

The Protective Effects of Peer Relationships for Early Adolescents with Non-Optimal  
Parent-Child Relationships

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## **ABSTRACT**

### **The Protective Effects of Peer Relationships for Early Adolescents with Non-Optimal Parent-Child Relationships**

Felicia Meyer

A fundamental hypothesis of peer relationships research is that positive relationships with peers, including friendships, can protect children from the detrimental effects of non-optimal relationships with parents. The current study examined whether positive peer relations moderate the association between negativity in the parent-child relationship and psychosocial adjustment. Early adolescents (N = 430, mean age = 11 years old) rated the quality of their relationships with their mother, father and best friend, indicated which of their peers was a best friend (i.e., peer acceptance) and rated their perceived social competence and self-worth. Children with negative relations with their parents were expected to be less well-adjusted than those with less negative parental relations. It was also hypothesized that two aspects of positive peer relations, namely friendship quality and peer group acceptance, would moderate the association between negative parental relations and child adjustment. Multiple regression was used to examine interactions between parent and peer measures in their association with children's social competence and self-worth. Social competence was inversely related to paternal negativity and positively related to friendship support and peer acceptance. Friendship support interacted with maternal negativity in its association with social competence, even when controlling for peer acceptance. Self-worth was inversely related to maternal and paternal negativity and, to a lesser extent, the association with paternal negativity was moderated by friendship support. These findings highlight the developmental significance of friendship during early adolescence and provide evidence for the hypothesized protective effects of peer relations.

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Chance makes our parents, but choice makes our friends.

- Jacques Delille (1738-1813)

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## **The Protective Effects of Peer Relationships for Early Adolescents with Non-Optimal Parent-Child Relationships**

A basic premise of social development research is that interpersonal relationships are a critical context for human development. Across the lifespan, close relationships are one of the fundamental building blocks of human culture; they form the basic structure of our social lives but also change as our lives unfold (Laursen & Bukowski, 1997). During childhood and adolescence, relationships take place in at least two social worlds, namely the family and the peer group. Research on relationships in these two domains has served several purposes (Rubin, Bukowski & Parker, 2006). One goal has been to identify the features of relationships in these domains and to understand how they differ from each other. A second goal has been to identify the differential effects that these relationships have on children's development and adjustment. A third goal has been to understand the interface between these relationship systems. Research in this area includes studies that have examined the continuities and discontinuities in individual differences in relationship experiences with family members and with peers. It also includes research on the extent to which positive relationship experiences in one domain can compensate for negative experiences in another domain. The present study falls into the latter group.

The study reported here examines the hypothesis that positive relationships with peers can protect children from the detrimental effects of non-optimal experiences in their relationship with their mothers and fathers. In order to explore this question, it is necessary to understand the nature and significance of social relationships for early adolescents. Therefore, the introduction that follows first identifies the central

relationships in the lives of early adolescents, then explains why and how they are important and finally considers how these different relationships interact.

### *Defining and Measuring Relationships*

Before discussing why relationships are important, we must first distinguish among the many types of relationships that make up a child's social world and outline how they can be conceptualized, measured and compared. First, although relationships are embedded in a larger social network, they are generally dyadic entities (Laursen & Bukowski, 1997). Throughout the course of development, individuals have personal relationships with a number of people in their networks; however, close relationships are usually limited to parent-child, sibling, friend and romantic relationships (Furman & Buhrmester, 1985, 1992). In close relationships, influence is frequent, diverse, strong and enduring (Rubin, Bukowski & Parker, 2006).

Researchers have proposed various ways of measuring relationships; however, one of the common strategies used to assess child and adolescent friendships, as well as other relationships, is a dimensional analysis through which one determines whether certain elements (e.g., companionship, intimacy, conflict) are present in the social interaction between the two individuals (Hartup, 1996). Dimensional analyses are based on a network approach that focuses on the "provisions" that children report obtaining from different relationships (Furman & Buhrmester, 1985). Relationship provisions refer to the experiences, opportunities and affordances of relationships (Furman & Buhrmester, 1985; Weiss, 1974). According to this view, individuals seek specific types of social support in their relationships with others. In his theory, Weiss (1974) proposed six basic social provisions: attachment (affection, security and intimate disclosure), reliable

alliance (a lasting, dependable bond), enhancement of worth, companionship, guidance and nurturance.

