade students ($N = 118$) responded individually to the six hypothetical dilemmas by choosing between two alternatives designed to assess the value they placed on their school work and behaviour in the classroom. Next, in pairs, participants first discussed the same dilemmas from the pretest and then reached a common decision. Following the discussions, students completed a posttest assessing their responses to the same six hypothetical dilemmas. Their responses to

the six dilemmas were rated on an 11-point scale (0 to 10) and averaged, with high scores representing high achievement motivation. In order to examine whether students' motivation to achieve (assessed via students' pretest scores) were associated with their school functioning, classroom teachers provided a rating of participating students' involvement (e.g., how often the student takes part in classroom discussions) and disruptive behaviour (e.g., how often the student disrupts the class by talking out). Teachers' ratings of classroom involvement and disruptive behaviour were significantly correlated with students' scores on the pretest, indicating a positive association between students' academic achievement motivation and their actual behaviour in school.

The results also revealed that students' decisions were most similar to those of their partners' after having discussed the dilemmas in pairs, suggesting that classmates had influenced their choices. Peer influence was also associated with the quality of the interactions with their classmates, indicating that the more harmonious or compatible the discussions were, the greater the changes were in students' own decisions from pretest to posttest. In addition, students' decisions were associated negatively with their involvement in disruptive behaviour in school, thus indicating that better school-based decisions were associated with less disruptive behaviour in the classroom. The results of this study suggest that classmates influence students' academic effort and achievement and this influence can positively or negatively influence behaviours depending on the value the student places on academic work in school.

Using a methodology similar to that of Berndt et al. (1990), Steinberg and Silverberg (1986) examined the influence of peers in a sample of early adolescents in grades five

through nine. In this study, peer autonomy was operationalized as resistance to peer pressure and was assessed using twenty hypothetical dilemmas that have been used previously to evaluate peer pressure in antisocial and neutral situations (Berndt, 1979). Adolescents had to solve the dilemmas by making a choice between two alternatives, one that asked what they should really do if faced with the situation (i.e., autonomous decision making), and one that was suggested by their best friend (i.e., susceptibility to peer pressure). The researchers hypothesized that autonomy from peers would show a curvilinear pattern (i.e., susceptibility to peer pressure, or peer conformity would be higher at early and middle adolescence than during preadolescence or later adolescence). In comparisons made across grades, results indicated that peer conformity was higher among eighth grade adolescents than among adolescents in grade nine and preadolescents in grade five, thus indicating a curvilinear trend. Gender differences were also found in that girls were found to be more autonomous from their peers and more likely to resist their influence, than were boys, especially in antisocial situations.

Whereas some researchers have focused on autonomy in relationships with peers, others have examined the relevance of peer relationships in association with socioemotional functioning and well-being (e.g., Armsden & Greenberg, 1987; Blain et al., 1993; Paterson et al., 1995), and problem behaviour (e.g., Allen et al., 1990; Oldenburg & Kerns, 1997). Researchers examining relatedness to peers in association with characteristics of psychological adjustment have found positive correlations between peer attachments and self-esteem measures, and negative correlations between peer attachments and problems such as depression and anxiety (e.g., Armsden & Greenberg, 1987; Eccles et al., 1997; Greenberg et

al., 1983; Oldenburg & Kerns, 1997).

In a recent study conducted by Oldenburg and Kerns (1997), peer relationships were examined in association with symptoms of depression in a sample of fifth grade ($N = 166$) and eighth grade ($N = 156$) students. Two aspects of peer relationships, namely peer acceptance and friendship quality, were hypothesized to relate to symptoms of depression in girls and boys. Further it was hypothesized that friendship quality would be more salient among early adolescents than among preadolescents. Peer acceptance was assessed using a sociometric rating scale procedure that included both preference and popularity ratings that were summed to form a single score of popularity (Asher & Hymel, 1981). Participants were rated on how much they enjoyed spending time with their classmates (preference), and how much they were liked by their classmates (popularity). In addition, students completed self-report questionnaires assessing friendship quality (Parker & Asher, 1993) and depression (Birleson, 1981; Kovacks, 1981). Results revealed that peer acceptance and depressive symptoms were negatively related, and that peer acceptance was more significant for girls than for boys. Moreover, friendship quality was related negatively to symptoms of depression more strongly among preadolescents than among early adolescents, which was contrary to the hypothesis put forth by the researchers. The relation between popularity and depressive symptoms differed for boys and girls. Popularity was related more to depressive symptoms for girls than for boys in both preadolescence and early adolescence, suggesting that girls placed more importance on peer popularity than boys.

Other studies in which investigators have focused on adolescents with poor personal adjustment have suggested that the lack of positive peer relationships is related to problem

behaviour and involvement with deviant peers, academic failure, and less satisfactory relationships in general (e.g., Dishion, Patterson, Stoolmiller, & Skinner, 1991; Gillmore et al., 1992; Wentzel & Caldwell, 1997). Indeed, researchers have established that greater involvement with peers during adolescence without positive parent-adolescent relations appears to be one of the best predictors of problem behaviours (Dekovic & Meeus, 1997). Given the potential importance of peer relationships for adolescent development, determining the manner in which autonomy and relatedness in relationships with peers relates to adolescent functioning and adjustment in school is an important task for theory and research.

Summary. Overall, the studies reviewed in this section indicate that the peer group is an essential context for positive development and adjustment. Clearly, there is a need to understand the role that peers play in meeting adolescents' developmental needs for autonomy and relatedness. Yet, in the majority of the studies, researchers have utilized samples composed mainly of early adolescents thereby limiting our understanding of peer relationships across other adolescent age levels and developmental contexts.

Although findings from the empirical research reviewed suggest that peers influence adolescents' educational performance and affective states, these studies provide limited information on specific academic competencies and behavioural outcomes associated with school functioning and psychological adjustment across grades and gender with regard to peers. For example, Oldenburg and Kerns (1997) have suggested that stronger effects in the relation between popularity and psychological well-being might have been found in boys if externalizing, rather than internalizing problems had been used as the outcome measure. Therefore in order to learn whether gender and age differences are consistently found across

contexts, outcome measures that are sensitive to detecting adjustment problems (externalizing and internalizing problems, for example) in boys and girls should be included in studies. To address this issue, in the present study, I used a measure of psychological adjustment that assessed both dimensions of externalizing and internalizing problem behaviours.

Previous research has shown that both peer involvement and conformity increase from childhood through middle adolescence (Brown et al., 1986; Collins, Gleason, et al., 1997). More specifically, the eighth and ninth grades are thought to represent the "developmental zenith of conformity to peer pressure" (Steinberg & Silverberg, 1986, p. 848). Measures used in studies of peer conformity have assessed autonomy in relationships with peers using self-reports of low levels of conformity to peers to indicate greater autonomy from peers (Kuperminc, Allen, & Arthur, 1996). Nevertheless, individuation theory, which is characterized by both autonomy and relatedness, holds that the adolescent should begin to assume greater emotional separateness in their relationships with their peers for healthy psychological development (Josselson, 1980). Surprisingly, little research has specifically been directed toward examining autonomy in relationships with peers in terms of differentiation from peers. For this reason, in the present study, peer autonomy was examined by utilizing a measure of emotional autonomy which reflected the idea of individuation and an individual's perception of him or herself as being distinct and separate from peers.

Autonomy and Relatedness in the School Context

Theoretical background. Researchers examining school autonomy and belonging suggest that autonomy and relatedness are significant predictors of school functioning and

adjustment (e.g., Adelman et al., 1986; Cotterell, 1992; Eccles & Midgley, 1989; Eccles et al., 1993, 1997; Goodenow, 1993a, 1993b, 1994; Ryan & Powelson, 1991; Ryan et al., 1994). Theorists acknowledge that students' perceptions of support and feelings of relatedness, as well as students' beliefs about how much control they feel they have in school, are two dimensions of school experiences that influence academic functioning and social behaviour in the classroom (e.g., Goodenow, 1993a, 1993b, 1994; Kasen et al., 1990; Wentzel, 1994, 1996, 1997). Moreover, a number of researchers have suggested that problem behaviour in the classroom often arises from unmet needs for autonomy and control (Glasser, 1986; Kohn, 1993; Taylor & Adelman, 1990).

Studies of children's socialization processes in the classroom are particularly relevant to understanding how relatedness to teachers and peers at school are associated with students' academic and behavioural competence (e.g., Goodenow, 1994; Wentzel, 1994; 1997). Specifically, students are more likely to engage in classroom learning and behave responsibly if they feel supported and valued by both teachers and peers. Indeed, research suggests that a sense of belonging and school membership contributes to motivation and academic engagement in school (e.g., Eccles et al., 1993; Goodenow, 1993a, 1993b, 1994; Roeser et al. 1996; Wentzel, 1998; Wentzel & Caldwell, 1997).

Although several studies exist that have examined relatedness in association with academic achievement and social behaviour in early adolescence, few studies have examined students' experiences of autonomy and relatedness together in association with school functioning and adjustment across other developmental periods. Needs for autonomy and relatedness have been identified as important dimensions of development because they affect

general well-being as well as behaviour and academic achievement (Kuperminc et al., 1996; Ryan & Powelson, 1991). Thus, in the school context, autonomy and relatedness have been regarded by researchers as being critical components of school experiences because of their links to learning and social adjustment outcomes.

Studies relating autonomy and relatedness to school functioning and psychological adjustment. One of the earliest studies that examined autonomy in relation to school functioning was conducted by Smith et al. (1987). In this study Smith and his colleagues conceptualized school autonomy as perceived control at school, that is, students' beliefs about how much influence they have in school-related situations (e.g., being included in decision making with regard to learning activities and classroom rules). These investigators hypothesized that students' perceptions of control at school would be associated positively with attitudes, affect, and behaviour. It was further hypothesized that lower levels of perceived control at school would be found among students experiencing problems in school, especially among students in public school special education resource room programs.

The study involved three samples drawn from both regular and special education populations. The total sample included 188 students, ranging in ages from 9 to 19 years, from one public school regular education program ($N = 80$), one public school special education resource room program ($N = 57$), and one university experimental special education laboratory program ($N = 51$) designed to enhance students' perceptions of control at school. Students completed self-report measures of perceived control at school (PCSS; Adelman et al. 1986), and several items pertaining to attitudes and feelings toward school (e.g., how he or she feels about wanting to go to school) and items relating to life

satisfaction and happiness (e.g., how satisfied he or she feels about life in general, and how happy he or she usually feels). Teachers completed ratings of students' behaviour at school.

The results from the study showed that, within the regular education sample, higher perceived control at school was related positively to both teachers' ratings of appropriate behaviour and students' self-reports of positive adjustment or well-being (e.g., attitudes toward school, life satisfaction, happiness). Furthermore, the results indicated that, within the public school special education resource sample, low perceived control at school was associated with less positive behaviours and attitudes in school. The laboratory special education sample reported higher perceptions of control and more positive attitudes toward school than did either of the other two samples. In addition, the results did not reveal any significant gender or age differences in the total sample across groups of students ranging in age from 9 to 12 years ($N = 73$), 13 to 15 years ($N = 71$), and 16 to 19 years ($N = 44$). In general, however, younger students tended to have lower perceived control scores than older students. Overall, the results confirmed the hypothesis that lower levels of perceived control at school would be associated with less positive adjustment among students who experienced problems in learning and behaviour at school.

Additional empirical evidence regarding the role of autonomy in school can be found in the research conducted by Eccles and her colleagues on the developmental stage-environment fit model, as discussed earlier in this chapter (e.g., Eccles et al., 1993; Eccles, Buchanan, et al., 1991; Eccles et al., 1984; Eccles & Midgley, 1989 for reviews). Moreover, according to Eccles, Lord, et al. (1991), "in person-environment fit theory, behaviour, motivation, and mental health are influenced by the fit between the characteristics

individuals bring to their social environments and the characteristics of these social environments" (p. 523). Adolescents' developing need for autonomy has been identified by Eccles and her colleagues as one example in which the school environment, through its teaching practices, produces a mismatch. Eccles et al. (1984) have argued that the declines in motivation, school grades, and school-related behaviour are a result of the mismatch between the developmental needs of early adolescents and the opportunities afforded them in their school environments. For example, in comparison to elementary grades, adolescents in middle school and high school classrooms perceive there are fewer opportunities to participate in decision making, choice, and self-management in the classroom (Eccles, et al., 1984). Person-environment fit theory suggests that "when the needs or goals of the individual are congruent with the opportunities afforded by the environment, favourable effective, cognitive, and behavioral outcomes should result for that individual; conversely, when a discrepancy exists between the needs of the individual and opportunities available in that individual's environment, unfavourable outcomes should result" (Midgley & Feldlaufer, 1987, p. 237).

Midgley and Feldlaufer (1987) investigated students' decision making opportunities before and after the transition from sixth grade elementary classrooms to seventh grade middle school classrooms in a longitudinal study involving 2210 early adolescents. The researchers compared students' and teachers' actual and preferred responses to five pairs of items measuring opportunities for classroom input from students concerning where to sit, amount of homework, what classwork to do, classroom rules, and what to do when work is completed. The findings showed that, although students expressed a desire for more decision

making in the seventh grade, both students and teachers reported that students experienced less decision making opportunities in the seventh grade than in the sixth grade. Thus, the study's findings indicated that older students perceived they had fewer opportunities for making classroom decisions after the transition.

A number of recent studies on relatedness in school provide empirical support for the important role that belonging and support play in adolescents' school functioning and psychological adjustment (e.g., Goodenow, 1993a, 1993b, 1994; Wentzel, 1994, 1997). In one study, Goodenow (1993a) examined early adolescents' sense of belonging and support in school in relation to achievement, motivation, and effort. Goodenow hypothesized that belonging would be positively associated with motivation, and influence students' effort and achievement in the classroom. A sample of 353 students in grades 6, 7, and 8 completed self-reports assessing classroom belonging and support (using the Classroom Belonging and Support Scale; Goodenow, 1993a), and motivation (using the Student Opinion Questionnaire; Pintrich & DeGroot, 1990). Teachers completed effort and achievement ratings for each student. Goodenow (1993a) found that teacher support was positively related to students' motivation and effort, especially for girls. More specifically, girls placed greater importance on feelings of belonging in school than did boys. The correlational results of the study also showed that the strength of the associations between motivation and belonging/support dropped significantly from sixth to eighth grade. Overall, these results suggest the importance of classroom belonging/support (i.e., relatedness) to academic motivation, effort and achievement among early adolescents.

Wentzel (1994) examined the relation between perceived support from teachers and

peers and early adolescents' social adjustment in a sample of 475 middle school students.

Wentzel hypothesized that the degree to which students felt connected to the social life of the classroom, operationalized in terms of students' perceptions of support from teachers and peers, would be critical factors that motivated students to pursue socially responsible behaviour. In this study, teachers rated students' prosocial and responsible classroom behaviour (helping other students learn, being considerate of others in class) and students' responsible/irresponsible classroom behaviour (rule compliance, acting out behaviours). The items used to assess perceived support from teachers and peers reflected notions of belonging and relatedness (e.g., concern and caring from teachers and peers) and were taken from the Classroom Life Measure (Johnson, Johnson, Buckman, & Richards, 1985). Wentzel found that teacher support was a significant and positive predictor of responsible behaviour or social adjustment. Social and academic support from teachers and peers were related significantly and positively to prosocial behaviour.

Subsequent research conducted by Wentzel (1997) demonstrates the importance of students' relationships with teachers in predicting academic achievement motivation and classroom behaviour. Specifically, in a longitudinal study of eighth grade students, Wentzel examined students' perceptions of teacher caring (social and academic support from teachers) in relation to students' psychological distress, academic effort, and social behaviour.

Wentzel hypothesized that psychological variables might "explain links between perceived support from teachers and students' effort and engagement in the classroom" (p. 412).

Adolescents completed survey measures that assessed teacher caring/support (Johnson et al., 1985), psychological distress, control beliefs, several items assessing prosocial behaviour,

social responsibility, irresponsible behaviour, and academic effort. A composite psychological distress score was computed based on 12 items that assessed anxiety, depression, low self-esteem, and low well-being (Weinberger, Feldman, Ford, & Chastain, 1987). End of year grades provided a measure of academic achievement. Results indicated that psychological distress was related significantly and negatively to perceived teacher caring, responsible classroom behaviour and compliance, and student's academic effort.

Results of this study showed that teacher caring was a significant predictor of behavioural competence (prosocial behaviour and social responsibility scores) and students' academic effort ("try" and "pay attention" scores). Moreover, gender analyses indicated that girls, more than boys, had significantly higher scores on teacher caring, distress, prosocial behaviour and social responsibility. The findings confirmed the study's hypothesis, that better psychological adjustment, indicated by lower scores on the items of distress, would be related positively to teacher caring, responsible classroom behaviour and academic effort. The results of Wentzel's (1994, 1997) studies suggest that a sense of relatedness or belonging is strongly associated with involvement in prosocial and responsible behaviour and may foster positive social and academic outcomes for adolescents.

In one of the few studies examining relatedness in relationships with parents, peers, and teachers in the school context, Ryan and colleagues (1994) investigated associations between relationship perceptions and school-related functioning and adjustment in a study involving 606 middle school students in grades seven and eight. Relatedness was examined using self-report measures assessing adolescents' perceptions of emotional security and utilization of support in relationships with teachers, parents, and peers on the Inventory of

Adolescent Attachment (IAA; Greenberg, 1982), school utilization (e.g., sharing problems at school with others), and emulation of others (e.g., identification with parents, teachers, and peers as role models). School functioning was assessed using measures of students' school-related competencies (such as coping with academic failure, reasons for engaging in school tasks, motivational orientation, and perceptions of control over outcomes and grades). A global self-esteem measure, the Multidimensional Self-Esteem Inventory (O'Brien & Epstein, 1988) was used to assess adjustment.

Ryan and his colleagues found that those adolescents who reported high levels of security and utilization of teachers and parents for emotional and school concerns also reported more positive attitudes and motivation in school. Relatedness to friends was associated more with self-esteem than with school-related outcomes. The findings showed that girls, more than boys, reported feeling secure in their relationships with teachers, and emulated teachers and friends. In contrast, boys scored lower than girls on emotional connections to school, and friends, and were more likely to report that they utilized no one for emotional and school concerns. Emulation of teachers and parents was found to be positively related to school adjustment and motivation whereas emulation of friends was negatively related to school outcomes. Analyses of grade differences indicated that utilization of support from others increased across the grades, with older adolescents more likely than younger adolescents reporting turning to teachers and friends for help with school and emotional concerns.

The results of this study suggest that emotional security and utilization of others positively contributes to adolescent school functioning and self-esteem, thus indicating the

importance of attachments relationships with others in facilitating successful outcomes at school.

Summary. The studies reviewed in this section provide empirical support for the notion that both autonomy and relatedness are necessary for successful outcomes in educational contexts. Researchers have established that adolescents' experiences of autonomy and relatedness are critical components of school functioning. Studies have consistently shown that as adolescents enter middle and secondary school environments they are afforded fewer opportunities for autonomy than children in elementary school environments (e.g., Eccles, Lord, et al., 1991; Eccles & Midgley, 1989; Eccles et al., 1984, 1993). As a consequence, decreases in motivation along with corresponding increases in problematic behaviours result because students feel they do not have much choice or control over school processes that affect them.

Smith et al.'s (1987) study of perceptions of control advances the theoretical argument that perceptions of control at school are important for explaining school and adjustment problems. Nevertheless, one problem with their study that may have affected the results that were presented earlier, was that gross age and gender comparisons were made between groups that were disproportionate in the ratio of boys to girls. Specifically, there were twice as many boys as there were girls in the regular education sample, twice as many girls than boys in the public school special education resource sample, and almost four times as many boys as there were girls in the laboratory school sample. The unequal proportions of boys and girls across samples raises the question as to whether the results were more representative of gender differences than of students experiencing problems in learning and

behaviour.

Because research suggests that needs for autonomy become increasingly important and change as children enter adolescence (e.g., Savin-Williams & Small, 1986; Steinberg & Silverberg, 1986), there is a need for research that examines autonomy development across the adolescent time period. The studies of autonomy and relatedness reviewed in this section have focused primarily on early adolescent populations and thus have failed to embrace a wider sample of high school students and developmental contexts. Examining autonomy and relatedness across a wider span of age ranges during middle, as well as early adolescence, would extend the research by providing a comprehensive picture of these two dimensions.

Researchers have found that many problems occur for adolescents as they make the transition from elementary to middle school, especially in terms of school performance and their relationships with teachers (Eccles & Midgley, 1989). Because teachers play an important role in facilitating school-relevant outcomes when they provide secure and supportive relationships in early adolescence (Ryan et al., 1994) the question that remains is what role teachers have regarding social development and school functioning during middle adolescence.

Goodenow's (1993a, 1993b, 1994) studies on school belonging suggest "the possibility that a psychological sense of membership in school may affect school behaviour and academic achievement indirectly through its influence on motivation" (Goodenow, 1993b, p. 87). Although Goodenow did evaluate behavioural aspects of school functioning (e.g., students' absences, tardiness) in relation to school belonging among a sample of early adolescents, her examination of school belonging and membership focused on academic-

related outcomes rather than on adjustment outcomes (Goodenow, 1993a, 1993b, 1994). In the present investigation, I attempted to supplement our understanding of autonomy and relatedness at school by assessing the relations between school belonging and student outcomes and examining these dimensions in relation to a more comprehensive range of behaviours than was investigated in previous research. Specifically, I examined the relations of autonomy and relatedness and adolescent outcomes including school-related functioning (i.e., competencies, grades), and psychological adjustment (i.e., internalizing and externalizing problem behaviours) across grade levels and contexts.

For adolescents in high school, the whole school, rather than a particular classroom becomes the social context (Minuchin & Shapiro, 1983). In particular, Minuchin and Shapiro have noted the importance of examining age/grade groupings when examining the link between development and psychological and school adjustment. For example, schools represent "different social contexts at preschool, elementary, and secondary levels. They are organized differently, children perceive them differently, and different aspects of social behavior are expressed in school as a function of children's changing capacities and needs" (Minuchin & Shapiro, 1983, p. 199). That is, the school environment represents social contexts that change across elementary and secondary grades that reflect developmental changes adolescents experience at these different grade levels. In this regard, within the school context, microcontexts that are age/grade specific should be considered in research efforts that span multiple contexts. Previous research has been limited because of its focus on a specific academic class in school rather than the school in general. Thus, in the present investigation students were asked to respond to their experiences of autonomy and relatedness

in school, in a generalized manner.

In summary, research examining the degree to which students' perceptions of autonomy and relatedness are associated with school functioning have critical implications for education. Indeed, research that attempts to disentangle the complex relations between adolescents and their school and behavioural functioning will help clarify the role of autonomy and relatedness in the school context. Increased knowledge of autonomy and relatedness in relation to school functioning and psychological adjustment during adolescence may provide important information necessary for the design and implementation of successful intervention programs at school.

Statement of the Problem

Several researchers (e.g., Barber & Olsen, 1997; Chen & Dornbusch, 1998; Eccles & Midgley, 1989; Ryan & Powelson, 1991) contend that autonomy and relatedness needs play a meaningful role both in adolescent psychosocial development and academic achievement. For example, failure to establish autonomy and relatedness in the family has been linked to problem behaviours during adolescence (Allen, Hauser, Eickholt, Bell, & O'Connor, 1994; Allen, Moore, Kuperminc, & Bell, 1998). Although the importance of experiences of autonomy and relatedness to children's and adolescents' adjustment has been supported by research in the family, we know very little about these experiences on adolescents' functioning in other contexts, such as with peers and at school during the adolescent years (Allen & Hauser, 1996; Armsden & Greenberg, 1987; Conger et al., 1997; Frank et al., 1990; Fuhrman & Holmbeck 1995; O'Brien, 1989). Until recently, most researchers have focused their attention on examining children's and adolescents' experiences of autonomy and

relatedness in the family and have overlooked other important social developmental contexts, such as peer groups and school.

Many motivation theorists, for instance, believe that problem behaviours at school (e.g., noncompliance, learned helplessness, school failure) may be reflective of adolescents' attempts to demonstrate their independence from parental and/or societal norms to achieve a sense of personal control at school (e.g., Adelman & Taylor, 1990; Glasser, 1986; Murtaugh & Zetlin, 1990; Taylor & Adelman, 1990; Taylor, Adelman, Nelson, Smith, & Phares, 1989). Other research suggests that adolescents are more likely to be successful in school and act responsibly if they feel supported in their learning and perceive teachers and peers are concerned about them (e.g., Goodenow, 1994; Wentzel, 1994; 1997). Moreover, much research exists linking academic and social difficulties with poor parental and peer relationships (e.g., Allen et al., 1998; Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Brier, 1995; Parker & Asher, 1987). In this regard, studies should be directed to better understanding the role that autonomy and relatedness play in adolescents' school functioning and psychological adjustment when one considers the detrimental consequences that problems in these areas have for the adolescent. The present investigation was directed toward that understanding.

The purpose of the present research is to investigate two critical dimensions of adolescent development -- autonomy and relatedness -- in relation to school functioning and psychological adjustment. This study will extend previous research examining autonomy and relatedness in families by including both peer and school contexts as well. Few investigators have either (a) studied these dimensions of adolescent development together across multiple

contexts, or (b) examined the interrelations of autonomy and relatedness in association with adolescent adjustment. Specifically the objective of the present study is to determine whether adolescents' perceptions of their experiences of autonomy and relatedness in parent, peer, and school contexts are associated with school functioning and psychological adjustment.

Hypotheses

Three sets of hypotheses have been developed to guide the present investigation. The first set of four hypotheses examines gender and grade differences in adolescents' perceptions of autonomy and relatedness in parent, peer, and school contexts. The second set of six hypotheses explores relations among autonomy, relatedness, school functioning, and psychological adjustment across contexts of parents, peers, and school. The third set of two hypotheses explores relations of autonomy and relatedness simultaneously as predictors of school functioning and psychological adjustment across contexts of parents, peers, and school. The hypotheses are numbered one through twelve.

Gender and grade differences in adolescents' perceptions of autonomy and relatedness. Gender and grade level are important factors to be considered in relation to the developmental changes that occur as children move through adolescence (Conger et al., 1997; Eccles & Midgley, 1989; Eccles et al., 1993; Hill & Holmbeck, 1986; Josselson, 1980). The parental context is an especially important context in which to study age and gender differences because of normal developmental changes that occur in adolescent-parental relationships throughout this period (Blos, 1967; Collins, Laursen, et al., 1997; Douvan & Adelson, 1966; Hill & Holmbeck, 1986). Moreover, the upper elementary and lower high school years are times in which peer pressure and conformity to peers increases (Berndt,

1979; Brown, 1990; Steinberg & Silverberg, 1986) and the peer group becomes an increasingly important context for adolescents as they "rely more heavily than before on friendships and non-kin relationships for support and development" (Goodenow, 1993b, p.81). While girls at this age tend to place much more emphasis on peer attachments and relationships than boys, they are also at more at risk for depression and self-esteem problems (Armsden & Greenberg, 1987; Blain et al., 1993; Oldenburg & Kerns, 1997). We know, for example, that the transition period from elementary to middle and secondary school is an especially problematic time for early adolescents in terms of a developmental stage-environment mismatch (Eccles et al., 1984; Eccles & Midgley, 1989; Eccles et al., 1993; Goodenow, 1993b; Midgley & Feldlaufer, 1987). The school environment is also an important context in which boys and girls receive gender-related messages that will distinguish them and affect their self-conceptions and behaviour (Minuchin & Shapiro, 1983). When taken together, these research findings suggest that adolescents' experiences of autonomy and relatedness in relationships with parents, peers, and at school will vary by gender and grade.

In this study, four hypotheses regarding gender and grade differences have been developed based on findings suggested from previous research, as well as theoretical expectations. There are two hypotheses regarding gender (Hypotheses 1 and 2) and two hypotheses regarding grade (Hypotheses 3 and 4).

Hypothesis 1. The first hypothesis is that when compared to boys, girls will report higher levels of peer autonomy. This gender difference is expected given that previous research on peer conformity has indicated that girls are more autonomous from their peers

than boys and less susceptible to peer influences (e.g., Berndt, 1979; Brown et al., 1986; Steinberg & Silverberg, 1986).

Hypothesis 2. The second hypothesis is that when compared to boys, girls will have higher levels of parental attachment, peer attachment, and school belonging. Theory and research findings have suggested that girls place much more emphasis on feelings of belonging and attachment in their relationships with parents, peers, and at school than do boys (e.g., Douvan & Adelson, 1966; Eccles et al., 1997; Goodenow, 1993a, 1993b; Oldenburg & Kerns 1997; Ryan et al., 1994; Stern, 1990).

