

# CONTEMPORARY ISSUES IN PARENTING

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## *Chapter 6*

### **THE FAMILY-SCHOOL RELATIONSHIPS MODEL: PARENTAL INFLUENCES ON SCHOOL SUCCESS**

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#### **ABSTRACT**

This chapter focuses on a summary of two investigations assessing the utility of the Family-School Relationships Model. This Model has been proposed as an effective tool in organizing and conceptualizing research regarding parenting, parent-child relationships, and academic and social adjustment in school. Both studies reported in this chapter provide evidence for the general utility of a model of research that allows for clarity in a field of study that has little integration. In Study 1 the contributions of parental involvement in children's and adolescents' educational success was estimated using a 4<sup>th</sup> grade and 7<sup>th</sup> grade middle-class, predominantly white sample from southern Ontario, Canada. An ecological model that has four nested variables, including family climate (cohesion and conflict), parent-child interactions about school issues (e.g., helping, support, monitoring, pressure, and press for intellectual development), individual child characteristics of intellectual effectiveness and effort, and school achievement (marks for English and Math), was assessed using linear structural equation techniques. Separate models were computed for each grade level for child's perceptions of mother and father. Results are discussed in terms of parental beliefs of parent involvement in school, the role of parenthood, and the use of family-school connection models for studying family processes that predict children's school success. In Study 2 an analysis of a subset of families and children from the National Longitudinal Survey of Children and Youth was used to assess the association between family structure, family processes, child characteristics, and teachers' judgments of children's academic success. Children between the ages of 6 and 11 years who were in two-parent (n = 1,321) and single-parent (n = 197) households that had complete data on all research variables in Cycle 1 and 2 of the NLSCY were included in this investigation. The analyses were undertaken to assess if a variety of family processes for two-parent and single-parent households were predictive of teachers' judgments of academic standing during the Cycle 1 and Cycle 2 periods. A

complex set of variables was used in this analysis. Academic success was evaluated by teachers' ratings of achievement. Children's personal characteristics included measures of academic skills or focus, level of hyperactivity and inattention, anxiety and depression, and prosocial behaviors. Family measures included assessments of positive parenting, ineffective parenting, rational parenting, consistency of discipline, family dysfunction, parental depression, social support for the family, and socioeconomic status indicators. Initial inspection of the data revealed few significant gender differences. Comparisons between two-parent and one-parent households revealed that two-parent households included higher socioeconomic status indicators, more support for the family, less parental depression, and less family dysfunction. Two-parent households also had children who were less hyperactive, more academically skilled, less anxious or depressed, and were judged by teachers as having good academic standing. These findings were consistent for both Cycle 1 and Cycle 2. Through the use of complex multivariate analyses, similar but also different family process patterns were observed for two-parent and one-parent households. The parental and family characteristics that are related to children's academic success were found to be largely consistent between one- and two-parent families. There were, however, some important differences. For example, while socioeconomic status appears unrelated to either positive parenting or ineffective parenting in two-parent families, higher SES status for one-parent families is associated with lower levels of positive parenting and higher levels of ineffective parenting. These particular findings suggest that when single parents are successful in increasing their economic standing, there is added stress to the family such that the task of parenting might be more difficult. The findings of this study are complex and multivariate; they reveal a web of social and family ecology links to students' academic success in school. While the findings from this investigation suggest that both family structures can have positive and negative family processes that are associated with good or poor academic success of children, the single-parent family, in general, could be seen as the more stressed and strained family form. The major social policy implication is that it is important to assure adequate family income and social support for parents, especially for children of single-parent households. Further, the findings suggest that possible interventions in the treatment of family dysfunction should include individual treatment of parental depression, interventions in marriage and family relations, and parent training associated with healthy parent-child relationships.

## INTRODUCTION

In *Worlds Apart: Relationships Between Families and Schools*, Sara Lawrence Lightfoot (1978) drew attention to the powerful divide between the home and school, the two most powerful developmental contexts for children. Parents and teachers, she noted, kept to their separate roles and with only a minimum of contact with each other across the family-school boundary. What was more remarkable was her further observation that this schism even extended to researchers in education and child development who also tended to keep their scholarly efforts focused on either the child in the school or the child in the home. A major exception to this generally divided world was, of course, the study of the pre-school age child (Levenstein, 1977); but the day the child went off to school the fully integrated nature of children's lives came to an end. Children began to exist in two separate worlds and, being children, they adjusted and dealt with it. We are now learning that they and society may have been paying a price for this bifurcated existence.

Times change and since Lightfoot's book appeared more than 25 years ago, we have developed what is now almost a common sense belief that parental involvement with children and adolescents' education is beneficial for their school success. Hoover-Dempsey and Sandler (1997) review numerous investigations demonstrating that parental involvement can enhance children's learning and performance (e.g., Eccles and Harold, 1993; Epstein, 1991; Ryan and Adams, 1995). It only makes sense to believe that when parents and teachers are both focused on the child's success at school, this mutual involvement will enhance children's school successes. However, Stevenson and colleagues' (Stevenson, Chen and Uttal, 1990; Stevenson, Lee, Chen, Lummis et al., 1990; Stevenson, Lee, Chen, Stigler et al., 1990; Stevenson and Stigler, 1992) observations of several national cultures concerning parents' role in children's education, indicated that parents hold selective views of parental involvement in their child's education. North American parents indicate it is their responsibility to provide emotional support, encouragement, and social or community learning opportunities to enhance success in school. However, on average, parents did not view the home as being responsible for the articulation of the importance of achievement, monitoring children's activities or progress, or helping with homework. Observations such as these (see also Lareau, 1987, 1989) compel us to examine whether parental involvement in providing support, encouragement, intellectual opportunities outside the school, achievement expectations, monitoring, and helping with homework or school activities have significant associations with children and young adolescents' school success.

Scott-Jones (1995) has proposed that parent-child interactions include four levels: valuing, monitoring, helping, and doing. Briefly, valuing involves communication about the self, fair mindedness, self-awareness, provision of educational resources, and perhaps respect for self and individual accomplishments and expectations. Through the expression of valuing, parents are thought to create role models and the conditions for enhancing identification with the importance of achievement. Monitoring includes explicit and implicit rules regarding homework and other school activities, checking on homework completion, or setting standards or limits about time watching television. Ideally, it is thought that monitoring leads a child to develop self-management strategies that facilitate achievement in school. Helping involves the assistance of skill development through a tutorial relationship, regulating the direction of behavior, assisting in finding helpful resources, or even learning together. The goal of helping is to maximize success in performance. Finally, doing is over-involvement in helping where the parent assumes too much responsibility for the child's school performance.

In regard to parental beliefs about their involvement in children's education (Stevenson, Chen and Uttal, 1990; Stevenson, Lee, Chen, Lummis et al, 1990), the level of valuing would include aspects of encouraging intellectual opportunities and providing achievement expectations; monitoring would include setting rules, checking on homework completion, or setting limits on television viewing; helping would include direct support for getting school work completed and finding useful resources; while doing would be taking over a task while placing extreme pressure and demand on the child for school performance. Scott-Jones (1995) suggests that these four levels of parent-child interaction can have direct effects on academic achievement and also indirect effects, where any of the four levels can influence the basic skills or motivations of the child, while in turn, these skills and motivations predict academic achievement.

Other investigators have suggested similar but elaborated models for the study of parent-child interactions and school success (e.g., Brody, Stoneman and Flor, 1995; Campbell, 1994;

Entwistle and Alexander, 1996; Marjoribanks, 1996; Ryan and Adams, 1995). At least four sets of investigators have proposed research models that attempt to provide an organization for studying family processes, individual characteristics of the child, and children's school achievement and adjustment (Bronfenbrenner, 1986; Darling and Steinberg, 1993; Marjoribanks, 1996; Ryan and Adams, 1995). Each of these models provide direction as to how family climate or parenting styles, parent-child interactions, children's individual characteristics or development, and school outcomes can be studied as a set of interrelated yet distinct features of child development in the context of school and family. Family climate or parenting styles are viewed as a context that facilitates or impedes parental actions that enhance a child's successes in school. Characteristics of the child are most proximal to the child's actions and behaviors in the school, but also mediate parental behaviors such as valuing, monitoring, or helping that occur within the family. Further, the nature of the family climate will influence which forms of parent-child interactions are likely to occur. Thus, family climate and parent-child interactions are distal social contexts that are thought to influence the proximal effects to the child's characteristics (or level of individual development) on school achievement. For example, both Marjoribanks (1996b) and Ketssetzis, Ryan and Adams (1998) have found that proximal variables of child characteristics mediate more distal parent-child interactions effects on school outcomes.

In the remainder of this chapter we will present a research model that helps to integrate a largely diffuse and disjointed line of investigation using an ecological model. We will launch this undertaking by reviewing a number of foundational principles governing the formation of the Family-School Relationships Model, provide an overview of the components of the model, and summarize two investigations that illustrate the usefulness of the model for understanding the linkage between the family and children's school success.

### **Foundational Principles to the Model**

A broad review of the research literature suggests several criteria that are necessary to an inclusive model (see Ryan and Adams, 1995 for more detail).

First, the model should be inclusive. That is, it should encompass, at some level of abstraction, all of the characteristics of individual family members, the patterns of family relationships, and the contextual circumstances of the family that might be seen to affect or to be affected by the child's academic and social school success.

Second, the model should organize the relevant variables along a dimension of proximity to the child's school outcomes. This criterion is consistent with a report by Wang, Haertel and Walberg (1993) who found that variables (e.g., psychological, instructional, home environment) that were proximal and more intimately related to school learning were stronger determinants of learning than were distal variables (e.g., demographics, policy, institutional organizations, etc.). Path analytic studies (e.g., Grolnick and Slowiaczek, 1994; Steinberg, et al., 1992) of family process effects on school learning also point to the importance of a proximal-distal dimension in the model's structure.

Third, the model should recognize that influence or effects will be strongest between adjacent or proximal classes of variables. That is, the more widely separated the variables are along the proximal-distal dimension, the weaker are the interactions between variables. In general, those variables distal from the child's school outcome will have their effects on the

outcome variables through the mediating actions of variables and processes more intimately connected to the outcome. In the language of path analysis, while direct effects between variables are possible at all levels of the model, indirect effects should be expected to predominate.

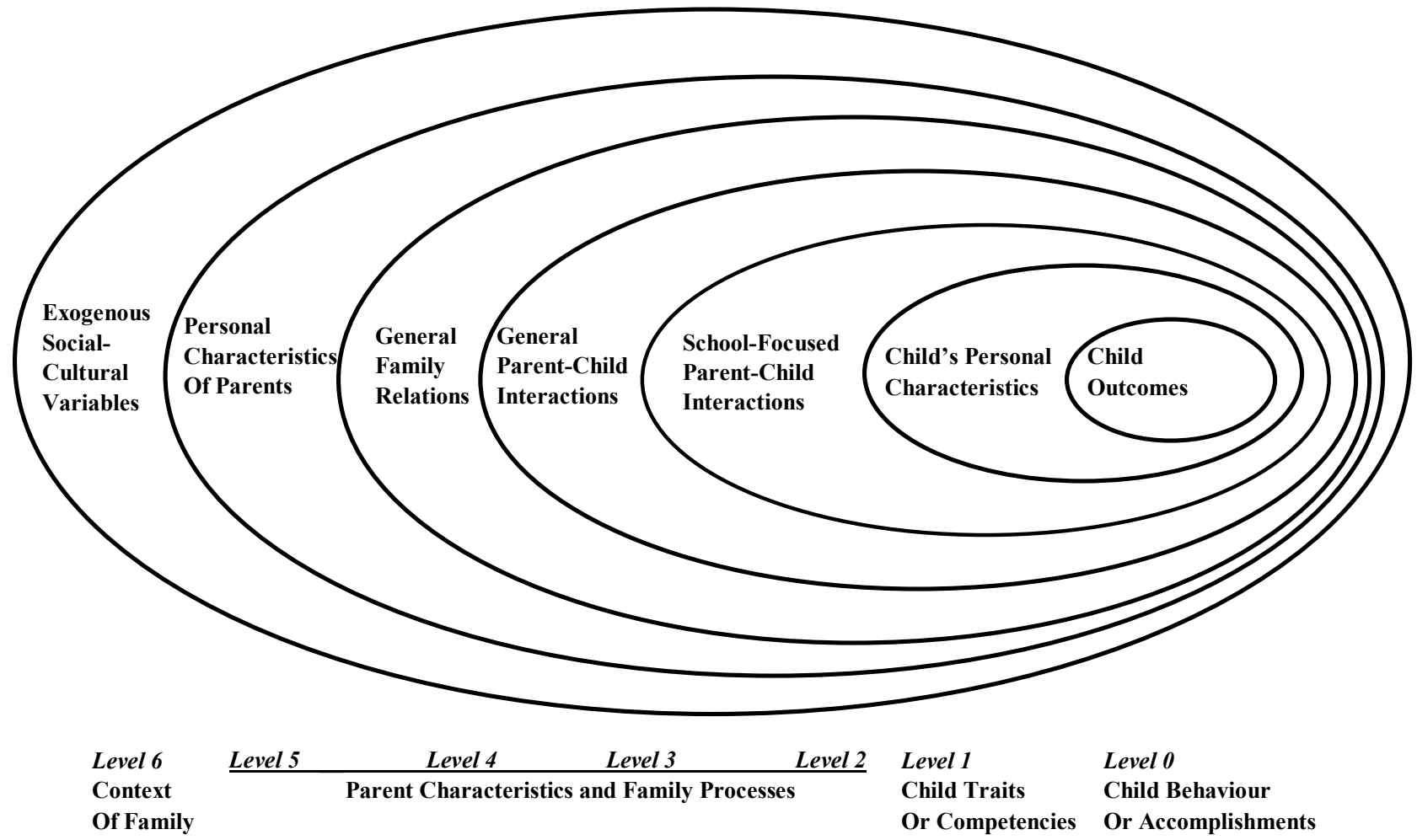
Fourth, the model should acknowledge the possibility of bidirectionality of influence along the proximal-distal dimension. It is to be expected that all variable classes represented in the model will have the capacity to exert some influence over all other variable classes. Within the context of the single dimension of the model, for example, the levels of general family conflict can be seen as affecting parent-child relations that, in turn, affect school outcomes. Similarly, it is also likely that school outcomes will sometimes affect parent-child relations that, in turn, could lead to changes in the overall level of conflict in the family.

### **The Family-School Relationships Model**

Figure 1 depicts a model that we contend encompasses all of the relevant family characteristics and processes that might be implicated in children's school achievement and adjustments. It is structured along a proximal-distal dimension where Children's Outcome is placed at Level 0 (the target of interest). Child's Personal Characteristics is Level 1 with successive levels extending out to Exogenous Social/Cultural and Biological Variables at Level 6. The order of effects along the proximal-distal dimension is assumed to be bidirectional where the intensity of interaction is normally greatest between adjacent levels. The levels themselves are not to be seen as particular variables, constructs, or processes. Rather, they are styled as classes of constructs within which literally hundreds of specific variables could be defined, depending on the objectives of a given research project or interests of a researcher.