However, children do not necessarily obtain the same provisions from their various relationships throughout their development as the relative importance of these relationships is likely to change over time. Although their social lives consist of many relationships (Furman & Buhrmester, 1985; 1992), from the earliest years, children develop significant relationships with family members and, as they grow older, with their peers (Furman, 1989; Rubin et al., 2005; Sullivan, 1953). It follows then that parents and peers both play a significant role in their lives. In the following sections, I will further describe and contrast children's relationships with their parents, with their friends, as well as their experiences in the peer group.

#### *Parent-Child Relationships*

Families have been recognized as an early pervasive and highly influential context for socialization (Parke & Buriel, 2006). Much of the research devoted to the family context has focused on the relationship between children and their parents and, historically, has emphasized the types of child-rearing practices that parents employ. Studies on infant-parent attachment (e.g., Bowlby, 1969) and on parental child-rearing styles (e.g., Baumrind, 1973; Maccoby & Martin, 1983) are good examples of this tradition.

More generally, parents affect their children in numerous ways; through interaction, direct instruction and the provision of opportunities (Parke & Buriel, 2006). However, there is a need for additional research on the multiple ways in which parents can influence their children. Indeed, even in recent reviews of the parent-child context

(e.g., Bradley & Corwyn, 2003; Collins & Laursen, 2004; Parke, 2004a; Parke & Buriel, 2006; Steinberg, 2001) little empirical attention has examined the specific provisions that children obtain from their relationships with their parents.

In contrast, Furman and Buhrmester (e.g., 1985, 1992) have examined children's perceptions of various relationships in their social networks and shown that parents are viewed as important sources of many social provisions. Indeed, mothers and fathers are generally perceived as providing affection, reliable alliance, enhancement of worth and guidance, demonstrating that most parent-child relationships have strong emotional and instrumental components. Attention has also been given to the measurement of negative interactions between children and their parents; for example, some researchers have looked at the frequency and intensity of conflict (e.g., Furman & Buhrmester, 1992; Laursen & Collins, 1994). Following this line of research, the current study will focus on the significance of negative parent-child interactions.

Finally, although most researchers agree that parents play a critical role in their children's development, one of the major challenges in research on parent-child relationships remains to determine the unique contribution of families to socialization outcomes, as well as the limits of family effects (Harris, 1998). It is likely that, as children grow older, family effects become more limited in part because of the growing importance of peers in their lives.

### *Friendships*

Ever since Monroe's (1898) groundbreaking study, friendship has been viewed as a critical developmental context. According to Bukowski and Sippola (2005), friendship is the most enduring universal relational experience across the lifespan. Unlike parent-

child relationships, it is believed that friendships only truly develop in late childhood. Indeed, in his developmental model of interpersonal relationships, Sullivan (1953) proposed that children begin to develop “chumships” or close, intimate mutual relationships with same-sex peers as they enter early adolescence. According to Sullivan (1953) and some others (Vandell, 2000; Weiss, 1974), it is in their interactions and relationships with their friends that children have their first opportunities to experience a sense of self-validation and of well-being.

Furthermore, children describe their relationships with friends differently from their relationships with their caregivers – as more companionable, intimate and egalitarian and, simultaneously, as less affectionate and reliable. In fact, children report experiencing greater companionship with their friends than with their parents or siblings and as much intimacy as with their mothers (Furman & Buhrmester, 1985). Another way in which friendship relations are differentiated from family ties is that they involve voluntary association of equals (Antonucci & Jackson, 1987). Finally, as proposed by several researchers (Berndt, 1982; Bukowski & Hoza, 1989; Furman & Buhrmester, 1992; Hartup, 1983; Rubin, Bukowski & Parker, 2006), friendships become a primary source of social support during adolescence. Indeed, during this stage, friends can exert an enormous influence on an individual’s behaviour given that they become a fundamental source of socialization (Bukowski, Brendgen & Vitaro, 2007).