Hypothesis 3. The third hypothesis is that the level of school autonomy will show a decrease from grade eight to grade eleven. Previous research has shown that adolescents perceive less teacher support for student autonomy and decreases in opportunities for decision making and choice as they move from middle school to junior high school (e.g., Eccles et al., 1984, 1993; Eccles & Midgley, 1989) and into secondary school (e.g., Willower, Eidell, & Hoy, 1973) that are a result of grade-related changes associated with school learning environments, school structure (McNeil, 1986) or teacher control beliefs (e.g., Midgley, Feldlaufer, & Eccles, 1988; Willower et al., 1973).

Hypothesis 4. The fourth hypothesis is that (a) adolescents in grade 11 will show higher levels of parental autonomy and peer autonomy, and (b) lower levels of parental attachment and peer attachment than adolescents in grade eight or grade nine. Previous researchers have found that emotional autonomy from parents increases with age whereas relatedness to parents decreases (e.g., Blain et al., 1993; Collins, Gleason, et al., 1997; Lamborn & Steinberg, 1993; Papini et al., 1991; Steinberg & Silverberg, 1986). Moreover,

research examining peer groups suggests that peer conformity is higher in early adolescence than in preadolescence and late adolescence (e.g., Brown et al, 1986; Gavin & Furman, 1989; Steinberg, 1988; Steinberg & Silverberg, 1986), and there are declines in peer social support as a result of grade-related changes and changes in parent-adolescent relationships during this time (e.g., Berndt, 1989; Collins, Gleason, et al., 1997).

Relations of autonomy and relatedness to school functioning and psychological adjustment. The second set of six hypotheses concerns the examination of relations of autonomy and relatedness to school functioning and psychological adjustment, across contexts of parents, peers, and school. In this study, six hypotheses have been developed based on findings suggested from previous research, as well as theoretical expectations. There are two hypotheses regarding school functioning (Hypothesis 5 and 6) and four hypotheses regarding psychological adjustment (Hypotheses 7 to 10).

Hypothesis 5. The fifth hypothesis is that school autonomy will be positively associated with school functioning. This hypothesis is based on research findings indicating the importance of school autonomy to motivation and engagement in school (e.g., Eccles et al., 1993; Kasen et al., 1990) and recent research findings indicating positive associations between student autonomy and school-related functioning (i.e., school grades, academic motivation) (e.g., Roeser & Eccles, 1998).

Hypothesis 6. The sixth hypothesis is that parental attachment, peer attachment, and school belonging will be positively associated with school functioning. Previous empirical research suggests that having positive parental and peer relationships are important to adolescents' school performance and well-being (e.g., Armsden & Greenberg, 1987;

Greenberg et al., 1983; Oldenburg & Kerns, 1997; Ryan et al., 1994). Research findings on school belonging have shown positive associations among school belonging, academic functioning, and appropriate behaviour (Goodenow, 1993a, 1993b, 1994).

Hypothesis 7. The seventh hypothesis is that parental autonomy will be positively associated with problems in psychological adjustment. This hypothesis is based in part on research findings indicating positive associations between problems of adjustment and emotional autonomy from parents (e.g., Fuhrman & Holmbeck, 1995; Greenberg et al., 1983; Lamborn & Steinberg, 1993; Ryan & Lynch, 1989; Turner et al., 1993) and partly on theory and research suggesting that adjustment problems are linked to insecure attachments and less differentiation and autonomy promoting behaviours in relationships with parents (e.g., see Allen et al., 1990 for a review; Allen & Hauser, 1996; Allen, Hauser, et al., 1997).

Hypothesis 8. The eighth hypothesis is that peer autonomy will be associated negatively with problems in psychological adjustment. Theory suggests that greater autonomy in relationships with peers should be associated with fewer psychological problems (e.g., Josselson, 1980).

Hypothesis 9. The ninth hypothesis is that school autonomy will be associated negatively with problems in psychological adjustment. This hypothesis is based in part on the research findings of Smith et al. (1987) indicating negative associations between perceptions of control at school and behaviour problems and in part on research findings suggesting the importance of autonomy and decision-making opportunities to motivation and engagement in school (e.g., Eccles et al., 1993; Kasen et al., 1990).

Hypothesis 10. The tenth hypothesis is that parental attachment, peer attachment, and school belonging will be associated negatively with problems in psychological adjustment. Research and theory suggest that the quality of attachments to parents, peers, and school are important for emotional well-being and adjustment (e.g., Armsden & Greenberg, 1987; Greenberg et al., 1983; Ryan & Powelson, 1991) and to motivation and engagement in school (e.g., Goodenow, 1993b; 1994). Research findings have shown negative associations between the quality of attachments to family, peers, and school with problem behaviours (e.g., depression, antisocial behaviours) (e.g., Barber & Olsen, 1997; Eccles et al., 1997; Oldenburg & Kerns, 1997). Other research findings suggest that the lack of positive peer relationships during adolescence is related to increases in peer conformity, involvement with peers in antisocial activities, and school failure (Dishion et al., 1991; Wentzel & Caldwell, 1997) each of which have important implications for adolescents' functioning at school (Allen & Kuperminc, et al., 1994; Berndt et al., 1990; Gillmore et al., 1992; Savin-Williams & Berndt, 1990; Wentzel, 1998).

Autonomy and relatedness in contexts of parents, peers, and school, as predictors of school functioning and psychological adjustment. The final set of two hypotheses further explores the relations of autonomy (i.e., parental autonomy, peer autonomy, school autonomy) and relatedness (i.e., parental attachment, peer attachment, school belonging) variables as predictors of school functioning and psychological adjustment. One hypothesis examines the extent to which the autonomy and relatedness variables explain variance in school functioning (Hypothesis 11). The second hypothesis examines the extent to which the autonomy and relatedness variables explain variance in problems in psychological adjustment (Hypothesis 12).

Hypothesis 11. The eleventh hypothesis is that teacher-rated school competencies and academic achievement (i.e., GPA) will each be positively associated with autonomy and relatedness in parent, peer, and school contexts. Thus, adolescents who perform better in school, in terms of these two dimensions of school functioning, would perceive themselves to be more autonomous in their relationships with their parents and peers, and at school, and also perceive themselves to be more attached to their parents, peers, and school.

Hypothesis 12. The twelfth hypothesis is that self-reported internalizing and externalizing problems will each be (a) associated positively with parental autonomy, and associated negatively with peer autonomy and school autonomy, and (b) associated negatively with parental attachment, peer attachment, and school belonging. Thus, those adolescents who experience more problems would report greater autonomy in relationships with parents, and report less peer autonomy and school autonomy, and poorer quality of attachments to parents, peers and school.

The last two hypotheses are based on research findings indicating positive associations between problems of adjustment and emotional autonomy from parents (e.g., Lamborn & Steinberg, 1993); on findings suggesting that students who do not have supportive relationships with parents, teachers, and peers, or do not feel a sense of belonging in school are often at risk for academic and adjustment problems (e.g., Goodenow, 1993a, 1993b; Roeser et al., 1996; Wentzel, 1998); and on theory suggesting that meeting needs for autonomy and relatedness are fundamental to successful school functioning and adjustment in adolescence (e.g., Collins, Gleason, et al., 1997; Hill & Holmbeck, 1986; Ryan & Powelson, 1991).

CHAPTER THREE

Method

Participants

Participants for this study were 478 adolescents ($n = 213$ boys, $n = 265$ girls) who were enrolled in grades eight ($n = 170$), nine ($n = 167$), and 11 ($n = 141$). These adolescents were drawn from 27 classrooms and were attending one of seven schools in a publicly funded Catholic school district in a large Canadian city in Southwestern Ontario. It is important to note that in this school district, approximately one-third of the student population is not Catholic. In Ontario, both Catholic and Public schools follow a standardized provincial curriculum, except that Catholic schools offer a religious education course as a required course. Parental consent was obtained for 500 students (78% of the students in grades eight, nine, and eleven). Of those students, incomplete questionnaires were obtained from 22 students. Data from these participants were excluded from the analyses. There were no students who participated whose primary placement was in a full-time special education program, or who did not speak or read English.

Ages of the participants ranged from 13 to 18 years old ($M = 14.71$, $SD = 1.32$). The age categories employed in this study, representing early adolescence (ages 12 to 14 years) and middle adolescence (ages 15 to 17 years) are meaningful categories, both theoretically and empirically, that have been established in the literature and used by others in research on adolescence (e.g., Gavin & Furman, 1989; Schonert-Reichl, 1994; Steinberg, 1993; Wintre & Crowley, 1994). The early and middle adolescent age ranges were chosen for the present investigation because this time in the life span has been identified as a critical

period for individuation and autonomy development, and social development with parents and with friends, and at school (Blos, 1962, 1967; Collins, Gleason, et al., 1997; Grotevant & Cooper, 1986; Hill & Holmbeck, 1986; Josselson, 1980; Minuchin & Shapiro, 1983; Silverberg & Gondoli, 1996), and thus would provide the most opportunity for revealing cross-sectional data within a developmental framework.

Grade 8 elementary school students ($M = 13.48$ years old, $SD = 0.50$) were recruited from regular education academic subject classrooms. The grade eight sample was a homogenous (not tracked by ability) population. Adolescents at this grade level represented the pretransition early adolescent. The ninth grade represents the transition year from elementary to secondary school. High school students in Grade 9 ($M = 14.47$ years old, $SD = 0.50$) and Grade 11 ($M = 16.48$ years old, $SD = 0.53$) were recruited from religious education classrooms in which students were not tracked by ability. Religious education is a required course for all students attending Catholic schools within the district. The high school students were recruited from all students enrolled in grade nine and grade eleven religious education classes in the second semester and therefore provided a representative sample of all adolescents enrolled in the school. Although students were otherwise tracked by ability for other subject classes, the student sample represented a homogeneous (not tracked by ability) population.

Students in grade nine were selected to participate because those adolescents are believed to be in "greater transition with respect to both personal characteristics associated with adolescent development and interpersonal characteristics dealing with normative social behaviour in this developmental period" (Ford, 1982, p. 337). Students in grade eleven were

selected to participate because at this grade level, older adolescents experiencing academic difficulties at school would likely be attending classes although they may be at risk for leaving school, and/or being considered for alternative educational programs. Students from grades eight, nine and eleven were chosen because these grade levels represented different age groupings and social contexts that reflected developmental changes adolescents experience in school (Minuchin & Shapiro, 1983).

According to adolescents' reports of parents' occupations, the mean socioeconomic status (SES) of fathers and mothers, based on the Blishen, Carroll, and Moore (1987) socioeconomic index for occupations in Canada, was 44.64 ($SD = 12.87$) and 41.98 ($SD = 14.00$) respectively. Scores ranged from 21 to 101, indicating the full range of social classes was represented. Some examples of occupations from this index are labourer in manufacturing industry (28.97), motor vehicle mechanics and repairers (39.19), secretary (41.82), dental lab technician (45.15), and civil engineer (71.70). The ethnicity of the participants was 65.3% White ($n = 312$), 10.7% Black ($n = 51$), 10% Asian ($n = 48$), 4.2% East Indian ($n = 20$), 3.1% Hispanic ($n = 15$), and 6.7% Other (e.g., mixed ethnicity; $n = 32$). To obtain information regarding family composition, participants were asked to indicate to whom they were referring when completing the questionnaire items about parents. Eighty-one percent of the participants referred to both parents, 11% referred to mothers only, 1% referred to fathers only, 5% referred to mother and stepfather or father and stepmother, and 2% referred to other adults (e.g., grandparents, relative, foster parents).

Measures of Autonomy, Relatedness, and Psychological Adjustment

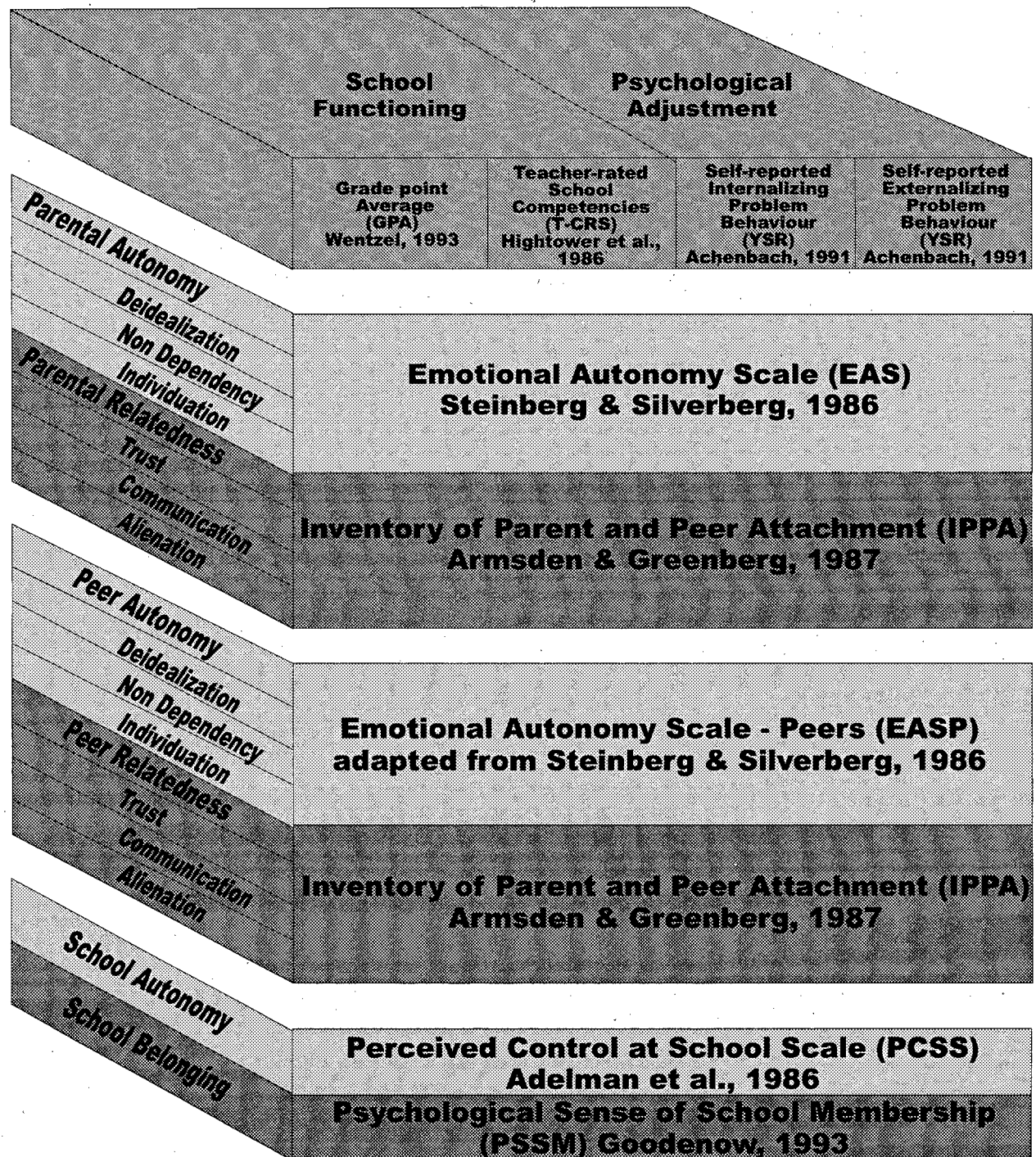
The measures used in this study are shown in Figure 2. Adolescents' measures

Figure Caption

Figure 2. Measures of autonomy, relatedness, school functioning, and psychological adjustment.

Measurement

60



included the following three sets of self-report questionnaires.

Measures of autonomy. Autonomy in relationships with parents was assessed using the 14-item version of Steinberg and Silverberg's (1986) Emotional Autonomy Scale (EAS; see Appendix A). The EAS² (Steinberg & Silverberg, 1986) has been used to assess autonomy in the context of adolescent-parental relationships regarding parental deidealization (e.g., "Even when my parents and I disagree, my parents are always right"; reversed scored; five items, $\alpha = .63$), nondependency on parents (e.g., "I go to my parents for help before trying to solve a problem myself"; reversed scored; four items, $\alpha = .51$), and individuation (e.g., "There are some things about me that my parents don't know"; five items, $\alpha = .60$). Students are asked to respond to each item on a four-point Likert scale (4 = "strongly agree"; 3 = "agree"; 2 = "disagree"; 1 = "strongly disagree"). A response of "strongly agree" reflects a high level of emotional autonomy in relationships with parents. Total scores range from 14 to 56 on the 14-item version. High scores on the EAS indicate greater differentiation from parents. Cronbach's alpha for the 14-item version of the EAS, as reported by Lamborn and Steinberg with their sample, was .82. The authors of the EAS reported that the scale demonstrates construct validity because the exploratory factor and internal consistency analyses "confirmed the theoretically generated components of emotional autonomy used to generate the initial pool of items" (Steinberg & Silverberg, 1986, p. 844). In addition, the EAS has been used in a number of studies relating emotional autonomy to parental support (Lamborn & Steinberg, 1993), parental fallibility (Frank et al., 1990) and

² Cronbach alphas reported herein for each of the subscales of the EAS are from Steinberg and Silverberg's (1986) study. Lamborn & Steinberg (1993) reported the alpha for the entire 14-item scale only.

parental detachment and rejection (Ryan & Lynch, 1989) in adolescents' relationships with their parents. Cronbach alphas reported from these studies ranged from .71 to .82 for the total scale. In the present study, Cronbach's alpha computed for the total EAS scale was .78. In this sample, Cronbach alphas computed for each of the subscales for parental autonomy were as follows: Deidealization, .66, Nondependency, .48, and Individuation, .67.

Autonomy in relationships with peers was assessed using a 14-item scale that parallels the EAS measure described in the previous section. The peer version, entitled the Emotional Autonomy Scale - Peers (EASP; see Appendix B) was a modified version of Steinberg and Silverberg's (1986) EAS. However, rather than assessing autonomy in relationships with parents, items on the EAS were modified to assess autonomy in relationships with peers. Moreover, each item on the EASP corresponds to an item on the EAS. The EASP was designed to assess autonomy in the context of adolescent-peer relationships regarding deidealization of peers (e.g., "My friends and I agree on everything"; five items all reversed scored), nondependency on peers (e.g., "I go to my friends for help before trying to solve a problem myself"; reversed scored; four items), and individuation (e.g., "There are some things about me that my friends don't know"; five items). Adolescents are asked to respond to each item on a four-point Likert scale (4 = "strongly agree"; 3 = "agree"; 2 = "disagree"; 1 = "strongly disagree"). Total scores range from 14 to 56. A high score indicates greater differentiation in relationships with peers. In the present investigation, Cronbach's alpha computed for the total EASP scale was .65. In this sample, Cronbach alphas computed for each of the subscales for peer autonomy were as follows: Deidealization, .48, Nondependency, .46, and Individuation, .62.

School autonomy was assessed using the Perceived Control at School Scale (PCSS; Adelman et al., 1986; see Appendix C). The PCSS has been used in previous research to assess students' perceptions of their autonomy in school in a general way. This self-report scale consists of 16 items designed to tap students' perceptions regarding the degree of control or influence one has over school-related situations such as being able to make choices and take part in decisions (Heavey et al., 1989; Smith et al., 1987). Students respond to each statement on a 6-point Likert scale (1 = "never"; 2 = "not very often"; 3 = "slightly less than half the time"; 4 = "slightly more than half the time"; 5 = "very often"; 6 = "always"). Examples of items from the scale relating to students' involvement in making decisions and choices are "At school, I feel people want me take part in making decisions", and "At school, I feel I have a choice about what I am doing or learning." Total summary scores can range from 16 to 96, with high scores indicating greater perceived control at school.

The PCSS demonstrates adequate reliability and has been validated in diverse school populations. For example, Adelman et al. (1986) reported Cronbach alphas ranging from .69 to .80 for the total scale. Test-retest reliabilities over a two week period ranged from .55 to .80. The PCSS demonstrates construct validity by its modest correlations with the Nowicki-Strickland Locus of Control scale (see Adelman et al., 1986). Correlations between the two measures are reported as .58 for students in grades three to six, and .35 for students in grades 7 to 12, suggesting that higher PCSS scores are associated with an internal locus of control orientation. The PCSS has the ability to discriminate between those students experiencing problems in learning and behaviour at school, and those who are not. In the

present study, the PCSS was found to have adequate internal consistency (Cronbach's alpha was .79).

Measures of relatedness. Relatedness to parents and peers was assessed using the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987; see Appendix D). This self-report inventory was used to examine the degree to which adolescents feel a sense of emotional connection and feel validated and cared for in their relationships with their parents and peers. This measure provides separate composite scores and subscale scores for parent attachment and peer attachment. The IPPA has been used in numerous studies of attachment with adolescents between the ages of 12 and 20 (e.g., Cotterell, 1992; Greenberg et al., 1983; Papini et al., 1991; Papini & Roggman, 1992; Paterson et al., 1995). There are 28 parent items and 25 peer items that make up the two attachment scales used to assess adolescents' relationships with parents and peers in a generalized manner. The use of global targets such as parents and peers "minimizes the need for defensiveness with respect to specific figures and gives a reasonable snapshot of the adolescents' general feelings concerning various types of relationships" (Ryan et al., 1994, p. 228). Students respond to the items using a 5-point Likert scale (1 = "almost never or never true", 2 = "not very often true", 3 = "sometimes true", 4 = "often true", 5 = "almost always or always true"). The items broadly assess dimensions of relatedness to parents and peers regarding mutual trust, quality of communication, and degree of anger and alienation. Total scores for the separate parent and peer attachment scales are computed by summing the scores for Trust and Communication, and reverse scoring all Alienation items.

Armsden and Greenberg (1987) report the inventory has "substantial reliability and

good potential validity as a measure of perceived quality of close relationships" (p. 446).

Moreover, Armsden and Greenberg (1987) report Cronbach alphas for the parent attachment subscales as follows: Trust (10 items; $\alpha = .91$), Communication (10 items; $\alpha = .91$), and Alienation (8 items; $\alpha = .86$). Cronbach alphas reported for the peer attachment subscales are as follows: Trust (10 items; $\alpha = .91$), Communication (8 items; $\alpha = .87$), and Alienation (7 items; $\alpha = .72$). Three week test-retest reliabilities using the composite measure of parent and peer attachment in Armsden and Greenberg's (1987) sample of 18 to 20 year olds were .93 for parent attachment, and .86 for peer attachment. Cotterell (1992) reported alphas similar to those found by Armsden and Greenberg (1987) for the parent attachment scale ($\alpha = .94$), and peer attachment scale ($\alpha = .87$) in a sample of 14 to 17 year olds. Construct validity for the IPPA has been demonstrated through multi-trait multi-method by Armsden and Greenberg (1987). Moderate to high correlations were reported among the Family Environment Scale (FES; Moos, 1974), the Tennessee Self-Concept Scale (TSCS; Fitts, 1965) and the Family and Peer Utilization factors from the Inventory of Adolescent Attachment (Greenberg et al., 1983), suggesting convergent validity with these family measures (see Armsden & Greenberg, 1987). In the present investigation, internal consistencies were found to be adequate for both the parental attachment scale: Trust ($\alpha = .90$), Communication ($\alpha = .82$), Alienation ($\alpha = .84$), and total parental attachment scale ($\alpha = .93$), as well as for the peer attachment scale: Trust ($\alpha = .92$), Communication ($\alpha = .89$), Alienation ($\alpha = .71$), and total peer attachment scale ($\alpha = .92$).

As a measure of relatedness in the school context, the Psychological Sense of School Membership (PSSM; Goodenow, 1993b; see Appendix E) was used. This 18-item self-report

scale was used to assess students' perceived belonging or psychological sense of membership in the school environment. Students respond to each item on a five-point Likert scale ranging from 1 ("not at all true") to 5 ("completely true"). Examples of items from the scale are "I can really be myself at this school", "Most teachers at this school are interested in me", and "Other students here like me the way I am." The items are designed to tap school belonging by focusing on aspects of attachment that are believed to contribute to a student's sense of emotional connection in the school setting. Low scores indicate alienation or an absence of perceived belonging or relatedness at school, while high scores indicate high perceived belonging and being part of the school in general. A total summary score is derived by reverse scoring the negative items and summing the scores of all the items.

The PSSM demonstrates acceptable internal consistency reliability and validity. Cronbach's alpha for the scale ranged from .77 to .88 across different samples (Goodenow, 1993b). Construct validity for the PSSM has been established by studying the results of contrasting groups (Downie & Starry, 1977). The instrument discriminates between groups and subgroups predicted to be different in terms of their sense of belonging or psychological membership in school (Goodenow, 1993b). For example, Goodenow (1993b) found that girls exhibited a higher sense of school membership or belonging than boys. In the current investigation, Cronbach's alpha for the PSSM was .89.

Measures of Psychological Adjustment. The Youth Self-Report (YSR; Achenbach, 1991; see Appendix F) is a standardized instrument designed to assess behavioural competencies and problems of youths who are 11 to 18 years of age. There are separate norms for boys and for girls to allow for comparisons between other populations of the same

age and gender. The Problem Scale provides a measure of internalizing, externalizing, and total problem behaviours derived from eight syndrome scales comprised of 103 specific problem items. Adolescents are asked to respond to each of the items using a 0-1-2 scoring system (0 = "not true"; 1 = "somewhat or sometimes true"; 3 = "very true or often true"). For the purposes of this investigation, adolescents' psychological adjustment problems were assessed using scores obtained from the Internalizing scale (withdrawal, somatic complaints, anxious/depressed), the Externalizing scale (delinquent, aggressive), and three other problem scales (social problems, thought problems, and attention problems) used to make up the Total Problem scale score.

The problem scales of the YSR have been used in research to discriminate between non-deviant and deviant populations based on T scores. Achenbach (1991) states that "scores in the normative samples ranging from about the 82nd to the 90th percentile were found to provide the most efficient discrimination for most sex/age groups. T scores of 60 to 63, which span these percentiles, were therefore chosen to demarcate the clinical range" (p. 45). For the total problem scores, T scores between 60 to 63 designate the borderline clinical range, whereas T scores above 63 represent more deviant problem scores than those scores which fall below 60.

In order to determine whether the adolescents who participated in this study were different in the level of severity of problem behaviours from adolescents classified as clinically referred youths, means of the scores from the Internalizing, Externalizing and Total Problem scales on the Youth Self-Report in this sample were compared to means of the scores from normative samples provided in the manual. These data were taken from

Appendix B in the Manual for the Youth Self-Report and 1991 Profile (Achenbach, 1991).

In the present study, the means of the Internalizing, Externalizing, and Total Problem scales were tested using one-sample directional t tests. The scale means for the participants in this sample differed significantly from the means of referred boys and girls on the Internalizing, Externalizing, and Total Problem scales of the Youth Self-Report (see Appendix G). For the purposes of generalizing the results of the present study, these data support the contention that the participants in this study differed significantly from those adolescents in the referred group with respect to degree of problem behaviour.

Extensive documentation for the reliability and validity of the YSR measure has been provided in the manual (see Achenbach, 1991). Regarding reliability, for example, Cronbach alphas reported separately for the total problem scales in demographically matched referred and nonreferred male and female samples were both .95. Test-retest reliabilities over a 7-day period were reported as .70 in a sample of 11 to 14 year olds and .91 for 15 to 18 year olds. Over a period of 7 months, the reliability for the total problem scale was reported as .56 in a combined (male and female) sample of 11 to 14 year olds. Detailed validity information is described in the manual (see Achenbach, 1991). For example, as evidence of criterion-related validity, the YSR T scores have the ability to discriminate between demographically matched clinically referred and nonreferred youths that indicate normal, borderline, and clinical ranges. The YSR also demonstrates high concurrent validity with the pre-1991 counterpart YSR scales, with correlations reported ranging from .80 to .90. In the present investigation, internal consistency assessed via Cronbach's alpha was as follows: Internalizing scale, .91, Externalizing scale, .86, and Total Problem scale, .94.

Measures of Adolescents' School Functioning

Adolescents' school functioning was assessed in two ways: (1) teacher-ratings of adolescents' school competencies, and (2) academic achievement.

School competencies. School competencies (SchComp) were assessed using teacher ratings on the Teacher-Child Rating Scale (T-CRS; Hightower et al., 1986; see Appendix H). The 38-item standardized checklist has been used to estimate students' strengths and competencies associated with social behaviour, learning, and academic abilities.