We have indicated (Ryan and Adams, 1995) that our model focuses on within-the-family processes and is not intended to account for all the ways family members or other socialization agents, such as peers, teachers, or administrators, could have an influence on children's school success. It does not, for example, address the various ways parents become involved in their children's schooling within the school context as volunteers, members of parent-teacher organizations, membership on advisory committees, or even running for office on a local school board. Epstein's (1987, 1992) explication of the different types of parental school involvement deals with these issues much more directly.

*Level 0: Child Outcomes.* In our judgment school success focuses mainly on academic achievement and social behaviors or adjustment in the school setting. Academic achievement can be measured through the use of grades, teacher ratings of achievement, or standardized achievement tests. Social behaviors could be determined from an inspection of school records to assess major behavioral disruptions such as truancy, suspensions, or detention. More often studies involve the use of teacher ratings, usually on standardized checklists or rating scales where the focus is on the child's capacity to work within the rules of the school (e.g., see Adams, Ryan, Ketsetzis, and Keating, 2000), the child's relationship with teachers, or on peer relationships. Less frequently, child-teacher interactions are observed, coded, and analyzed.



**Figure 1:** The Family-School Relationships Model

Other possible outcomes at this level could include such things as self-esteem, assertiveness, maturity, or confidence. In fact, these same characteristics are often explicit objectives of early childhood education programs, and if they are also among the important goals of a particular program for school-age children, the model is open to their inclusion at Level 0. As will be seen, however, the model's presumptions, for children who attend regular school, is that schooling outcomes will be limited to academic achievement and social behaviors within the school. Constructs such as self-esteem and maturity are classed with the Child's Personal Characteristics at Level 1 and are understood to be among the qualities the child brings to the learning situation and which contribute to the schooling outcomes and which may be affected, in turn, by the school outcomes themselves.

*Level 1: Child's Personal Characteristics.* This level includes all personal qualities that are connected with the outcomes, however they are defined. It is assumed that when some condition or process in the family affects a child's success in school, the effects of that condition or process will always be mediated in some way through the psychological processes within the child. Conflict in the home, for example, might reduce achievement through a reduction of the child's motivation to succeed or limit the child's energy to complete homework. The potential list of constructs or variables located at this level is very long and would include various forms of intellectual ability and academic skills along with a wide range of psychosocial characteristics such as self-esteem, sociability, assertiveness, confidence, self-efficacy or enthusiasm.

*Level 2: School-Focused Parent-Child Interactions.* This level reflects a specific focus on the ways parents (and, sometimes, older siblings) take particular action with respect to school issues. Variables of interest at this level could include help with homework, monitoring of homework and school attendance, exerting pressure or using aversive strategies to motivate the child, taking steps to ensure the general development of literacy, numeracy, and cultural interests, or simply being a parent who is easy to talk to about relationship problems at school.

The Level 2 variables can be distinguished from the more general variables of parent-child interaction identified at Level 3 on the basis of the special focus on school. If the outcomes of interest were child development outcomes of a more general nature, there would be little reason to divide Level 2 processes from those in Level 3. But, with school outcomes being the focus in this case, it makes particular sense to locate these two classes of variables in different levels of the model. Certainly, within a path analysis framework, the partitioning of these different varieties of parent-child interaction makes it easier to see how general parenting behaviors come to affect school-related parenting, thus revealing something of the mechanisms, for example, that link parenting style research with school achievement (Dornbusch, Ritter, Leiderman, Roberts, and Fraleigh, 1987).

*Level 3: General Parent-Child Interactions.* Variables at this level characterize, in a general way, the interactions or relationships between parents and their children. There is no particular focus on schooling in these interactions. In a "distance" metaphor, the school is already becoming a remote issue. Variables or constructs at this level are those traditionally associated in parenting research with constructs such as authoritative, authoritarian, or permissive parenting styles and measures of parental coerciveness, parental control, parental rejection, or the expression of warmth between parent and child. Once again, the list is long and the model remains open to the particular research interests of the investigator.

*Level 4: General Family Relations.* In this level attention shifts from a consideration of interactions between parents and children to a concern for the overall nature of the family. This level involves a sense of how families present themselves as a group or unit. Constructs such as cohesiveness, conflict, family sociability, enmeshment, disengagement, and democratic family style illustrate the variables at this level.

Further, constructs that define the nature of marital relationship between the parents fit into this level. While an argument can be made to assign marital or inter-parental relationship constructs to their own level, they are placed within Level 4 because such relationships likely appear to most children as an integral part of the overall nature of the family. In fact, the exact placement of the marital relationship variables in this model is most probably an empirical question best answered with reference to path analytic data. Certainly, no data is currently available that can clearly advise where to place these processes in relation to the proximal-distal dimension.

*Level 5: Personal Characteristics of Parents.* Parents' personal characteristics are placed at this level because they are not strictly a part of the relationship processes that characterize the family system. As such they are rather distant from school outcomes, but clearly highly relevant to how the family will be operating in general and how the parents might interact with their children around school issues in particular. The constructs at this level include parental personality characteristics such as introversion, expressiveness, dominance, and flexibility, as well as psychiatric disorders such as depression, excessive anxiety, and psychoses. Parental beliefs about education and parents' expectations about educational achievement are also located at this level.

*Level 6: Exogenous Social/Cultural and Biological Variables.* Constructs at this level are of two types. First, there are the social or cultural variables of socioeconomic status, type of neighborhood, marital status, family structure, and ethnicity, for examples. Second, this level also includes the biological "givens" such as sex of the parent or inherited characteristics. Among the latter could be physical disability or general disability such as Down's Syndrome.

Unlike the variables included in other levels, Level 6 might seem more arbitrary. The characteristics and processes located at the other levels all bear a natural and logical linkage with each other. Each of them identify a feature of a person or family process that is substantially formed by other events or processes formed by the nature of family relationships. In a sense, there is a strong organic linkage among the variables in levels 0 through 5.

Level 6, on the other hand, is intended to include all those characteristics and conditions of the family that can have a significant impact on the family system and family members, but which, themselves are not, in significant degree, the consequences of those same family processes, especially those that are particularly germane to children's school success. The direction of effects with respect to Level 6 variables is assumed to be rather more strongly unidirectional.

## **Objectives of this Chapter**

In the remainder of this chapter we will review two substantial investigations. The first involves the use of a data set collected in a local school setting. The second reports findings using the National Longitudinal Survey of Children and Youth. The latter data set is from a

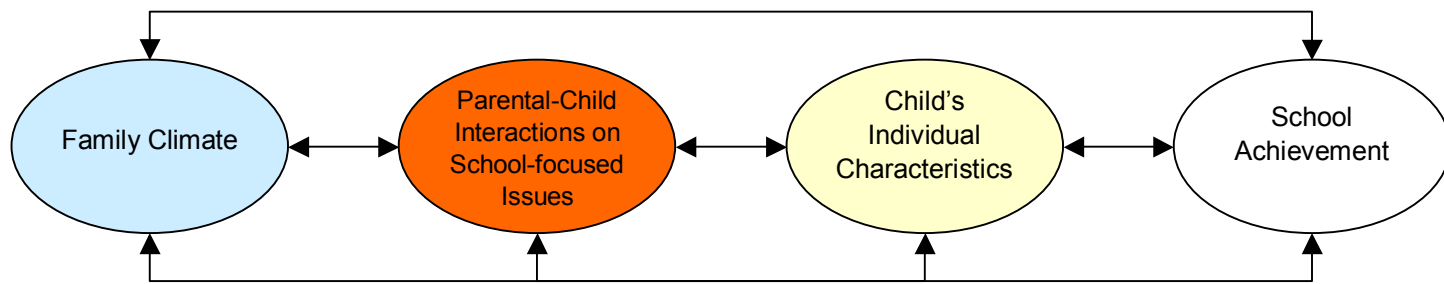
large national longitudinal study in Canada. It is reasonably representative of Canadian families with the exception of Native populations. We will present the purpose and nature of two major studies, report on the findings, interpret the results, and draw some conclusions about the use of the Family-School Relationships Model and the findings we have observed using both local and national data sets. Both reports are original findings that have not been reported elsewhere. Funding for the first study was provided through the Hospital for Sick Children's Foundation and the second from Human Resources Development Canada.

### **STUDY 1: A CROSS-SECTIONAL STUDY OF FAMILY CLIMATE, PARENT-CHILD INTERACTIONS ABOUT SCHOOL ISSUES, CHILDREN'S CHARACTERISTICS AND SCHOOL ACHIEVEMENT**

This study assesses the research model that is depicted in Figure 2. Selected levels of the Family-School Relationships Model were used in Study 1. Based on an integration of assumptions that the family environment provides the context within which parent-child interactions are likely to occur or not, it is anticipated that family climate will predict parent-child interactions about school activities. Further, parent-child interactions that are focused on valuing, monitoring, or helping the child with school activities are likely to have effects through the mediating characteristics of the child that have pertinence to school achievement behaviors. Thus, distal environmental influences are likely to influence adjacent variables from household or family contexts (e.g., family climate) through dyadic relationships that influence parent-child interactions linked to individual characteristics of the child and his or her behaviors in school. However, it is possible that there are independent direct effects on any other variable in the model. Direct effects are expected to be infrequent with indirect effects prominent in this model.

#### **Family Climate**

The general family atmosphere provides a wide social environment with its own emotional tone. This emotional tone provides the background or press for specific forms or quality of dyadic relationships between family members. Two dimensions of family atmosphere include its degree of *cohesion* (support, communication, involvement among family members) and *conflict* (open expression of differences in views, emotions, or behaviors). Coleman (1988, 1990) refers to this as social capital which involves the degree of relationships between family members and the quality of relationships that support parent-child interactions (see also Marjoribanks, 1996b). A variety of studies indicate that higher family cohesion facilitates (Brody et al., 1995; Brody, Stoneman and Flor, 1996; Barber and Buehler, 1996; Carbonell, Reinherz, and Giaconia, 1998; Georgiou, 1995; Weist, Freedman, Paskewitz, Proescher and Flaherty, 1995) while higher degrees of family conflict diminish (Brody et al., 1995; Brody, Stoneman and Flor, 1996; Shek, 1997; Forehand, Biggar, and Kotchick, 1998; Kurdek, Fine and Sinclair, 1995) academic achievement and social adjustment in school.



**Figure 2:** An Abbreviated Version of the Family-School Relationships Model

## **Parent-Child Interactions about School-Focused Issues**

A review by Bogenschneider (1997) demonstrates the importance of parental involvement (e.g., parent-teacher conferencing, parental monitoring of academic progress, or homework helping behaviors) for children's school success. She reports that six studies have found that involved parents have a child who does better in school. One investigation (Stevenson and Baker, 1987) found that parental involvement in a child's school activity even mediates almost all of the effects of parental education. Likewise, parental involvement appears to mediate the effects of authoritative parenting on children's school success (Steinberg, Lamborn, et al., 1992). Based on research of some 4800 high school students, where comparisons of four major racial groups and various family structures, resulted in similar findings, Bogenschneider (1997) argues that parent involvement has the same general consequences for children of diversity.

Often research on family interactions and parental involvement are measured by using observations (e.g., Cohn, 1990; McDevitt, Hess, Kashiwagi, Dickson, Miyake, and Azuma, 1987), questionnaires, or self-reports (e.g., Kurdek and Sinclair, 1988; Campbell and Mandel, 1990; Loeber and Dishion, 1984) of general family relationship processes and then correlate such measures with academic achievement, often based on reading and/or math grades. The general profile from these studies indicates that families that are in conflict, are not cohesive, are overly protective and intrusive, have poor internal organization, are not nurturing, and have poor general parenting quality have children who perform poorly in school. Much less is known, however, about the specific parent-child interactions associated within the context of school activities and their effects on school achievement.

Some particular parent behaviors have been found to be positively related to school successes which represent at least three of the four dimensions suggested by Scott-Jones (1995). Among these are: parental help with school subjects (Amato and Ochiltree, 1986; Chen and Uttal, 1988; Hewison, 1988; Hewison and Tizard, 1980; Hoover-Dempsey, Bassler, Brissie, 1987; Keith, Reimers, Fehrmann and Pottebaum, 1986; Seginer, 1986); achievement training (Anderson and Evans, 1976), monitoring of school behaviors by parents (Campbell and Mandel, 1990; Loeber and Dishion, 1984; Ramsey, Walker, Shinn, O'Neill and Stieber, 1989), parental teaching strategies (Barber, 1988; Hess, Holloway, Dickson and Price, 1984; Laosa, 1982), and a general interest by parents in their children's school affairs (Hoover-Dempsey et al., 1987; Milne, Ginsburg, Myers, and Rosenthal, 1986; Stevenson and Baker, 1987). While this body of research specifies some of the parent-child interactions about school-focused issues that are associated with children's school success, it is far from clear how these behaviors are influenced by the family climate, and how the school-focused interactions are associated with characteristics of the children who do well or poorly in school. Nonetheless, enough evidence has been published to expect that parent-child interactions concerning school activities that include valuing, helping, and monitoring (however, some studies suggest monitoring may not have desirable effects - Coley and Hoffman, 1996; Kurdek et al., 1995), should be associated with children earning higher grades. Although, over-demanding or negative pressure are likely to be associated with lower grades. Further, the effects of parent-child interactions focused on school issues and activities are thought to have primarily indirect effects through child characteristics that are linked to school success.

### **Child'S Individual Characteristics**

A child's personal characteristics make an important contribution to his or her own school adjustment or achievement (see Amato, 1989; Anderson and Evans, 1976; Beer, 1989; Forehand, McCombs, Long, Brody, and Fauber, 1988). In particular, the child's scholastic ability or skills at being a good student (Jovanovic and Lerner, 1994) and persistence or effort (Ryan and Adams, 1999) are major contributors to school achievement. Therefore, it is reasonable to anticipate that students who perceive themselves as having high scholastic ability or skills and who put forth effort and work hard in school will manifest higher levels of achievement.

### **School Achievement: Math and English Grades**

In a substantial review of research on the family-school link, Ryan (1993) constructed a data base of 211 empirical and clinical reports. The majority of studies focusing on achievement have used math and reading (English) grades as the primary indicator of school achievement (e.g., Anderson and Evans, 1976; Campbell and Mandel, 1990; Dornbusch et al., 1987). Further, most regional, national, and cross-cultural comparisons of academic success employ such indicators along with standardized achievement scores to draw comparisons in the study of children's school success. Therefore, in this study we selected grades in Math and English as our outcome variables.