Researchers have taken various approaches to the study and measurement of friendship. First, there is general agreement that school-aged children tend to associate and develop close relationships with same-sex peers and, therefore, that one should focus on same-sex peers when measuring children’s peer relationships (e.g., Bukowski,

Newcomb & Hartup, 1996). In friendship research, children are often differentiated from one another according to whether or not they have friends (e.g., Hartup, 1996). However, when studying children's relationships, it is not sufficient to simply assess the presence or absence of a friend (Brendgen, Markiewicz, Doyle & Bukowski, 2001; Bukowski, Newcomb & Hartup, 1996). It is also important to examine the qualitative characteristics of these relationships (Berndt, 1996; Furman, 1996). In other words, friendships should be regarded multi-dimensionally; several variables can be used to describe or measure friendship, such as the total number of friends one has, the number of truly close friends one has and friendship quality – which may include aspects such as companionship and intimacy (Bukowski, 2001; Hartup, 1996). Indeed, although most children participate in friendships, there is considerable variability in the quality of these friendships (Bukowski & Hoza, 1989; Parker & Asher, 1993). By examining specific features of friendship, rather than relying on general measures indicating whether a friendship exists, we can gain a clearer understanding of the developmental significance of this relational experience (Bukowski & Sippola, 2005).

#### *Peer Group Relationships*

Peer relationships beyond the dyad have also received empirical attention. In effect, past researchers have carefully distinguished between the functions and features of friendships and acceptance by the peer group as a whole (Ladd, 1999; Parker & Asher, 1993). In contrast with friendship, which has been conceptualized as an intimate and supportive mutual relationship between two peers, group acceptance involves the collective attitudes of the peer group toward a particular child (Asher, Parker & Walker, 1996; Bukowski & Hoza, 1989; Parker & Asher, 1993). Furthermore, whereas measures



of friendships are operationalized in terms of reciprocity and mutuality, measures of peer group experiences are typically defined in terms of unilateral assessments of relative standing (Vandell, 2000). In other words, peer group acceptance is a unidirectional process, whereas dyadic relationships such as friendships are bidirectional and reciprocal in nature. In summary, friendship and peer acceptance are conceptually, and therefore methodologically, different from one another (Bukowski & Hoza, 1989; Parker & Asher, 1993). It is not surprising then that children's dyadic relationships may be independent of their group relations (Harris, 1995); some children who have low status in the group may still be able to form successful friendships. Therefore, it is important to distinguish between friendship and broader peer relations as there may be unique benefits inherent to these distinct, yet overlapping, relational domains (Asher et al., 1996; Brengden, Vitaro, Doyle, Markiewicz & Bukowski, 2002).

#### *Relationships and Child Adjustment*

As pointed out by Weiss more than three decades ago, "the problem of what we gain through relationships with others has been central in the study of human experience" (1974, p. 17). If relationships have received so much empirical attention, it is because they affect the individuals who take part in them, but in what ways? As proposed by Laursen and Bukowski (1997), relationships typically differ in their specific contributions to individual development. Yet, there is also some overlap in terms of what different relationships provide to an individual (Furman & Buhrmester, 1985). For instance, in their close relationships with both peers and parents, children may experience acceptance and support which is likely to be tied to feelings of self-worth and competence (Stocker, 1994). Furthermore, Weiss (1974) proposed that negative emotions are experienced when

social provisions are not obtained. Therefore, there are a number of reasons to expect that children's relationships will be associated with their adjustment. In what follows, we provide an overview of the research that examines the ways in which parents, friends and peers contribute to child well-being.

### *Parent-Child Relationships and Child Adjustment*

An extensive body of literature – as well as common wisdom – supports the notion that children's relationships with their parents play a central role in their development and psychological adjustment. However, some researchers have questioned whether parents have important and lasting effects on their offspring. For instance, Harris (1995, 1998) has claimed that the impact of parents on children's development is limited; in contrast, she proposes that peer group processes account for major socialization outcomes. Among the many responses to this controversial claim, Steinberg (2001) proposes that it is highly unlikely that parents would have little or no impact on their children's values, attitudes and personality. In his opinion, children are necessarily affected by their parents – the people who have lived with them, raised them and tried to influence them since the moment they were born. Other areas of research are consistent with Steinberg's view that the quality of the parent-child relationship influences the psychological well-being of children. For example, according to attachment theory, experiences in early intimate relationships (i.e., with parents) and internal representations of these relationships are powerful antecedents to the current and later mental health of children (Bowlby, 1969, 1980). From an empirical perspective, support from close family members has been shown to be associated with higher self-esteem for children and adolescents (Harter, 1998; Levitt et al., 1993; van Aken & Asendorpf, 1997).