Twenty items are designed to assess students' abilities and skills in accepting limitations (e.g., copes well with failure, accepts things not going his/her way), assertiveness (e.g., participates in class discussions, expresses ideas willingly), task commitment (e.g., completes work, well organized, a self-starter) and peer relationships (e.g., is friendly toward peers, well liked by classmates). Teachers rate each item on how well they describe the student using a 5-point rating scale (1 = "not at all"; 2 = "a little"; 3 = "moderately well"; 4 = "well"; 5 = "very well"). A total score is comprised of the sum of teacher ratings on four subscales relating to Frustration Tolerance, Assertive Social Skills, Task Orientation, and Peer Social Skills.

Eighteen items describing school-related problems are designed to assess a variety of behaviours associated with externalizing problems (e.g., disruptive in class, disturbs others while they are working), internalizing problems (e.g., withdrawn, anxious, does not express feelings), and other difficulties associated with learning (e.g., poor work habits, poorly motivated to achieve, difficulty following directions). The items are rated by the teacher on a 5-point scale (1 = "not a problem"; 2 = "mild problem"; 3 = "moderate problem"; 4 =

"serious problem"; 5 = "very serious problem"). The total problem score (SchProbs) is the sum of the teacher ratings on the Acting-Out, Shy-Anxious, and Learning subscales. Scores on the T-CRS indicate the degree to which the student differs from a normative sample on the problems identified by their teachers on the subscales. Normative profiles developed by Hightower, Spinell, and Lotyczewski (1989) place those who score at or below the fifteenth percentile as having serious difficulties adjusting in the various domains.

Teachers' reports of problem behaviour on the Acting-Out and Shy-Anxious subscales were used to assess the validity of adolescents' self-reports of problem behaviour on the Externalizing and Internalizing scales on the YSR. Comparisons were made between students' and teachers' ratings of students' problem behaviours. Correlations between the YSR and T-CRS subscales were significant and positive both for boys and for girls (see Appendix I).

Evidence of reliability and validity for the scale been described in the research literature on the development and validation of the T-CRS (see Hightower et al., 1986). High internal reliability coefficients in excess of .84 have been reported for the subscales by its authors (Hightower et al., 1989). In other research by Bear and Ryes (1994), alpha coefficients were reported to be as follows: .96 for the Total School Competency scale and .94 for the Acting-Out subscale. Moreover, in a sample of 138 ninth graders, Luthar (1995) reported Cronbach's alphas for the six subscales of the T-CRS ranged between .81 and .98 for boys, and .77 and .98 for girls. Test-retest coefficients ranged from .61 to .91 over 10 and 20-week periods (Hightower et al., 1986). The T-CRS was developed from the Classroom Adjustment Rating Scale (CARS; Lorion, Cowen, & Caldwell, 1975) and the

Health Resources Inventory (HRI; Gesten, 1976). Construct validity has been shown through correlations with these and other measures of school adjustment problems and competencies (see Hightower et al., 1986). The T-CRS has the ability to discriminate between children who are adjusting well and poorly in school. In the current investigation internal consistency, as measured by Cronbach's alpha, was found to be acceptable (Total School Competency scale, .94, Total Problem scale, .93, Acting-Out subscale, .91, and Shy-Anxious subscale, .88).

Academic achievement. Academic achievement was assessed by computing a composite grade point average score. At the end of the school year, report card grades were obtained from school records for each student participant. Grade point averages (GPAs) were calculated by averaging the grades obtained in four academic classes (i.e., english, mathematics, science, and social studies -- either one history, geography, or senior social science course). Grades were converted to a 13-point scale ranging from 13 (A+) to 1 (R = extensive remediation) using the coding system of Roeser and colleagues (1996). Letter grades have been established by the Ontario Ministry of Education and Training for use by District School Boards.

Procedures

University ethics approval and School Board approval for conducting research in schools were obtained. Principals within the school system were informed of the approval for the study by the School Board. Principals and Vice-Principals were then contacted and solicited for research participation. All contacts were made by this investigator. Initially, information about the study and the requirements of students and teachers were given to

classroom teachers at a grade level meeting or at a department meeting in early May. Subsequently, interested teachers were contacted in order to answer questions they might have about the study, and to schedule classroom visits in which to introduce the research project to the students, distribute letters and consent forms, and complete questionnaires. Students were informed of the study in a classroom visit scheduled by this investigator and were invited to participate (see Appendix J). A parent permission letter and consent form (see Appendix K) and student informed consent form (see Appendix L) were given to students to take home. As an incentive for adolescents to return their signed consent forms, either indicating they would participate or not, students who returned signed consent forms before data collection began, were eligible for a classroom draw for one \$5.00 gift certificate from a local video store. Students whose parents did not permit them to participate, or students who chose not to participate, worked on independent assignments given by the teacher during the classroom session designated for completing the questionnaires. These assignments were determined by the classroom teacher before the questionnaires were distributed. The date for completing the questionnaires was scheduled in consultation with the classroom teacher within one to two weeks of the initial classroom visits, in which the letters describing the study and permission forms were distributed.

During the administration session, student participants were given a package of questionnaires in an envelope. Before removing the questionnaires from the envelope, three practice questions, including two negatively worded items, and the different types of rating scales were presented to ensure that the participants understood the questioning formats and scales that they would encounter. Students were then asked to take the questionnaires from

the envelope. The cover page was read aloud by this researcher while students followed along (see Appendix M). Students were encouraged by the researcher to answer questions thoughtfully and honestly and told their opinions mattered and were important to improving education. In order to protect students' identities, each student was given an identification number (ID) that was assigned at the onset of the study. Students completed a student identification form that was included in the package (see Appendix N). This form was used to match students' and teachers' questionnaires, and school grades. The ID forms were collected by the researcher and kept separate from the questionnaires. Names were not recorded on the questionnaire. The questionnaires identified students only by an ID number.

The questionnaires were administered to students under group testing conditions during the regular classroom instructional period. Students took approximately 30 to 60 minutes to complete the measures. The sets of questionnaires in the package were counterbalanced to control for a possible order effect. The packages were randomly distributed among students in each classroom. The students' and teachers' measures were selected so that they could be completed efficiently in the classroom setting during one instructional period. To encourage honest responses, students were assured of confidentiality. Individual assistance was offered to all participants by either the researcher and/or her trained assistant as required, in order to help students understand and follow directions, or read the question. While students completed their questionnaires, teachers completed the T-CRS for each student participating from that teacher's classroom.

After the questionnaires were collected, participants were debriefed in a follow-up discussion by this researcher, who provided information about how the questionnaires related

to the main ideas that were being explored. Students were given the opportunity to ask questions and comment about whether they thought the ideas being investigated in the study were relevant to their own lives.

CHAPTER FOUR

Results

The results of this research are presented in four sections. The first section describes the preliminary analyses used to screen the data prior to conducting the main analyses. The next section provides results of analyses examining gender and grade differences in autonomy and relatedness across the contexts of parents, peers, and school. The third section presents the results of the correlational analyses examining relations of autonomy and relatedness to school functioning and psychological adjustment. Finally, the last section presents results of the regression analyses examining autonomy and relatedness in the contexts of parents, peers, and school as predictors of school functioning and psychological adjustment. Because both theory and research suggest that gender differences exist in relation to schooling and mental health (e.g., Allen et al., 1990; Conger et al., 1997; Hill & Holmbeck, 1986; Roeser et al., 1998; Wentzel, 1998), in prevalence rates for internalizing and externalizing problem behaviours (e.g., Scaramella, Conger, & Simons, 1999), and in the quality of adolescent-parental and adolescent-peer relationships (e.g., Geuzaine et al., 2000; Laible et al., 2000; Stern, 1990), analyses were conducted separately for boys and for girls.

Preliminary Analyses

Prior to statistical analysis, the data were examined using the procedure outlined by Tabachnick and Fidell (1989) for screening data. SPSS Frequencies were used to check on accuracy of data entry, missing values, and normality of distributions. The shape of the distributions were examined using SPSS Graphs. Specifically, the data were searched for minimum and maximum values, and means and standard deviations were inspected for

plausibility. Out of range values were corrected by checking the original data sheets for accuracy of input. Both visual inspection of the distributions and the coefficients for skewness and kurtosis were examined to detect departures from normality (Hopkins & Weeks, 1990; Stevens, 1992; Tabachnick & Fidell, 1989). According to Tabachnick and Fidell (1989), "with large samples the significance levels of skewness and kurtosis are not as important as their actual sizes (worse the farther from 0) and visual appearance of the distribution" (p. 74). Thus, one way to screen for nonnormal variables, is to examine distributions of the variables. Following this strategy, the skewness and kurtosis values were found to be close to zero, and thus, were considered acceptable in the present study. Table 1 includes the means, standard deviations, skewness, kurtosis, and range for all the measures used in the study.

The data were also examined for univariate outliers. A z score was computed for all of the measures utilized in the present study (i.e., parental autonomy, peer autonomy, parental attachment, peer attachment, school autonomy, school belonging, internalizing problems, externalizing problems, total problem scores, teacher-rated school competencies, teacher-rated school problems, GPA). Following the procedure outlined by Tabachnick and Fidell (1989) a univariate outlier was indicated by a z score greater than or equal to 3.67, at $p = .001$ criterion. Five cases (or 1% of the sample) were identified as univariate outliers. As noted by Stevens (1992) and others (e.g., Tabachnick & Fidell, 1989), in samples with more than 100 cases, a few standardized scores in excess of ± 3.00 can be expected simply by chance. Thus, in the present study, the cases with outliers were retained for all data analyses. There was no reason to believe that the outlier cases were not part of, or members

Table 1

Means, Standard Deviations, Skewness, Kurtosis, and Range for all Measured Variables

Variable	<u>M</u>	<u>SD</u>	Skewness	Kurtosis	Range
Parental Autonomy (EAS)	40.17	6.47	-.40	.25	20-56
Deidealization (Easde)	13.81	2.85	-.14	-.25	6-20
Nondependency (EASnon)	11.66	2.21	-.31	-.22	5-16
Individuation (EASind)	14.71	3.10	-.48	-.03	5-20
Parental Attachment (PA)	97.01	19.56	-.41	-.13	35-139
Trust (PATrust)	37.12	8.05	-.58	-.21	13-50
Communication (PACom)	32.47	7.16	-.31	.06	10-50
Alienation (PAAlien)	20.58	6.75	.33	-.30	8-38
Peer Autonomy (EASP)	38.24	5.20	.00	-.08	23-53
Deidealization (EASPde)	14.30	2.26	.04	.13	7-20
Nondependency (EASPnon)	11.02	2.24	-.10	-.24	5-16
Individuation (EASPind)	12.93	2.92	-.09	-.39	6-20
Peer Attachment (PeerA)	97.73	15.94	-.66	.28	38-123
Trust (PrTrust)	40.33	7.58	-1.10	1.23	10-50
Communication (PrCom)	27.64	6.87	-.41	-.58	8-40
Alienation (PrAlien)	16.24	4.64	.42	-.23	7-31
School Autonomy (PCSS)	59.33	11.33	-.44	.13	23-86
School Belonging (PSSM)	62.41	12.68	-.42	.04	20-89
Teacher-rated School Competencies (SchComp)	73.69	16.00	-.12	-.70	32-100
Teacher-rated School Problems (SchProbs)	26.91	11.06	1.68	2.85	18-79
Grade Point Average (GPA)	8.28	3.07	-.47	-.64	1-13
Student-rated Internalizing Problems (YSRint)	16.21	10.22	.82	.50	0-53
Student-rated Externalizing Problems (YSRext)	15.25	7.95	.66	.18	0-45

of, the intended population for which the results of this study will generalize. The summary statistics in Table 1 include the univariate outlier cases.

The data were screened for multivariate outliers using the strategy in which a dummy dependent variable is used to screen for outliers among a set of independent variables (Tabachnick & Fidell, 1989). To screen for multivariate outliers, SPSS Regression was used to calculate the Mahalanobis distance (D^2) for each case using the case identification number as the dummy dependent variable, with grade, parental deidealization, parental nondependency, parental individuation, parental attachment, peer deidealization, peer nondependency, peer individuation, peer attachment, school autonomy, and school belonging as the independent variables. An outlier was indicated by a D^2 that was significant at $p < .001$ level. Mahalanobis distance was calculated as chi-square with degrees of freedom equal to the number of observed variables in the hypothesized model (Tabachnick & Fidell, 1989). For the current study, which utilized eleven independent variables for the regression analysis, the chi-square critical value at $p < .001$ was 31.26. Thus, if a D^2 for a single case exceeded 31.26 it was considered an outlier. Three cases (or less than 1% of the sample) were identified as multivariate outliers having D^2 values of 31.41, 31.65, and 32.50. Cohen and Cohen (1983) suggest that if outliers represent less than one or two percent of the total number of cases, they can remain in the data set. Therefore, it was decided that the three multivariate outlier cases would be retained for all further data analyses.³

Next, the data were screened graphically in order to examine the degree to

³ Regression analyses were conducted with and without the multivariate outlier cases. Excluding the outlier cases did not change the results that are reported.

which the data met the assumptions of normality, linearity, and homoscedasticity between predicted scores on the dependent variable and errors of prediction. Scatterplots were obtained from SPSS Graphs in which standardized residuals were plotted against the standardized predicted values (e.g., Tabachnick & Fidell, 1989). Scatterplots were examined and appeared normal, thus indicating that assumptions of normality, linearity, and homoscedasticity of residuals had been met.

Gender and Grade Differences in Adolescents' Perceptions of Autonomy and Relatedness

The purpose of this section is to present the results of analyses of gender and grade differences in parental autonomy, peer autonomy, parental attachment, peer attachment, school autonomy, and school belonging. Each of the hypotheses will be addressed in turn. It will be recalled that one goal of this study was to determine whether gender and grade differences exist regarding the way in which adolescents report their experiences of autonomy and relatedness in parent, peer, and school contexts.

Previous research on emotional autonomy and parent and peer attachment (using the same measures of autonomy and attachment) have used the total scale scores as well as subscales (e.g., Armsden & Greenberg, 1987; Chen & Dornbusch, 1998; Cotterell, 1992; Frank et al., 1990; Isakson & Jarvis, 1999; Lamborn & Steinberg, 1993; Steinberg & Silverberg, 1986; Steinberg, 1988). Both total scale scores and subscale scores were examined in the present study. Composite scores provide a more generalized measure of the variables of interest than would be obtained from individual subscales (Ghiselli, Campbell, & Zedeck, 1981). In the present investigation, the composite scales have demonstrated acceptable reliabilities greater than $\alpha = .60$ to justify their use over individual subscales

(Murphy & Davidshofer, 1998). The results of subscale analyses have also been reported in this study because some researchers have suggested that subscales might reveal different aspects of adolescent functioning that may not otherwise be captured through the use of the composite measure (e.g., Chen & Dornbusch, 1998; Frank et al., 1990; Silverberg & Gondoli, 1996). Reliabilities for each of the subscales have been reported in the Methods section.

In the present investigation, I first examined composite scale scores in the analyses. For these analyses, separate 2 (gender) x 3 (grade) analysis of variances (ANOVAs) were conducted using the total scale scores of the measures assessing parental autonomy, peer autonomy, parental attachment, peer attachment, school autonomy, and school belonging. Gender and grade were the independent variables or between-subject factors. Next, I explored the multidimensional characteristics of autonomy in relationships with parents and peers, and attachment to parents and peers using multivariate analyses of variance (MANOVAs). For these analyses, separate 2 (gender) x 3 (grade) MANOVAs were conducted with the subscale scores for emotional autonomy from parents (i.e., deidealization, nondependency, individuation), attachment to parents (i.e., trust, communication, alienation), emotional autonomy from peers (i.e., deidealization, nondependency, individuation), and attachment to peers (i.e., trust, communication, alienation).

To examine significant differences obtained among grade level means, the Tukey honestly significant difference (HSD) post hoc procedure was used to make all pairwise comparisons at $p < .05$ criterion.

Gender and grade differences in parental autonomy. It was hypothesized that adolescents in grade 11 would show higher levels of parental autonomy than would adolescents in grades eight or nine (Hypothesis 4a). That is, it was expected that older adolescents would be more emotionally autonomous from their parents than younger adolescents (e.g., Lamborn & Steinberg, 1993; Ryan & Lynch, 1989; Steinberg & Silverberg, 1986). Because previous research results have been equivocal with respect to differences between boys and girls on scores of emotional autonomy from parents (e.g., Lamborn & Steinberg, 1993; Steinberg & Silverberg, 1986; Ryan & Lynch, 1989), no hypothesis regarding gender was put forth. To examine differences in parental autonomy, a 2 (gender) x 3 (grade) ANOVA was performed. For this analysis, the total score on the Emotional Autonomy Scale (EAS) served as the dependent variable. Table 2 provides the means and standard deviations for the total scale and subscale scores for parental autonomy for gender and grade respectively.

The ANOVA revealed a nonsignificant main effect for gender, $F(1, 472) = 2.81$, ns; a nonsignificant main effect for grade, $F(2, 472) = 3.44$, $p < .05$; and a nonsignificant gender x grade interaction, $F(2, 472) = 1.95$, ns. Thus, the results of the ANOVA did not reveal significant gender or grade differences in parental autonomy when using the total EAS score. Boys and girls did not differ from one another in their perceptions of emotional autonomy from parents. In contrast to what was hypothesized, no grade differences were found.

To further explore parental autonomy, a 2 (gender) x 3 (grade) MANOVA was conducted with the three subscales from the EAS. For this analysis, scores for

Gender and Grade Means and Standard Deviations for Parental Autonomy

Variable	Gender			
	Boys ^a		Girls ^b	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Deidealization	13.43	2.84	14.11	2.82
Nondependency	11.66	2.29	11.66	2.16
Individuation	14.53	3.23	14.85	2.99
Total Scale	39.62	6.53	40.61	6.41

Variable	Grade					
	Grade 8 ^c		Grade 9 ^d		Grade 11 ^e	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Deidealization	13.59	2.92	13.89	2.71	13.96	2.94
Nondependency	11.27	2.19	11.79	2.18	11.96	2.22
Individuation	14.38	3.08	14.95	3.12	14.82	3.09
Total Scale	39.24	6.22	40.63	6.39	40.74	6.78

^an = 213. ^bn = 265. ^cn = 170. ^dn = 167. ^en = 141.

Deidealization, Nondependency, and Individuation were the dependent variables, and gender and grade were the independent variables. The results of this analysis revealed a significant multivariate main effect for gender, $F(3, 470) = 2.68, p < .05$, Wilks's lambda = .983; a nonsignificant multivariate main effect for grade, $F(6, 940) = 1.73, ns$, Wilks's lambda = .978; and a nonsignificant multivariate gender x grade interaction, $F(6, 940) = 1.15, ns$, Wilks's lambda = .985.

Following one of the recommended procedures typically used in multivariate research, significant multivariate effects were followed-up with univariate F tests in order to identify which of the subscales contributed to the overall main effect (Bray & Maxwell, 1982; Stevens, 1992). Results of the follow-up univariate analyses revealed that gender was significant on the Deidealization subscale, $F(1, 472) = 6.72, p = .01$. As can be seen in Table 2, girls scored significantly higher than boys on this subscale. There were no differences between boys and girls on either the Nondependency subscale, $F(1, 472) = 0.00, ns$, or the Individuation subscale, $F(1, 472) = 1.21, ns$.

The result from the MANOVA indicates that girls, to a greater extent than did boys hold less idealized images of the parents and acknowledge that their parents may not always be right or share the same opinions.

Gender and grade differences in peer autonomy. Next, it was of interest in this investigation to determine whether gender and grade differences exist in adolescents' perceptions of autonomy in relationships with peers. Specifically, it was hypothesized that when compared to boys, girls would report higher levels of peer autonomy (Hypothesis 1). That is, it was expected that girls would be more emotionally autonomous from their peers

because studies suggest that girls are less susceptible than boys to the influence of peers to conform with respect to antisocial pressure from peers (e.g., Berndt, 1979; Brown et al., 1986; Steinberg & Silverberg, 1986). Furthermore, it was hypothesized that adolescents in grade 11 would show higher levels of peer autonomy than would adolescents in grade eight or nine (Hypothesis 4a) because studies have shown that conformity to peer pressure decreases with age across early and middle adolescence (e.g., Berndt, 1979; Collins, Gleason et al., 1997; Gavin & Furman, 1989; Steinberg & Silverberg, 1986). Thus, peer autonomy was expected to increase across grade levels. To examine differences in peer autonomy, a 2 (gender) x 3 (grade) ANOVA was performed. For this analysis, the total score on the Emotional Autonomy Peer Scale (EASP) served as the dependent variable. Refer to Table 3 for the means and standard deviations for the total scale and subscale scores for peer autonomy for gender and grade respectively.

The ANOVA yielded a nonsignificant main effect for gender, $F(1, 472) = 0.04$, ns; a nonsignificant main effect for grade, $F(2, 472) = 1.61$, ns; and a nonsignificant gender x grade interaction, $F(2, 472) = 0.09$, ns. No differences were found between boys and girls, or across grade levels regarding peer autonomy. Thus, the hypotheses that gender and grade differences would exist in peer autonomy was not supported by the ANOVA when using the EASP total score.

To further explore autonomy from peers, a 2 (gender) x 3 (grade) MANOVA was conducted with the three subscales from the EASP. For this analysis, scores for Deidealization, Nondependency, and Individuation were the dependent variables, and gender and grade were the independent variables. The results of this analysis revealed a significant

Gender and Grade Means and Standard Deviations for Peer Autonomy

Variable	Gender			
	Boys ^a		Girls ^b	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Deidealization	14.09	2.22	14.46	2.28
Nondependency	11.40	2.24	10.72	2.20
Individuation	12.85	2.90	12.98	2.93
Total Scale	38.35	4.93	38.16	5.42

	Grade					
	Grade 8 ^c		Grade 9 ^d		Grade 11 ^e	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Deidealization	13.95 _a	2.33	14.37	2.25	14.63 _b	2.14
Nondependency	11.28 _a	2.42	10.63 _b	2.14	11.17	2.09
Individuation	13.30	3.07	12.63	2.84	12.82	2.78
Total Scale	38.52	5.68	37.64	5.07	38.62	4.70

Note. In each row, the means with different subscripts indicate significant differences using Tukey's HSD procedure, $p < .05$.

^a $n = 213$. ^b $n = 265$. ^c $n = 170$. ^d $n = 167$. ^e $n = 141$.

multivariate main effect for gender, $F(3, 470) = 6.62, p < .001$, Wilks's lambda = .959; a significant multivariate main effect for grade, $F(6, 940) = 4.13, p < .001$, Wilks' lambda = .949; and a nonsignificant multivariate gender x grade interaction, $F(6, 940) = 0.23, ns$, Wilks's lambda = .997.

Results of the follow-up univariate analyses revealed gender and grade differences on two of the three subscales. As can be seen in Table 3, girls scored significantly higher than boys on the Deidealization subscale, $F(1, 472) = 3.87, p = .05$. Boys, in turn, had significantly higher scores than girls on the Nondependency subscale, $F(1, 472) = 10.23, p = .001$. No difference was found between boys and girls on the Individuation subscale $F(1, 472) = 0.30, ns$.

As can be seen in Table 3, significant grade effects were found for Deidealization, $F(2, 472) = 4.21, p < .05$, and for Nondependency, $F(2, 472) = 3.52, p < .05$, but not for Individuation $F(2, 472) = 2.23, ns$. Tukey HSD post hoc tests for grade revealed that adolescents in grade eight scored significantly lower than adolescents in grade 11 on Deidealization. For Nondependency, adolescents in grade eight scored significantly higher than adolescents in grade nine.

In summary, the results of the MANOVA examining peer autonomy, showed that girls and boys differed with respect to their scores of deidealization and nondependency. Whereas girls had higher levels of deidealization than did boys, boys scored higher on nondependency than did girls. When compared to adolescents in grade eight, adolescents in grade nine had lower scores of nondependency on peers. When compared to adolescents in grade eight, adolescents in grade 11 had higher scores of peer deidealization.

The results of this MANOVA provide partial support for the hypothesis that girls would have higher levels of peer autonomy than would boys. More specifically, higher scores on the Deidealization subscale indicate that girls, to a greater extent than do boys, hold less idealized images of their peers and acknowledge that their peers may not always be right or share the same opinions. However, contrary to the hypothesis, boys had higher scores than girls on the Nondependency subscale, indicating that boys depend less on their peers than do girls. Regarding grade differences, grade eight adolescents had lower scores on the Deidealization subscale than adolescents in grades nine and 11, which is consistent with the hypothesis that adolescents in grade 11 would have higher levels of peer autonomy than adolescents in grade eight or grade nine. That is, older adolescents would be more emotionally autonomous from their peers than younger adolescents and more likely to hold more mature perceptions of their peers. However, contrary to the previously stated hypothesis, grade eight adolescents reported greater nondependency in their relationships with peers than adolescents in grade nine, suggesting that adolescents in grade eight were less dependent on their peers.

Gender and grade differences in parental attachment. Several differences were expected regarding adolescents' perceptions of their attachments to parents. Because research findings suggest that feelings of being connected and emotionally supported in relationships are especially important to girls (e.g., Eccles et al., 1997; Goodenow, 1993a; Laible et al., 2000; Stern, 1990), it was hypothesized that when compared to boys, girls would have higher levels of parental attachment (Hypothesis 2). Furthermore, it was hypothesized that adolescents in grade 11 would have lower levels of parental attachment

than adolescents in grade eight or grade nine (Hypothesis 4b). Studies have shown that parental attachments decrease as adolescents mature (e.g., Blain et al., 1993; Collins, Gleason et al., 1997; Lamborn & Steinberg, 1993; Papini et al., 1991). To examine differences in parental attachment, a 2 (gender) x 3 (grade) ANOVA was performed. For this analysis, the total score for the parental attachment scale (PA) of the Inventory of Parent and Peer Attachment (IPPA) served as the dependent variable. Table 4 provides the means and standard deviations for the total scale and subscale scores for parental attachment for gender and grade respectively.

The ANOVA yielded a nonsignificant main effect for gender, $F(1, 472) = 0.77$, ns; a nonsignificant main effect for grade, $F(2, 471) = 1.78$, ns; and a nonsignificant gender x grade interaction, $F(2, 472) = 0.97$, ns. The results of this analysis failed to find significant differences between boys and girls, or differences across grade levels on scores for parental attachment. Thus, the ANOVA results did not support the hypotheses regarding gender and grade differences in parental attachment when using the total score from the IPPA.

To further explore attachment to parents, a 2 (gender) x 3 (grade) MANOVA was conducted with the three subscales from the IPPA associated with parental attachment. For this analysis, scores for parental Trust, Communication, and Alienation were examined as the dependent variables, and gender and grade were the independent variables. The MANOVA revealed a significant multivariate main effect for gender, $F(3, 470) = 6.55$, $p < .001$, Wilks's lambda = .960; a nonsignificant multivariate main effect for grade, $F(6, 940) = 0.93$, ns, Wilks's lambda = .988; and a nonsignificant multivariate gender x grade interaction, $F(6, 940) = 0.90$, ns, Wilks's lambda = .989.

Gender and Grade Means and Standard Deviations for Parental Attachment

Variable	Gender					
	Boys ^a		Girls ^b			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Trust	37.80	7.70	36.57	8.30		
Communication	32.02	7.02	32.83	7.26		
Alienation	20.01	6.48	21.03	6.94		
Total Scale	97.81	18.65	96.37	20.27		
	Grade					
	Grade 8 ^c		Grade 9 ^d		Grade 11 ^e	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Trust	37.87	7.66	37.05	7.90	36.30	8.65
Communication	33.21	7.13	32.59	6.37	31.43	7.96
Alienation	20.38	6.95	20.49	6.80	20.91	6.48
Total Scale	98.69	19.40	97.15	18.87	94.82	20.45

^an = 213. ^bn = 265. ^cn = 170. ^dn = 167. ^en = 141.

Results of the follow-up univariate analyses did not reveal any gender differences on the Trust subscale, $F(1, 472) = 3.07, p = .08$, on the Communication subscale, $F(1, 472) = 1.31, p > .20$, or on the Alienation subscale, $F(1, 472) = 2.80, p = .10$. As can be seen in Table 4, an inspection of the means of the subscales showed that relative to boys, girls had higher scores relating to parental communication and feelings of alienation, and lower scores of trust. Although the MANOVA result was significant, the univariate results failed to reveal on which of the three subscales boys and girls were different. A significant MANOVA finding does not necessarily mean that there will be any significant ANOVA results (Huberty & Morris, 1989). The univariate results do not take into account the correlations among the variables. Thus, univariate F s may yield different results because each variable is considered separately and not in combination with others (Bray & Maxwell, 1982; Stevens, 1992).