## **METHOD**

### **Sample**

A sample of 4<sup>th</sup> grade (81 males, 80 females) and 7<sup>th</sup> grade (68 males, 83 females) students, parents, and teachers from a publicly funded Roman Catholic school district in Southern Ontario responded to the survey in classroom settings. The mean age of the 4<sup>th</sup> grade was 10.02 years with the mean age for the 7<sup>th</sup> grade subjects being 13.03 years. More than 90% of the students had been in their school for two or more years. Over 80% of the parents had finished high school, and more than 60% had some post-secondary education. At least one partner was full time employed for the full sample, with the other partner employed part-time or full time for 74% of grade 4 children and 84% for grade 7 adolescents. This sample represents a married, well-educated, white middle-class sample with predominantly European ancestry.

### **Procedure**

The 4<sup>th</sup> grade sample was obtained from seven elementary schools in the same district. All of these schools fed into a large junior high school. Participants were solicited for participation through posted advertisements and material sent home to all families in the 4<sup>th</sup>

and 7<sup>th</sup> grades. In total, 52% and 55% in the 4<sup>th</sup> and 7<sup>th</sup> grade, respectively, participated in the study. In a classroom or study hall setting, children completed portions of the Family Environment Scale and the Inventory of Parental Influence. Permission and demographic information were obtained through a questionnaire sent to the parents. The teachers provided information on the child's characteristics using the Health Resources Inventory and provided each child's grades in Math and English.

## Measurements

*Family Environment Scale.* The family climate was measured using the cohesion and conflict subscales of The Family Environment Scale (Moos and Moos, 1986). The scales include items measuring children's perceptions of cohesion and conflict in the general family environment using True and False response options. Test-retest estimates of the subscale range from  $r_s = .68$  to  $.86$  over two weeks. Internal consistencies are reported in the range of  $\alpha = .61$  to  $.78$  (Moos and Moos, 1986).

*Inventory of Parental Influence.* Campbell's (1994) inventory is a five factor scale that measures children's perceptions of parent-child interactions concerning school issues. The factors include pressure, support, monitoring and time management, help, and press for intellectual development beyond the classroom. Separate perceptions were obtained about fathers and mothers. A representative item from the *pressure* scale is: "My (mother/father) is never pleased with my marks." High ratings suggest that the children perceived their parents as demanding and applying excessive pressure. An example of a *support* item is: "My parents are pleased if I do my best." High ratings on the support scale suggest a psychological supportive parenting relationship. An item from the *help* scale is: "When I bring home a test paper, my (mother/father) goes over my mistakes with me." High ratings indicate help doing homework, reading books, and preparing for tests. An example item for *press for intellectual development* is: "My (mother/father) buys me books for presents." High scores indicate encouragement to read, study, and engage in intellectual activities in the community setting and at home. An item from the *monitoring* scale is: "I am expected to do my homework at the same time each night." High ratings on monitoring indicate parental rules regarding doing home work, reading, and recreational television viewing. In general, these five scales represent the four levels of parent-child interaction suggested by Scott-Jones (1995).

*Health Resources Inventory.* The individual characteristic of each child was obtained from teacher's ratings. Each teacher assessed the child's school-related competency on two subscales of the Health Resources Inventory (Gesten, 1976). The scale is completed on a 5-point scale ranging in options of (1) describes child not at all, to (5) describes child very well. One scale represents *intellectual effectiveness*, which Gesten initially called "good student". This scale assesses effective learning skills (e.g., is interested in school work, is prepared to work, and so forth). The second scale measures how much *effort* the child exerts in getting tasks done. This scale assesses persistence and drive in school activities. High scores on both competencies represents greater teacher perceived child competency and individual resources. Test-retest reliabilities range from  $r_s = .72$  to  $.91$  (Gesten, 1976).

*Earned grades.* Teachers provided the students' grades for the previous semester in reading (English) and math. Grades were obtained from official transcripts with permission by parents.

## RESULTS

### Descriptive Statistics

The means, standard deviations and correlation matrices for the perceptions of mother (see table 1) and father (see table 2) provide a very similar description of the association between variables. The family climate variables of cohesion and conflict are associated with distinct kinds of parent-child interactions. For example, cohesion is negatively associated with conflict. Further, cohesion is associated with parents who are likely to also provide support, help, and opportunities for intellectual development. A cohesive family is less likely to have parents who use pressure. In comparison, conflict in the family is associated with higher use of pressure and less use of support, help, or intellectual development. In general, regarding parent-child interactions, support, help, press for intellectual development, and monitoring are correlated with each other. Also, while pressure tends to be negatively correlated with support, help and intellectual development, it is positively correlated with monitoring for the 7<sup>th</sup> grade sample. The correlations between parent-child interactions and the personal characteristics of the children, show that parental use of pressure is consistently negatively correlated with a child's intellectual effectiveness and effort. Likewise, pressure is predictive of children earning lower grades, especially in English courses. Contrary to expectations, help and monitoring tended to be associated with less intellectual effectiveness and effort by the child. However, parental provision for intellectual development was mostly associated with greater intellectual effectiveness and effort by the child. Intellectual effectiveness and effort were positively associated with each other and with grades earned in both English and mathematics. Finally, students earning high marks in English tended to also earn high marks in mathematics.

**Table 1. Correlations, means and standard deviations for the 4<sup>th</sup> and 7<sup>th</sup> grades sample for perception of mothers**

	<i>Family</i>				<i>Mother</i>			<i>Child</i>		<i>Grades</i>	
	<i>Cohesion</i>	<i>Conflict</i>	<i>Pressure</i>	<i>Support</i>	<i>Intellectual</i>		<i>Intellectual</i>		<i>English</i>	<i>Math</i>	
					<i>Help</i>	<i>Development</i>	<i>Monitoring</i>	<i>Effectiveness</i>			<i>Effort</i>
Cohesion	1	-0.54	-0.25	0.36	0.45	0.36	0.07	0.03	0.05	0.05	-0.06
Conflict	-0.54	1	0.18	-0.38	-0.28	-0.32	-0.05	0.03	0.04	-0.05	0.10
Pressure	-0.33	0.26	1	-0.13	0.09	0.09	0.40	-0.29	-0.33	-0.29	-0.25
Support	0.22	-0.18	-0.15	1	0.43	0.41	0.19	0.13	0.11	0.04	0.08
Help	0.25	-0.26	-0.02	0.30	1	0.50	0.45	-0.19	-0.16	-0.16	-0.25
Intellectual Development	0.17	-0.27	-0.14	0.28	0.47	1	0.58	-0.06	0.00	-0.03	-0.14
Monitoring	-0.06	0.07	0.16	0.12	0.39	0.58	1	-0.34	-0.34	-0.29	-0.34
Intellectual Effectiveness	0.12	-0.13	-0.27	0.01	-0.01	0.19	0.01	1	0.8	0.74	0.69
Effort	0.07	-0.16	-0.29	0.07	0.07	0.20	0.05	0.70	1	0.74	0.63
English Grades	0.09	-0.23	-0.32	0.16	0.02	0.21	0.01	0.68	0.68	1	0.59
Math Grades	0.02	-0.12	-0.13	0.01	0.02	0.16	0.10	0.67	0.67	0.64	1
MEAN											
Grade Four	6.93	2.87	28.67	53.68	23.38	23.38	18.56	39.87	3.26	10.41	10.99
Grade Seven	6.41	3.44	31.82	51.73	22.59	22.59	17.82	35.94	3.15	9.67	9.47
STANDARD DEVIATION											
Grade Four	1.75	1.90	8.24	6.27	6.16	6.16	5.12	8.10	0.56	1.94	1.78
Grade Seven	2.14	2.42	10.40	6.32	6.06	6.06	5.37	9.73	0.72	2.67	2.90

Note: Correlations below the diagonal are for the 4<sup>th</sup> grade sample; correlations above the line are for the 7<sup>th</sup> grade sample.

**Table 2: Correlations, means and standard deviations for the 4<sup>th</sup> and 7<sup>th</sup> grades sample for perception of fathers**

	<i>Family</i>				<i>Father</i>			<i>Child</i>		<i>Grades</i>	
	<i>Cohesion</i>	<i>Conflict</i>	<i>Pressure</i>	<i>Support</i>	<i>Intellectual</i>		<i>Intellectual</i>		<i>English</i>	<i>Math</i>	
					<i>Help</i>	<i>Development</i>	<i>Monitoring</i>	<i>Effectiveness</i>			<i>Effort</i>
Cohesion	1	-0.55	-0.25	0.49	0.39	0.38	0.14	0.03	0.05	0.05	-0.06
Conflict	-0.54	1	0.2	-0.52	-0.38	-0.41	-0.18	0.03	0.04	-0.06	0.1
Pressure	-0.36	0.35	1	-0.19	0.05	0.08	0.33	-0.35	-0.4	-0.41	-0.28
Support	0.33	-0.26	-0.12	1	0.52	0.5	0.28	0.13	0.16	0.1	0.05
Help	0.24	-0.28	-0.11	0.3	1	0.61	0.48	-0.18	-0.1	-0.16	-0.24
Intellectual Development	0.19	-0.25	-0.19	0.29	0.45	1	0.57	-0.09	0	0	-0.16
Monitoring	-0.08	0.07	0.09	0.12	0.34	0.5	1	-0.34	-0.32	-0.28	-0.32
Intellectual Effectiveness	0.12	-0.13	-0.27	-0.01	-0.01	0.19	0.03	1	0.8	0.74	0.69
Effort	0.07	-0.16	-0.29	0.07	0.07	0.2	0.05	0.7	1	0.74	0.63
English Grades	0.09	-0.23	-0.32	0.16	0.03	0.21	0.01	0.65	0.69	1	0.59
Math Grades	0.02	-0.12	-0.13	0	0.02	0.17	0.1	0.55	0.67	0.64	1
MEAN											
Grade Four	6.93	2.87	29.39	52.98	33.53	22.21	17.44	39.87	3.26	10.41	10.99
Grade Seven	6.41	3.44	32.55	50.47	26.6	20.42	16.64	35.94	3.15	9.67	9.47
STANDARD DEVIATION											
Grade Four	1.75	1.90	8.21	6.78	8.7	5.99	5.08	8.1	0.56	1.94	1.78
Grade Seven	2.14	2.42	10.86	7.05	8.15	6.38	5.21	9.73	0.72	2.67	2.90

Note: Correlations below the diagonal are for the 4<sup>th</sup> grade sample; correlations above the line are for the 7<sup>th</sup> grade sample.

## Structural Equations

Using a portion of the Family-School Relationships Model depicted in Figure 1 (see Figure 2), the model was tested for each parent for each of two grades using linear structural equation modeling techniques (LISREL version 8: Jöreskog and Sörbom, 1989). Prior to collapsing data for boys and girls, *t*-tests were computed on each variable. Girls rated higher for intellectual effectiveness only. Therefore, it must be recognized that given that we have collapsed on gender to provide a large enough sample to use structural equations, the findings are likely biased, in part, by teachers' perceptions of higher competency on intellectual effectiveness for girls.

The general model was tested using linear structural equations derived from covariance matrices. Because of single indicator variables for each factor, we estimated variable error variance by multiplying the observed variance for each variable by 1 minus alpha (Hayduk, 1987). We determined maximum likelihood estimates for each predictive association in just-identified models. Nonsignificant paths were trimmed if the coefficient value failed to attain statistical significance at the .05 level. This resulted in four identified models with findings for mother reported in Figure 3 and father reported in Figure 4. Adequacy of the model was based on the chi-square test, goodness-of-fit and adjusted goodness-of-fit indices that represents the proportion of variance and covariances of the variables being analyzed that is explained by the causal model (see Tanaka and Huba, 1985). A nonsignificant chi-square and values of goodness-of-fit of .90 or higher indicate a model that is judged adequate (Tanaka, 1987).

## Perception of Mother

For mothers with 4<sup>th</sup> grade children the identified model was judged adequate. The  $\chi^2$  (6) = 5.85, *p* = .44, with Goodness of Fit Index = .99, and the Adjusted Goodness of Fit Index = .95. The model accounted for 45% of math grades and 53% of English grades. The standardized coefficients are reported in Figure 3. In this model family cohesion was associated with less use of demands and pressure by mother. In turn, higher pressure by mother was associated with a reduction in the child's intellectual effectiveness and child's effort in school. Further, pressure had a direct association with earned grades, but only for English, where pressure was associated with poorer English grades. Both child's intellectual effectiveness and effort predicted higher earned grades in English. Only effort was associated with a child's earned marks in math.

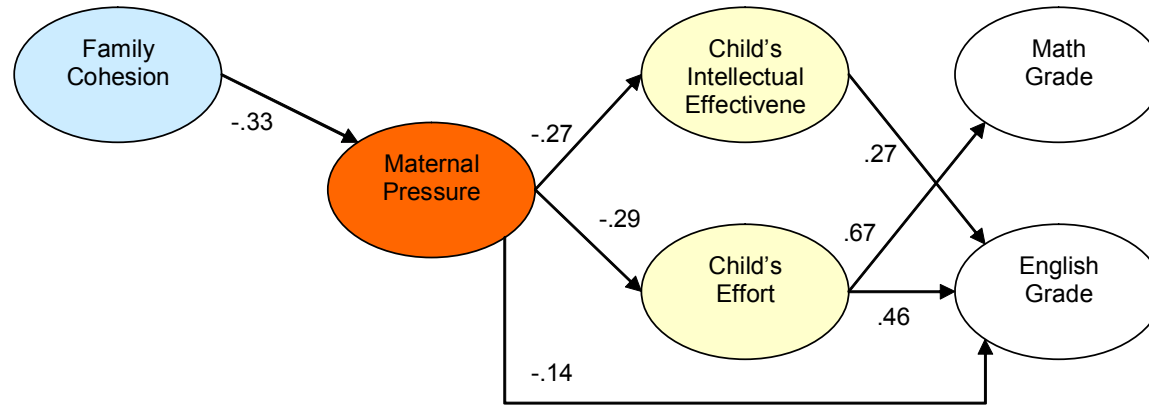
For mothers with 7<sup>th</sup> grade students the identified model was again judged adequate. The  $\chi^2$  (12) = 14.15, *p* = 0.29, with Goodness of Fit Index = .97, and Adjusted Goodness of Fit Index = .93. The model accounted for 48% of the math grades and 61% of English grades. The standardized coefficients for this model are also reported in Figure 2. For mothers of 7<sup>th</sup> grade children, family cohesion was associated with more frequent experiences in intellectual development. Maternal provision for intellectual development was associated with greater effort in school which was associated with higher marks in English. The use of monitoring techniques by mothers was not associated with family cohesion; however, monitoring was associated with lower levels of children's intellectual effectiveness and children's effort at

school. Children's intellectual effectiveness was associated with both math and English grades; however, only child's effort for 7<sup>th</sup> graders was associated with higher English marks.