The MANOVA results examining parental attachment indicated that boys and girls differed significantly in their perceptions of their attachments to parents when scores on the Trust, Communication, and Alienation subscales of the IPPA are considered jointly. This result provides some evidence that boys and girls show differences in their attachments to their parents.

Gender and grade differences in peer attachment. Adolescents were expected to differ in their perceptions of their attachments to peers. Because theory and research findings suggest that girls place more importance on security and support in peer relationships (e.g., Douvan & Adelson, 1966; Eccles et al., 1997; Goodenow, 1993a; Oldenburg & Kerns, 1997), it was hypothesized that girls would report higher levels of peer attachment than

would boys (Hypothesis 2). Furthermore, it was hypothesized that adolescents in grade 11 would show lower levels of peer attachment than adolescents in grade eight or grade nine (Hypothesis 4b). That is, it was expected that peer attachment would decrease across grade levels because studies have shown there are declines in peer conformity and social support by late adolescence (e.g., Collins, Gleason, et al., 1997). To examine differences in peer attachment, a 2 (gender) x 3 (grade) ANOVA was performed. In this analysis, the total score for the peer attachment scale (PeerA) of the Inventory of Parent and Peer Attachment (IPPA) served as the dependent variable. Table 5 provides the means and standard deviations for the total scale and subscale scores for peer attachment for gender and grade respectively.

The ANOVA yielded a significant main effect for gender, $F(1, 472) = 21.54, p < .001$; a significant main effect for grade, $F(2, 471) = 4.12, p < .05$; and a nonsignificant gender x grade interaction, $F(2, 472) = 0.04, ns$. As can be seen in Table 5, girls scored higher than did boys on peer attachment when using the IPPA total score. This result is consistent with the hypothesis that girls would report higher levels of peer attachment than would boys.

Regarding grade differences, Tukey HSD post hoc tests for grade revealed that grade eight adolescents scored significantly lower than grade nine adolescents on peer attachment (see Table 5). This result is contrary to the expectation that scores for peer attachment would show a decrease across grades.

To further explore attachment to peers, a 2 (gender) x 3 (grade) MANOVA was conducted with the three peer subscales of the Inventory of Parent and Peer Attachment

Gender and Grade Means and Standard Deviations for Peer Attachment

Variable	Gender			
	Boys ^a		Girls ^b	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Trust	39.38	7.42	41.09	7.64
Communication	24.49	6.85	30.17	5.75
Alienation	15.81	4.41	16.59	4.79
Total Scale	90.07	15.26	96.67	15.90

Variable	Grade					
	Grade 8 ^c		Grade 9 ^d		Grade 11 ^e	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Trust	39.08 _a	8.48	41.27 _b	6.97	40.71	6.95
Communication	26.51 _a	7.13	28.51 _b	6.63	27.98	6.67
Alienation	16.45	4.72	15.89	4.45	16.40	4.75
Total Scale	91.14 _a	17.18	95.88 _b	14.70	94.30	20.45

Note. In each row, the means with different subscripts indicate significant differences using Tukey's HSD procedure, $p < .05$.

^a $n = 213$. ^b $n = 265$. ^c $n = 170$. ^d $n = 167$. ^e $n = 141$.

(IPPA). For this analysis, scores for peer Trust, Communication, and Alienation were the dependent variables, and gender and grade were the independent variables. The results of this analysis revealed a significant multivariate main effect for gender, $F(3, 470) = 49.50$, $p < .001$, Wilks's lambda = .760; a significant multivariate main effect for grade, $F(6, 940) = 2.27$, $p < .05$, Wilks's lambda = .972; and a nonsignificant multivariate gender x grade interaction, $F(6, 940) = 0.17$, ns, Wilks's lambda = .998.

Results of the follow-up univariate analyses revealed significant gender and grade differences on two of the three subscales. As can be seen in Table 5, a significant gender effect was obtained for the Trust subscale, $F(1, 472) = 6.27$, $p < .05$, the Communication subscale, $F(1, 472) = 100.30$, $p < .001$, but not for the Alienation subscale, $F(1, 472) = 3.69$, $p = .06$. Specifically, girls had significantly higher scores than boys on the Trust and the Communication subscales. As can be seen in Table 5, significant grade differences were also found for Trust, $F(2, 472) = 3.93$, $p < .05$, and Communication, $F(2, 472) = 5.55$, $p < .01$, but not for Alienation, $F(2, 472) = 0.81$, ns. Tukey HSD post hoc tests for grade revealed that grade eight adolescents had significantly lower scores than grade nine adolescents on both these subscales at the .05 criteria.

In summary, the results of the MANOVA showed that boys and girls differed regarding their attachments to peers. As expected, girls reported a significantly higher quality of relationship with peers in perceived mutual trust and communication than did boys. One unexpected result was that adolescents in grade nine reported a higher degree of trust and communication in their relationships with peers than adolescents in grade eight. It was expected that peer attachment would decrease from grade eight to grade nine.

Gender and grade differences in school autonomy. Grade level differences were expected regarding adolescents' perceptions of school autonomy. Because previous findings suggest increases in teacher control and corresponding decreases in opportunities for decision-making and choice across grade levels (e.g., Eccles, Buchanan, et al., 1991; Eccles, Lord, et al., 1991; Eccles et al., 1984; Eccles & Midgley, 1989; Midgley & Feldlaufer, 1987; Midgley et al., 1988; Willower et al., 1973), it was hypothesized that the level of school autonomy would show a decrease from grade eight to grade 11 (Hypothesis 3). No hypothesis was put forth regarding differences between boys and girls in their perceptions of school autonomy. To examine differences in school autonomy, a 2 (gender) x 3 (grade) ANOVA was performed. For this analysis, the total score on the Perceived Control at School Scale (PCSS) was used as the dependent variable. Table 6 provides the means and standard deviations for school autonomy for gender and grade respectively.

The ANOVA yielded a nonsignificant main effect for gender, $F(1, 472) = 1.91$, ns; a nonsignificant main effect for grade, $F(2, 472) = 1.31$, ns; and a nonsignificant gender x grade interaction, $F(2, 472) = 1.62$, ns. The results revealed an absence of gender and grade differences on scores of perceived control at school. In contrast to what was hypothesized, adolescents' perceptions of school autonomy did not show a decrease across grades eight, nine, and eleven.

Gender and grade differences in school belonging. Next, it was of interest to determine whether boys and girls differed in their perceptions of school membership or belonging at school. Because previous research has documented gender differences in school belonging, with girls reporting greater belonging than boys (e.g., Goodenow, 1993a;

Gender and Grade Means and Standard Deviations for School Autonomy and School Belonging

Variable	Gender					
	Boys ^a		Girls ^b			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
School Autonomy	58.43	11.83	60.05	10.88		
School Belonging	61.78	13.16	62.92	12.29		
	Grade					
	Grade 8 ^c		Grade 9 ^d		Grade 11 ^e	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
School Autonomy	59.05	12.23	60.34	9.58	58.46	12.08
School Belonging	63.66	14.03	62.56	10.71	60.74	13.03

^an = 213. ^bn = 265. ^cn = 170. ^dn = 167. ^en = 141.

1993b), it was hypothesized that girls would report higher levels of school belonging than would boys (Hypothesis 2). No hypothesis was put forth regarding grade differences. To examine differences in school belonging, a 2 (gender) x 3 (grade) ANOVA was performed. For this analysis, the total score on the Psychological Sense of School Membership (PSSM) scale was used as the dependent variable. Table 6 provides the means and standard deviations for school belonging for gender and grade respectively.

The ANOVA revealed a nonsignificant main effect for gender, $F(1, 472) = 0.57$, *ns*; a nonsignificant main effect for grade, $F(2, 472) = 1.74$, *ns*; and a nonsignificant gender x grade interaction, $F(2, 472) = 1.76$, *ns*. Thus, the hypothesis that girls would report higher levels of school belonging than would boys was not supported.

Summary. One purpose of the present study was to examine differences in adolescents' perceptions of their experiences of autonomy and relatedness in parental, peer, and school contexts. Four hypotheses were posited in which differences between boys and girls, and differences across grades eight, nine, and eleven were examined.

The first hypothesis was that girls would report higher levels of peer autonomy than boys (Hypothesis 1). The results of the total scale analyses showed that girls did not differ from boys in their perceptions of peer autonomy, however, gender differences were found in the subscale analyses. Specifically, when compared to boys, girls deidealized their peers to a greater extent, thus acknowledging that their peers may not always be right or that they share the same opinions. Contrary to the hypothesis, results regarding nondependency indicated that when compared to girls, boys were less dependent on their peers.

The second hypothesis was that, when compared to boys, girls would report higher

levels of attachments to parents and peers, and belonging at school (Hypothesis 2). The results of the total scale analyses supported the hypothesis that girls had higher levels of peer attachment. From the subscale analyses, it was found that girls also reported more trust and communication in their relationships with their peers. However, the analyses did not show that girls had higher levels of parental attachment or higher levels of school belonging in comparison to boys.

The third hypothesis was that the level of school autonomy would show a decrease from grade eight to grade eleven (Hypothesis 3). No differences across grade levels were found to support this claim. Moreover, there were no gender differences found.

The fourth hypothesis was that adolescents in grade eleven would show higher levels of parental autonomy and peer autonomy (Hypothesis 4a), and lower levels of parental attachment and peer attachment than adolescents in grade eight or grade nine (Hypothesis 4b). Results of the total scale analyses did not support the hypotheses.

Regarding autonomy, one finding emerged from the subscale analyses that supports the study's hypotheses with respect to grade level differences in peer autonomy. Specifically, when compared to adolescents in grade eight, adolescents in grade 11 deidealized their peers to a greater extent. This result provides some support for the hypothesis that adolescents in grade 11 would be more autonomous from their peers than adolescents in grade eight.

One finding emerged from the subscale analyses which was contrary to the hypothesis with respect to grade level differences in autonomy. Specifically, adolescents in grade nine were found to be more dependent on their peers than adolescents in grade eight, whereas less

dependency was expected.

Regarding attachment, one finding from the total scale analyses was contrary to the hypothesis with respect to peer attachment. Specifically, when examining the total score for peer attachment, grade nine adolescents reported being more attached to their peers than adolescents in grade eight. Furthermore, the subscale analyses revealed that adolescents in grade nine had higher levels of mutual trust and communication in their peer relationships in comparison to adolescents in grade eight. Thus, contrary to expectations, both the total scale analyses and subscale analyses showed that adolescents in grade nine reported better quality of peer relationships in perceived mutual trust and communication than adolescents in grade eight, whereas lower levels were expected.

Relations of Autonomy and Relatedness to School Functioning and Psychological Adjustment

The purpose of this section is to present the results of the correlational analyses. It will be recalled that the second major goal of this study was to determine the associations among measures of autonomy, relatedness, school functioning, and psychological adjustment across different contexts. For these analyses, Pearson product-moment correlations were calculated to examine the relations between parental, peer, and school autonomy, relatedness to parents, peers, and school, GPA, teacher-rated school competencies, and internalizing and externalizing problems. For the correlational analyses, the significance level was set at $p \leq .01$ due to the large number of correlations being calculated (cf., Brown et al., 1986; Foley & Epstein, 1992). Intercorrelations among measures for boys and for girls are

reported in Table 7⁴.

The correlations were inspected for consistency in the way boys and girls reported their experiences of autonomy and relatedness within the contexts of parents, peers, and school. As can be seen in Table 7, the patterns for boys and girls were similar. Fisher's Z transformation was performed on the correlations between boys and girls and evaluated for significance at $p = .01$ against the critical value of $z = 2.58$ (Downie & Starry, 1977). Results of the Fisher Z transformations revealed that all the correlations between boys and girls were not statistically different.

Table 7 was also inspected for the intercorrelations among the subscales and total scores associated with measures of parental autonomy, parental attachment, peer autonomy, and peer attachment. Each of the subscales was significantly and strongly related to the composite scale and the intercorrelations among the subscales varied, with generally stronger correlations among the attachment subscales and low to moderate correlations among the autonomy subscales.

Moreover, given the suggestion made in the literature that autonomy and attachment are negatively associated (e.g., Ryan & Lynch, 1989), the correlations were inspected for evidence of this relationship. With the exception of alienation, which was positively related to individuation, dimensions of autonomy (i.e., deidealization, nondependency) and

⁴ The correlations reported in Table 7 were computed with grade levels combined. Intercorrelations between measures at each grade level can be found in Appendix O. Results of the Fisher Z transformations revealed that only one correlation was significantly different between grades, which was less than would have been expected by chance. The correlation between perceived control at school (PCSS) and teacher-rated school competencies (SchComp) was found to be significantly different between grade eight and grade eleven.

Table 7

Intercorrelations Among Measures for Boys^a and Girls^b

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 EAS	-	.81	.74	.84	-.73	-.73	-.66	.58	.12	.23	-.18	.18	-.16	-.17	-.02	.24	-.30	-.37	-.05	-.11	.28	.48
2 EASde	.82	-	.44	.49	-.53	-.57	-.46	.39	.18	.38	-.07	.10	-.15	-.17	-.07	.14	-.21	-.27	-.01	-.04	.15	.35
3 EASnon	.67	.40	-	.46	-.50	-.50	-.52	.33	.02	.07	-.08	.04	-.06	-.07	.01	.11	-.19	-.26	-.02	-.09	.14	.35
4 EASInd	.82	.50	.30	-	-.70	-.66	-.59	.63	.07	.08	-.26	.26	-.16	-.16	.02	.29	-.30	-.35	-.10	-.14	.35	.44
5 PA	-.67	-.58	-.44	-.55	-	.94	.90	-.86	-.07	-.05	.23	-.27	.34	.34	.14	-.43	.43	.49	.12	.15	-.53	-.53
6 PATrust	-.63	-.59	-.41	-.47	.92	-	.79	-.71	-.05	-.05	.19	-.19	.29	.31	.12	-.35	.39	.46	.10	.18	-.45	-.54
7 PACom	-.61	-.51	-.53	-.41	.88	.74	-	-.64	-.00	-.01	.22	-.16	.25	.25	.16	-.24	.38	.42	.14	.15	-.37	-.40
8 PAAllen	.52	.40	.20	.56	-.83	-.66	-.57	-	.15	.06	-.20	.38	-.38	-.35	-.11	.58	-.39	-.45	-.07	-.07	.62	.48
9 EASP	.15	.24	-.02	.10	-.07	-.05	-.07	.07	-	.72	.70	.77	-.53	-.51	-.48	.38	-.17	-.21	.07	.15	.12	-.01
10 EASPde	.25	.32	.15	.12	-.14	-.14	-.16	.07	.65	-	.35	.29	-.28	-.27	-.27	.17	-.10	-.19	.08	.10	-.00	.06
11 EASPhon	-.19	-.04	-.14	-.25	.21	.17	.13	-.25	.62	.21	-	.26	-.32	-.32	-.38	.11	-.02	.00	.01	.14	-.08	-.21
12 EASPhnd	.21	.20	-.04	.28	-.17	-.11	-.10	.26	.72	.18	.12	-	-.53	-.49	-.39	.50	-.26	-.24	.06	.09	.28	.09
13 PeerA	-.04	-.08	.05	-.04	.25	.18	.23	-.25	-.52	-.21	-.31	-.48	-	.96	.85	-.76	.45	.54	.06	.02	-.41	-.16
14 PrTrust	-.03	-.06	.04	-.04	.26	.24	.21	-.23	-.47	-.20	-.21	-.47	.93	-	.77	-.68	.42	.52	.05	.02	-.37	-.17
15 PrCom	-.00	-.10	.01	.09	.14	.08	.22	-.05	-.47	-.21	-.47	-.27	.84	.69	-	-.39	.33	.38	.09	.04	-.15	.01
16 PrAllen	.07	.01	-.09	.20	-.23	-.10	-.11	.41	.29	.05	-.01	.46	-.60	-.47	-.18	-	-.43	-.50	-.01	.00	.58	.29
17 PCSS	-.27	-.29	-.09	-.21	.35	.33	.23	-.37	-.27	-.17	-.06	-.28	.41	.42	.28	-.31	-	.71	.15	.12	-.43	-.36
18 PSSM	-.34	-.32	-.12	-.31	.52	.47	.37	-.54	-.25	-.15	-.01	-.29	.41	.43	.29	-.25	.66	-	.15	.18	-.46	-.45
19 SchComp	-.04	-.09	.10	-.08	.12	.11	.06	-.16	.11	.13	.13	-.02	.09	.12	.05	-.06	.22	.24	-	.49	-.07	-.07
20 GPA	.07	.07	.08	.02	.06	.10	-.01	-.06	.36	.25	.25	.22	-.06	-.00	-.06	.10	.06	.10	.54	-	-.10	-.29
21 YSRInt	.18	.12	.02	.25	-.48	-.37	-.31	.61	.14	.08	-.15	.29	-.32	-.32	-.06	.47	-.42	-.53	-.10	-.08	-	.52
22 YSRext	.30	.17	.18	.33	-.41	-.37	-.26	.47	-.12	-.03	-.27	.03	-.01	-.06	.13	.15	-.17	-.28	-.23	-.25	.39	-

(table continues)

Note. Correlations for boys are below the diagonal; correlations for girls are above the diagonal. Correlations that are significant at the .01 level and higher are bolded. For boys, correlations of .14 and higher are significant at the .05 level; correlations of .18 and higher are significant at the .01 level; correlations of .23 and higher are significant at the .001 level. For girls, correlations of .13 and higher are significant at the .05 level; correlations of .16 and higher are significant at the .01 level; correlations of .20 and higher are significant at the .001 level. EAS = Emotional Autonomy Scale for parents total scale; EASde = EAS Deidealization subscale; EASnon = EAS Nondependency subscale; EASind = EAS Individuation subscale; PA = IPPA parental attachment total scale; PATrust = parental Trust subscale; PACom = parental Communication subscale; PAAlien = parental Alienation subscale; EASP = Emotional Autonomy Scale for peers total scale; EASPde = EASP Deidealization subscale; EASPnon = EASP Nondependency subscale; EASPind = EASP Individuation subscale; PeerA = IPPA peer attachment total scale; PrTrust = peer Trust subscale; PrCom = peer Communication subscale; PrAlien = peer Alienation subscale; PCSS = Perceived Control at School Scale; PSSM = Psychological Sense of School Membership; SchComp = teacher-rated school competencies; GPA = grade point average; YSRint = Youth Self-Report Internalizing subscale; YSRext = Youth Self-Report Externalizing subscale.

^a*n* = 213. ^b*n* = 265.

relatedness (i.e., trust, communication) were related negatively both for boys and for girls, suggesting there is some disparity between autonomy and relatedness in both contexts of parents and peers.

Also of interest was the correlation between school autonomy and school belonging. Research suggests that student autonomy and influence at school is positively linked with a sense of school community and belonging (e.g., Battistich, Solomon, Watson, & Schaps, 1997). As can be seen in Table 7, perceived control at school was positively correlated with school belonging. Moreover, for autonomy, school autonomy was negatively related to dimensions of parental autonomy and peer autonomy. Whereas positive correlations were found between parental autonomy (i.e., deidealization, individuation) and peer autonomy (i.e., deidealization, individuation), peer nondependency was negatively related to parental nondependency, indicating that less dependency on parents is associated with more dependency on peers.

Additionally, the correlations among the four criterion variables (i.e., teacher-rated school competencies, GPA, internalizing problems, externalizing problems) were examined. Moderate and positive correlations were found between school competencies and GPA and between internalizing and externalizing problems. School competencies and GPA were negatively related to problems in psychological adjustment.

Relations of parental autonomy to school functioning and psychological adjustment. It was hypothesized that parental autonomy would be associated positively with psychological

adjustment problems (Hypothesis 7). Table 8⁵ presents the correlations of parental autonomy to school functioning and problems in psychological adjustment for boys and for girls. Results from the total scale analyses revealed that parental autonomy was significantly and positively related to internalizing and externalizing problem scores both for boys and for girls. As can be seen in Table 8, several significant relations emerged with regard to the subscale analyses pertaining to parental deidealization, nondependency on parents, and individuation. Parental deidealization was significantly and positively associated with externalizing problems for girls, but not for boys. That is, girls who perceived that their parents may not always be right or shared the same opinions, also reported more externalizing problems. Nondependency was found to be significantly and positively related to externalizing problems both for boys and for girls. Thus, adolescents who reported being less dependent on their parents also reported more externalizing problems. Moreover, individuation from parents was found to be significantly and positively related to internalizing and externalizing problems for both genders. The Individuation subscale reflects adolescents' perceptions that parents do not fully understand or know them well (e.g., Chen & Dornbusch, 1998; Ryan & Lynch, 1989). This result indicated that those adolescents who report higher levels of individuation from parents, also report more problems.

To further explore relations between autonomy from parents and school functioning, the relation of emotional autonomy from parents to teacher-ratings of adolescents' school competencies, and GPA were examined. As can be seen in Table 8, results revealed no

⁵ Table 8 is presented here for convenience and because it provides a concise summary of the observed relations.

Table 8

Correlations of Parental Autonomy to School Functioning and Psychological Adjustment for Boys^a and Girls^b

Variable	Parental Autonomy (EAS)					
	Total Scale		Deidealization		Nondependency	
	Boys	Girls	Boys	Girls	Boys	Girls
School Competencies (SchComp)	-.04	-.05	-.09	-.01	.10	-.02
GPA	.07	-.11	.07	-.04	.08	-.09
Internalizing Problems (YSRint)	.18**	.28***	.12	.15	.02	.14
Externalizing Problems (YSRext)	.30***	.48***	.17	.35***	.18**	.35***
					.33***	.44***

^a $n = 213$. ^b $n = 265$.** $p \leq .01$. *** $p \leq .001$.

significant relations for boys or for girls.

Relations of peer autonomy to school functioning and psychological adjustment.

Next, it was of interest to examine relations of peer autonomy to school functioning and psychological adjustment. It was hypothesized that peer autonomy would be associated negatively with psychological adjustment problems (Hypothesis 8). Table 9⁶ presents the correlations of peer autonomy to school functioning and problems in psychological adjustment for boys and for girls. There were no significant findings in the total scale, but there were two significant relations found in the subscales. Specifically, nondependency on peers was significantly and negatively related to self-reports of externalizing problems for boys and for girls. This result supports the hypothesis and suggests that those adolescents who are less dependent on their peers report fewer externalizing problems. One other significant finding revealed that individuation from peers was significantly and positively related to self-reports of internalizing problems both for boys and for girls. Although no specific a priori hypothesis was made regarding individuation from peers, this finding suggests that those adolescents who feel their peers do not really know or understand them, report more internalizing problems.

Next, the relation between peer autonomy and school functioning was examined. As can be seen in Table 9, there was one significant finding in the total scale that was supported by each of the subscales. Specifically, for boys only, GPA was significantly and positively related to peer autonomy. That is, boys who reported higher levels of autonomy in their

⁶ Table 9 is presented here for convenience and because it provides a concise summary of the observed relations.

Table 9

Correlations of Peer Autonomy to School Functioning and Psychological Adjustment for Boys^a and Girls^b

Variable	Peer Autonomy (EASP)					
	Total Scale		Deidealization		Nondependency	
	Boys	Girls	Boys	Girls	Boys	Girls
School Competencies (SchComp)	.11	.07	.13	.08	.13	.01
GPA	.36***	.15	.25***	.10	.25***	.14
Internalizing Problems (YSRint)	.14	.12	.08	-.00	-.15	-.08
Externalizing Problems (YSRext)	-.12	-.01	-.03	.06	-.27***	-.21***
					.03	.09

^an = 213. ^bn = 265.

p ≤ .01. *p ≤ .001.

relationships with peers (i.e., deidealization, nondependency, and individuation) had higher GPAs.

Relations of parental attachment to school functioning and psychological adjustment.

Next, it was hypothesized that parental attachment would be positively associated with school functioning (Hypothesis 6) and negatively associated with psychological adjustment problems (Hypothesis 10). Table 10⁷ presents the correlations of parental attachment to school functioning and problems in psychological adjustment for boys and for girls. First, the association between parental attachment and school functioning was examined by investigating the relation of parental attachment to teacher-ratings of adolescents' school competencies and GPA. There were no significant relations found in the total scale, but there was one significant relation found in the subscales. Specifically, greater mutual trust in relationships with parents was significantly and positively associated with GPA for girls, but not for boys. This result provides some evidence in support of the hypothesis that positive relationships with parents are associated with better school functioning.

Next, the relation of parental attachment to psychological adjustment was examined. As can be seen in Table 10, there were significant relations found in the total scale and in each of the subscales. Both for boys and for girls, significant and negative correlations were found between parental attachment and adolescents' self-reports of internalizing and externalizing problems. Thus, as expected, the correlational results support the hypothesis that perceived quality of mutual trust and communication and the extent of alienation in

⁷ Table 10 is presented here for convenience and because it provides a concise summary of the observed relations.

Correlations of Parental Attachment to School Functioning and Psychological Adjustment for Boys^a and Girls^b

Note. Scores on the alienation subscale are reversed scored when computing the total scale score.

$$^{**}\bar{p} \leq .01. \quad ^{***}\bar{p} \leq .001.$$

relationships with parents are associated with fewer problems in psychological adjustment.

Relations of peer attachment to school functioning and psychological adjustment. In examining relations of peer attachment to school functioning and psychological adjustment, it was hypothesized that peer attachment would be positively associated with school functioning (Hypothesis 6) and negatively associated with psychological adjustment problems (Hypothesis 10). Table 11⁸ presents the correlations of peer attachment to school functioning and problems in psychological adjustment for boys and for girls. First, the association between peer attachment and school functioning was examined by investigating relations of peer attachment to teacher-ratings of adolescents' school competencies and GPA. There were no significant findings that emerged from the total scale or subscale analyses for either teacher-rated school competencies or GPA.

Next, the association between peer attachment and psychological adjustment was examined by investigating relations of peer attachment to adolescents' self-reports of internalizing and externalizing problems. With regard to internalizing problems, as can be seen in Table 11, there was a significant finding from the total scale that was supported by the trust and alienation subscales. Specifically, for boys and for girls, peer trust was related significantly and negatively to adolescents' self-reports of internalizing problems, whereas less alienation in relationships with peers was related to fewer internalizing problems. That is, adolescents who reported greater mutual trust and less alienation in their relationships with peers also reported fewer internalizing problems.

⁸ Table 11 is presented here for convenience and because it provides a concise summary of the observed relations.

Table 11

Correlations of Peer Attachment to School Functioning and Psychological Adjustment for Boys^a and Girls^b

Variable	Peer Attachment (PeerA)					
	Total Scale		Trust		Communication	
	Boys	Girls	Boys	Girls	Boys	Girls
School Competencies (SchComp)	.09	.06	.12	.05	.05	.09
GPA	-.06	.02	-.00	.02	-.06	.04
Internalizing Problems (YSRint)	-.32***	-.41***	-.32***	-.37***	-.06	-.15
Externalizing Problems (YSRext)	-.01	-.16**	-.06	-.17**	.13	.01
					.15	.29***

Note. Scores on the alienation subscale are reversed scored when computing the total scale score.

^a $\eta = 213$. ^b $\eta = 265$.

** $p \leq .01$. *** $p \leq .001$.

With regard to externalizing problems, there was a significant finding from the total scale that was supported by the trust and alienation subscales. Specifically, for girls only, peer trust was related significantly and negatively to self-reports of externalizing problems, whereas less alienation in relationships with peers was related to fewer externalizing problems. That is, adolescent girls who reported greater mutual trust and less alienation in their relationships with peers also reported fewer externalizing problems.

The results support the hypothesis that peer attachment would be negatively associated with psychological adjustment problems. Whereas for girls, peer attachment was significantly and negatively related to both self-reports of internalizing and externalizing problems, for boys, peer attachment was significantly and negatively related only to self-reports of internalizing problems.

Relations of school autonomy to school functioning and psychological adjustment. In examining relations of school autonomy to school functioning and psychological adjustment, it was hypothesized that school autonomy would be positively associated with school functioning (Hypothesis 5) and negatively associated with psychological adjustment problems (Hypothesis 9). Table 12⁸ presents the correlations of school autonomy to school functioning and problems in psychological adjustment for boys and girls. To test these hypotheses, the association between school autonomy and school functioning was first examined by investigating the relation of perceived control at school to teacher-ratings of adolescents' school competencies and GPA. There was only one significant relation found

⁸ Table 12 is presented here for convenience and because it provides a concise summary of the observed relations.

Correlations of School Autonomy and School Belonging to School Functioning and Psychological Adjustment for Boys^a and Girls^b

Variable	School Autonomy		School Belonging	
	(PCSS)		(PSSM)	
	Boys	Girls	Boys	Girls
School Competencies (SchComp)	.22***	.15	.24***	.15
GPA	.06	.12	.10	.18**
Internalizing Problems (YSRint)	-.42***	-.43***	-.53***	-.46***
Externalizing Problems (YSRext)	-.17	-.36***	-.28***	-.45***

^a $n = 213$. ^b $n = 265$.

** $p \leq .01$. *** $p \leq .001$.

between school autonomy and school functioning. Specifically, for boys only, perceived control at school was significantly and positively related to teacher-ratings of school competencies. Moreover, for both genders, no significant relation emerged between perceived control at school and GPA. Thus, the results provide partial support for the hypothesis that school autonomy would be positively related to school functioning.

Next, the association between school autonomy and psychological adjustment was examined by investigating the relation of perceived control at school to internalizing and externalizing problems. Perceived control at school was related significantly and negatively to internalizing problems for both genders, and negatively to externalizing problems for girls only. Thus, the results support the hypothesis that school autonomy would be negatively related to psychological adjustment problems. That is, those adolescents who reported higher levels of perceived control at school, reported fewer problems.

Relations of school belonging to school functioning and psychological adjustment. In examining relations of school belonging to school functioning and psychological adjustment, it was hypothesized that school belonging would be positively associated with school functioning (Hypothesis 6) and negatively associated with psychological adjustment problems (Hypothesis 10). Table 12 presents the correlations of school belonging to school functioning and problems in psychological adjustment for boys and girls. To test this hypothesis, the association between school belonging and school functioning was first examined by investigating the relation of school belonging to teacher-ratings of adolescents' school competencies and GPA.

For boys, school belonging was significantly and positively associated with teacher-

ratings of school competencies. For girls, school belonging was related significantly and positively to GPA. Taken together, these results provide support for the hypothesis that school belonging would be positively associated with school functioning.

Next, the association between school belonging and psychological adjustment was examined by investigating the relation of school belonging to adolescents' self-reports of internalizing and externalizing problems. For both genders, school belonging was related significantly and negatively to both internalizing and externalizing problems. As hypothesized, these results indicate that those adolescents who perceived positive connections to school, reported fewer internalizing and externalizing problems.

Summary. The second major goal of the present investigation was to examine the relations of autonomy and relatedness in parent, peer, and school contexts to school functioning and psychological adjustment. Six hypotheses were posited, two with regard to school functioning (i.e., teacher-rated school competencies, GPA) and four with regard to psychological adjustment (i.e., internalizing problems, externalizing problems).

First, school functioning was examined. It was hypothesized that school functioning would be positively associated with school autonomy (Hypothesis 5) and also positively associated with parental attachment, peer attachment, and school belonging (Hypothesis 6). With regard to Hypothesis 5, results showed that only teacher-rated school competencies and not GPA were positively associated with school autonomy, and only for boys.

With regard to Hypothesis 6, results are summarized within the parent, peer, and school contexts, first for teacher-rated school competencies and next for GPA. Teacher-rated school competencies were associated as follows: findings for parental attachment and peer

attachment did not reveal any significant associations for either gender; and school belonging was positively associated only for boys. GPA was associated as follows: greater mutual trust in relationships with parents was positively associated for girls only; findings for peer attachment did not reveal any significant association for either gender; and school belonging was positively related for girls only.

Next, psychological adjustment was examined. It was hypothesized that problems in psychological adjustment would be positively associated with parental autonomy (Hypothesis 7), negatively associated with both peer autonomy (Hypothesis 8) and school autonomy (Hypothesis 9). It was further hypothesized that problems in psychological adjustment would be negatively associated with parental attachment, peer attachment, and school belonging (Hypothesis 10). Results are summarized first for internalizing problems and next for externalizing problems.

With regard to Hypothesis 7, internalizing problems were positively associated with parental autonomy (total scale) and individuation from parents for boys and for girls. For both genders, externalizing problems were positively associated with parental autonomy (total scale), nondependency on parents, and individuation from parents. Moreover, externalizing problems were positively associated with deidealization of parents only for girls.

With regard to Hypothesis 8, internalizing problems were positively related to individuation from peers. Externalizing problems were negatively associated with nondependency on peers.

With regard to Hypothesis 9, internalizing problems and externalizing problems were each negatively associated with school autonomy.

Finally, with regard to Hypothesis 10, results are summarized within the parent, peer, and school contexts, first for internalizing problems and next for externalizing problems. Internalizing problems were associated as follows: parental attachment (including trust, communication, and alienation scores) was negatively associated; overall peer attachment and peer trust were negatively associated, and alienation was positively associated; and school belonging was negatively associated. Externalizing problems were associated as follows: parental attachment (including trust, communication, and alienation scores) was negatively associated; overall peer attachment and peer trust were negatively associated, and alienation was positively associated for girls only; and school belonging was negatively associated.

Regression Analyses Examining Autonomy and Relatedness in the Contexts of Parents, Peers, and School, as Predictors of School Functioning and Psychological Adjustment

The purpose of this section is to present the results of the regression analyses. It will be recalled that the third major goal of the present investigation was to determine the extent to which autonomy and relatedness predict school functioning and psychological adjustment problems. To further explore relations of autonomy and relatedness to school functioning and psychological adjustment, four separate hierarchical multiple regressions were computed for each gender in which teacher-rated school competencies, GPA, internalizing problems and externalizing problems served as the dependent variables. Parental deidealization, parental nondependency, parental individuation, parental attachment, peer deidealization, peer nondependency, peer individuation, peer attachment, school autonomy, and school belonging and grade level were the independent variables. Grade level served as a control variable in these analyses for two reasons: (a) grade in school was part of

the cross-sectional research design and used as an index of developmental status (cf., Larson et al., 1996), and (b) significant grade differences were found on dimensions of peer autonomy and peer attachment in the MANOVA analyses examining gender and grade differences.

It was hypothesized that autonomy and relatedness in parent, peer, and school contexts would be significant predictors of school functioning and psychological adjustment problems. First it was hypothesized that teacher-rated school competencies and academic achievement would each be positively associated with autonomy and relatedness in parent, peer, and school contexts (Hypothesis 11). Next, it was hypothesized that internalizing and externalizing problems would each be positively associated with parental autonomy, and negatively associated with peer autonomy and school autonomy (Hypothesis 12a). It was further hypothesized that internalizing and externalizing problems would be negatively associated with parental attachment, peer attachment, and school belonging (Hypothesis 12b).

For each hierarchical regression analyses, the predictors were entered into the analyses in the following way. In Step 1, grade level in school was entered first. The hierarchical approach was used to statistically control for grade in assessing the relations of autonomy and relatedness variables to the dependent variable beyond that of grade level (Cohen & Cohen, 1983). Theoretically, different grade levels would reflect age-related differences in adolescent characteristics during a critical period for individuation and autonomy development with parents, peers, and at school (e.g., Hill & Holmbeck, 1986; Josselson, 1980; Minuchin & Shapiro, 1983). Thus, it was of interest to determine the unique contribution of dimensions of autonomy, and relatedness after controlling for variance

associated with adolescents' grade level. Next, parental deidealization, parental nondependency, parental individuation, parental attachment, peer deidealization, peer nondependency, peer individuation, peer attachment, school autonomy, and school belonging variables were entered as a block in Step 2. To avoid any potential problems with multicollinearity between dimensions of trust and communication in relationships with parents or with peers (see correlations in Table 7), the composite scores for parental attachment and peer attachment were used.

The hierarchical multiple regression procedure was chosen because it allows one to control entry of variables and to determine the unique variance contributions of the independent variables after accounting for the proportion of variance attributable to one or more independent variables already in the equation (Tabachnick & Fidell, 1989). As noted by Pedhazur (1982), interrelations among the independent variables (i.e., multicollinearity) may pose difficulties in regression analyses. Thus, to check for multicollinearity in the present investigation I examined tolerance levels within the regression analysis (Gavazzi et al., 1993; Tabachnick & Fidell, 1989). Tolerance levels range from 0 to 1, and if values are less than 0.1, the potential for multicollinearity increases (Norušis, 1997). For each of the regression analyses, tolerance values for the independent variables were examined and did not indicate problems with multicollinearity (i.e., tolerance values ranged from .34 to .81).

Multiple regression analyses predicting teacher-rated school competencies.

Hierarchical multiple regression analyses on teacher-rated school competencies were performed separately for boys and for girls. As can be seen in Table 13, for boys, results from the hierarchical regression analysis predicting teacher-rated school competencies

Summary of Hierarchical Multiple Regression Analysis Predicting SchoolCompetencies for Boys^a

Variable	<u>B</u>	<u>SE B</u>	β	<u>R</u>	<u>R</u> ²	<u>F</u> _{change}
Step 1						
Grade	2.69	0.87	.21**	.21	.04	9.57**
Step 2						
Parental Deidealization	-0.75	0.52	-.13	.41	.17	3.08***
Parental Nondependency	1.04	0.55	.14			
Parental Individuation	-0.06	0.43	-.02			
Parental Attachment	-0.01	0.09	-.01			
Peer Deidealization	0.97	0.53	.13			
Peer Nondependency	1.02	0.54	.14			
Peer Individuation	0.62	0.45	.11			
Peer Attachment	0.07	0.10	.07			
School Autonomy	0.14	0.12	.10			
School Belonging	0.23	0.12	.18			

^an = 213.

p < .01. *p = .001.

indicated that, after controlling for variance associated with grade level, the autonomy and relatedness variables contributed significantly to school competencies. Specifically, in the first step in the analysis, grade level accounted for only a small part of the variance (4%) in school competencies. In the second step, inclusion of parental autonomy, peer autonomy, parental attachment, peer attachment, school autonomy and school belonging variables produced a significant change in R^2 , accounting for 13% of the variance in teacher-rated school competencies. Inspection of the standardized beta weights shown in Table 13 revealed that the variables jointly predicted teacher-rated school competencies for boys. Overall, the total model accounted for 17% of the variance in boys' school competencies, $F(11, 201) = 3.76, p = .001$.

As can be seen in Table 14, for girls, results from the hierarchical regression analysis predicting teacher-rated school competencies indicated that in the first step in the analysis, grade level accounted for very little variance (1%) in school competencies. In the second step, the autonomy and relatedness variables did not contribute significantly to an increase in R^2 , after controlling for variance associated with grade. Inspection of the standardized beta weights shown in Table 14 indicated that the variables, when considered together, predicted teacher-rated school competencies for girls. Overall, the total model accounted for 8% of the variance in girls' school competencies, $F(11, 253) = 1.87, p < .05$.

Summary of Hierarchical Multiple Regression Analysis Predicting School Competencies for Girls^a

Variable	<u>B</u>	<u>SE B</u>	β	<u>R</u>	<u>R²</u>	<u>F_{change}</u>
Step 1						
Grade	1.44	0.77	.12	.12	.01	3.56
Step 2				.27	.08	1.67
Parental Deidealization	0.29	0.43	.06			
Parental Nondependency	0.52	0.50	.08			
Parental Individuation	-0.48	0.44	-.10			
Parental Attachment	0.07	0.08	.09			
Peer Deidealization	0.40	0.49	.06			
Peer Nondependency	-0.62	0.50	-.09			
Peer Individuation	0.73	0.38	.15			
Peer Attachment	-0.27	0.08	-.03			
School Autonomy	0.11	0.12	.08			
School Belonging	0.15	0.12	.13			

Note. All *p* values are nonsignificant.

^a*n* = 265.

Multiple regression analyses predicting GPA. Hierarchical multiple regression analyses on GPA were performed separately for boys and for girls. The results of the regression analysis predicting GPA for boys are presented in Table 15. As can be seen in Table 15, in the first step, grade level did not account for variance in GPA. In the second step, the autonomy and relatedness variables produced a significant change in R^2 , accounting for 19% of the variance in GPA. Inspection of the standardized beta weights shown in Table 15 revealed that peer deidealization, peer nondependency, and peer individuation were significant and positive predictors of GPA for boys. Overall, the total model accounted for 19% of the variance in GPA, $F(11, 201) = 4.36, p < .001$.

As can be seen in Table 16, for girls, results from the hierarchical regression predicting GPA revealed that in the first step, grade level did not account for variance in GPA. In the second step, the autonomy and relatedness variables produced a significant change in R^2 , accounting for 8% of the variance in GPA. Inspection of the standardized beta weights shown in Table 16 revealed that school belonging was a significant and positive predictor of GPA for girls. Overall, the total model accounted for 8% of the variance in GPA, $F(11, 253) = 1.94, p < .05$.

Multiple regression analyses predicting internalizing problem behaviours. Hierarchical multiple regression analyses for self-reported internalizing problems were performed separately for boys and for girls. As can be seen in Table 17 for boys, in the first step, grade level did not account for variance in self-reported internalizing problems. In the second step, the autonomy and relatedness variables produced a significant change in R^2 , accounting for 44% of the variance in boys' self-reported internalizing problems. Inspection

Summary of Hierarchical Multiple Regression Analysis Predicting GPA for Boys^a

Variable	<u>B</u>	<u>SE B</u>	β	<u>R</u>	<u>R</u> ²	<u>F</u> _{change}
Step 1						
Grade	-0.12	0.17	-.05	.05	.00	0.49
Step 2				.44	.19	4.74***
Parental Deidealization	-0.02	0.10	-.02			
Parental Nondependency	0.19	0.10	.14			
Parental Individuation	0.02	0.08	.03			
Parental Attachment	0.00	0.02	.01			
Peer Deidealization	0.28	0.10	.21**			
Peer Nondependency	0.32	0.10	.24**			
Peer Individuation	0.27	0.08	.25***			
Peer Attachment	0.02	0.02	.10			
School Autonomy	0.01	0.02	.05			
School Belonging	0.03	0.02	.14			

^an = 213.

p < .01. *p ≤ .001.

Summary of Hierarchical Multiple Regression Analysis Predicting GPA for Girls^a

Variable	<u>B</u>	<u>SE B</u>	β	<u>R</u>	<u>R</u> ²	<u>F</u> _{change}
Step 1						
Grade	-0.07	0.16	-.03	.03	.00	0.18
Step 2				.28	.08	2.12*
Parental Deidealization	0.04	0.09	.04			
Parental Nondependency	-0.00	0.10	-.00			
Parental Individuation	-0.10	0.09	-.10			
Parental Attachment	0.01	0.02	.04			
Peer Deidealization	0.10	0.10	.08			
Peer Nondependency	0.07	0.10	.05			
Peer Individuation	0.13	0.08	.13			
Peer Attachment	0.00	0.02	.01			
School Autonomy	-0.01	0.02	-.03			
School Belonging	0.05	0.02	.21*			

* $p < .05$.^a $n = 265$.

Summary of Hierarchical Multiple Regression Analysis Predicting Internalizing Problems for Boys^a

Variable	<u>B</u>	<u>SE B</u>	β	<u>R</u>	<u>R</u> ²	<u>F</u> _{change}
Step 1						
Grade	0.42	0.50	.06	.06	.00	0.71
Step 2				.67	.44	15.95***
Parental Deidealization	-0.84	0.24	-.26***			
Parental Nondependency	-0.56	0.25	-.14*			
Parental Individuation	-0.03	0.20	-.01			
Parental Attachment	-0.22	0.04	-.44***			
Peer Deidealization	0.19	0.25	.05			
Peer Nondependency	-0.55	0.25	-.13*			
Peer Individuation	0.49	0.21	.15*			
Peer Attachment	-0.01	0.04	-.02			
School Autonomy	-0.10	0.06	-.13			
School Belonging	-0.18	0.06	-.26***			

^an = 213.

*p < .05. ***p ≤ .001.

of the standardized beta weights shown in Table 17 revealed that parental deidealization, parental nondependency, parental attachment, peer nondependency, and school belonging were significant and negative predictors of self-reported internalizing problems for boys. Peer individuation emerged as a significant and positive predictor of boys' self-reported internalizing problems. Overall, the total model accounted for 44% of the variance in boys' self-reported internalizing problem behaviours, $F(11, 201) = 14.61, p < .001$.

As can be seen in Table 18, for girls, results from the hierarchical regression predicting self-reported internalizing problem behaviours revealed that the autonomy and relatedness variables made a significant contribution to predicting internalizing problems, after controlling for grade level. In the first step, grade level did not account for variance in self-reported internalizing problems. In the second step, the variables produced a significant change in R^2 , accounting for 40% of the variance in internalizing problems. Examination of the standardized beta weights indicated that parental attachment and peer attachment were significant and negative predictors of self-reported internalizing problems for girls. Overall, the total model accounted for 40% of the variance in girls' self-reported internalizing problem behaviours, $F(11, 253) = 15.32, p < .001$.

Multiple regression analyses predicting externalizing problem behaviours. Multiple regression analyses for externalizing problems were performed separately for boys and for girls. As can be seen in Table 19, in the first step, grade level did not account for variance in self-reported externalizing problems for boys. In the second step, the variables produced a significant change in R^2 , accounting for 24% of the variance in externalizing problems. Inspection of the standardized beta weights shown in Table 19 revealed that parental

Summary of Hierarchical Multiple Regression Analysis Predicting Internalizing Problems for Girls^a

Variable	<u>B</u>	<u>SE B</u>	β	<u>R</u>	<u>R</u> ²	<u>F</u> _{change}
Step 1						
Grade	0.19	0.55	.02	.02	.00	0.12
Step 2				.63	.40	16.84***
Parental Deidealization	-0.42	0.25	-.11			
Parental Nondependency	-0.54	0.29	-.11			
Parental Individuation	0.07	0.25	.02			
Parental Attachment	-0.23	0.04	-.45***			
Peer Deidealization	-0.27	0.28	-.06			
Peer Nondependency	-0.15	0.29	-.03			
Peer Individuation	0.19	0.22	.05			
Peer Attachment	-0.10	0.05	-.16*			
School Autonomy	-0.11	0.07	-.11			
School Belonging	-0.11	0.07	-.13			

^a $n = 265$.

* $p < .05$. *** $p < .001$.

Summary of Hierarchical Multiple Regression Analysis Predicting Externalizing Problems for Boys^a

Variable	<u>B</u>	<u>SE B</u>	β	<u>R</u>	<u>R</u> ²	<u>F</u> _{change}
Step 1						
Grade	0.40	0.43	.06	.06	.00	0.88
Step 2				.49	.24	6.30***
Parental Deidealization	-0.36	0.24	-.13			
Parental Nondependency	0.04	0.25	.01			
Parental Individuation	0.39	0.20	.16*			
Parental Attachment	-0.13	0.04	-.31**			
Peer Deidealization	-0.12	0.24	-.03			
Peer Nondependency	-0.51	0.25	-.15*			
Peer Individuation	-0.11	0.21	-.04			
Peer Attachment	0.03	0.04	.06			
School Autonomy	-0.02	0.06	-.03			
School Belonging	-0.08	0.06	-.13			

^a $n = 213$.

* $p \leq .05$. ** $p < .01$. *** $p \leq .001$.

individuation was a significant and positive predictor of self-reported externalizing problems, whereas parental attachment and peer nondependency were significant and negative predictors of boys' self-reported externalizing problems. Overall, the total model accounted for 24% of the variance in boys' self-reported externalizing problem behaviours, $F(11, 201) = 5.82$, $p < .001$.

As can be seen in Table 20, for girls, results from the hierarchical regression analysis predicting externalizing problem behaviours revealed that the autonomy and relatedness variables made a significant contribution to predicting externalizing problems, after controlling for grade level. In Step 1, grade level did not account for variance in girls' self-reported externalizing problems. In Step 2, the variables produced a significant change in R^2 , accounting for 37% of the variance in externalizing problems. Examination of the standardized beta weights revealed that parental attachment and school belonging were significant and negative predictors of self-reported externalizing problems for girls. Overall, the total model accounted for 37% of the variance in girls' self-reported externalizing problem behaviours, $F(11, 253) = 13.25$, $p < .001$.

Summary. The third major goal of the present investigation was to determine the extent to which autonomy and relatedness in the contexts of parents, peers, and school account for variance in school functioning and problems in psychological adjustment.

Overall, results of the hierarchical regression analyses on measures of school functioning showed that autonomy and relatedness variables accounted for significant proportions of variance in teacher-rated school competencies and GPA, after controlling for grade level. For boys, peer deidealization, peer nondependency, and peer individuation were

Summary of Hierarchical Multiple Regression Analysis Predicting Externalizing Problems for Girls^a

Variable	<u>B</u>	<u>SE B</u>	β	<u>R</u>	<u>R</u> ²	<u>F</u> _{change}
Step 1						
Grade	0.31	0.42	.05	.05	.00	0.56
Step 2				.61	.37	14.49***
Parental Deidealization	0.18	0.19	.06			
Parental Nondependency	0.25	0.23	.07			
Parental Individuation	0.21	0.20	.08			
Parental Attachment	-0.10	0.03	-.27**			
Peer Deidealization	0.06	0.22	.02			
Peer Nondependency	-0.31	0.22	-.09			
Peer Individuation	-0.05	0.17	-.02			
Peer Attachment	0.05	0.04	.09			
School Autonomy	-0.03	0.05	-.04			
School Belonging	-0.19	0.05	-.29***			

^an = 265.

p < .01. *p ≤ .001.

positive and significant predictors of GPA. For girls, school belonging emerged as a significant and positive predictor of GPA. However, none of the independent variables emerged as unique predictors of teacher-rated school competencies for boys or for girls.

Results of the hierarchical regression analyses on measures of psychological adjustment showed that the autonomy and relatedness variables accounted for significant proportions of variance in adolescents' self-reports of internalizing and externalizing problem behaviours after controlling for grade level, which was not significantly related to problems in psychological adjustment. Findings for boys showed that parental deidealization, parental nondependency, parental attachment, peer nondependency, and school belonging were significant and negative predictors of self-reported internalizing problems, whereas peer individuation was a significant and positive predictor of boys' self-reported internalizing problems. Moreover, parental attachment and peer nondependency were significant and negative predictors of self-reported externalizing problems for boys, whereas parental individuation was a positive and significant predictor of boys' self-reported externalizing problems.

For girls, results showed that parental attachment and peer attachment were significant and negative predictors of self-reported internalizing problems. Moreover, parental attachment and school belonging were significant and negative predictors of girls' self-reported externalizing problems.

Results of the regression analyses provide further evidence to suggest that experiences of autonomy and relatedness within the contexts of parents, peers, and school make independent contributions to the prediction of adolescent outcomes. Thus, the results support the notion that experiences of autonomy and relatedness are important for understanding adolescents' school functioning and problems in psychological adjustment.

CHAPTER FIVE

Discussion

This study explored two critical dimensions of adolescent development -- autonomy and relatedness -- in relation to school functioning and psychological adjustment. Specifically, adolescents' perceived experiences of autonomy and relatedness were examined in the contexts of parents, peers, and school in order to better understand their relations to academic and behavioural functioning during adolescence. These three contexts have been identified by researchers as the major areas of socialization in which adolescents invest time and commitment and develop attitudes and beliefs that are critical to schooling and emotional health development and adjustment in general (e.g., Blum & Rinehart, 1997; Brown, 1990; Eccles et al., 1997; Greenberger et al., 1982; Minuchin & Shapiro, 1983; Roeser, 1998).

The present study contributes to the literature by adding to the recent growth in research examining socialization experiences and tasks of adolescence (e.g., social support, connection, regulation, autonomy, coping) simultaneously across multiple contexts (e.g., Barber & Olsen, 1997; Eccles et al., 1997; Isakson & Jarvis, 1999; Wenz-Gross et al., 1997) and was aimed at identifying the way in which parent, peer, and school contexts relate to specific dimensions of academic and psychological adjustment. The present research is unique because the findings presented in this study illustrate the complexity of the interrelatedness of the dimensions of autonomy and relatedness in different contexts.

This chapter is organized into three sections. In the first section, I discuss the findings as they relate to the hypotheses, as presented in Chapter Two, around which this study is organized: (a) gender and grade differences in adolescents' perceptions of autonomy

and relatedness across the contexts of parents, peers, and school, (b) relations of autonomy and relatedness to school functioning and problems in psychological adjustment, and (c) autonomy and relatedness in the contexts of parents, peers, and school as predictors of school functioning and problems in psychological adjustment. In the second section, I consider the implications and importance of this study to theory, research, and education. Finally, in the third section, I present the strengths and limitations of the present study and provide recommendations for future research.

Gender and Grade Differences in Adolescents' Perceptions of Autonomy and Relatedness

The present study compared adolescent boys' and girls' perceptions of parental autonomy, peer autonomy, school autonomy, and relatedness to parents, peers, and school at three different grade levels (grade 8, grade 9, and grade 11). Significant findings of hypothesized gender and grade differences in autonomy and relatedness clarify prior research and extend knowledge about autonomy and relatedness in important ways.

Gender differences in autonomy. Although there were no hypotheses concerning gender differences in parental autonomy, findings from the analyses examining emotional autonomy from parents revealed that girls scored higher than boys on parental deidealization, indicating that girls held more realistic conceptions of their parents and were less likely to idealize their parents. This finding is in accord with findings from previous investigations indicating that girls score higher than boys on parental deidealization (e.g., Steinberg & Silverberg, 1986).

With regard to gender differences in perceived autonomy from peers, it was hypothesized that girls would report higher levels of peer autonomy than would boys

(Hypothesis 1). Findings from the analyses examining dimensions of peer autonomy (i.e., deidealization, nondependency, individuation) indicated that girls were less likely than boys to hold idealized images of their peers. This finding provides some support for the hypothesis and suggests that girls may have a more realistic view of their peers and acknowledge that their peers may not always be right or share their opinions.

Emotional autonomy from peers has been associated theoretically with greater psychological differentiation and expressions of distinctiveness of the self from others (e.g., Josselson, 1980), and empirically associated with less conformity to peer pressure in girls (e.g., Steinberg & Silverberg, 1986). Theoretically, it could be that the concept of deidealization may shed light on the development of emotional autonomy from peers in that adolescents may have to replace idealized images of their peers with more realistic ones, similar to that which is hypothesized to occur in the development of emotional autonomy from parents (e.g., Blos, 1967). Because studies have also shown that girls are less susceptible than boys to peer pressure and conformity, especially in antisocial situations (e.g., Berndt, 1979; Brown et al., 1986; Steinberg & Silverberg, 1986), perhaps peer deidealization is the mechanism by which girls may be less susceptible to peers' influences.

The present findings also indicated that, when compared to girls, boys had higher scores of nondependency on peers, suggesting that boys are less dependent on their peers than are girls. Perhaps this finding is not surprising given research indicating that when compared to boys, girls place more importance on friendship quality and report more affection, commitment and intimacy in their relationships with peers (e.g., Brendgen, Markiewicz, Doyle, & Bukowski, 2000; Goldbaum & Crawford, 2000; Stern, 1990). The

results of the present study provide further understanding of extant notions of peer autonomy because peer autonomy was assessed in a way different than in previous investigations.

Researchers have used hypothetical situations, or reports of peer conformity and perceived peer pressures to assess susceptibility to peers as a way in which to measure autonomy from peers (e.g., Berndt, 1979; Brown et al., 1986; Gavazzi et al., 1993; Kuperminc et al., 1996; Oldenburg & Kerns, 1997; Steinberg & Silverberg, 1986). In contrast, the present study operationalized peer autonomy to indicate the degree to which adolescents distinguished or differentiated themselves from their peers. Thus, the present investigation advances research on autonomy because peer autonomy, as uniquely defined in this study, has not been empirically investigated to date, and as such, provides new information regarding the unique ways in which boys and girls perceive their peer relations. Clearly, research on emotional autonomy from peers warrants further investigation in order to better understand its potential significance in autonomy development during adolescence.

Gender differences in relatedness. It will be recalled that relatedness was operationalized in the present study in terms of one's perceptions of attachment to parents, peers, and school. With regard to gender differences in relatedness, it was hypothesized that girls would report higher levels of parental attachment, peer attachment, and school belonging than would boys (Hypothesis 2). Previous research has suggested that girls, in comparison to boys, place much more emphasis on feelings of connection and belonging (e.g., Douvan & Adelson, 1966; Eccles et al., 1997; Goodenow, 1993a; Laible et al., 2000; Stern, 1990).

With regard to parental attachment, findings from the multivariate analysis examining

parental trust, communication, and alienation scores provide some evidence to suggest that boys and girls differ in their attachments to their parents. Relative to boys, girls had higher communication and alienation scores, and lower scores of trust. In the present study, parental attachment was assessed via a generalized attachment to parents. Specifically, adolescents were asked to respond to the questionnaire items on parental relationships for the parent or persons(s) who had acted as his or her parents most of the time. Adolescents predominantly responded with both parents in mind (81%) without distinguishing between mother or father.