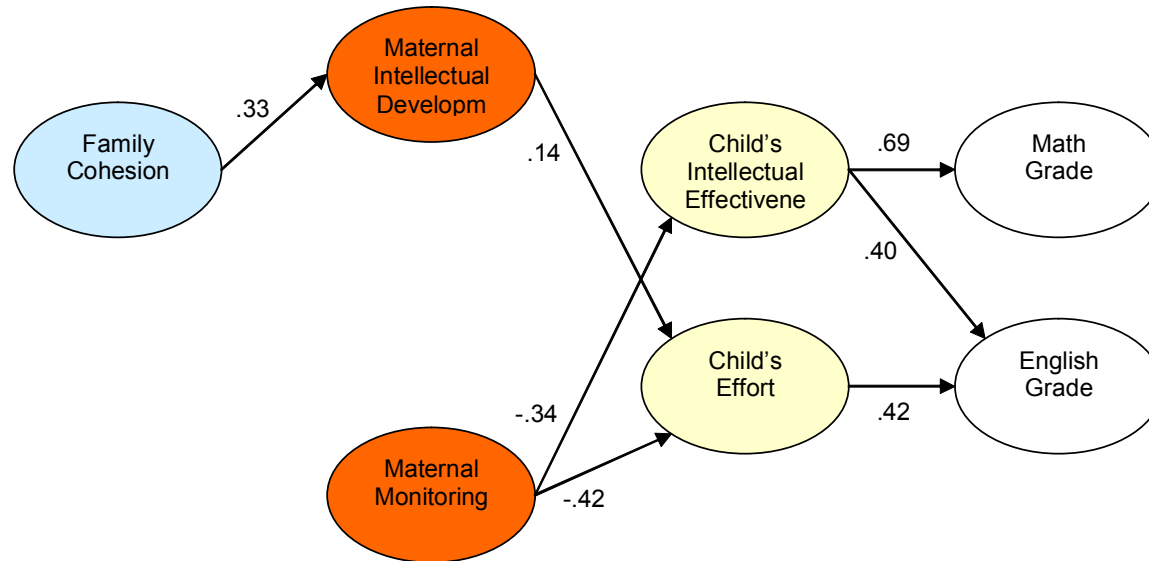
### **Perception of Father**

For fathers with 4<sup>th</sup> grade children the identified model was judged adequate. The  $\chi^2$  (10) = 9.61,  $p = 0.47$ , with Goodness of Fit Index = .98, and Adjusted Goodness of Fit Index = .95. The model accounted for 45% of math grades and 54% of English grades. Standardized coefficients are reported in Figure 4. Family cohesion was associated with less, and family conflict with more use of pressure by fathers. In turn, paternal pressure and demands were associated with lower intellectual effectiveness and child's effort. Three factors were associated with English grades. Higher family conflict was associated with lower marks in English; while higher intellectual effectiveness and child's efforts to do well were associated with higher marks in English. Only child's effort was associated with higher math grades for 4<sup>th</sup> grade children.

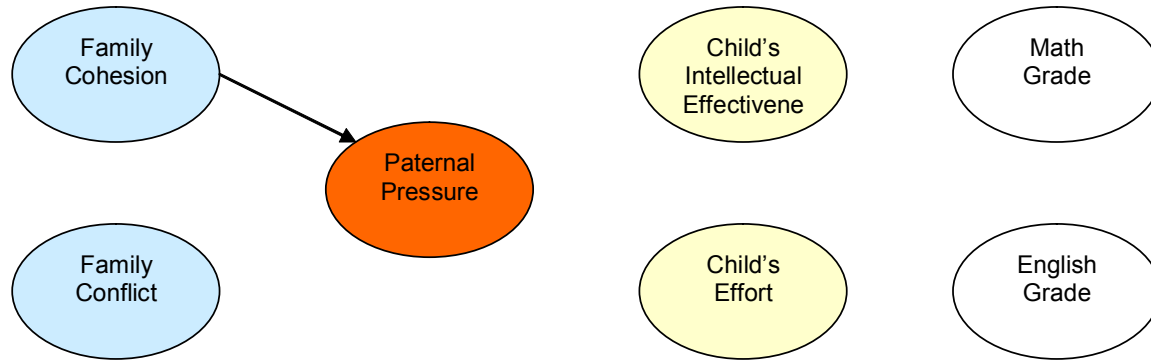
The most complex picture of paternal influences emerges for the 7<sup>th</sup> grade children. Again, for the 7<sup>th</sup> grade children the model was judged adequate. The  $\chi^2$  (19) = 23.15,  $p = 0.23$ , with Goodness of Fit Index = .96, and Adjusted Goodness of Fit Index = .91. The model accounted for 48% of math grades and 61% of English grades. Standardized coefficients are reported in Figure 4. When considering the father, family cohesion was associated with more paternal support and less use of paternal pressure and demands. However, higher family conflict was correlated with less paternal support and less monitoring of the teenage child. A young adolescent's intellectual effectiveness was associated positively with paternal support and negatively with paternal pressure and monitoring. Use of pressure and of monitoring by fathers was associated with less intellectual effectiveness and effort by the teenager. For teenagers, intellectual effectiveness was associated with higher math and English grades, with child's effort being associated with English but not math grades.



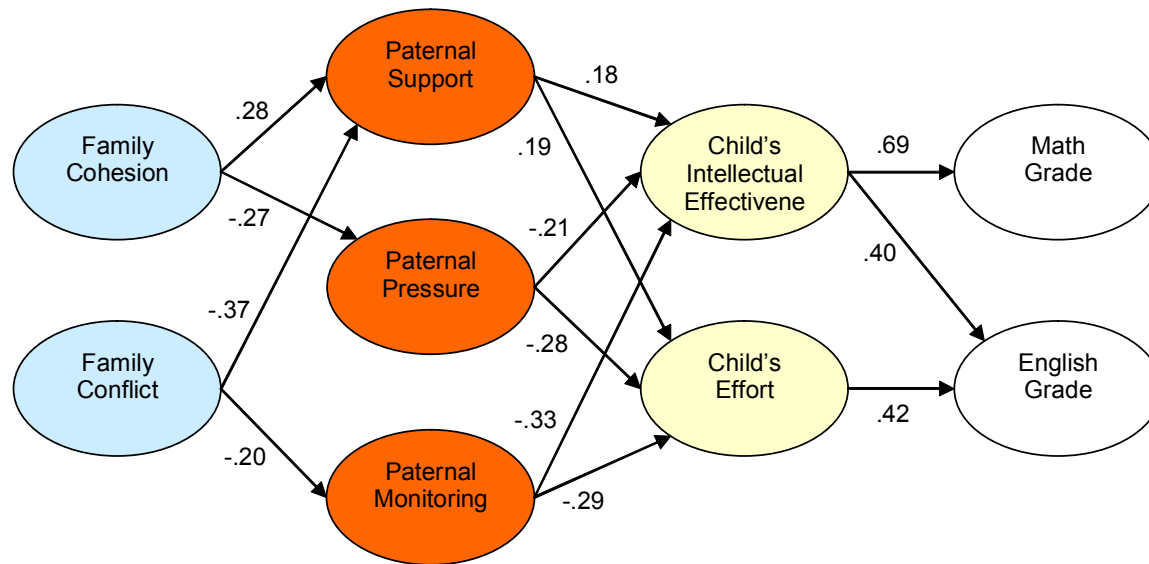
**Figure 3a:** Maternal Responses for Fourth Grade



**Figure 3b:** Maternal Responses for Seventh Grade



**Figure 4a:** Paternal Responses for Fourth Grade



**Figure 4b:** Paternal Responses for Seventh Grade

## DISCUSSION

The findings reported in Figures 3 and 4 lend general support for the family - school relationships that were anticipated in the conceptual model (see Figure 2). Most associations were linked together through a series of connections that ultimately influence school achievement. Adjacent classes of variables tended to be associated with each other, while few associations skipped an adjacent class of variables to predict a more distal variable. These findings indicate that the family - school relationship processes are imbedded in a web of inter-linkages that contribute to a child's school success. Further, the findings reveal that parenting behaviors about school-focused activities operate in the wider context of family climate and that parent-child interactions about school activities have an influence through personal characteristics of the child which are associated with academic performance. Therefore, theoretical models such as those proposed by Scott-Jones (1995), Ryan and Adams (1995) and Marjoribanks (1996a) provide useful conceptualizations for studying how family processes contribute to a child's success in school. Each class of variables in the conceptual model was found to be useful in predicting school achievement. However, the configuration of variables differed to varying degrees by grade level and by parenthood. Mothers' parent-child interactions about school issues were linked with family cohesion. Family cohesion was either associated with diminished use of negative pressure by mothers in the 4<sup>th</sup> grade sample or the promotion of mothers' provisions of opportunities for intellectual development in the 7<sup>th</sup> grade sample. A warm and caring emotional atmosphere appears to be constructive for the child through mothers' parenting behaviors about school. For fathers, both family cohesion and conflict had significant contributions to how the father engaged in parent-child interactions about school activities. For the 4<sup>th</sup> grade children, family cohesion was associated with less use of paternal pressure; however, family conflict was associated with greater use of pressure by fathers. In the 7<sup>th</sup> grade sample, family cohesion was associated with higher paternal support and lower use of paternal pressure. Family conflict predicted less use of paternal support and less paternal monitoring. For the fathers in this study, being in a warm and nurturing family environment was associated with less use of negative pressure and greater use of emotional support. In contrast, fathers were likely to reduce their support and monitoring (7<sup>th</sup> grade only) and to use more negative pressure (4<sup>th</sup> grade only) when the family environment was open to personal expression of emotion, conflict, and individual differences. The affective quality of the marriage, and we suspect the family climate, has been related to both psychological distress and restraint-related behaviors within the family (e.g., see Feldman and Wentzel, 1995; Feldman, Wentzel, Weinberger and Munson, 1990). Further, family conflict has been found to be associated with a wide variety of problems within the family and for the teenager (Cummings and O'Reilly, 1997). Therefore, as expected, a warm family climate will provide a facilitating environment for parent-child interactions about school matters that influence school success. Although, it should be noted that family conflict is more likely to be associated with less desirable parent-child interactions, especially in the father-child relationship.

According to Stevenson and colleagues (Stevenson, Chen and Uttal, 1990; Stevenson, Lee, Chen, Lummis, et al., 1990; Stevenson and Stigler, 1992), parents view their role in matters of schooling as providing emotional support, encouragement, and social or community learning opportunities to enhance success in school. Perhaps, then, it is not too

surprising that only parent-child interactions that include pressure, intellectual development, support and monitoring were found to be associated with school outcomes through the child's competence and work effort. Efforts at providing intellectual development and general emotional support are part of the process of valuing learning and accomplishments. Monitoring focuses on self-management strategies. The presence of these forms of parent-child interactions, reflecting what Scott-Jones (1995) refers to as valuing and monitoring interactions, are supportive of claims by Stevenson and his colleagues about what is central to the beliefs of parents about family-school involvement. However, the use of negative pressure is an unproductive side of parental involvement. In three of the four models tested in this study, pressure emerged as a major contributor to the associations in each model. In fact, for 4<sup>th</sup> grade children, it is the only parent-child interaction about school-focused activities that emerges and in all cases the association with other variables in the model is negative. While pressure by parents is associated with less favorable school outcomes, the present correlation study can not distinguish if pressure predicts the child's characteristic or the reverse.

We should add that parent-child interactions involving helping with homework did not emerge as part of the ecological web of connections in this investigation. This too is in agreement with parental beliefs suggested by the findings of Stevenson and Stigler (1992). Parents have reported they do not believe it is their duty to provide help with homework, book reports, essays and the like. Therefore, it is not surprising to find that helping did not emerge as a major contributing factor. Research on the effects of helping with homework, and the contributions of homework to children's school success has remained equivocal (Balli, Demo and Wedman, 1998). Our findings when combined with that of Stevenson et al. tentatively suggests that parental involvement in doing homework with children is not part of a larger predictive model of the family-school connection – perhaps due to parental beliefs that it is not a family duty to provide such help.

In examining the link between parent-child interactions and children's competence, several rational associations were observed. In all cases, where pressure emerged as a significant contributor to the model, pressure was associated with a child having a lower state of intellectual effectiveness or putting forth less effort in school (as judged by the teacher). Likewise, when monitoring occurs (only in the two 7<sup>th</sup> grade models), it has a negative association with a child's intellectual effectiveness and effort in school. It may, in actuality, be a form of pressure or control for children who are entering adolescence, renegotiating relationships with parents, and seeking more autonomy. However, Scott-Jones (1995) points out that the Dornbusch et. al. (1990) study suggests that "early autonomy, defined as adolescents making decisions alone, was associated with lower grade point average and school effort" (p. 90). Too much autonomy does not appear to be good either. The watchful eye and guarded protection of monitoring may be seen by parents as a supportive process; however, children may view this from a different lens and see it as intrusive and over-controlling.

Mothers' provision for activities within the community that enhance intellectual development was associated with having 7<sup>th</sup> grade children who work harder in school. Likewise, for 7<sup>th</sup> grade children, fathers who provided higher levels of encouragement and support had children who manifested greater intellectual effectiveness and engaged in more effort in school. Perhaps the role of mother versus father becomes clearer in unique contributions to children's school success as the child moves into adolescence and beyond (Hosley and Montemayor, 1997, p. 164). Mothers may have a greater influence by providing

a wide array of enrichment opportunities. Fathers may have greater influence by individual support and encouragement. Neither parent will have a desirable influence, it appears, by using pressure or monitoring strategies with the young adolescent. And helping with homework appears to be unrelated to school success at all.

The final linkage in the general conceptual model focuses on individual characteristics of the child and school achievement as measured by math and reading grades. We observed that for the 4<sup>th</sup> grade children effort alone predicted math grades. Perhaps teachers primarily grade according to effort in the lower grades. In the 7<sup>th</sup> grade, both intellectual effectiveness (good study skills) and effort (motivation) predict grades in English. As the demands of education increase with older students, the necessity of having both skill and motivation appears to become evident.

There are certain limitations to this study. The sample is homogenous, White middle-class, and lives in affluent neighborhoods. One cannot generalize to a wider diversity of ethnic, religious, or immigrant households. However, some evidence suggests there may be a similar pattern of family environment influences on academic achievement between white, Hispanic and black households in the United States (Rowe, Vazsonyi, and Flannery, 1995). Likewise, due to sample limitations, we were unable to test models by gender. A recent review by Hosley and Montemayor (1997) suggests there may be both differences by gender of child and by parenthood. For example, fathers and sons express less affection toward each other than mothers and daughters. In turn, sons and daughters are more likely to help mother than father around the house (Eberly, Montemayor and Flannery, 1993). The nature of close relationship may also affect the social process of influences that might begin in early adolescence as suggested in our study, but changes in middle and late adolescence to some other form. Further, any age comparisons one might make are confounded by different educational settings for 4<sup>th</sup> and 7<sup>th</sup> grade children. Elementary school-age children are most often taught in a setting where one or two teachers come to the same room to teach the child. This form of instruction provides a more protected and structured environment for young children. In most junior high school settings children often move from class to class and have several teachers each day. We know little to nothing about the importance of such environments for the connections between family and school and parental influences on school achievement. It is possible that the role of the family becomes more influential as the instructional setting becomes more complex and less personalized.

In conclusion, few parent-child interactions about school-focused activities were observed as important contributors to children's school success, especially for the 4<sup>th</sup> grade sample. Use of negative pressure was predicted by either family cohesion for mothers, or family cohesion and conflict for father, indicating that the general family atmosphere sets the context within which parent-child interactions about school issues emerge. All parent-child interactions influenced the characteristics of competence of the child (intellectual effectiveness and child effort) while competence and motivation factors predicted school achievement.

## **STUDY 2: A LONGITUDINAL ANALYSIS OF FAMILY RELATIONSHIPS AND CHILDREN'S SCHOOL ACHIEVEMENT IN ONE- AND TWO-PARENT FAMILIES**

The well-being of Canadian children has become a focal concern for a variety of political, governmental, school, and parent groups. One question, often addressed by such groups, focuses on children's academic success and the effectiveness of the school in assisting intellectual development, mental health and well-being. As community leaders, teachers, and parents become more involved in their children's academic growth, there is increased consideration of how the community, family, and school have unique and interacting influences on children's success. For example, in Study 2 our own interest is in determining if socioeconomic status, community support, and family processes of one parent versus two parent households have similar or different predictable influences on elementary school children's personal characteristics and academic success.

The main objectives of this report is to (a) examine the impact on school achievement of a network of family, parent and child characteristics, and (b) to compare the differences among these family, parent and child characteristics in the prediction of school achievement for one-parent and two-parent families. One of the first studies of this nature was published by Jencks and his American colleagues (1972). *Inequality: A Reassessment of the Effects of Family and Schooling in America* (Jencks et al., 1972) provides one of the first North American attempts to assess a multitude of factors associated with children's school success. In part, stimulation from this pioneering study has resulted in a wide array of investigations examining the family impact on children's educational achievement and behavior (e.g., Dornbusch and Ritter, 1990; Floyd, 1997; Lam, 1997). Most of this research has focused on the influences of socioeconomic status (e.g., Brookhart, 1998), parental expectations (e.g., Seginer, 1983), and general parenting styles (Dornbusch and Ritter, 1990; Paulson, 1994). Also in this research comparisons have been made between different kinds of families and their effects on children's school success. At the same time these studies have typically not investigated the possible complex social interactions and linkages that might exist within families of different types and how these processes might predict children's school success.

We have recognized that several conceptual frameworks have been advanced regarding inter-linking family processes that could influence children's behavior and achievement in a school setting (e.g., Green, 1995; Marjoribanks, 1996; Scott-Jones, 1995). Our own interests have been to complete another investigation to test the utility of the Family-School Relationships Model as a useful framework for understanding family contributions to children's school successes (see Figure 1).

Several investigations have now been completed to assess the use of the Ryan and Adams (1995) model in predicting family-school relations. No investigation has yet included all levels, but rather various combinations of levels to predict school adjustment and academic achievement. Using data from one Ontario Catholic school system, family climate (cohesion and conflict), parent-child interactions about school issues (e.g., helping, support, monitoring, pressure, and press for intellectual development), child's intellectual effectiveness and effort, and school achievement (marks in English and Math) have been found to interlink in predicting children's school success (Adams, Ryan, Keating, and Midgett, 2000). Further, the model has been used with this same sample from Study 1 of 161 4<sup>th</sup> grade and 151 7<sup>th</sup> grade

children to assess the role of the family in predicting children's rule compliance, peer sociability, and social maladjustment in school (Adams, Ryan, Ketsetzis and Keating, 2000; Ketsetzis, Ryan and Adams, 1998).

The most comprehensive test thus far of the utility of the Family-School Relationships Model was undertaken using data from the first wave of the National Longitudinal Survey of Children and Youth (NLSCY: Ryan and Adams, 1999). The analyses involved a sample of 2,134 girls and 2,168 boys aged 6 to 11 years. The analytic model included representative variables of Levels 6, 5, 4, 3, 1 and 0. Higher socioeconomic status (SES) was observed to have a large and positive influence over children's school achievement where SES had both direct and indirect effects on school success. Among other findings, it was observed that elementary school-age children's school success is associated with a web of interlinking influences on achievement. For example, (a) socioeconomic status was associated with higher levels of social support by community members, (b) social support was associated with less parental depression, (c) higher levels of depression predicted greater family dysfunction, with (d) family dysfunction predicting greater ineffectiveness of the parent, and, in turn, (e) ineffective parenting predicted poorer academic focus which was highly predictive of academic achievement. Comparisons were made between boys and girls, and between younger and older children; similar findings were observed for all comparisons.

Considerable evidence has now accumulated to establish that what happens in the system of family relationships has an important and statistically significant association with children's school success (Epstein, 1989, 1991, 1996; Hoover-Dempsey and Sandler, 1997; Ketsetzis et al., 1998; Ryan and Adams, 1995). Individual research reports and comprehensive reviews of published studies demonstrate that an extremely wide variety of parental and family characteristics can have an impact on children in school. Beyond the now widely accepted belief that the family's socioeconomic status has an influence on achievement, it has also been shown that parental characteristics, the overall nature and atmosphere of the family, the general nature of parent-child relationships, and the interactions between parents and children concerning school activities all have an influential role in determining achievement (e.g., see Ryan and Adams, 1999). Evidence also shows that the child's own personal characteristics are powerful determinants of achievement (Wang, Haertel, and Walberg, 1993).

The NLSCY offers a variety of potential variables for assessing the Family-School Relationships Model and its utility in testing family processes that might predict school achievement. Data on important child characteristics are available in the survey: *academic focus*, *hyperactivity* and *attention deficit*, *anxiety-depression*, and *prosocial behaviors*. Academic focus, which refers to the child's capacity to always be ready for school work, to concentrate on learning tasks, to persist on academic tasks, and to ignore distractions, has been shown in previous research to be highly predictive of achievement levels (e.g., see Gesten, 1976; Ketsetzis et al., 1998; Ryan and Adams, 1999). There is a good deal of evidence linking attention difficulties with achievement (Barkley, 1990; Hinshaw, 1992; Maguin, Loeber and LeMahieu, 1993), although Coie and Dodge (1998) have claimed that the precise nature of the linkage between the two remains unclear. Further, evidence suggests that higher levels of anxiety and depression are unpleasant emotional states that diminish concentration and focus on learning. Likewise, children who are socially adjusted, compliant to rules, and who engage in good school citizenship are likely to manifest prosocial behaviors that could facilitate academic success. Academic focus and prosocial behavior constitute

potential strengths whereas attention deficit and anxiety-depression are potential weakness in child characteristics that might be linked to school success.

The NLSCY data include four measures of parent-child interactions that are potentially significant for achievement. *Positive parent-child interactions* have been shown to be associated with a broad range of child development measures (Bar-Tal, Nadler, and Blechman, 1980; Fabes, Eisenberg, Karbon, Troyer, and Switzer, 1994) and Ketsetzis et al (1998) found a significant association between parental support and school adjustment. In contrast, however, Ryan and Adams (1999) failed to find any significant association between positive parenting and achievement using the first wave of data from the NLSCY. It is possible that this variable may reveal its effects on achievement over time. The second parent-child interaction variable from the survey is *ineffective and hostile parenting* which has been widely explored by Patterson and his associates (e.g., Patterson, Reid, and Dishion, 1992). Ryan and Adams (1999) found that in the first wave of data from the NLSCY that ineffective parenting had a significant and powerful association with achievement. Other parent-child interactions of potential importance include *consistency of discipline* and the use of *rational parenting behaviors* when dealing with children's conduct (Scott-Jones, 1995). The use of a consistent pattern of parental responses to children's behavior and rational parenting that includes discussion, avoidance of punitive behavior, and the encouragement of effective decision-making about acceptable and unacceptable behavior, may provide contributions to children's school success by helping children to understand what acceptable behaviors are in regards to conduct and expectations.

In addition to these four measures of parent-child relationships, the survey also provides an overall assessment of the level of *family dysfunction*. This variable is distinguished from parent-child interaction variables because it is a description of the general way all family members interact with each other. It is a measure of the atmosphere that is characteristic of the family as a group. Previous research on family dysfunction has shown that it has significant negative associations with achievement (Conger, Conger, Elder, Lorenz, Simons, and Whitbeck, 1992; Forehand, Thomas, Wierson, Brody and Fauber, 1990; Grolnick and Slowiaczek, 1994; Ryan and Adams, 1999).

Beyond the inter-relational processes operating in families, the personal characteristics of the parents are often important. The survey contains two useful parent measures: *parental depression* and parent-perceived *social support*. Earlier evidence (Forehand, McCombs, and Brody, 1987; Roseby and Deutch, 1985; Ryan and Adams, 1999; Thomas and Forehand, 1991) has demonstrated the negative implications of parental depression for children's school success and adjustment. Parents' ratings of their level of perceived social support can be taken, in part, as a measure of their sense of security and thus properly interpreted as an indicator of a characteristic of the parent but external to the parent in the form of a social environment that surrounds the parent's personal characteristics. The confidence that stems from this feeling of support has been shown to act as a buffer against a wide variety of negative forces that operate on the family in difficult times (Garbarino, 1992). Ryan and Adams (1999) have observed that social support is predictive of the level of parental depression in Canadian families.

Finally, outside of the family itself, the nature of the family's context within the community has important implications for children. Socioeconomic status has been repeatedly shown to be an important influence on achievement (Booth and Dunn, 1996). The educational level of the family members, their potential earnings, and comparative social

status provide for the human and economic capital that supports the social or interpersonal capital of family interactions (Coleman, 1988, 1990; Marjoribanks, 1993).

In addition to the widely documented socioeconomic effects on school achievement (Booth and Dunn, 1996), the nature of the family structure has been considered in the study of children's behavioral adjustment and school success (e.g., see Amato, 1987, Stuart and Abt, 1981; Teachman, Carver and Paasch 1999). For example, Demo and Acock (1996) used the National Survey of Families and Households in the United States to examine the differences between intact first-married families, divorced single-parent families, stepfamilies, and continuously single mother-headed families regarding young adolescents socioemotional adjustment, academic performance, and global well-being. The first-marriage intact homes had children who performed the best across all indicators of well-being and school success. The continuously single mother-headed families had the lowest income and slightly less academically successful children. The divorced and stepfamilies tended to report more conflict and disagreement.

Coleman (1988, 1990) has advanced a provocative rationale for finding differences between family types. He distinguishes three forms of "capital" that families might possess. The *financial* capital involves the total family's wealth and purchasing power. The *human* capital involves the strength and influence that accompanies the parent's education. Combined financial and human capital represent the basic constraints and opportunities that are associated with a family's resources. However, *social* capital involves the density of interactions between parents, their children, and the school system. Coleman argues that the social relationship of such capital provides the means by which the human capital is developed. Without positive parent-child relationships there is little or no mechanism to transmit available human and financial capital to children.

Coleman (1988) offers the example of family structure as a means of strengthening social capital in the family. Family structure deals with the number of parents present in the family. His work focuses on the absence of a family member that creates a *structural deficit* that leads to less social capital for children to draw on and use to support their development. In this framework, in comparison to two-parent families, one-parent households are seen as having less time available to invest in parent-child interactions. Indeed, there is considerable evidence that indicates children in single-parent households receive less encouragement and less assistance with homework than children in two-parent homes (e.g., Amato, 1987; Astone and McLanahan, 1991; Dornbusch et al., 1985; Nock, 1988).

Family atmosphere and parenting practices are the substance of social capital in the family. Steinberg, Dornbusch and Brown (1992) suggest that three specific aspects of the authoritative family (see Baumrind, 1989) are the major components of parenting that produces a competent child or adolescence. This trinity includes acceptance and warmth, supervision and control, and psychological autonomy or democracy. Approximations to these three components in the NLSCY data set include positive parenting, ineffective and hostile parenting, consistency of discipline, and rational parenting behaviors.

Using Coleman's (1988) structural deficiency hypothesis, one can speculate that intact families offer more economic and human capital, than single-parent families. Further, single-parent families may be limited in their capacity to provide the same level of social capital as intact-families, therein being more strained and less facilitative in promoting children's emotional well-being and academic success.

## METHOD

### Sample

Cycle 1 data were initially used for the 6 - 9 year-old children who had complete data for the variables under consideration. These children came from 4,925 intact and 261 single-parent households. Sample cases were eliminated if they had missing data on key variables of interest and were then connected with retesting in Cycle 2. Only subjects who were in an intact two-parent or a single-parent for Cycle 1 (6 - 9 years old) and Cycle 2 (8 - 11 years old) are included in the sample for this study. If less than 5% of the respondents' data on any given variable was missing a mean substitution was used to establish complete data for each subject. The final sample consisted of 1,321 two-parent and 197 single-parent households. Analyses of males and females resulted in few significant gender differences. Given the focus of this study was on family structure the smaller number of single-parent households made it questionable to sub-divide by gender in the multivariate analyses used in this investigation.

### Measures

*Achievement* (Level 0) was measured by a single item from the teacher questionnaire. Teachers rated each child on the question, How would you rate this student's current achievement across all areas [reading, mathematics, written work]? Teachers rated student achievement on a five-point scale from, near the top of the class to near the bottom of the class. Demaray and Elliott (1998), Gerber and Semmel (1984) and Hoge and Coladarci (1989) provide reviews of research literature indicating that teachers' judgments are accurate predictors of achievement using ranking and rating techniques like the one used in this study.

An *Academic Focus Scale* (Level 1) was developed by combining scores on six items from the teacher questionnaire. Children were rated by their teachers on a variety of academic skills. Sample items from the scale are, listens attentively, follows directions, or works independently. Higher scores indicate better levels of academic focus. Cronbach alpha for the scale was .91 during Cycle 1.

A *Hyperactivity-Inattention Scale* (Level 1) consisting of 8 items from the parent questionnaire provided a measure of the children's level of hyperactivity and inattention. Sample items are, can't sit still, is restless or hyperactive and can't concentrate, can't pay attention for long. Higher scores indicate greater numbers of hyperactive-inattention behaviors. The alpha for this scale was .84 in Cycle 1.

An *Emotional Disorder Scale* (Level 1) measuring children's *anxiety-depression* (Level 1) was used from the parent questionnaire. The scale contains 8 items and has an alpha of .79 in Cycle 1. Example items include, Is worried, Cries a lot, and Is nervous, high strung or tense. A high score indicates the presence of behaviors associated with anxiety and depression.

A *Prosocial Behavior Scale* (Level 1) consisting of 10 items was used from the teacher questionnaire. The Cycle 1 alpha was .90. Sample items include: Shows sympathy to someone who has made a mistake, Will try to help someone who has been hurt, or, If there is

a quarrel or dispute will try to stop it. A high score indicate the presence of prosocial behaviors such as helping, sympathy, comforting, and resolving disputes.