There is some suggestion made in the research literature indicating that the gender of the parent may influence adolescents' feelings of attachment such that adolescent-father or adolescent-mother attachments may be different for boys and girls (e.g., Armsden & Greenberg, 1987; Paterson et al., 1995). It has been suggested that boys and girls have a stronger emotional bond with their mother than with their father (see Geuzaine et al., 2000), or that attachments may vary because of different expectations adolescents have of their mothers and fathers (e.g., Paterson et al., 1995). Although few gender differences have been found in studies that have distinguished between adolescent-father and adolescent-mother relations, Papini et al. (1991) found some evidence to suggest that across pubertal status, early adolescent girls perceived less attachment to their mothers and fathers, whereas boys exhibited a slight (though nonsignificant) increase in perceived attachment to their mothers and less attachment to their fathers. These researchers also found that girls, in comparison to boys, reported significantly greater attachment to fathers. Thus, future studies that examine boys' and girls' attachments to mothers and fathers separately, might help to

clarify and extend our understanding of adolescent-parental attachments, especially at a time in development when adolescents begin to integrate parental and peer attachments.

With regard to peer attachment, findings from the analyses examining peer trust, communication and alienation scores revealed that, when compared to boys, girls had higher levels of mutual trust and communication in their relationships with their peers. These results are consistent with the hypothesis of this study and are congruent with research findings indicating that girls have a better quality of relationship with peers than do boys (e.g., Armsden & Greenberg, 1987; Oldenburg & Kerns, 1997).

With regard to school belonging, girls did not report higher levels of school belonging than did boys. This finding was inconsistent with the hypothesis of this study as well as previous research suggesting the existence of gender differences. Indeed, past research indicates that girls place much more emphasis on feelings of belonging and connection at school than do boys (e.g., Goodenow, 1993a; Eccles et al., 1997). One explanation for the nonsignificant gender differences in the present investigation may be due to the difference in measures used to assess school belonging across studies. Whereas some researchers have used only a few items to assess school connection, such as teacher availability (e.g., Barber & Olsen, 1997) or school liking (e.g., Eccles et al., 1997), the current study utilized a more comprehensive measure of school belonging (Goodenow's, 1993b, Psychological Sense of School Membership scale) than used in most other studies. Goodenow's measure focuses on students' attitudes about their place in the school as a whole and reflects their sense of attachment to the entire school. As noted by Goodenow (1993b) school practices such as cooperative learning tasks, inclusive group projects and activities that call on the

collaborative efforts of students and teachers working together are likely to contribute to students' sense of belonging at school. For the boys and girls who took part in this study, cooperative learning activities are common classroom and school practices in the elementary schools as well as in the regular instructional program in the high school. The Catholic school system is characterized by communal activities including retreats, masses, liturgies that contribute to a shared sense of community. It may be that the adolescents in this sample represented a cohesive group of individuals who had relatively stable feelings of school membership possibly due to a pre-existing sense of identification with their schools (Isakson & Jarvis, 1999) that could result in there being no difference between boys and girls in school belonging. Alternatively, it may be that the particular classroom or school from which the adolescent participants were drawn were places in which both boys and girls were made to feel an equal sense of belonging or lack thereof.

Grade differences in autonomy. With regard to grade differences in parental autonomy, previous research findings have been somewhat equivocal. For instance, some researchers have found that emotional autonomy from parents increases with age (e.g., Lamborn & Steinberg, 1993; Steinberg & Silverberg, 1986). In contrast, Ryan and Lynch (1989) found no grade level differences in adolescents' emotional autonomy from parents in their sample of 212 adolescents in grades nine through 12. Because research has documented age-related increases in emotional autonomy from parents during adolescence, it was hypothesized that adolescents in grade 11 would report higher levels of parental autonomy than would adolescents in grades eight or nine (Hypothesis 4a).

Results showed that adolescents in grade 11 did not report higher levels of parental

autonomy than adolescents in grades eight or grade nine. Thus, these results are in accord with those of Ryan and Lynch (1989). Perhaps the results of the present study are not in concert with those of other researchers (e.g., Steinberg & Silverberg, 1986) because of differences in age ranges (maturational level) examined in this study and those examined in previous research. For example, Steinberg and Silverberg (1986) found that emotional autonomy increased linearly in their sample of 865 early adolescents in grades five through nine. Whereas Steinberg and Silverberg's grade levels spanned preadolescence to early adolescence, the present study spanned early to middle adolescence. Most notably, although Steinberg and Silverberg found that emotional autonomy was significantly related to grade, the significant differences were those between the fifth and sixth grade, and between the sixth and eighth grade. Moreover, no significant differences were found between grades eight and nine. Although researchers suggest that development of emotional autonomy during adolescence is a lengthy process that extends beyond late adolescence into adulthood (Frank et al., 1990; Hill & Holmbeck, 1986; Steinberg & Silverberg, 1986), it may be that overall levels of parental autonomy are relatively stable during the middle adolescent years. Support for this contention is found in the findings of the current study as well as in those of Ryan and Lynch (1989). Accordingly, longitudinal studies are called for that could better determine the developmental trajectory of emotional autonomy from parents during adolescence that would help to further our understanding of emotional autonomy development during early and middle adolescence.

With regard to grade differences in peer autonomy, it was hypothesized that adolescents in grade 11 would report higher levels of peer autonomy than would adolescents

in grades eight or nine (Hypothesis 4a). Studies have shown that conformity and peer pressure increases from childhood through middle adolescence and peaks around grade 8 and grade 9, then declines (Berndt, 1979; Collins, Gleason, et al., 1997; Gavin & Furman, 1989; Steinberg & Silverberg, 1986). In the present study, findings from the analyses examining dimensions of emotional autonomy from peers indicated that adolescents in grade 11 reported higher levels of deidealization from peers than adolescents in grade eight. Recall that higher deidealization scores signify that adolescents hold less idealized images of their peers. Thus, in the present study, older adolescents were more likely to have more mature conceptualizations of their peers than were younger adolescents.

This result supports the hypothesis and extends findings from previous research on peer conformity, as previously mentioned, by suggesting the possible relevance of peer deidealization in relation to declines in peer conformity. Further studies might examine more specifically deidealization of peers in relation to peer conformity as an important next step to understanding the connection and distinction between peer autonomy and peer conformity.

Results of the present investigation regarding nondependency on peers indicated that grade eight adolescents, who were in elementary school, reported being less dependent on their peers than adolescents in grade nine, who were in high school. This finding is contrary to the hypothesis that older adolescents would be more autonomous from their peers than younger adolescents. One plausible explanation for this finding can be found in the literature on transitions from elementary school to high school (e.g., Gavin & Furman, 1989; Isakson & Jarvis, 1999). For instance, Gavin and Furman (1989) found that early adolescents in grades seven and eight who were enrolled in middle schools, had a strong sense of unity and

superiority within their peer group and displayed more negative behaviours toward those outside the group. For the students in the present study, grade nine is a transition year characterized by new curriculum, a different organization for the school day, and new peers. Such changes give rise to a loss in feelings of unity and superiority. Thus, the school transition from grade eight to grade nine is a stressful time in which adolescents experience large peer groups, new challenges, and academic and social pressures in the new school situation (e.g., Gavin & Furman, 1989, Isakson & Jarvis, 1999; Simmons & Blyth, 1987). It has been suggested that because adolescents in high school do not have a regular classroom of peers, other than homeroom with whom to identify and associate with, they may feel a greater need to depend on the peer group to feel more secure and feel they belong in the new school environment (Gavin & Furman, 1989). The present findings suggest that adolescents might adjust to the transition from grade eight to grade nine by depending more on their peers in grade nine than they did in grade eight, which would account for the finding in this study regarding the difference in nondependency on peers between grade eight and grade nine.

Clearly, more research is needed to examine the effects of school transitions from grade eight to nine in relation to hypotheses about emotional autonomy from peers. Given the findings of the present study, further research that focuses on dimensions of peer autonomy is warranted. In particular studies that more broadly examine emotional autonomy from peers during school transitions may be especially helpful.

With regard to grade differences in school autonomy, school transition studies among early adolescent samples have shown that adolescents perceive there is less support for

student autonomy and fewer opportunities for decision making and choice as they move through the elementary and middle school grades (e.g., Eccles, Buchanan, et al., 1991; Eccles et al., 1984, 1993; Eccles & Midgley, 1989; Midgley & Feldlaufer, 1987; Roeser & Eccles, 1998). In contrast, Smith and colleagues (e.g., Adelman et al., 1986; Heavey et al., 1989; Smith et al., 1987) have found no differences in students' perceptions of control across ages ranging from nine years to 19 years. Whereas the most recent research suggests a decline in school autonomy across early adolescence, it was hypothesized that school autonomy would decrease from grade eight to grade eleven (Hypothesis 3).

Contrary to the hypothesis, school autonomy did not decrease across grades. One possible explanation for the lack of significant grade differences in school autonomy may be due to the manner in which school autonomy was assessed. Studies that have found a decrease in school autonomy (e.g., see Eccles et al., 1984, 1993 for a review, Midgley & Feldlaufer, 1987), have used a brief measure of school autonomy designed to assess students' perceptions of opportunities at the classroom level, such as making decisions about classroom rules, homework, where to sit, choosing partners, and sharing ideas in classroom discussions. In the present study, school autonomy was broadly assessed via students' perceptions about "decision making regarding school socialization processes, reactions of significant others at school to student's efforts to act autonomously, availability of options and choices, fairness of the rationale offered for limits imposed, and ability of the student to counter the control efforts of others at school" (Adelman et al., 1986, p. 1007). Thus, the measure of school autonomy used in the present investigation focused on adolescents' perceptions of autonomy in the school as a whole and not, per se, characteristics of

individual classrooms.

It appears that an important constraint limiting research on school autonomy may be due to the multitude of ways in which autonomy is conceptualized and operationalized across the research literature to date. Thus, a clearer definition of the construct and its assessment in future research on school autonomy is needed.

Grade differences in relatedness. It will be recalled that relatedness was operationalized in terms of adolescents' perceptions of attachment. With regard to grade differences in parental attachment, given past research findings indicating a decline in parental relationship support across adolescence, as well as theory suggesting that feelings of acceptance and closeness in families are lower in middle adolescence than in childhood (e.g., Collins, Gleason, et al., 1997; Steinberg, 1990), it was hypothesized that adolescents in grade 11 would report lower levels of parental attachment than would adolescents in grades eight or nine (Hypothesis 4b).

In the present study, no grade differences were found in parental attachment on dimensions of mutual trust, quality of communication, or extent of alienation. Thus, the present findings contrast with those of other researchers who found age-related declines. For instance, Lamborn and Steinberg (1993) found that parental relationship support decreased between grades nine and eleven. Nevertheless, other researchers have found no age differences among early and middle adolescents in the quality of adolescent-parental relationships (e.g., Greenberg et al., 1983; Papini & Roggman, 1992). Although the results of the present investigation are not in accord with those of several others, the results herein are in concert with some of the previous research in this area. One possible explanation for

these equivocal findings may be due to differences in the measures used to assess parental attachment. For example, Lamborn and Steinberg (1993), researchers who have found a decrease in parental support over time, used a self-designed measure of parental relationship support. In contrast, Papini and Roggman (1992) and Greenberg et al. (1983), researchers who found no age differences, used measures of parental attachment that were used in the present study (i.e., Inventory of Parent and Peer Attachment; Armsden & Greenberg, 1987). Whereas Lamborn and Steinberg's measure assesses "adolescents' confidence that parents are supportive, are available to help when needed, and spend time with them" (p. 497), the Inventory of Parent and Peer Attachment assesses three broad dimensions of attachments to parents (i.e., mutual trust, communication, alienation).

With regard to grade differences in peer attachment, it was hypothesized that adolescents in grade eleven would report lower levels of peer attachment than either adolescents in grade eight or grade nine (Hypothesis 4b). Research and literature on peer relations suggest there are age-related declines in conformity behaviour and social support from peers as autonomy from peers increases during adolescence (e.g., Collins, Gleason, et al., 1997).

The grade eight and grade nine findings from the analyses examining dimensions of peer attachment indicated that, grade nine adolescents reported significantly higher levels of mutual trust and communication in their peer relationships than did adolescents in grade eight. That is, grade nine adolescents reported feeling more secure and supported in their peer relationships, and thus were more attached to their peers than were grade eight adolescents. Although these results were contrary to the hypothesis, they are consistent with

findings from a recent longitudinal study on school transitions conducted by Isakson & Jarvis (1999). Isakson and Jarvis hypothesized that support from peers would decrease over the transition from grade eight to grade nine as a response to increased pressures to fit in and belong in the new school situation. Contrary to their hypothesis, these researchers found that social support from peers actually increased from grade eight to grade nine. Although the sample in their study was small ($N = 48$), their findings provide some evidence that adolescents' attachments to peers increase during school transitions from grade eight to grade nine.

One plausible explanation for the increase in peer attachments from grade eight to grade nine may be due to adolescent coping patterns. It may be that during or after the initial disruptions of changing schools and adapting to a new school environment, adolescents seek out and expand their relationships with peers in order to feel less anonymous and more secure. Researchers have suggested that peer relationships are increasingly important to adolescents' feelings of affiliation and acceptance during adolescence (Berndt, 1979; Gavazzi et al., 1993; Goodenow, 1994; Oldenburg & Kerns, 1997; Steinberg & Silverberg, 1986), and help them manage stress (e.g., Brown, 1990; Isakson & Jarvis, 1999).

It may be recalled that the finding in the present study regarding nondependency on peers revealed that grade nine adolescents reported depending more on their peers, as evidenced by lower scores of nondependency, than did adolescents in grade eight (see Hypothesis 4a). Thus, when the findings regarding peer attachment and peer autonomy are considered together, they suggest that adolescents in grade nine are more dependent on their peers (i.e., less autonomous from peers) and feel more supported in their peer relationships

(i.e., more attached to peers) than adolescents in grade eight. These findings extend previous research on school transitions and peer attachment by suggesting the importance of peer attachments in the context of the transition to high school.

Relations of Autonomy and Relatedness to School Functioning and Psychological Adjustment

Relations of autonomy and relatedness to school functioning and psychological adjustment were examined both correlationally and in a series of hierarchical regression analyses. In the following section I begin with a discussion of the findings from the correlational analyses and follow with a discussion of the regression analyses.

Relations of autonomy to school functioning. With regard to the associations between autonomy and school functioning, it was hypothesized that school autonomy would be positively associated with school functioning (Hypothesis 5). It may be recalled that school functioning was assessed in two ways: (1) teacher-ratings of adolescents' school competencies, and (2) academic achievement (GPA). School autonomy was operationalized in terms of the adolescent's perceptions of control at school. Findings indicated that, for boys only, school autonomy was positively associated with teacher-rated school competencies. This finding is in accord with research and theory suggesting the importance of school autonomy to academic motivation and school-related functioning (e.g., Eccles, Buchanan, et al., 1991; Eccles et al., 1984; Roeser & Eccles, 1998).

Contrary to what was hypothesized, no significant relation emerged between school autonomy (i.e., perceived control at school) and GPA, for boys or for girls. Although some researchers have found no significant correlation between school autonomy and GPA (e.g., Eccles et al., 1997), related research has indicated positive associations between perceived

control, motivation, and academic achievement (Adelman et al., 1986; Deci & Ryan, 1987; Deci, Vallerand, Pelletier, & Ryan, 1991; Grolnick et al., 1991; Smith et al., 1987; see Stipek & Weisz, 1981 for a review). Moreover, recent research conducted by Roeser and Eccles (1998) examining associations between adolescents' school perceptions and academic functioning, found significant and positive links between school autonomy (assessed as student autonomy) and GPA. These researchers examined behavioural and school-related perceptions of grade eight adolescents, and found that school autonomy was associated positively with academic grade point average in a sample of 1,046 eighth grade adolescents. Similar results have been found in research conducted by Barber and Olsen (1997) in which school autonomy and GPA were positively related for eighth grade girls, but not for boys.

It may be that differences between the results of the present study and those of prior research are due to the manner in which autonomy in school has been conceptualized and measured. Differences may also be due to disparate sample sizes and/or grade levels (for example being restricted to middle grades). For instance, most of the research on school autonomy has been confined to elementary or middle schools (e.g., Eccles et al., 1984; Roeser & Eccles, 1998). Most research on school autonomy has been conducted examining school autonomy in the form of opportunities in the classroom for decision-making, choice and self-management (e.g., Barber & Olsen, 1997; Eccles et al., 1997; Eccles et al., 1993; Kasen et al., 1990; Midgley & Feldlaufer, 1987) using measures that were comprised of only a few items which were limited in scope, such as deciding where to sit in the classroom, choosing partners, having a say in deciding rules, and being able to express/share their own ideas. Because recent research findings on caring school communities have suggested that

opportunities for students' participation and influence in school might be more important at the secondary level than in elementary school (e.g., Battistich et al., 1997), more research examining the nature and function of school autonomy in secondary school is clearly warranted.

Although there was no hypothesis regarding the relation between peer autonomy and school functioning, it is important to note the significant and positive relation that was found between peer autonomy and GPA for boys only. Boys who perceived themselves as more individuated and less dependent on their peers, had higher end of year GPAs. One plausible explanation for this finding can be found in the research of Ryan et al. (1994) exploring early adolescents' relationships with parents, peers, and teachers in relation to school functioning. These researchers found that peer emulation (i.e., idealizing or strongly identifying with peers) was negatively related to school adjustment and motivation, in terms of school functioning. These researchers speculated that adolescents who emulate their peers may be more focused on their peers than on school. It is plausible that the construct of peer emulation is conceptually similar to that of peer autonomy as defined in this study.

The findings of the present study are also in concert with those of others' research suggesting that better academic achievement for boys is associated with greater differentiation from peers (i.e., less emulation of peers) (e.g., Ryan et al., 1994). Such findings suggest that if adolescent boys can distinguish themselves from their peers and achieve a sense of separateness from them, they may be more focused on school. This interpretation should be approached cautiously, however, given the cross-sectional nature of the data in the present study. Indeed, no firm conclusions can be made regarding the directionality of this result.

Relations of attachment to school functioning. With regard to associations between attachment and school functioning, it was hypothesized that parent attachment, peer attachment, and school belonging would each be positively associated with school functioning (Hypothesis 6). Findings revealed that, for girls only, parental trust was significantly associated with higher GPA. This finding is congruent with results found in other studies (e.g., Cotterell, 1992; Eccles et al., 1997; Wentzel, 1998). For example, Cotterell (1992) found positive, although weak relations, between attachment to parents and academic adjustment (operationalized as academic self-concept and academic plans) in a sample of 57 adolescents, ranging in ages from 14 to 17 years. Also using a measure that reflected emotional connections with parents, Eccles and her colleagues (Eccles et al., 1997) found small, but positive associations between parental attachment and GPA for both genders in a large sample of approximately 1400 early adolescents. Although speculative at this point, it may be that for girls in the present study, mutual trust in relationships with parents may be reflected in a generalized trust in other adults with parental type roles (e.g., teachers) and may be associated with positive academic outcomes (e.g., Wentzel, 1991). There is some evidence in relational theory (e.g., Gilligan, Rogers, & Brown, 1990) that girls value intimacy more than do boys. It may be that girls who have a positive parental trust relationship are more likely to adopt parental values and attitudes regarding academic achievement and/or are more likely to feel confident and positive about themselves which may also be associated with positive academic outcomes.

The results from the present study regarding the association between peer attachment and school functioning did not support the hypothesis. No significant relations between peer

attachment (i.e., mutual trust, communication, alienation) and school functioning (i.e., teacher-rated school competencies, GPA) were evidenced either for boys or for girls.

Despite the plethora of literature and research that suggests the importance and influence of friends on educational outcomes (e.g., Berndt et al. 1990; Cotterell, 1992; Eccles et al., 1997; Goodenow, 1992; Oldenburg & Kerns, 1997; Wentzel & Caldwell, 1997; Wenz-Gross et al., 1997), previous research, for the most part, has focused broadly on educational or achievement-related goals and psychological adjustment outcomes rather than on specific academic competencies or achievement. For example, Cotterell (1992) also examined relations of peer attachment and peer support to academic adjustment (assessed as academic self-concept and academic plans) and well-being (i.e., general self-concept, depressed mood, self-esteem). Although Cotterell found significant and negative associations between academic adjustment and support from friends and positive associations between attachment to friends and academic self-concept for boys and for girls, peer attachment and support were found to be more closely linked to psychological well-being. Further studies are needed to examine more specifically the associations between peer attachment relationships and academic competencies and achievement. As Goodenow (1992) has suggested, it is "necessary in research on education to disaggregate the influence of close friends, reference-group peers, and classmates" (p. 185).

As hypothesized, school belonging was related positively to school functioning, although these relations differed by gender. More specifically, for boys only, school belonging was positively associated with teacher-ratings of school competencies, whereas, for girls only, school belonging was positively related to GPA. These results are in accord with

previous studies indicating that feelings of belonging and connection at school are associated positively with academic achievement and school-related performance (Eccles et al., 1997; Goodenow, 1993a, 1993b, 1994; Roeser et al., 1996; Wentzel, 1998; Wentzel & Caldwell, 1997).

When taken together, these correlational findings provide some evidence to suggest that adolescents who feel a sense of connection and support at school have better school functioning. It should also be noted that with the exception of parental trust for girls, few relations between dimensions of attachment to parents or attachments to peers were found to be significantly associated with school-related functioning.

Multiple regression analyses predicting school functioning. Regression analyses were conducted to further examine relations of autonomy and relatedness as predictors of school functioning. The results supported the hypothesis that autonomy (i.e., parental deidealization, parental nondependency, parental individuation, peer deidealization, peer nondependency, peer individuation, school autonomy) and relatedness (i.e., parental attachment, peer attachment, school belonging) would explain a significant proportion of variance in both teacher-rated school competencies and GPA for boys and for girls (Hypothesis 11). For boys, dimensions of peer autonomy (i.e., deidealization, nondependency, individuation) uniquely predicted higher GPAs. This finding extends the correlational results by suggesting that the relations are still significant after taking into account all the other variables. This finding is in concert with research suggesting that emulation of peers (i.e., idealizing peers) may discourage academic engagement (e.g., Ryan et al., 1994). Thus, the finding in the present investigation contributes to that literature by

providing new evidence to suggest that, for boys only, greater differentiation from peers may allow boys to concentrate on their academics and skills necessary for better academic achievement in school.

The only other single variable that reached significance in predicting school functioning was school belonging for girls only. School belonging was related to higher ratings of GPA for girls. This finding is consistent with previous research that has shown that adolescents' feelings of belonging and membership at school are important to motivation, academic success and engagement in school (Eccles et al., 1993; Goodenow, 1993a, 1993b, 1994). Gilligan et al. (1990) conducted extensive interviews with adolescent girls from six to eighteen years of age, and reported that girls have an intense interest in intimacy not shared by boys. Gilligan et al.'s finding may provide an explanation for the gender specific finding in the present study that school belonging for girls uniquely predicted GPA for girls. It may be that school belonging provides girls with opportunities for intimacy which is more highly valued by girls. Thus, peer autonomy and school belonging made independent contributions to the prediction of GPA, although in different ways for boys and for girls.

It was surprising to find that the school context variables (i.e., school autonomy, school belonging) were not more influential in predicting school functioning, especially for boys. In the correlational data, positive and significant correlations of teacher-rated school competencies to school autonomy and school belonging were found for boys. Although one might expect that school autonomy and school belonging might uniquely predict school functioning, it may be that when combined with all the other variables, they become less influential, resulting in reduced relations in the regression equation (c.f., Roeser & Eccles,

1998).

Relations of autonomy to psychological adjustment. With regard to the association between autonomy and psychological adjustment, it was hypothesized that parental autonomy would be positively associated with problems in psychological adjustment (Hypothesis 7). It may be recalled that psychological adjustment was assessed in two ways: (1) self-reported internalizing problem behaviours, and (2) self-reported externalizing problem behaviours. In the present investigation the findings showed that overall, parental autonomy was found to be positively associated with both internalizing and externalizing problem behaviours for boys and for girls. That is, greater differentiation in relationships with parents was positively associated with internalizing and externalizing problems in similar ways for girls and boys. More specifically, those adolescents who felt more individuated from parents, indicating that his or her parents did not really understand them or know them, reported more internalizing and externalizing problems. For boys, nondependency on parents was associated with more externalizing problems. In contrast, for girls, nondependency on parents and greater parental deidealization were associated with more externalizing problems.

These findings are consistent with previous research that has linked perceptions of autonomy in the parent-adolescent relationship to adolescent adjustment. For example, Lamborn and Steinberg (1993) found positive associations between emotional autonomy from parents and problem behaviours (i.e., antisocial behaviour and internal distress) among early and middle adolescents. Other researchers have reported similar results, suggesting that parental insecurity and detachment in relationships with parents may play an important role in psychological adjustment and health risk behaviours (e.g., Chen & Dornbusch, 1998;

Fuhrman & Holmbeck, 1995; Turner et al., 1993, 1994).

The present result supports previous research by suggesting that adolescents who reported greater feelings of emotional autonomy in relationships with parents may be more at risk for internalizing and externalizing problems, although, given the cross-sectional nature of the data, a causal relationship can not be established by the findings. There is a current debate in the literature regarding the adaptive function of emotional autonomy from parents. For example, Lamborn and Steinberg (1993) found that in family situations in which parental support was lacking, greater emotional autonomy from parents was associated with more problem behaviours and low academic competence. Moreover, in situations in which parental support was high, these researchers found that greater emotional autonomy was associated with more problem behaviours, but better psychosocial adjustment and better academic competence. In contrast, Fuhrman and Holmbeck (1995) found that greater emotional autonomy was associated with fewer behaviour problems and higher academic competence in family situations characterized by more adolescent-parent conflict and low maternal warmth. These researchers suggested that higher emotional autonomy from parents may be adaptive for the adolescent in more stressful family situations.

The results of the present study support the importance of positive attachments to parents by showing positive relations of parental attachment to school functioning and negative associations with problems in psychological adjustment. However, no consistent pattern of relations were established by the data with respect to dimensions of autonomy in relationships with parents to overall functioning. As noted by Silverberg and Gondoli (1996), "for most teens, these affective and conceptual changes, sometimes referred to as

features of emotional autonomy, neither demand nor signify radical detachment from parents" (p. 17). Indeed, most theorists of adolescence agree that emotional independence from parents is achieved in the contexts of close relationships with parents (e.g., Collins, Gleason, et al., 1997; Grotevant & Cooper, 1986; Hill & Holmbeck, 1986).

Certainly, more research is needed to clarify the nature and function of emotional autonomy from parents in adolescence. For instance, it would be desirable to examine more narrowly defined groups of adolescents (e.g., those who report both high emotional autonomy and high parental attachment vs. those who report low emotional autonomy and high parental attachment). Such studies would be able to better determine whether emotional autonomy in relationships with parents and attachments to parents could be adaptive. It may also be useful to examine what constitutes stressful family situations in order to better understand how those situations affect emotional autonomy and psychological adjustment.

With regard to the associations between peer autonomy and psychological adjustment, it was hypothesized that peer autonomy would be negatively associated with problems in psychological adjustment (Hypothesis 8). No a priori hypotheses were made regarding relations of specific dimensions of peer autonomy (i.e., deidealization, nondependency, individuation) to problems. Findings from the present study examining deidealization, nondependency, and individuation in relationships with peers, indicated that adolescent boys and girls who reported being less dependent on their peers had fewer externalizing problems. This finding provides support for the hypothesized relation. In contrast, adolescent boys and girls who reported feeling more individuated from their peers (indicating that their peers did not really know them well) reported higher levels of internalizing problems. These results

suggest that nondependency and individuation are differentially associated with adolescent problem behaviours (i.e., depression/anxiety, involvement in delinquent and aggressive behaviours).

The finding regarding peer nondependency is consistent with findings from research examining relations of peer autonomy to psychological adjustment problems (e.g., Barber & Olsen, 1997). These researchers found that high peer autonomy (i.e., less psychological control) was negatively associated with feelings of depression and antisocial behaviour, suggesting that adolescents who report less autonomy from their peers, have more problems.

Far less is known about peer individuation as operationalized in the present study. In this study, a positive association was found between peer individuation and internalizing problems. This study also found positive associations among peer alienation, peer individuation, and internalizing problems for boys and for girls (see Table 7). Thus, adolescents who reported more internalizing problems also reported feeling more individuated and more alienated in their relationships with peers. It may be that the construct of individuation is conceptually similar to that of alienation in relationships with peers.