The *Positive Interactions Between Parents and Child Scale* (Positive Parenting, Level 3), consisting of five items from the parent questionnaire, provided a measure of positive, supportive interactions between parents and children. Sample items are, How often do you praise (name) by saying something like Good for you! or That's good going! and How often you and he/she talk or play with each other, focusing attention on each other for five minutes or more, just for fun. Higher scores indicates positive parenting with the child. The Cycle 1 alpha was .81.

The *Ineffective and Hostile Parenting Scale* (Level 3) consists of 7 items from the parent questionnaire. Sample items include, How often do you get angry when you punish (name)? and How often do you get annoyed with (name) for saying or doing something he/she is not supposed to do? High scores reflect a hostile, angry, and reactive parenting style. The alpha for this scale at Cycle 1 was .71.

The *Rational Parenting Scale* (Level 3) consisted of 4 items and had an alpha of .57 for Cycle 1. Items are taken from the parent questionnaire and include responses to the following questions When (name of child) breaks the rules or does things that he/she is not suppose to do, how often do you: raise your voice, scold or yell at him/her; calmly discuss the problem; use physical punishment; describe alternative ways of behaving that are acceptable. The scolding and use of physical punishment are reverse in the scoring of this scale.

The *Consistency of Discipline Scale* (Level 3) was obtained from the parents and includes 5 items. The alpha for Cycle 1 was .66. Sample items include, When you give him/her a command or order to do something, what proportion of the time do you make sure that he/she does it? or If you tell him/her he/she will get punished if he/she doesn't stop doing something, and he/she keeps doing it, how often will you punish him/her? A high score indicates consistent use of punishment in disciplinary situations.

The *Family Dysfunction Scale* (Level 4) is based on 11 items from the parent questionnaire. This measure provides a measure of the level of overall dysfunction in the family with higher scores indicating greater dysfunctionality. Sample items are, In times of crisis we can turn to each other for support, We express our feelings to each other, and Making decisions is a problem for our family. The alpha in Cycle 1 was .88.

Two measures were used for Level 5: the *Parental Depression Scale* (12 items) and the *Social Support Scale* (6 items). The alpha for the two scales in Cycle 1 data was .82, and .83, respectively. A sample item for the depression scale is, How often have you felt or behaved this way in the last week: I felt lonely, I had crying spells, or I felt hopeful about the future. Higher scale scores indicated increased level of depression. Sample items for the support scale are, I have family and friends who help me feel safe, secure and happy and There are people I can count on in an emergency.

*Socioeconomic Status* was determined for the NLSCY by standardizing the measures of education level for the person most knowledgeable (PMK) about the child and spouse, the prestige of occupation for the PMK and spouse, and the household income. This SES measure includes both financial and human capital of the family household.

## Data Analysis Procedures

Procedures similar to those reported in Ryan and Adams (1999) in the study of Cycle 1 data and in Study 1 reported above were utilized here. First, correlations, means, and standard deviations were inspected for possible discrepancies. Second, the data were broken down by gender and linear structural equation models (Jöreskog and Sörbom, 1989) were developed separately for boys and girls. No differences were observed in the models for boys and girls. Third, the data were then collapsed across gender so that models for two-parent and single-parent households could be developed, first for Cycle 1 and then for Cycle 2. Identical models for each of the family types were observed in Cycle 1 and again in Cycle 2 indicating that the same system of modeled processes are operating in the two cycles of data collection. As a consequence only the Cycle 1 models are reported in order to show within cycle relationships among the variables. Finally, the variables in the Family-School Relationships Model from Level 1 to Level 6 in Cycle 1 were used to predict Achievement in Cycle 2. The analysis of (a) Cycle 1 data in which comparisons are drawn between intact and single-parent households and (b) the effects of Cycle 1 family process data used to predict Cycle 2 achievement are the focus of the results reported here.

Structural equations were used to analyse the data because, a) the system of relationships among the variables being studied is large and complex and, b) the Family-School Relationships Model offers a basic theory of how the system of variable relationships ought to appear. This approach permits the simultaneous assessment of a large number of relationships among variables and can determine how closely they conform to a theory-predicted pattern. It must be kept in mind, however, that the results of the analyses themselves do not reflect the active interactions among the variables. The dynamic processes that lie behind the system of relationships pictured in the analyses are revealed through our theory and knowledge of the behaviors captured in the measures used in the study. These considerations are dealt with in the discussion section of the report

## RESULTS

The correlations among all variables for the two-parent and single-parent households are found in Table 3. Most correlations are modest to moderate in size. One important correlation to note is the association between student achievement as judged by a teacher in Cycle 1 and another teacher at Cycle 2 ( $r = .72$ ,  $p < .001$  for children in both family structures). This observation indicates that a child's relative standing on teachers' ratings of achievement remain highly consistent over a two year period. The difference between means for achievement at Time 1 compared with Time 2 was not significant,  $t = .55$ ,  $p = .58$ . This consistency precluded our potential use of either a difference score or a residual change score.

Table 4 provides the means and standard deviations for the two-parent and one-parent families in Cycle 1 and Cycle 2. A test of equivalence of means between the two family structures for each of the two Cycles revealed some consistent significant differences. Across the two data collection cycles, two-parent homes had higher SES, less parental depression, less family dysfunction, and, for the children, less hyperactivity, less anxiety and depression, more academic focus, and higher achievement. No differences were found between family

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types in the level of ineffective parenting, consistency of discipline, level of rational parenting, and the presence of prosocial behavior in the children. Interestingly, however, in Cycle 2 single-parents showed more positive parenting although the difference between the two- parent families and single-parent families was very modest.

The findings would lend support to the notion proposed by Coleman that a single-parent household may have a structural disadvantage or, to use his term, deficiency that reduces human, economic, and social capital. The more limited resources available to parents in single-parent families appears to make it harder for them to deal with the same challenges faced by two-parent families with the result that the children in the single-parent homes are showing more adjustment and achievement difficulties.

**Table 3: Correlations Among Variables for Two-Parent (below diagonal) and Single-Parent (above the diagonal) For Cycle 1 data**

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	SES	--	.26	-.24	-.14	-.19	.14	.18	.21	.11	.00	-.07	.09	.27	.26
2	Support	.17	--	-.25	-.51	.17	-.05	.04	-.08	.09	-.10	.20	-.03	.22	.15
3	Depression	-.18	-.15	--	.26	-.08	.21	-.17	.13	-.11	.22	-.16	.25	-.14	-.07
4	Fam.Function	-.20	-.50	.31	--	-.40	.29	-.12	.27	-.17	.30	-.29	.17	-.19	-.19
5	Positive	.07	.07	-.07	-.19	--	-.32	-.02	-.32	.02	-.12	.26	-.10	.02	.08
6	Hostile	-.05	-.02	.21	.22	-.22	--	-.28	.54	-.27	.49	-.30	.44	-.16	-.18
7	Consist	.21	.13	-.19	-.18	.09	-.23	--	-.21	.08	-.19	.06	-.18	.09	.14
8	Punitive	-.12	-.12	.15	.31	-.30	.54	-.13	--	-.21	.36	-.38	.17	-.18	-.16
9	Ac. Focus	.19	.02	-.06	-.08	-.02	-.15	.08	-.07	--	-.48	.15	-.28	.65	.59
10	Hyperact	-.15	-.05	.15	.14	-.11	.40	-.19	.20	-.39	--	-.19	.53	-.40	-.36
11	Prosocial	.11	.17	-.04	-.20	.21	-.24	.19	-.24	.12	-.16	--	-.11	.08	.05
12	E.Disorder	-.03	-.03	.24	.16	-.14	.38	-.13	.20	-.09	.40	-.07	--	-.20	-.07
13	Achieve 1	.24	.01	-.05	-.02	-.02	-.09	.11	-.04	.66	-.30	.07	-.05	--	.72
14	Achieve 2	.28	.04	-.09	-.05	-.02	-.10	.14	-.03	.56	-.30	.06	-.05	.72	--

**Table 4: Means, Standard Deviations, and Probability of Differences Between Means for Two-Parent and Single-Parent Households in NLSCY Cycles 1 and 2**

Variable	Cycle 1					Cycle 2				
	Two-Parent		Single-Parent		<i>p</i>	Two-Parent		Single-Parent		<i>p</i>
	<i>M</i>	<i>Sd</i>	<i>M</i>	<i>Sd</i>		<i>M</i>	<i>Sd</i>	<i>M</i>	<i>Sd</i>	
SES	-.08	.69	-.60	.81	<b>.001</b>	-.02	.70	-.57	.83	<b>.001</b>
Support	14.74	2.66	14.02	2.66	<b>.001</b>	--	--	--	--	--
Depression	4.21	4.54	6.69	5.64	<b>.001</b>	3.82	4.46	6.01	5.77	<b>.001</b>
Fam.Dysf	8.07	4.83	9.31	4.74	.518	8.06	4.75	8.96	4.84	<b>.014</b>
Positive	12.51	2.74	12.65	2.89	.215	12.11	2.59	12.58	3.11	.043
Ineffective	9.03	3.69	9.38	4.00	.199	8.72	3.65	9.08	3.65	.256
Consistency	15.17	3.25	14.81	3.74	.161	15.30	3.06	15.27	3.32	.900
Rational	9.12	1.99	8.91	2.08	<b>.004</b>	8.73	1.85	8.51	2.00	.125
Hyperactive	4.43	3.52	5.41	4.01	.297	4.13	3.43	5.30	3.95	<b>.001</b>
Prosocial	12.76	3.57	12.48	3.68	<b>.001</b>	13.18	3.50	13.40	3.65	.428
Acad. Foc.	4.04	.66	3.78	.77	<b>.001</b>	4.02	.70	3.79	.80	<b>.001</b>
Anxiety	2.49	2.44	3.35	2.87	<b>.001</b>	2.56	2.52	3.29	2.83	<b>.018</b>
Achieve 1	3.48	1.21	3.08	1.26	--	--	--	--	--	--
Achieve 2	--	--	--	--		3.47	1.19	3.02	1.26	<b>.001</b>

Note: Two-parent sample: N = 1,321; One-parent sample: N = 197: ---- indicates that data are not available or in the case of achievement, collected at separate Cycles

## Structural Equation Models from Cycle 1

The variables selected from the NLSCY data that fit the Family-School Relationships Model were used in two separate linear structural equation analyses, first for intact two-parent households and then for the single-parent households. The initial step for each was to compute a just-identified model after which non-significant pathways were trimmed. The over identified models are reported in Figure 5 (two-parent households) and Figure 6 (single-parent households). The model reported in Figure 5 sustained a significant chi-square ( $\chi^2$  (42) = 114.42,  $p > .01$ ) largely due to the sample size which makes chi-square a poor measure of model adequacy in this case. In contrast, the Goodness of Fit Index was .987 while the adjusted fit of .972. The standardized root mean square residual was .03. Further, the Norm Fit Index was .967. With the exception of the significant chi-square all indicators suggest an excellent fit. The model in Figure 5 accounted for 45% of the variance in achievement by direct effects alone.

The model in Figure 6 had a nonsignificant chi-square ( $\chi^2$  (35) = 27.74,  $p < .804$ ). The Goodness of Fit Index was .979 with an adjusted fit of .945. The standardized root mean square residual was .034. The Norm Fit Index was .961. Again, an excellent fit is observed in Figure 5. This model accounted for 48% of the variance in achievement from direct effects.

*Two-parent families: Direct associations with SES.* Of initial importance in Figure 5 is the wide array of direct, unmediated associations between SES and other variables within the model. Independent of all other associations in the model, SES maintains a modest, but significant ( $\gamma = .12$ ) association with achievement. Children born into a higher SES household are going to do a little better in school just because of the financial and human resources of the home and, probably, because of the family's enhanced social context. Further, SES has several other important associations in these data. SES is associated with reduced levels of hyperactivity and inattention in children with two-parents ( $\gamma = -.14$ ), with more parent perceived social support ( $\gamma = .17$ ), less parental depression ( $\gamma = -.16$ ), greater consistency in disciplinary actions ( $\gamma = .19$ ), and more teacher-rated academic focus by the child ( $\gamma = .18$ ). Economic standing, social status and parent education capital were found to have a wide variety of influences on factors in this study even when the effects of other intervening variables are accounted for.

*Two-parent families: The achievement model.* A second way to consider Figure 5 is to trace all pathways that lead to student achievement -- the academic portion of the model. SES predicts higher levels of social support and lower levels of depression. Likewise, social support is also related to less family dysfunction. On the other hand, depression and family dysfunction are positively connected to ineffective parenting which may reduce a child's academic focus. Academic focus then has a direct effect on achievement ( $\beta = .64$ ). Parent depression, family dysfunction, hostile and angry parenting appear to have constraining effects on academic success. The possible negative effects of these processes seem to be partially offset by the positive effects of higher SES and stronger levels of social support.

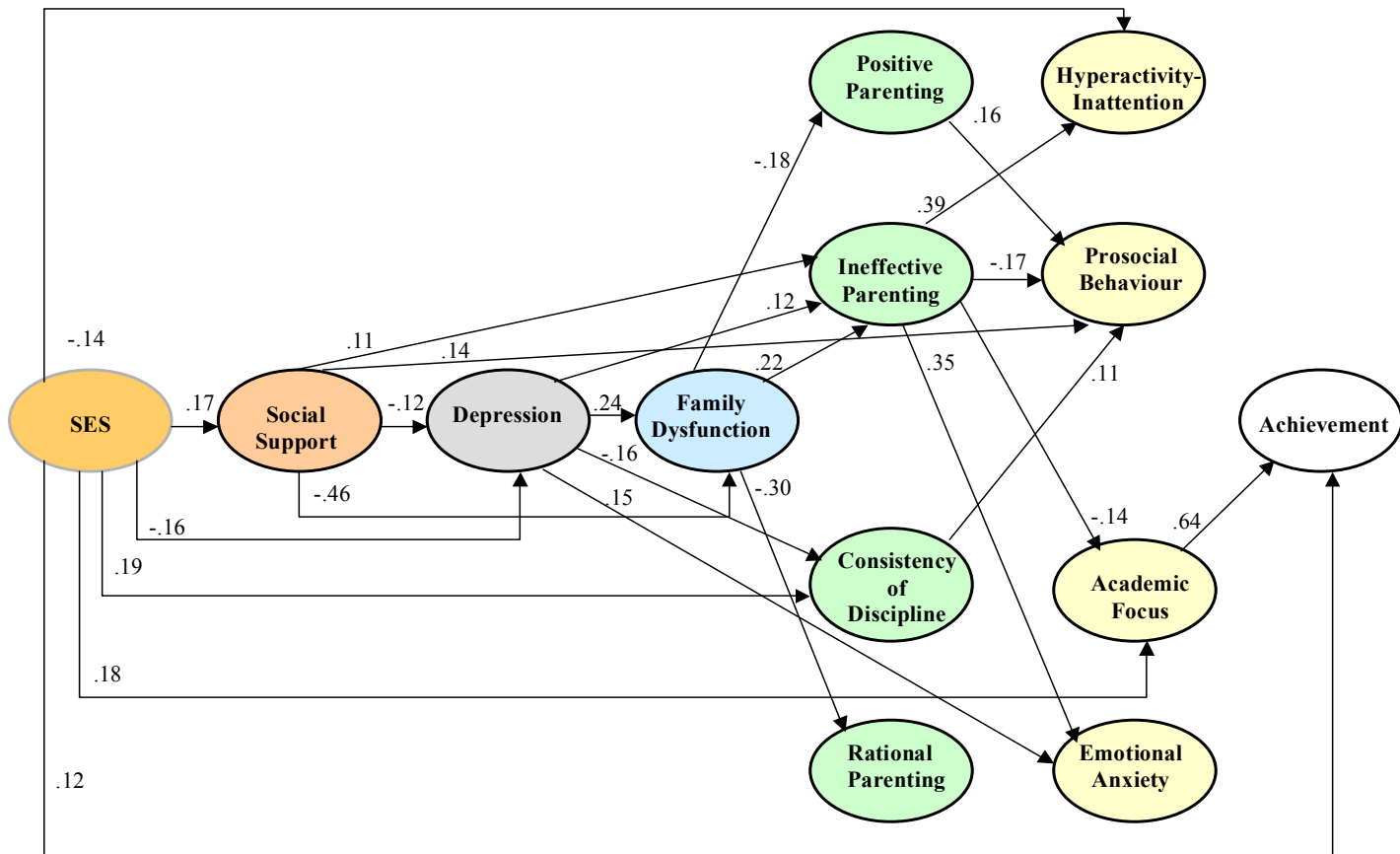


Figure 5: The Over-identified Model for Two-Parent Households in Cycle 1

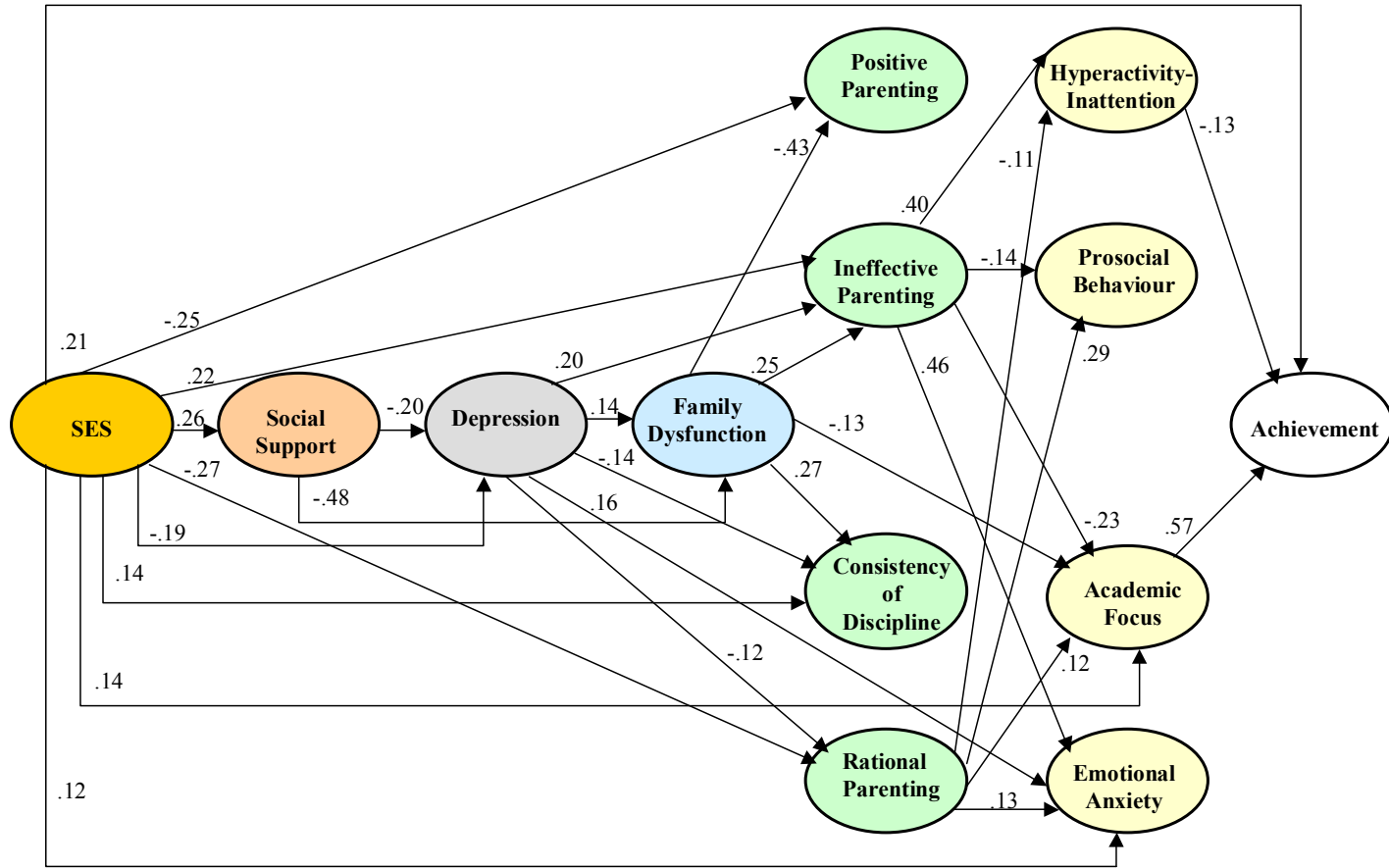


Figure 6: The Over-identified Model for One-Parent Households for Cycle 1

*Two-parent families: Other findings.* Although not part of the initial planning for this study, a third way to examine Figure 5 is to consider all of the pathways that link with child characteristics which do not appear to be implicated in the child's achievement. To begin, and as already noted, SES is associated with greater perceived social support ( $\gamma = .17$ ), less parental depression ( $\gamma = -.16$ ), and greater consistency in discipline ( $\gamma = .19$ ). Social support is, in turn, associated with less parental depression ( $\beta = -.12$ ) and less family dysfunction ( $\beta = -.46$ ). Further, parental depression is linked to greater family dysfunction ( $\beta = .24$ ), less consistency in disciplining children ( $\beta = -.16$ ), more ineffective parenting ( $\beta = .12$ ), and to more anxiety and depression in the children ( $\beta = .15$ ). Then, family dysfunction is associated with less positive parenting ( $\beta = -.18$ ), more ineffective parenting ( $\beta = .22$ ), and less rational or democratic parenting ( $\beta = -.30$ ), although the latter variable does not appear related to any of the four child characteristics and plays no further roles in the processes studied in this report. Again and as with the case in the achievement model, SES and social support appear to act as buffers against the undesirable influences of parental depression and family dysfunction that reduce the social capital of the family. In turn, one observes that positive parenting ( $\beta = .16$ ) and consistency in discipline ( $\beta = .11$ ) are associated with greater prosocial behavior while ineffective parenting is connected to less prosocial behavior by children ( $\beta = -.17$ ). The parent-child relationship variable that is widely associated with the emotional state of children in this analysis is ineffective parenting. This form of parenting is associated with more hyperactivity and inattention by children ( $\beta = .39$ ), less prosocial behavior ( $\beta = -.17$ ), less academic focus ( $\beta = -.14$ ), and greater anxiety and unhappiness in children ( $\beta = .35$ ). The evidence suggests that parental depression is associated with family dysfunction which in turn predicts less positive parenting, more ineffective parenting, and less democratic parenting. Social capital facilitates positive parenting and consistency in discipline, both of which predict greater prosocial behavior. Ineffective parenting constrains prosocial behavior and appears to reinforce hyperactivity or anxiety-depression.

*One-parent families: Direct associations with SES.* As in the two-parent families, SES has a wide variety of associations that again demonstrate the power of income, social status, and education on families and children. The pattern of associations, however, for SES in the one-parent families appears to be more complex than it is in the case of the two-parent families. The level of SES in single-parent households has a direct association with children's academic achievement ( $\gamma = .21$ ) just as it does on the two-parent families. SES also has other effects on various levels in the model and a few of these findings are somewhat unexpected. As anticipated, SES is not only associated directly with children's achievement, but also with greater social support as perceived by the parent ( $\gamma = .26$ ), consistency in the use of discipline ( $\gamma = .14$ ), degree of a child's academic focus ( $\gamma = .14$ ), and less parental depression ( $\gamma = -.19$ ). Unexpectedly, and unlike the two-parent families, SES, in these data, is also associated with less positive parenting ( $\gamma = -.25$ ), less rational and democratic parenting ( $\beta = -.27$ ), more ineffective parenting ( $\beta = .22$ ), and more anxiety and depression for children ( $\beta = .12$ ). Apparently, when single-parents struggle to build the financial and educational capital of the family household, there are both positive and negative consequences.

*One-parent families: The achievement model.* When Figure 6 is examined with respect to the network of variables that predict academic achievement for single-parent children, we see a somewhat more complex situation than we do for two-parent-families. Again we find that

SES is associated positively and directly with achievement. It is also associated with social support and depression which both link to family dysfunction. Further, family dysfunction is associated with higher ineffective parenting behaviors (beta = .25), higher rates of consistent use of discipline/punishment (beta = .27), and lower levels of positive parenting (beta = -.43), although the latter two variables are not further related to any of the child characteristics. Family dysfunction has a small negative direct association with academic focus (beta = -.13). Ineffective parenting (beta = .40) and rational parenting (beta = -.11) are associated with hyperactivity and inattention in children with the hyperactivity, unlike the case with the two-parent family, being associated with lower achievement (beta = -.13). Also, ineffective parenting (beta = -.23) is associated with less academic focus, while rational parenting is associated with higher academic focus (beta = .12). Further, academic focus predicts higher achievement (beta = .57).

*One-parent families: Other findings.* When we examine the child characteristics that are not related to child achievement in the one-parent model, we again find a slightly more complex picture than with two-parent families. The network of variables that link SES to social support, parental depression, and family dysfunction has already been described. SES is associated with social support for the family, with social support being linked to less parental depression which in turn predicts family dysfunction. Further, social support is associated with less family dysfunction. Parental depression also is associated with less consistency in discipline (beta = -.14), less use of rational parenting (beta = -.12), more ineffective parenting (beta = .20) and greater anxiety and depression in children (beta = .16). The influence of social capital in single-parent households indicates that social dysfunction in the family is associated with less positive parenting (beta = -.43), more ineffective parenting (beta = .25), greater consistency in discipline (beta = .27), and somewhat lower academic focus by the children (beta = -.13). Positive parenting nor consistency in discipline were significantly associated with variables in the remaining two levels of the model. However, ineffective parenting was associated with less prosocial behavior (beta = -.14) and less academic focus (beta = -.23) and with more hyperactivity (beta = .40) and anxiety (beta = .46).

## Models Predicting Cycle 2 Achievement

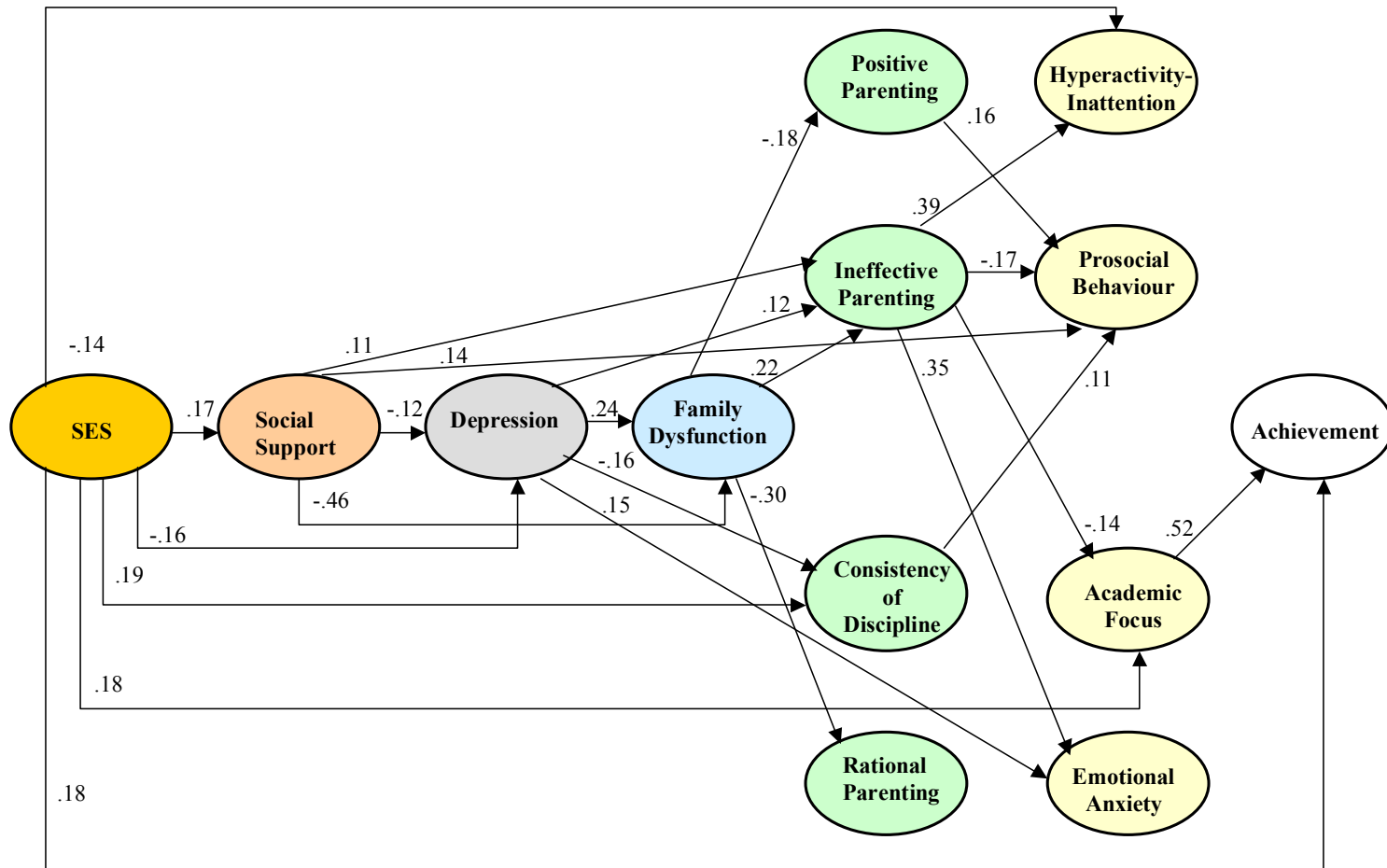
In the Cycle 1 models, the single most powerful predictor of achievement was the teacher's perception of the degree of academic focus in the children. This finding is subject to the criticism that the strong relationship between them is largely due to the fact that the teacher made the rating in both cases. A more powerful test of the relationships between the family and child characteristics, on the one hand, and child achievement on the other, is provided if achievement ratings from Cycle 2 are used instead of those from the Cycle 1. The teachers in Cycle 2 are different from the teachers in Cycle 1. Also, examining achievement in Cycle 2 in relation to family processes in Cycle 1 provides stronger evidence of possible causal effects. The logic is that achievement events in Cycle 2 cannot have any possible causal role in determining the child and family characteristics measured in Cycle 1. However, this last step toward a causal interpretation of the findings must be taken with caution because the system of family relationships operating in Cycle 1 will likely have been

sustained for Cycle 2. These variables reflect on-going systems of relationships that also have on-going bidirectional effects.