The results of the present study support theory and extend research on peer autonomy. Peer autonomy was uniquely defined in this study as an individual's perception of him or herself as being differentiated from his or her peers, and as such, represents a different construct of peer autonomy than those used in studies that have assessed peer autonomy as peer pressure, or psychological control (e.g., Barber & Olsen, 1997; Berndt et al., 1990; Steinberg & Silverberg, 1986). Clearly, additional research is needed to investigate and clarify the relations between different dimensions of peer autonomy (i.e.,

deidealization, nondependency, individuation) and psychological adjustment. Because the results of the present investigation were correlational in nature, future research efforts should investigate peer autonomy longitudinally in order to discern any causal links between autonomy in peer relations and problems in psychological adjustment.

With regard to the association between school autonomy and psychological adjustment, support was found for the hypothesis that school autonomy would be negatively associated with problems in psychological adjustment (Hypothesis 9). As expected, in the present study, both for boys and for girls, the findings showed that school autonomy was negatively associated with both internalizing and externalizing problems. That is, adolescents who felt they had some personal control or influence in school also reported fewer problem behaviours. This finding is congruent with those of related research. For example, Kasen et al. (1990) found negative associations between student autonomy (i.e., the degree of responsibility and independence that students are given) and emotional and behavioural problems (i.e., conduct problems, depression, anxiety).

The results of the present study support the hypothesis and are consistent with other research suggesting that adolescents' perceptions of their experiences of autonomy in school have important implications for motivation and behaviour in school (e.g., Eccles & Midgley, 1989; Eccles et al., 1993; Eccles et al., 1997; Heavey et al., 1989; Smith et al., 1987; Taylor et al., 1989). Thus, the present findings contribute to research that examines relations of school autonomy to school-related functioning by applying a measure of school autonomy (i.e., perceived control at school) that includes a wider array of autonomous behaviours than previously measured.

Relations of attachment to psychological adjustment. With regard to associations between attachment and psychological adjustment, it was hypothesized that parental attachment, peer attachment, and school belonging would be negatively associated with problems in psychological adjustment (Hypothesis 10). Overall, findings in the present study indicated, as expected, that parental attachment, peer attachment, and school belonging were each associated negatively with internalizing and externalizing problems both for boys and for girls. That is, those adolescents who reported feeling less attached to their parents, peers, and school had more internalizing and externalizing problems.

These results are in accord with theory and research linking adolescents' adjustment to experiences of attachment with parents, peers, and school (e.g., Allen, Hauser et al., 1994; Eccles et al., 1997; Wentzel, 1998). For example, research conducted by Eccles and colleagues (Eccles et al., 1997) examining associations between emotional attachment and psychological and behavioural functioning among seventh grade boys and girls, found that depressive affect and involvement in problem behaviours were linked negatively to emotional connections in the family, with peers, and to school. Research has also shown that adolescent-parental relationships are potential sources of influence that are strongly related to adolescents' social and emotional functioning and internalizing and externalizing behaviours (e.g., Conger et al., 1997; Wentzel & Feldman, 1996). Furthermore, research on peer relationships has documented negative associations between attachment to friends and depressed affect (e.g., Oldenburg & Kerns, 1997), and deviant behaviours (e.g., Gillmore et al., 1992). The results of research examining adolescents' sense of attachment and support at school suggest the theoretical importance of a school belonging for positive social

functioning and engagement in school (e.g., Goodenow, 1993a; Wentzel, 1994, 1997).

Overall, the results of the present investigation suggest that affective attachments in adolescents' relationships across contexts are strongly related to better psychological adjustment. Indeed, the present study uniquely contributes to the existing body of research by providing evidence that close, caring relationships are important to adolescents' social and emotional adjustment.

Multiple regression analyses predicting psychological adjustment. Regression analyses were conducted to further examine relations of autonomy and relatedness as predictors of psychological adjustment. The results supported the hypothesis that experiences of autonomy and relatedness in parent, peer, and school contexts would explain a significant proportion of variance in both adolescents' self-reported internalizing problems and externalizing problems (Hypothesis 12). The results of the regression analyses regarding internalizing and externalizing problems indicated specialized associations within the parent, peer, and school contexts to problems in psychological adjustment that were different for boys and for girls.

Focusing first on internalizing problems, with the exception of parental deidealization and parental nondependency, which were significant and negatively (instead of positively) associated with internalizing problems, parental attachment, peer nondependency, peer individuation, and school belonging uniquely predicted internalizing problems for boys. For girls, attachments to parents and peers were significant and negative predictors of self-reported internalizing problems. The negative relations of parental deidealization and parental nondependency to internalizing problems contrasts with the significant and positive

associations found in the correlational data.

The difference in the pattern of correlation coefficients for parental deidealization and parental nondependency suggests the presence of a suppressor variable. The detection of a suppressor variable can be done by systematically omitting each variable from the regression analysis until the sign of the coefficient changes to match the correlation (Tabachnick & Fidell, 1989). Following this strategy, the parental attachment variable was identified to be the suppressor variable. In a suppression situation, redundant variance in a variable is suppressed, enhancing the importance of that variable in the prediction of the dependent variable (Cohen & Cohen, 1983; Tabachnick & Fidell, 1989; Tzelgov & Henik, 1991). Suppression frequently occurs when predictors are correlated. In the present study, there were significant negative correlations between dimensions of parental autonomy and parental attachment. Thus, the parental attachment variable was suppressing the positive relation between parental autonomy and internalizing problems.

The findings regarding externalizing problems also indicated unique relations of autonomy and relatedness to self-reported externalizing problems. For boys, parental individuation, parental attachment, and peer nondependency were the only significant predictors of self-reported externalizing problems. For girls, parental attachment and school belonging were uniquely predictive of self-reported externalizing problems. Whereas both dimensions of autonomy and relatedness appear to play a role in the psychological functioning for boys, experiences of attachment are more important to predicting problems in psychological adjustment for girls.

The multiple regression analyses revealed that autonomy and relatedness experienced

in parent, peer, and school contexts uniquely predicted different areas of functioning for boys and for girls. It was evident that the importance of adolescents' experiences of autonomy and relatedness to predicting problems in psychological adjustment varied by context (i.e., parent, peer, school) and gender.

Summary

The results of the present investigation are generally consistent with research and literature documenting the relevance of parent, peer, and school experiences of autonomy and relatedness to adolescent development and adjustment (e.g., Barber & Olsen, 1997; Eccles et al., 1997; Roeser & Eccles, 1998; Wenz-Gross et al., 1997).

Overall, the results of the correlational analyses indicated that autonomy and relatedness in parent, peer, and school contexts were significantly associated with adolescents' school functioning and psychological adjustment in different ways. Several of the correlational findings uniquely contribute to the literature that examines the role that autonomy and relatedness play in adolescent development (e.g., Hill & Holmbeck, 1986; Grotevant & Cooper, 1986; Ryan & Powelson, 1991; Silverberg & Gondoli, 1996), and in relation to academic and behavioural functioning during adolescence (e.g., Armsden & Greenberg, 1987; Eccles et al., 1993; Eccles & Midgley, 1989; Goodenow, 1993a, 1993b, 1994; Paterson et al., 1995; Ryan et al., 1994; Taylor & Adelman, 1990). Specifically, the results of the present study build on that literature and extend recent research on schooling and mental health (e.g., Roeser, Eccles, & Strobel, 1998) by exploring more specifically dimensions of parental and peer autonomy (i.e., deidealization, nondependency, individuation) and dimensions of parental and peer attachment (i.e., trust, communication,

alienation) and by including both academic and behavioural adjustment outcomes.

Regression analyses were conducted to further examine the unique predictive effects of adolescents' perceptions of autonomy and relatedness on different areas of functioning (teacher-rated school competencies, GPA, internalizing problems, externalizing problems). The multiple regression procedure allowed for the examination of the simultaneous or combined influence of the individual variables that have been examined previously in the correlational analyses and to identify the unique variables, or combination of variables that best predict adolescents' functioning. The findings of the present study suggest the importance of assessing autonomy and relatedness in more than one context in order to understand the unique contributions to explaining the variations in adolescents' school functioning and psychological adjustment.

Implications and Importance of the Study to Education

The present research extends our understanding of the adolescent age-period through the examination of adolescents' experiences of autonomy and relatedness in different areas of functioning. The results indicate that unique dimensions of autonomy and relatedness are associated with school or behavioural difficulties. Such associations may be relevant when considering interventions and strategies aimed at providing assistance to adolescents experiencing school or behavioural difficulties. Results from this study can be used to inform intervention research at the school, family, and clinical levels to help adolescents function better in school. It is important for teachers, parents, and other professionals who work with adolescents to realize that adolescents have strong needs to belong and develop independence and that these needs are central developmental tasks of the adolescent period.

The knowledge that adolescence is a period of diversity and challenge serves to highlight the potential risk factors associated with adolescent functioning and suggest implications for educational practice, such as targeting adolescents who may be at-risk for school failure or maladjustment (Isakson & Jarvis, 1999; Kazdin, 1993; Wexler, 1991).

The results showed that fewer self-reported internalizing problems for boys were uniquely predicted by higher levels of parental attachment, peer nondependency, school belonging, and lower levels of peer individuation. For girls, fewer self-reported internalizing problems were uniquely predicted by higher levels of parental and peer attachments. The results also showed that fewer self-reported externalizing problems for boys were uniquely predicted by higher levels of parental attachment, peer nondependency, and lower levels of parental individuation. For girls, fewer self-reported externalizing problems were uniquely predicted by higher levels of parental attachment and school belonging. These results suggest that fewer internalizing and externalizing problems may result from strategies developed to improve these unique relations.

A decreased sense of school membership and autonomy at school may contribute to problem behaviour, poor motivation, and school failure (Eccles & Midgley, 1989; Goodenow, 1993a; Smith et al., 1987). Thus, approaches to intervention at the school level aimed at improving education for adolescents might include (a) collaborative communication between teachers and parents, and between teachers and students with input and involvement from other counselling professionals for academic and socioemotional difficulties, (b) teacher support for student autonomy and increased emphasis on empowering students to make decisions and participate in learning that will facilitate school-related processes and encourage

student motivation and positive attitudes and behaviours, and (c) the provision of cooperative learning situations that are designed to increase feelings of belonging and membership at school.

Parents and peers also play a role in fostering positive school functioning and feelings of belonging at school. The results of the present study indicate that greater perceived attachment to parents and peers is positively associated with school belonging and negatively associated with problem behaviours. Positive attachments in relationships with parents and peers provide support and feelings of security for adolescents, which may be especially critical during school transitions and times of increased academic stress (e.g., Isakson & Jarvis, 1999). The present study contributes to our theoretical understanding of the importance of peer relationships at the transition to high school. It may be recalled that grade nine adolescents were found to be more dependent on their peers and more attached to their peers than either adolescents in grade eight or grade 11. The results also showed that for boys only, more autonomy from peers was associated with better grades, suggesting that academic achievement might be improved for boys when strategies are developed to encourage more autonomy from peers. The results also showed that, for girls only, higher levels of parental trust was associated with higher GPAs, suggesting that academic achievement might be improved for girls when strategies are developed to encourage more parental trust, or perhaps more trust in other adults with parental type roles (e.g., teachers, coaches). Regular communication between parents and teachers about student progress, involvement with peers, and parental relations may assist in identifying and implementing strategies to help ensure successful performance in school.

The results showed that, for boys only, higher levels of school autonomy was associated with teacher-rated school competencies, suggesting that school performance might be improved for boys when strategies are developed to encourage them to have more influence over school-related situations. Strategies designed to motivate adolescents to exercise self-management, or maximize participation in educational and treatment programs should focus on themes of autonomy, empowerment, and personal control (e.g., Kaser-Boyd, Adelman, & Taylor, 1985; Taylor & Adelman, 1990; Taylor, Adelman, & Kaser-Boyd, 1984; Wexler, 1991). Educational interventions such as Lawrence Kohlberg's Just Community approach in high school (Higgins, 1991), for example, endorse ideas of participatory democracy. Just Community interventions emphasize student collaboration and participation in decision-making and rule-making as ways to decrease problem behaviours. As well, university laboratory programs designed to enhance perceptions of control at school also serve to illustrate the beneficial aspects of perceived control in relation to attitudes and behaviour (Smith et al., 1987; Taylor et al., 1989). Ryan and Powelson (1991) posit that in "educational contexts and tasks where students experience support for their autonomy, where they feel connected to and supported by significant others they are likely to be highly motivated. By contrast, in contexts that are perceived as controlling (vs. autonomy supportive) and where persons feel disconnected or unrelated to significant others, alienation and disengagement are the likely outcomes" (p. 53). Clearly, a better understanding of the influences of parents, peers, and school regarding experiences of autonomy and relatedness is necessary in order to improve education and foster positive adjustment outcomes during adolescence.

Strengths and Limitations of the Study and Future Directions

The results from the present study extend research and literature on autonomy and relatedness in the following ways. First, two dimensions of adolescent development were investigated in three different contexts (i.e., parent, peer, and school) which permits analyses of differences as a function of grade-related developmental levels. The results showed how adolescents' school functioning and psychological adjustment related to experiences of autonomy and relatedness with parents, with peers, and at school. The present study suggests that different contexts may contribute to adolescents' experiences of autonomy and relatedness in important ways that are associated with better emotional and behavioural functioning and academic outcomes during adolescence (Blum & Rinehart, 1997; Brown, 1990; Eccles et al., 1997; Isakson & Jarvis, 1999; Kasen et al., 1990; Roeser, 1998). Moreover, adolescents' needs for autonomy and relatedness should not be overlooked when one is investigating schooling and adjustment outcomes.

Second, consistent measures were used concurrently across three grade levels and three contexts. The lack of parallel measures across multiple contexts has been a notable drawback of past research (e.g., Barber & Olsen, 1997; Eccles et al., 1997; Ryan & Lynch, 1989). Therefore, findings of the present research should not be attributed to different measures being used.

Finally, the present research utilized multiple sources of information on adolescent functioning obtained from self-reports, teachers, and school records concerning a broad range of outcome measures assessing both academic (i.e., school competencies and school grades) and psychological functioning (i.e., internalizing and externalizing problems). This allowed

for the attainment of a cogent and comprehensive portrayal of adolescent functioning across multiple contexts via multiple perspectives.

There are several limitations of the present study that are important to note. First, the correlational data do not lend themselves to causal interpretation because the relations are based on cross-sectional data. Thus, firm conclusions about the effects of relations of autonomy and relatedness on school and adjustment outcomes cannot be drawn. Longitudinal research is clearly needed in order to make causal inferences concerning the relations found in the present investigation. Indeed, longitudinal studies are needed for examining developmental changes in autonomy and relatedness in relation to adolescent functioning over time. Such studies would serve to strengthen the findings and implications of the results of the present investigation and for better understanding the role that autonomy and relatedness play in adolescent development and functioning.

Second, the findings of the present study are exploratory and the nonrandom selection of schools and classrooms in this sample limits generalizability. More specifically, although this study was based on a large sample of adolescents intended to be representative of a population in the early and middle adolescent age ranges, there are several caveats that should be presented. All students who participated in the present study attended schools in the same Catholic school district. Approximately one-third of the students were non-Catholic. Thus, the sample may be biased because it includes only Catholic school students, making it different from a randomly selected non-Catholic school sample.

There were no students who participated whose primary placement was in a full-time special education program or who did not speak or read English, and thus bias due to under

representation may have been introduced.

The sample was ethnically diverse comprising, for the most part, of white middle-class adolescents from two-parent families. Because analyses were not conducted by ethnic groups, the generalizability of these findings to adolescents from other racial/ethnic backgrounds and/or family compositions and social classes is limited. There is evidence to indicate that there are patterns of ethnic differences in school performance and academic achievement (e.g., Steinberg, Dornbusch, & Brown, 1992; Sue & Okazaki, 1990). Steinberg et al. (1992) in their study of approximately 15,000 students at nine high schools, comprising of 66% White and nearly equal proportions of Black, Hispanic, and Asian-American argued that "ethnic differences in school performance can be explained more persuasively by examining the interplay between the major contexts in which youngsters develop - the family, the peer group, and the school - than by examining any one of these contexts alone" (p. 724). Their findings suggest that (1) parenting practices affect academic performance and behaviour, (2) the effect of parenting practices is moderated to a large extent by the peer group, and (3) peer support for academic achievement varies by ethnic group.

Third, the data for this research relied primarily on adolescents' self-reports. Thus, the findings of this study should be understood in terms of adolescents' perceptions of themselves and their experiences that do not necessarily reflect actual experiences and behaviours (Savin-Williams & Small, 1986). While self-reports can provide considerable information about perceived experiences and unobserved attitudes and behaviours, they are subject to both underreporting and overreporting and are strongly influenced by the individual's interpretation and understanding of the questions, and thus introduce bias in this

regard (Achenbach, 1991; McCord, 1990; Schwarz, 1999). However, self-reports emphasize the importance of adolescents' beliefs about themselves and their experiences across situations and contexts which was the focus of this study.

Finally, there are a number of measurement issues that need to be taken into account when considering the results of this study. First, the observed relations among the variables in this study may be inflated due to common method variance with respect to adolescents' self-reports, and classroom teachers' ratings of students' school competencies. Teacher-ratings of school competencies were provided by one classroom teacher, which at the high school level, represented information about school functioning in a single subject area. To improve the assessment of adolescents' school-related functioning, perhaps future research might include a composite of teacher-ratings of school competencies in the four academic classes included in the composite GPA. Furthermore, obtaining integrative reports of problem behaviours from teachers and parents, in addition to those obtained from adolescents, would provide a more complete picture of psychological functioning that is based on more than one informant.

Another important measurement issue that should be considered concerns the use of specific subscales of the measures assessing parental and peer autonomy. Because the parental nondependency subscale, and the peer deidealization and nondependency subscales did not have reliabilities as high as might be desired, results of analyses examining differences on the subscales must be interpreted with this in mind. The low reliabilities on these subscales may be a result of sample characteristics and error. It may be recalled, however, that much of the past research was conducted using composite scale scores rather

than subscales. Subscale scores allow for a more thorough and complete analysis of the variables of interest and thus may help to shed light on the function of these constructs. As suggested from the results of the present study, it is likely that individual subscales might reveal important information about emotional autonomy in relationships with peers. Thus, further research that investigates hypotheses relating to different dimensions of emotional autonomy from peers and adolescent adjustment is warranted.

Studies of peer autonomy that include both measures of behaviour and emotional aspects of peer relationships would be a valuable addition to research examining the development of peer autonomy during adolescence. Moreover, the assessment of emotional autonomy from peers, as a construct, requires further study as a valid measure of autonomy from peers that is conceptually distinct from measures of peer conformity or peer pressure. For example, an important task for further research is to determine the way in which adolescents conceptualize peer autonomy. Methodologies designed to examine the qualitative features of peer autonomy would serve to strengthen and refine the meaning of the construct and its interpretation.

Notwithstanding the limitations inherent in this study, the results of this research provide impetus for future speculation and studies of autonomy and relatedness on adjustment during adolescence.

Concluding Remarks

The present research is part of the growing number of studies that focus on promoting school success and mental health during adolescence. One criticism of previous work in the field of adolescent development has been the paucity of research examining the unique and

combined contribution of various dimensions of development within different social contexts on adolescents' functioning.

Both autonomy and relatedness have been afforded significance in the developmental literature as being two dimensions of development that are important for understanding adolescent functioning. Researchers have identified parents, peers, and school as the major social contexts in which adolescents experience autonomy and relatedness.

This study provides new empirical data and new perspectives on the way in which autonomy and relatedness are associated with school functioning and psychological adjustment within the three major social arenas of adolescents, namely parents, peers, and school.

The results of this research indicate that adolescents' experiences of autonomy and relatedness are associated with school-related functioning and problems in psychological adjustment. The findings have important implications for educators and parents of adolescents for improving educational practice and for promoting school success and positive adjustment outcomes during adolescence.

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Appendix A

Emotional Autonomy Scale (EAS; Steinberg & Silverberg, 1986)

NOW WE WOULD LIKE YOU TO ANSWER SOME QUESTIONS DESCRIBING YOUR RELATIONSHIP WITH YOUR PARENT(S), GUARDIAN(S), OR THE PERSON(S) WHO HAVE ACTED AS YOUR PARENT(S). CIRCLE THE NUMBER ON THE SCALE THAT TELLS HOW MUCH YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS.

BEFORE YOU ANSWER, INDICATE THE PERSON(S) WHO HAVE ACTED AS YOUR PARENTS MOST OF THE TIME. MAKE YOUR RESPONSE WITH THAT PERSON IN MIND.

- _____ both parents
- _____ mother only
- _____ father only
- _____ mother and stepfather
- _____ father and stepmother
- _____ grandmother and/or grandfather
- _____ other (adopted parents, foster parents, relative, etc.)

	DISAGREE STRONGLY	DISAGREE SOMEWHAT	AGREE SOMEWHAT	AGREE STRONGLY
1. My parents and I agree on everything.	1	2	3	4
2. I go to my parents for help before trying to solve a problem myself.	1	2	3	4
3. Even when my parents and I disagree, my parents are always right.	1	2	3	4
4. It's better for kids to go to their best friend than to their parents for advice on some things.	1	2	3	4

CIRCLE THE NUMBER THAT TELLS HOW MUCH YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS.

	DISAGREE STRONGLY	DISAGREE SOMEWHAT	AGREE SOMEWHAT	AGREE STRONGLY
5. When I've done something wrong, I depend on my parents to straighten things out for me.	1	2	3	4
6. There are some things about me that my parents don't know.	1	2	3	4
7. My parents know everything there is to know about me.	1	2	3	4
8. I try to have the same opinions as my parents.	1	2	3	4
9. If I was having a problem with one of my friends, I would discuss it with my mother or father before deciding what to do about it.	1	2	3	4
10. My parents would be surprised to know what I'm like when I'm not with them.	1	2	3	4
11. When I become a parent, I'm going to treat my children in exactly the same way that my parents have treated me.	1	2	3	4
12. There are things that I will do differently from my mother and father when I become a parent.	1	2	3	4
13. My parents hardly ever make mistakes.	1	2	3	4
14. I wish my parents would understand who I really am.	1	2	3	4

Appendix B

Emotional Autonomy Scale - Peers (EASP)

NOW WE WOULD LIKE YOU TO ANSWER SOME QUESTIONS DESCRIBING YOUR RELATIONSHIP WITH YOUR FRIENDS. CIRCLE THE NUMBER ON THE SCALE THAT TELLS HOW MUCH YOU AGREE OR DISAGREE WITH THE FOLLOWING SENTENCES.

	DISAGREE STRONGLY	DISAGREE SOMEWHAT	AGREE SOMEWHAT	AGREE STRONGLY
1. My friends and I agree on everything.	1	2	3	4
2. I go to my friends for help before trying to solve a problem myself.	1	2	3	4
3. Even when my friends and I disagree, my friends are always right.	1	2	3	4
4. It's better for kids to go to their parents than to their best friend for advice on some things.	1	2	3	4
5. When I've done something wrong, I depend on my friends to straighten things out for me.	1	2	3	4
6. There are some things about me that my friends don't know.	1	2	3	4
7. My friends know everything there is to know about me.	1	2	3	4
8. I try to have the same opinions as my friends.	1	2	3	4
9. If I was having a problem with one of my parents, I would discuss it with my friends before deciding what to do about it.	1	2	3	4
10. My friends would be surprised to know what I'm like when I'm not with them.	1	2	3	4
11. When I make friends in the future, I'm going to treat them exactly the same way that my friends have treated me.	1	2	3	4
12. There are things that I will do differently from my friends when I become a parent.	1	2	3	4
13. My friends hardly ever make mistakes.	1	2	3	4
14. I wish my friends would understand who I really am.	1	2	3	4

Appendix C

Perceived Control at School Scale (PCSS; Adelman et al., 1986)

THE NEXT STATEMENTS REFER TO THINGS THAT SOMETIMES HAPPEN IN SCHOOL. FOR EACH SENTENCE, CIRCLE THE NUMBER THAT INDICATES HOW MUCH OF THE TIME THE STATEMENT APPLIES TO YOU.

	Never	Not very often	Slightly less than half the time	Slightly more than half the time	Very often	Always
1. At school, I feel I have a say in deciding what the rules should be.	1	2	3	4	5	6
2. At school, I feel people don't let me be myself and act the way I really am.	1	2	3	4	5	6
3. At school, I feel I have a say in deciding what happens to me if I break a rule.	1	2	3	4	5	6
4. At school, I feel I can't influence what is happening to me.	1	2	3	4	5	6
5. At school, I feel people want me to be myself and act the way I really am.	1	2	3	4	5	6
6. At school, I feel people let me take part in making decisions.	1	2	3	4	5	6
7. At school, I feel I have a choice about what I am doing or learning.	1	2	3	4	5	6
8. At school, I feel I can influence what is happening to me.	1	2	3	4	5	6

CIRCLE THE NUMBER THAT INDICATES HOW MUCH OF THE TIME THE STATEMENT APPLIES TO YOU.

	Never	Not very often	Slightly less than half the time	Slightly more than half the time	Very often	Always
9. At school, I feel the rules make me do things I don't agree with.	1	2	3	4	5	6
10. At school, I feel no matter what I do I probably won't get what I want.	1	2	3	4	5	6
11. At school, I feel I have very little choice about what I am doing or learning.	1	2	3	4	5	6
12. At school, I feel I am able to change something if I don't like it.	1	2	3	4	5	6
13. At school, I feel others make decisions for me.	1	2	3	4	5	6
14. At school, I feel I get to do things in the way I think is right for me.	1	2	3	4	5	6
15. At school, I feel people want me to take part in making decisions.	1	2	3	4	5	6
16. At school, I feel people don't treat me fairly.	1	2	3	4	5	6

Appendix D

Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987)

THE NEXT PART ASKS YOU ABOUT YOU AND YOUR PARENT(S) OR THE PERSON(S) WHO HAVE ACTED AS YOUR PARENTS. FOR EACH SENTENCE, CIRCLE THE NUMBER THAT TELLS HOW TRUE THE STATEMENT IS FOR YOU NOW.

	Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
1. My parents respect my feelings.	1	2	3	4	5
2. I feel my parents are successful as parents.	1	2	3	4	5
3. I wish I had different parents.	1	2	3	4	5
4. My parents accept me as I am.	1	2	3	4	5
5. I have to rely on myself when I have a problem to solve.	1	2	3	4	5
6. I like to get my parents' point of view on things I'm concerned about.	1	2	3	4	5
7. I feel it's no use letting my feelings show.	1	2	3	4	5
8. My parents sense when I'm upset about something.	1	2	3	4	5
9. Talking over my problems with my parents makes me feel ashamed or foolish.	1	2	3	4	5

FOR EACH SENTENCE, CIRCLE THE NUMBER THAT TELLS HOW TRUE THE STATEMENT IS FOR YOU NOW.

		Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
10.	My parents expect too much from me.	1	2	3	4	5
11.	I get upset easily at home.	1	2	3	4	5
12.	I get upset a lot more than my parents know about.	1	2	3	4	5
13.	When we discuss things, my parents consider my point of view.	1	2	3	4	5
14.	My parents trust my judgment.	1	2	3	4	5
15.	My parents have their own problems, so I don't bother them with mine.	1	2	3	4	5
16.	My parents help me to understand myself better.	1	2	3	4	5
17.	I tell my parents about my problems and troubles.	1	2	3	4	5
18.	I feel angry with my parents.	1	2	3	4	5
19.	I don't get much attention at home.	1	2	3	4	5

FOR EACH SENTENCE, CIRCLE THE NUMBER THAT TELLS HOW TRUE THE STATEMENT IS FOR YOU NOW.

		Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
20.	My parents encourage me to talk about my difficulties.	1	2	3	4	5
21.	My parents understand me.	1	2	3	4	5
22.	I don't know whom I can depend on these days.	1	2	3	4	5
23.	When I am angry about something, my parents try to be understanding.	1	2	3	4	5
24.	I trust my parents.	1	2	3	4	5
25.	My parents don't understand what I'm going through these days.	1	2	3	4	5
26.	I can count on my parents when I need to get something off my chest.	1	2	3	4	5
27.	I feel that no one understands me.	1	2	3	4	5
28.	If my parents know something is bothering me, they ask me about it.	1	2	3	4	5

THE NEXT PART ASKS YOU ABOUT YOU AND YOUR FRIENDS. FOR EACH SENTENCE, CIRCLE THE NUMBER THAT TELLS HOW TRUE THE STATEMENT IS FOR YOU NOW.

Almost never
or never
true

Not very
often true

Sometimes
true

Often
true

Almost always
or always
true

1. I like to get my friends' point of view on things I'm concerned about. 1 2 3 4 5
2. My friends sense when I'm upset about something. 1 2 3 4 5
3. When we discuss things, my friends consider my point of view. 1 2 3 4 5
4. Talking over my problems with my friends makes me feel ashamed or foolish. 1 2 3 4 5
5. I wish I had different friends. 1 2 3 4 5
6. My friends understand me. 1 2 3 4 5
7. My friends encourage me to talk about my difficulties. 1 2 3 4 5
8. My friends accept me as I am. 1 2 3 4 5
9. I feel the need to be in touch with my friends more often. 1 2 3 4 5
10. My friends don't understand what I'm going through these days. 1 2 3 4 5
11. I feel alone or apart when I am with my friends. 1 2 3 4 5

FOR EACH SENTENCE, CIRCLE THE NUMBER THAT TELLS HOW TRUE THE STATEMENT IS FOR YOU NOW.

Almost never
or never
true

Not very
often true

Sometimes
true

Often
true

Almost always
or always
true

12. My friends listen to what I have to say. 1 2 3 4 5
13. I feel my friends are good friends. 1 2 3 4 5
14. My friends are fairly easy to talk to. 1 2 3 4 5
15. When I am angry about something, my friends try to be understanding. 1 2 3 4 5
16. My friends help me to understand myself better. 1 2 3 4 5
17. My friends are concerned about my well-being. 1 2 3 4 5
18. I feel angry with my friends. 1 2 3 4 5
19. I can count on my friends when I need to get something off my chest. 1 2 3 4 5
20. I trust my friends. 1 2 3 4 5
21. My friends respect my feelings. 1 2 3 4 5
22. I get upset a lot more than my friends know about. 1 2 3 4 5
23. It seems as if my friends are irritated with me for no reason. 1 2 3 4 5
24. I tell my friends about my problems and troubles. 1 2 3 4 5
25. If my friends know something is bothering me, they ask me about it. 1 2 3 4 5

Appendix E

Psychological Sense of School Membership (PSSM; Goodenow, 1993b)

NOW WE WOULD LIKE TO ASK YOU HOW YOU FEEL ABOUT YOUR SCHOOL. CIRCLE THE NUMBER THAT TELLS HOW TRUE THESE SENTENCES ARE FOR YOU.

	not at all true	a little true	somewhat true	mostly true	completely true
1. I feel like a real part of this school.	1	2	3	4	5
2. People here notice when I'm good at something.	1	2	3	4	5
3. It is hard for people like me to be accepted here.	1	2	3	4	5
4. Other students in this school take my opinions seriously.	1	2	3	4	5
5. Most teachers at my school are interested in me.	1	2	3	4	5
6. Sometimes I feel as if I don't belong here.	1	2	3	4	5
7. There's at least one teacher or other adult in this school I can talk to if I have a problem.	1	2	3	4	5
8. People at this school are friendly to me.	1	2	3	4	5
9. Teachers here are not interested in people like me.	1	2	3	4	5
10. I am included in lots of activities at this school.	1	2	3	4	5
11. I am treated with as much respect as other students.	1	2	3	4	5

CIRCLE THE NUMBER THAT TELLS HOW TRUE THESE SENTENCES ARE FOR YOU AT YOUR SCHOOL.

	not at all true	a little true	somewhat true	mostly true	completely true
12. I feel very different from most other students here.	1	2	3	4	5
13. I can really be myself at this school.	1	2	3	4	5
14. The teachers here respect me.	1	2	3	4	5
15. People here know I can do good work.	1	2	3	4	5
16. I wish I were in a different school.	1	2	3	4	5
17. I feel proud of belonging to my school.	1	2	3	4	5
18. Other students here like me the way I am.	1	2	3	4	5

Appendix F

Youth Self-Report (YSR; Achenbach, 1991)

is available from University of Toronto Press, Inc.,
5201 Dufferin Street, North York, Ontario, Canada M3H 5T8

Appendix G

Comparison of Adolescents on Problem Behaviour Scores on the Youth Self-Report

Comparison of Adolescents on Problem Behaviour Scores on the Youth Self-Report

	Participants				Referred			
	Boys ^a		Girls ^b		Boys ^c		Girls ^d	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Problem Behaviour Score								
Internalizing	13.59	9.30	18.31	10.45	16.1	9.90	21.5	11.10
Externalizing	15.99	7.92	14.65	7.93	17.3	9.60	17.7	9.50
Total Problem	50.69	23.57	54.86	24.91	54.9	26.60	63.4	28.00

Note. Participants = adolescents who participated in the present study; Referred = sample of adolescents with scores in the clinical range on the Youth Self-Report; Internalizing = YSRint raw scale scores; Externalizing = YSRext raw scale scores; Total Problems = YSR raw scale scores. All one-sample t tests were significant, $p < .05$, one-tailed.

^a n = 213. ^b n = 265. ^c n = 536. ^d n = 518.

Appendix H

Teacher-Child Rating Scale (T-CRS; Hightower et al., 1986)

is available from PMHP, Primary Mental Health Project

575 Mt. Hope Avenue, Rochester, New York, 14620

Appendix I

Correlations Between Students' and Teachers' Ratings of Problem Behaviours
for Boys and Girls

Correlations Between Students' and Teachers' Ratings of Problem Behaviours for
Boys^a and Girls^b

Variable	Teacher-rated Problem Behaviours			
	Acting-Out		Shy/Anxious	
	Boys	Girls	Boys	Girls
Student-rated Problem Behaviours				
Internalizing	-.08	.07	.19**	.13*
Externalizing	.24***	.23***	-.06	-.02

Note. Acting-Out = Teacher-Child Rating Scale acting-out subscale scores;

Shy/Anxious = Teacher-Child Rating Scale shy/anxious subscale scores; Internalizing

= Youth Self-Report Internalizing raw scores; Externalizing = Youth Self-Report

Externalizing raw scores.

^an = 213. ^bn = 265.

*p < .05. **p < .01. ***p < .001.

Appendix J

Student Recruitment Letter

Appendix K

Parent Permission Letter and Consent Form

PARENT CONSENT FORM

214

Title of Study: "Promoting School Success in Adolescence"

Researchers: Kimberly A. Schonert-Reichl, Ph.D.
Associate Professor
Department of Educational Psychology and Special Education
University of British Columbia
2125 Main Mall
Vancouver, B. C. V6T 1Z4

Carol Anne Buote, M.Ed.
Graduate Student
Department of Educational Psychology and Special Education
University of British Columbia

(KEEP THIS PORTION FOR YOUR RECORDS)

I have read and understand the attached letter regarding the study entitled, "Promoting School Success in Adolescence". I have also kept copies of both the letter describing the study and this consent form.

_____ Yes, my son/daughter has my permission to participate.

_____ No, my son/daughter does **not** have my permission to participate.

Parent's Signature: _____

Son or Daughter's Name: _____

Date: _____

(DETACH HERE AND RETURN THE BOTTOM PORTION TO THE SCHOOL)

I have read and understand the attached letter regarding the study entitled, "Promoting School Success in Adolescence". I have also kept copies of both the letter describing the study and this consent form.

_____ Yes, my son/daughter has my permission to participate.

_____ No, my son/daughter does **not** have my permission to participate.

Parent's Signature: _____

Son or Daughter's Name: _____

Date: _____

Appendix L

Student Consent Form



Department of Educational Psychology
and Special Education
Faculty of Education
2125 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: (604) 822-8229
Fax: (604) 822-3302

Student Consent Form

The purpose of this form is to give you the information you need in order to decide whether or not you want to participate in a research study entitled, "**Promoting School Success in Adolescence**". You may choose not to participate in this study now or at any time during the study, and there will be no penalty. If you do not choose to participate, that choice will not effect your class standing in any way. Students who do not participate will be given other work, as determined by the classroom teacher, that is related to regular classroom instruction.

The purpose of this study is to investigate your opinions about yourself, your friends, your family, and your experiences in school. This study is being organized by Mrs. Buote and her advisor from the University of British Columbia, Dr. Kim Schonert-Reichl. The information collected will be for Mrs. Buote's graduate thesis. It is hoped that the results of this study will help teachers and parents better understand students and therefore be able to improve education for all. In order accomplish this purpose, you will be asked to fill out four sets of questionnaires during one class period. One set of questionnaires asks you questions about your background and feelings about yourself. A second set of questionnaires asks you about your relationships with your parents. A third set of questionnaires asks you about your relationships with your peers. Finally, the fourth set of questionnaires ask you questions about how you feel about your school and situations that sometimes happen in school.

The research study is not a test. There are no right or wrong answers – just what you think. Please answer all the questions if you can. Do your best to answer truthfully and honestly.

Your name will not be kept with your answers so no one but the researchers will know who answered the questions. All answers are completely confidential. No one at your school or in your community (not even your parents) will see your answers, so please answer honestly. I will be happy to answer any questions you might have before you sign or later. Please indicate that you have read this form by signing your name on the lines below. You may keep a copy of this consent form for your records.

Thank you for your help.

Date: _____

Name (please print): _____

Signature: _____

Appendix M

Questionnaire Package Cover Page

PROMOTING SCHOOL SUCCESS IN ADOLESCENCE

Thank you for agreeing to participate in this study of adolescence. The purpose of the survey is to investigate your opinions about yourself, your friends, your family, and your experiences in school. There is very little research about Canadian students and your opinions are important if educators and parents are to truly understand experiences of today's Canadian teenagers. By participating in this study, you will help others better understand what is important to adolescents your age. **YOUR OPINIONS MATTER.**

Your name will not be kept with your answers so no one but the researchers will know who answered the questions. All your answers will be completely confidential. Please answer each of the questions thoughtfully and honestly. **Remember that NO ONE at the school or in the school community (not even your teachers and parents) will ever see your answers.**

**THIS IS NOT A TEST.
THERE ARE NO RIGHT OR WRONG ANSWERS.
ALL YOUR ANSWERS ARE IMPORTANT.**

Please read the directions carefully and answer all questions if you can. Raise your hand if you want to ask a question or do not understand what to do. When you have completed the questionnaires, put them back in the envelope. The researcher will collect them.

Thank you for your help. Let's begin now.



K. A. Schonert-Reichl, Ph.D.
Associate Professor, Faculty of Education
University of British Columbia

C. A. Buote, M.Ed.
Graduate Student,
University of British Columbia

Appendix N

Student Identification Form

ID # _____

PROMOTING SCHOOL SUCCESS IN ADOLESCENCE

THIS SHEET ALLOWS US TO KEEP YOUR NAME APART FROM YOUR ANSWERS (SO NO ONE WILL KNOW WHAT YOU SAY), AND THEN TO PUT YOUR QUESTIONNAIRES TOGETHER WHEN YOU ARE FINISHED.

Please put your name on this sheet.

NAME (please print clearly)

What grade are you in? (CIRCLE ONE)

7 8 9 10 11 12

Appendix 0

Intercorrelations Among Measures for Grades 8, 9 and 11

Table 01

Intercorrelations Among Measures for Grade 8 Boys^a and Girls^b

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 EAS	-	.80	.71	.78	-.66	-.67	-.58	.53	.18	.15	.00	.23	-.17	-.15	-.07	.26	-.20	-.37	-.03	-.10	.30	.44
2 EASde	.80	-	.41	.38	-.41	-.48	-.30	.32	.18	.25	.08	.10	-.11	-.10	-.07	.13	-.12	-.22	-.03	.03	.18	.36
3 EASnon	.58	.29	-	.33	-.40	-.41	-.46	.21	.06	.03	.08	.03	-.10	-.08	-.11	.07	-.08	-.24	.03	-.13	.12	.33
4 EASind	.79	.44	.16	-	-.68	-.63	-.57	.63	.15	.04	-.13	.36	-.17	-.16	.01	.35	-.24	-.37	-.06	-.13	.36	.32
5 PA	-.68	-.53	-.39	-.55	-	.93	.90	-.87	-.09	-.02	.18	-.30	.31	.27	.13	-.47	.38	.49	-.04	.02	-.55	-.45
6 PATrust	-.64	-.55	-.34	-.50	.93	-	.78	-.70	-.04	.05	.11	-.19	.28	.25	.10	-.42	.34	.46	.00	.09	-.49	-.45
7 PACom	-.58	-.44	-.52	-.36	.88	.76	-	-.65	-.07	-.01	.16	-.24	.25	.20	.18	-.31	.37	.40	-.04	.03	-.36	-.31
8 PAAllen	.58	.41	.18	.62	-.84	-.69	-.56	-	.14	.08	-.21	.37	-.30	-.27	-.08	.53	-.33	-.47	.09	.08	.63	.47
9 EASP	-.01	.14	-.21	.00	.04	.03	.11	.03	-	.81	.73	.76	-.56	-.57	-.52	.36	-.17	-.24	.02	.23	.11	-.05
10 EASPde	.08	.23	.09	-.11	.02	-.02	-.01	-.08	.58	-	.52	.39	-.32	-.31	-.37	.15	-.02	-.13	-.02	.27	-.00	-.01
11 EASPhon	-.34	-.13	-.29	-.33	.28	.25	.23	-.28	.73	.35	-	.25	-.46	-.49	-.49	.17	-.07	-.10	-.11	.02	-.08	-.12
12 EASPind	.20	.18	-.17	.34	-.17	-.14	.00	.32	.70	.03	.18	-	-.50	-.50	-.36	.47	-.27	-.28	.13	.23	.28	.01
13 PeerA	-.10	-.18	.13	-.13	.26	.25	.17	-.28	-.60	-.27	-.35	-.53	-	.97	.86	-.78	.52	.58	-.01	-.10	-.44	-.13
14 PrTrust	-.10	-.15	.11	-.12	.26	.30	.14	-.25	-.55	-.27	-.27	-.52	.93	-	.79	-.71	.48	.54	-.00	-.09	-.42	-.14
15 PrCom	.04	-.13	.08	.13	.09	.07	.13	-.03	-.56	-.33	-.54	-.28	.82	.65	-	-.43	.46	.48	.02	-.09	-.19	.03
16 PrAllen	.24	.16	-.15	.42	-.32	-.23	-.13	.50	.25	-.05	-.06	.51	-.59	-.45	-.19	-	-.45	-.53	.04	.07	.61	.29
17 PCSS	-.35	-.35	-.07	-.31	.30	.28	.15	-.37	-.17	-.06	.02	-.26	.37	.39	.15	-.35	-	.74	.22	.10	-.42	-.31
18 PSSM	-.38	-.32	-.09	-.38	.50	.47	.30	-.57	-.25	-.07	-.02	-.36	.39	.42	.24	-.25	.64	-	.21	.03	-.49	-.43
19 SchComp	-.28	-.22	-.03	-.32	.28	.28	.18	-.29	.10	.24	.25	-.20	.21	.24	.01	-.29	.39	.38	-	.61	-.01	-.07
20 GPA	-.03	-.01	.12	-.13	.22	.26	.07	-.26	.25	.28	.27	.02	.14	.15	-.02	-.25	.28	.25	.68	-	-.12	-.13
21 YSRInt	.23	.12	-.01	.34	-.57	-.48	-.36	.68	.05	-.12	-.25	.36	-.23	-.28	.02	.35	-.44	-.61	-.26	-.35	-	.55
22 YSRext	.30	.18	.17	.30	-.53	-.48	-.43	.49	-.17	-.12	-.34	.08	-.10	-.14	.13	.29	-.16	-.28	-.21	-.19	.51	-

(table continues)

Note. Correlations for boys are below the diagonal; correlations for girls are above the diagonal. Correlations that are significant at the .01 level and higher are bolded. For boys, correlations of .23 and higher are significant at the .05 level; correlations of .30 and higher are significant at the .01 level; correlations of .38 and higher are significant at the .001 level. For girls, correlations of .20 and higher are significant at the .05 level; correlations of .26 and higher are significant at the .01 level; correlations of .32 and higher are significant at the .001 level. EAS = Emotional Autonomy Scale for parents total scale; EASde = EAS Deidealization subscale; EASnon = EAS Nondependency subscale; EASind = EAS Individuation subscale; PA = IPPA parental attachment total scale; PATrust = parental Trust subscale; PACom = parental Communication subscale; PAAlien = parental Alienation subscale; EASP = Emotional Autonomy Scale for peers total scale; EASPde = EASP Deidealization subscale; EASPnon = EASP Nondependency subscale; EASPind = EASP Individuation subscale; PeerA = IPPA peer attachment total scale; PrTrust = peer Trust subscale; PrCom = peer Communication subscale; PrAlien = peer Alienation subscale; PCSS = Perceived Control at School Scale; PSSM = Psychological Sense of School Membership; SchComp = teacher-rated school competencies; GPA = grade point average; YSRint = Youth Self-Report Internalizing subscale; YSRext = Youth Self-Report Externalizing subscale.

^a $\eta = 72$. ^b $\eta = 98$.

Table 02

Intercorrelations Among Measures for Grade 9 Boys^a and Girls^b

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 EAS	-	.82	.76	.85	-.80	-.77	-.77	.62	.00	.24	-.34	.08	-.31	-.31	-.12	.34	-.34	-.39	-.12	-.10	.26	.53
2 EASde	.82	-	.45	.52	-.61	-.65	-.59	.40	.11	.48	-.27	.05	-.34	-.37	-.21	.26	-.26	-.36	.02	-.06	.09	.39
3 EASnon	.66	.43	-	.49	-.57	-.53	-.60	.42	-.08	.06	-.17	-.06	-.13	-.15	.03	.22	-.27	-.28	-.11	-.01	.19	.38
4 EASind	.82	.47	.27	-	-.74	-.68	-.68	.66	-.04	.05	-.36	.17	-.25	-.23	-.09	.34	-.30	-.30	-.20	-.16	.35	.51
5 PA	-.55	-.40	-.37	-.49	-	.94	.90	-.88	-.05	-.06	.27	-.25	.53	.52	.28	-.55	.36	.51	.26	.22	-.50	-.60
6 PATrust	-.55	-.48	-.36	-.42	.92	-	.79	-.73	-.06	-.11	.25	-.21	.49	.51	.27	-.45	.32	.48	.20	.24	-.37	-.61
7 PACom	-.48	-.33	-.46	-.35	.81	.65	-	-.69	.05	-.03	.31	-.12	.45	.46	.28	-.40	.31	.46	.22	.17	-.37	-.50
8 PAalien	.40	.21	.15	.49	-.86	-.70	-.49	-	.12	.02	-.18	.35	-.51	-.46	-.22	.65	-.35	-.44	-.29	-.18	.62	.52
9 EASP	.33	.46	.06	.23	-.13	-.11	-.11	.11	-	.64	.71	.80	-.52	-.44	-.42	.48	-.30	-.24	.08	.08	.21	.05
10 EASPde	.30	.41	.10	.18	-.20	-.22	-.16	.13	.73	-	.23	.25	-.30	-.26	-.25	.28	-.24	-.28	.11	.06	.00	.08
11 EASPnon	.06	.26	.04	-.12	.19	.18	.08	-.23	.55	.24	-	.34	-.24	-.20	-.25	.17	-.05	.05	.15	.24	.01	-.20
12 EASPind	.28	.27	-.01	.32	-.19	-.13	-.11	.25	.71	.25	.04	-	-.53	-.46	-.39	.54	-.33	-.27	-.04	-.09	.37	.18
13 PeerA	.13	.09	.12	.11	.14	.01	.22	-.15	-.42	-.17	-.36	-.34	-	.96	.83	-.74	.37	.53	.18	.15	-.39	-.24
14 PrTrust	.12	.11	.09	.08	.18	.07	.27	-.15	-.40	-.22	-.18	-.38	.93	-	.74	-.63	.34	.52	.13	.12	-.34	-.24
15 PrCom	.11	-.01	.06	.18	-.01	-.08	.17	.09	-.35	-.17	-.49	-.12	.84	.71	-	-.33	.23	.37	.16	.17	-.09	-.06
16 PrAlien	-.08	-.14	-.14	.05	-.19	-.04	-.04	.42	.20	-.05	.08	.32	-.47	-.35	-.02	-	-.37	-.46	-.19	-.09	.62	.32
17 PCSS	-.12	-.17	-.05	-.06	.30	.25	.26	-.27	-.36	-.18	-.14	-.37	.47	.48	.33	-.26	-	.62	.14	.04	-.25	-.32
18 PSSM	-.13	-.15	-.05	-.10	.41	.35	.32	-.38	-.31	-.14	-.08	-.36	.52	.59	.29	-.34	.62	-	.20	.23	-.33	-.44
19 SchComp	.16	.04	.25	.12	.00	.05	-.12	-.05	.16	.01	.12	.18	-.02	-.00	-.03	.01	.27	.14	-	.47	-.27	-.20
20 GPA	.36	.29	.30	.25	-.16	-.10	-.24	.09	.44	.23	.31	.33	-.01	.03	.06	.18	.01	-.01	.59	-	-.13	-.35
21 YSRint	.02	-.01	-.14	.11	-.40	-.30	-.25	.49	.17	.07	-.05	.27	-.38	-.38	-.06	.55	-.34	-.49	.01	.05	-	.52
22 YSRext	.20	.06	.04	.31	.34	-.28	-.07	.50	-.12	-.01	-.32	.03	.05	-.01	.21	.17	-.31	-.24	-.30	-.25	.51	-

(table continues)

Note. Correlations for boys are below the diagonal; correlations for girls are above the diagonal. Correlations that are significant at the .01 level and higher are bolded. For boys, correlations of .24 and higher are significant at the .05 level; correlations of .31 and higher are significant at the .01 level; correlations of .39 and higher are significant at the .001 level. For girls, correlations of .19 and higher are significant at the .05 level; correlations of .25 and higher are significant at the .01 level; correlations of .32 and higher are significant at the .001 level. EAS = Emotional Autonomy Scale for parents total scale; EASde = EAS Deidealization subscale; EASnon = EAS Nondependency subscale; EASind = EAS Individuation subscale; PA = IPPA parental attachment total scale; PATrust = parental Trust subscale; PACom = parental Communication subscale; PAAlien = parental Alienation subscale; EASP = Emotional Autonomy Scale for peers total scale; EASPde = EASP Deidealization subscale; EASPnon = EASP Nondependency subscale; EASPind = EASP Individuation subscale; PeerA = IPPA peer attachment total scale; PrTrust = peer Trust subscale; PrCom = peer Communication subscale; PrAlien = peer Alienation subscale; PCSS = Perceived Control at School Scale; PSSM = Psychological Sense of School Membership; SchComp = teacher-rated school competencies; GPA = grade point average; YSRint = Youth Self-Report Internalizing subscale; YSRext = Youth Self-Report Externalizing subscale.

^a $\eta^2 = .66$. ^b $\eta^2 = .101$.

Table 03

Intercorrelations Among Measures for Grade 11 Boys^a and Girls^b

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 EAS	-	.84	.78	.89	-.71	-.72	-.60	.58	.23	.32	-.17	.26	.03	-.02	.18	.08	-.37	-.35	.02	-.14	.27	.45
2 EASde	.84	-	.48	.59	-.59	-.58	-.51	.47	.29	.46	-.01	.15	.03	-.02	.10	.00	-.27	-.25	-.04	-.13	.20	.33
3 EASnon	.72	.43	-	.59	-.54	-.55	-.50	.38	.15	.14	-.14	.24	.07	.06	.17	.04	-.24	-.27	.07	-.15	.11	.29
4 EASind	.85	.56	.43	-	-.65	-.66	-.51	.58	.13	.18	-.28	.27	-.02	-.07	.18	.16	-.39	-.37	.03	-.10	.34	.48
5 PA	-.73	-.70	-.47	-.57	-	.94	.90	-.83	-.07	-.07	.24	-.25	.16	.19	-.01	-.23	.58	.51	.12	.23	-.56	-.54
6 PATrust	-.67	-.67	-.45	-.48	.92	-	.79	-.70	-.04	-.11	.24	-.15	.08	.12	-.06	-.14	.54	.47	.10	.22	-.52	-.55
7 PACom	-.70	-.65	-.54	-.50	.91	.77	-	-.57	.02	-.02	.19	-.12	.04	.08	.01	.01	.48	.42	.27	.28	-.39	-.40
8 PAAllen	.55	.53	.23	.54	-.82	-.61	-.62	-	.20	.09	-.22	.43	-.35	-.36	-.02	.54	-.55	-.47	.08	-.11	.60	.49
9 EASP	.18	.20	.12	.12	-.16	-.09	-.23	.10	-	.68	.61	.73	-.50	-.50	-.51	.26	-.01	-.13	.13	.07	-.03	.01
10 EASPde	.29	.30	.16	.24	-.19	-.13	-.24	.13	.67	-	.27	.19	-.23	-.28	-.23	.07	-.04	-.14	.14	-.10	-.00	.12
11 EASPhon	-.19	-.13	-.09	-.25	.13	.08	.06	-.22	.53	.05	-	.11	-.15	-.14	-.34	-.13	.25	.08	-.04	.11	-.26	-.31
12 EASPhind	.24	.22	.15	.22	-.23	-.12	-.26	.24	.78	.34	.09	-	-.55	-.53	-.45	.47	-.16	-.16	.14	.11	.14	.14
13 PeerA	-.19	-.17	-.16	-.13	.38	.30	.37	-.35	-.52	-.24	-.20	-.54	-	.96	.84	-.79	.47	.58	-.07	.09	-.36	-.19
14 PrTrust	-.17	-.16	-.16	-.11	.38	.35	.33	-.32	-.42	-.19	-.13	-.47	.94	-	.77	-.69	.45	.61	-.04	.09	-.32	-.20
15 PrCom	-.22	-.24	-.22	-.09	.37	.29	.44	-.25	-.49	-.21	-.36	-.40	.85	.72	-	-.39	.28	.35	.06	.13	-.16	.03
16 PrAllen	.05	-.01	.00	.13	-.18	-.05	-.14	.32	.40	.23	-.04	.54	-.72	-.61	-.33	-	-.49	-.53	.21	-.01	.48	.32
17 PCSS	-.34	-.36	-.19	-.27	.46	.44	.32	-.45	-.31	-.32	-.06	-.23	.42	.40	.36	-.30	-	.78	.06	.27	-.68	-.52
18 PSSM	-.47	-.46	-.21	-.43	.63	.57	.48	-.63	-.18	-.26	.07	-.16	.36	.34	.36	-.17	.70	-	.04	.33	-.62	-.52
19 SchComp	-.12	-.15	-.02	-.11	.16	.10	.17	-.17	.11	.04	.08	.10	.00	-.01	.07	.07	.00	.19	-	.34	.13	.19
20 GPA	-.06	-.02	-.09	-.06	.06	.11	.04	-.01	.40	.28	.21	.31	-.27	-.18	-.22	.31	-.12	.03	.47	-	-.06	-.35
21 YSRint	.28	.28	.06	.30	-.45	-.30	-.30	.64	.24	.32	-.09	.24	-.40	-.33	-.19	.56	-.46	-.45	-.02	.10	-	.56
22 YSRext	.36	.21	.28	.37	-.34	-.32	-.19	.40	-.05	-.01	-.10	.01	-.02	-.04	-.01	-.01	-.15	-.34	-.29	-.34	.28	-

(table continues)

Note. Correlations for boys are below the diagonal; correlations for girls are above the diagonal. Correlations that are significant at the .01 level and higher are bolded. For boys, correlations of .23 and higher are significant at the .05 level; correlations of .30 and higher are significant at the .01 level; correlations of .38 and higher are significant at the .001 level. For girls, correlations of .24 and higher are significant at the .05 level; correlations of .32 and higher are significant at the .01 level; correlations of .38 and higher are significant at the .001 level. EAS = Emotional Autonomy Scale for parents total scale; EASde = EAS Deidealization subscale; EASnon = EAS Nondependency subscale; EASind = EAS Individuation subscale; PA = IPPA parental attachment total scale; PATrust = parental Trust subscale; PACom = parental Communication subscale; PAAlien = parental Alienation subscale; EASP = Emotional Autonomy Scale for peers total scale; EASPde = EASP Deidealization subscale; EASPnon = EASP Nondependency subscale; EASPind = EASP Individuation subscale; PeerA = IPPA peer attachment total scale; PrTrust = peer Trust subscale; PrCom = peer Communication subscale; PrAlien = peer Alienation subscale; PCSS = Perceived Control at School Scale; PSSM = Psychological Sense of School Membership; SchComp = teacher-rated school competencies; GPA = grade point average; YSRint = Youth Self-Report Internalizing subscale; YSExt = Youth Self-Report Externalizing subscale.

^a η^2 = .75. ^b η^2 = .66.