The two-parent model, presented in Figure 7, sustained a significant chi-square ( $\chi^2(42) = 125.71, p = .001$ ) with the significance level due, as before, to the large sample size. The Goodness of Fit Index was .986, with the adjusted fit of .969. The standardized root mean square residual was .032 and a Normed Fit Index was .961. The final over-identified model accounted for 34% of the variance by direct effects. The single-parent model in Figure 8 had a nonsignificant over-identified model chi-square ( $\chi^2(34) = 26.53, p = .82$ ) and a Goodness of Fit Index of .980. The adjusted goodness of fit index was .947. The standardized root mean square residual was .034. This model accounted for 41% of variance by direct effects. Both models presented in Figure 4 and 5 have excellent indicators of fit.

For the two-parent model using achievement in Cycle 2 (see Figure 7) an identical model to that reported in Figure 8 for the Cycle 1 data is observed. The only difference is that the association between children's academic focus and achievement is smaller ( $\beta = .52$ ).

In the case of single-parent households (see Figure 7) the general model is very similar to that found for single-parent families in Cycle 1 (see Figure 4) but with four additional significant findings for the prediction of academic achievement two years later in Cycle 2. The new findings include: the elimination of family dysfunction's association with consistency in discipline (*n.s.*); the emergence of a negative direct association between family dysfunction and rational parenting ( $\beta = -.27$ ); a small positive direct association between family dysfunction and children's hyperactivity and inattention ( $\beta = .13$ ); and, a negative association between a child's level of anxiety and depression and academic achievement ( $\beta = -.17$ ). As in the model for two-parent households, a child's academic focus in Cycle 1 had a significant prediction for academic achievement in Cycle 2 ( $\beta = .52$ ).



**Figure 7:** The Over-identified Model for Two-Parent Households (Cycle 1 Family Processes Predicting Cycle 2 Achievement)

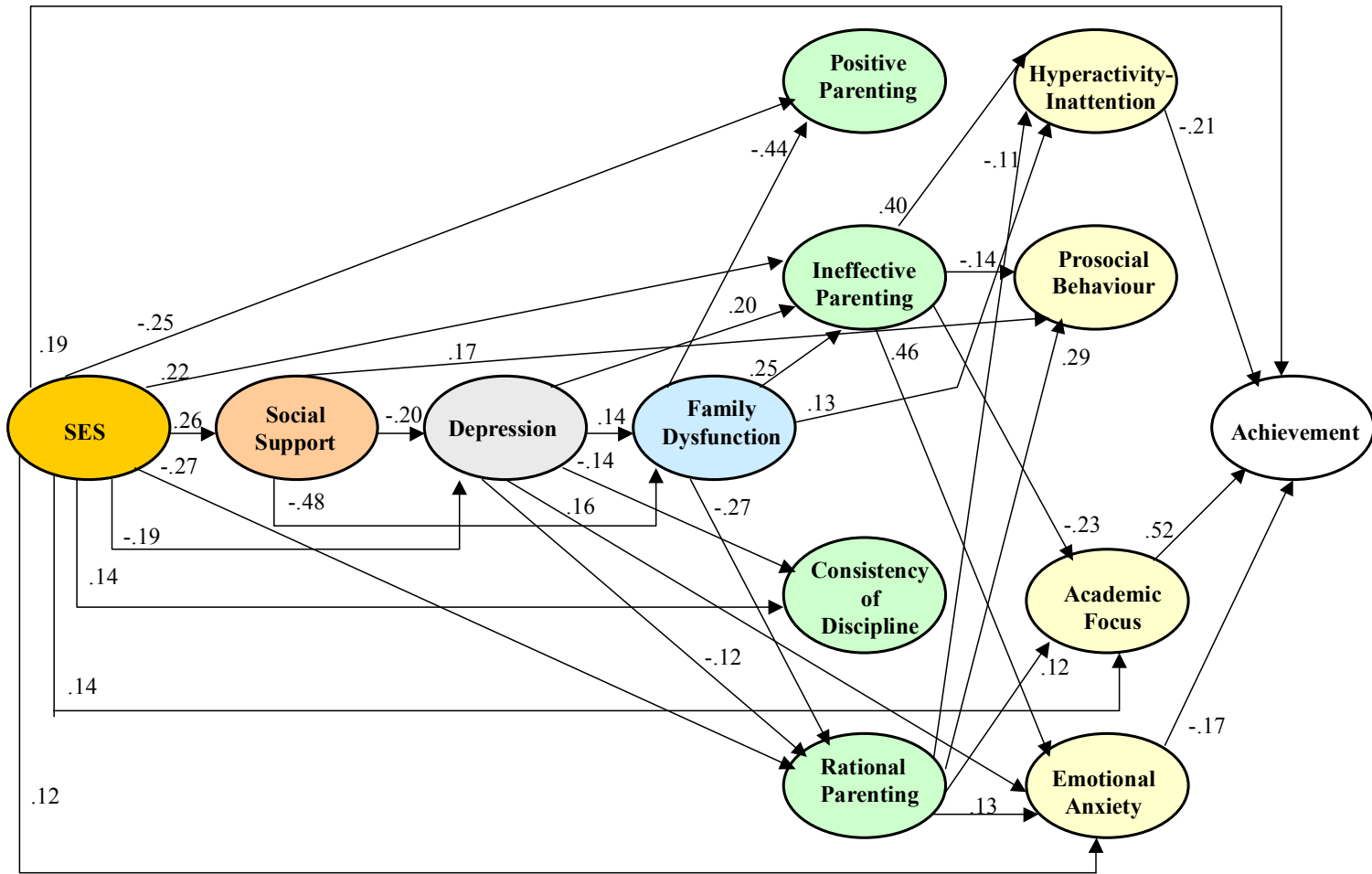


Figure 8: The Over-identified Model for One-Parent Households (Cycle 1 Family Processes Predicting Cycle 2 Achievement)

## DISCUSSION

The Family-School Relationships Model used to initially examine Cycle 1 data (Ryan and Adams, 1999) was validated. Further, a comparison of family types supports Coleman's (1988, 1990) and Demos and Acock's (1996) notion of at least a partially problematic structure in one-parent households. These findings in no way imply that single parents, as a group, are unsuccessful in their parenting. Rather, the findings suggest that the single-parent family may face more complex challenges than two-parent families as it struggles to sustain the material and social well being of its members.

Our findings suggest that socioeconomic status is highly important in its direct impact on a variety of family and child characteristics including the level of child achievement. In two-parent households, high SES, regardless of any other family relationship processes, is associated with children who are less hyperactive, more academically focused, and higher achievers in school. Thus, economic, educational, and status capital is transmitted to children through the informational, economic, and occupational status of parents within these two-parent households. Higher SES has other advantages. It is associated with having more community friends who provide support to the family. It reduces the likelihood that the prime caregiver for the children is depressed and is associated with more consistency in discipline/punishment. In general, higher SES, as a form of capital, enables healthy, successful, and symbolically complex role models. Also, higher levels of SES generally mean that parents will be using more complex forms of communication and hold parental expectations that children are to be successful, work-hard at school, and achieve well.

For single-parent families higher levels of SES indicators may suggest a more complex and, perhaps, less comfortable contribution to family relationships. The positive contributions of SES include greater community and relationship support for the parent, and again, children who will have greater academic focus and school achievement. However, we speculate that single-parents, usually mothers, who strive to build or to sustain a higher SES level may have to spread their own personal resources so thinly that their children have more difficulty in their social-emotional lives as well as school.<sup>1</sup> The contrast between the two-parent families in Figure 7 compared with the single parents in Figure 8 is interesting. In the two-parent family, only academic focus links to achievement. In the single-parent family both hyperactivity and a child's anxiety are linked to achievement along with academic focus. This suggests that the additional social resources available in a two-parent family may provide some level of adjustment capacity for the children so that the effects of conditions such as hyperactivity and depression/anxiety can be reduced. Possibly, the time away from home and at work needed to sustain a higher income may reduce positive and encouraging parenting behaviors and democratic parenting styles. Perhaps, due to the stress of maintaining a sound economic income, tired and exhausted single-parents may react with less effectiveness in their parenting behaviors. The time demands of earning the economic or educational capital associated with higher SES status may have both a positive and negative implication for children's development in the one-parent family.

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<sup>1</sup> In further research analyses could compare single mothers who work to those who do not, and after controlling for differences in income, gauge the impact on child outcomes. This analysis could address an important line of investigation. Do children do better when single mothers with adequate income stay at home with their children?

Consistently, across family structure, it is observed that community and relationship support are associated with less depression and family dysfunction. The powerful connection between SES and social support demonstrates that economic standing is connected to social relationships that facilitate the parent's emotional state and the family's functioning as a unit. Further, social support can be associated with less use of anger and hostility in parent-child relationships. It comes as no surprise that many interventions include social support as a major tool in facilitating children's well-being (Albee and Gullotta, 1997).

We found that depression was associated with family dysfunction, which, in turn, reduces positive and encouraging parenting. It also reduces the use of rational/democratic forms of parenting while promoting ineffectiveness in parent-child relationships. These problematic forms of parenting then are associated with lower levels of prosocial behavior and academic interests, as well as characteristics such as hyperactivity and anxiety-depression. For the two-parent family, academic focus only was found to directly predict student achievement (in Cycle 1 and 2). However, for the single-parent families, all but prosocial behavior was observed, in one or the other analysis, to predict academic achievement. As would be expected, hyperactivity and anxiety and depression were associated with lower student achievement and academic focus and interest was associated with higher student achievement.

The traditional trinity of parent-child relationships "warmth, control, and democracy" plays a substantial role in any discussion of the social capital of parent-child relationships. In this investigation the warmth factor is represented by positive parenting and the converse of angry and hostile parenting, designated as ineffective parenting. Control was represented by consistency in discipline. Democracy was found in the rational parenting variable. Positive parenting which included warmth and acceptance was associated with children's prosocial behavior within two parent-homes only. Hostile or ineffective parenting was associated with less prosocial behavior by children, more hyperactivity and anxiety and depression, and less academic interests and focus. Where significant, consistency in discipline was only associated with prosocial behavior. Rational parenting was associated with less of hyperactivity and anxiety and depression, but more academic focus and prosocial behavior when it was observed in the models. The findings reported on the relationship between social capital of parent-child relationships and prosocial outcomes by children are consistent with most past research in the study of family socialization.

Across both family types, the power of developing a sense of academic focus is a major feature of a child's academic success. This is not to disregard the importance of mental health indicators that are featured in the models on the single-parent family, but to underscore the key feature that is involved in being a good student, who is interested in school work, and has the competencies required for being successful in school. These data show that the child, the teacher, the family, and the community, all have evident influences on the formation of a child's academic focus and successes in school.

## **Limitations of Study 2**

One obvious limitation of this report is that to compare two-parent and single-parent families, we had to reduce our sample size. Therefore, the generalization of our findings may be limited, but nonetheless, they should be considered suggestive. Further, our use of

difference scores and regression residuals were unsuccessful. Therefore, we have relied on reports of relative ranking in teacher judged academic achievement in Cycle 1 and in Cycle 2. Our Family-School Relationships Model helps to construct a consistent model within Cycle 1 and in Cycle 2, and predictions from Cycle 1 family processes to Cycle 2 achievement. However, we were not able to predict the degree of change in achievement using these techniques. In fact, very little change in achievement performance as judged by teachers was observed over the two year period. Further, the NLSCY doesn't include a Level 2 variable for all ages (i.e., none for the 6-9 children, but one for the 10- 11 year children) that deals with parent-child relationships concerning school activities, as dealt with at home, together. Therefore, our model can not be fully tested in predicting children's school achievement. Finally, the complex model used in this study placed such a demand on the sample that not enough families who had complete data were observed to have had changes in marital status. Perhaps, a less sophisticated model could be constructed and tested that would not over tax the sample. A better alternative might be to use Cycle 1 through Cycle 3 data, where the number of changes in family status is likely to have occurred to test the use of the model in determining the impact of changes in family structure. This, however, necessitates complete data sets at all points of data collection.

## **CONCLUSION AND IMPLICATIONS FOR SOCIAL POLICY AND INTERVENTION**

The results of this study suggest several different policy directions as well as appropriate approaches to interventions aimed at promoting better academic performance in school-aged children. First, the large and pervasive impact of socio-economic status on the system of relationships in the family and on academic achievement directly points to the importance of the material resources that a family can draw upon. The conclusion articulated in our earlier study (Ryan and Adams, 1999) of the NLSCY on this same theme remains valid following the current analyses:

The data clearly indicated that children in higher income families do substantially better in school regardless of what happens within their families. Not only is the children's achievement directly affected by a higher standard of living, but such children also acquire more productive school work habits and academic skills. Moreover, the general quality of family life is strongly affected directly and indirectly by economic well being. Assuring adequate family income and educational learning opportunities for parents are almost essential social objectives if the educational success of the children in those families is to be enhanced. Social policy initiatives such as this must necessarily come from government either through direct delivery of economic resources to families or through the creation of employment and training conditions so that all families are adequately supported through employment income.

The present two studies, however, suggest that this sort of policy implication might be more relevant to two-parent families. There are indications that the needs of the single-parent family are more complex. Simply arranging for the single parent to have a job might possibly induce a level of stress and pressure that undermines the family's capacity to cope with all the demands that are placed upon it. Unfortunately, the data considered in this study cannot do

much more than flag the possibility that single parents will need much more sophisticated assistance than two-parent families.

As was the case with the previous study, the data point to the possibility of interventions at multiple levels within the family. It is possible to work directly with the children to develop better academic skills although it must be recognized that much of this sort of isolated effort could be undone by unproductive processes within the relationship system of the family. It is also possible to intervene at the level of parent-child relationships or the whole family to clarify modes of communication and interaction. This would, of course, begin to involve professionals from the mental health sectors thus significantly complicating the problem of service provision and raising the larger issue of service coordination and integration. Similar issues arise when simpler interventions aimed primarily at the mental health of the parents are targeted.

The most significant implication from the study, however, is the fact that families (of whichever type) as complex relational systems will probably respond best to interventions that are mindful of the range of levels that typify family functioning. Isolating an intervention to only one level of the family runs the risk of other family processes systematically undoing the effects. Ultimately, the most powerful sorts of interventions will be those that consist of multiple interventions that are coordinated to deal with the countervailing forces that operate in every family.

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