Also in response to Harris' claim that parents do not matter, Vandell (2000) pointed out that parenting effects should be viewed as conditional, rather than absolutes that are true for all children in all contexts. Indeed, it is now recognized that parenting is part of a complex developmental system that includes children's own capacities, multiple social relationships (with parents, siblings, friends and peer groups) and several developmental contexts (e.g., homes, schools and neighbourhoods) (Vandell, 2000). Accordingly, contemporary theory has moved beyond a focus on main effects of parenting toward an effort to understand complex interactions between individuals and their environments (Bronfenbrenner, 1979; Vandell, 2000).

#### *Peer Relationships and Child Adjustment*

Over the years, studies have pointed to the importance of peer relations (friendships and peer group relationships) for social and personality development and adjustment (Bukowski, 2001), including emotional and behavioural problems (Masten, 2005). Sullivan (1953) argued that friendships in late childhood make a unique contribution to psychological functioning. Since then, researchers interested in the developmental significance of friendship have found various aspects of friendship (presence, quantity, quality) to be associated with positive child outcomes.

First, regarding the presence of friendship, individuals who have friends appear to be more socially competent, sociable, cooperative and self-confident than those who do not (Hartup, 1993; Newcomb & Bagwell, 1995). Friendless children also tend to be less lonely and depressed than children who are friendless (Parker & Asher, 1993). Furthermore, studies show that children who have friends display many desirable characteristics such as sociability, cooperation and altruism (Newcomb & Bagwell, 1996)

and are more socially competent than children who do not have friends (Bukowski, Newcomb & Hartup, 1996). Second, with regard to the number of friendships, it has been demonstrated that children who have more friendships are more involved in school and perform better academically (Berndt, Hawkins & Hoyle, 1986). Even after controlling for peer group acceptance, it has been found that children who have multiple friends are more academically proficient and less lonely (Ladd, Kochenderfer & Coleman, 1997; Vandell & Hembree, 1994).

Empirical findings have also confirmed the developmental significance of friendship quality. Indeed, friendship support is positively correlated with school involvement and achievement (Berndt & Hawkins, 1991; Cauce, 1986), self-esteem (McGuire & Weisz, 1982; Perry, 1987) and psychosocial adjustment (Buhrmester, 1990). Friendship support has also been found to be negatively associated with depression, especially among girls (Buhrmester, 1990; Compas, Slavin, Wagner & Cannatta, 1986). Recently, positive friendship qualities have also been found to protect adolescents against social anxiety (La Greca & Harrison, 2005). These studies demonstrate the importance of knowing about the qualitative features of friendships in order to predict developmental outcomes. In conclusion, taken as a whole, these findings suggest that both the presence of a friend, the number of friends and the quality of friendship influence child functioning.

In addition, research has also documented the importance of peer groups for children's adjustment and well-being (Vandell, 2000). It has been proposed that peer systems may function in many ways to mediate and moderate processes that lead toward, and away from, psychopathology (Masten, 2005). Considerable evidence now tells us

that “being liked” by other children is associated with positive developmental outcome. In effect, positive peer relationships have been identified as a predictor of self-esteem, social competence and academic achievement (Hartup, 1996; Ladd, 1999). More specifically, peer group status and experiences have been found to be related to a number of developmental outcomes, including academic performance (DeRosier, Kupersmidt & Patterson, 1994), internalizing problems such as depression and loneliness (Burks, Dodge & Price, 1995; Coie & Dodge, 1988) and externalizing problems (Ollendick, Weist, Borden & Greene, 1992; Parker & Asher, 1987). In sum, research has demonstrated that friends and peer groups play an important role in children’s adjustment.

#### *Interplay Between Parents and Peers*

Experiences with parents and peers both constitute important developmental contexts for children. Indeed, the social relations of children and adolescents are centered on their friends and families (Bukowski, Newcomb & Hartup, 1996) and both family members and peers may serve as attachment figures and providers of social support (Franco & Levitt, 1998). As discussed previously, supportive relationships with both parents and peers contribute to well-being in early adolescence. Indeed, parental and peer support are associated with interpersonal competence (Collins & Laursen, 2004; Rubin et al., 2006; van Aken & Asendorpf, 1997) and self-esteem (Franco & Levitt, 1998). Therefore, we know that parents and peers affect various child outcomes while providing both complementary and unique social experiences (Hartup, 1979). However, what is less clear is whether and how these two relationship systems interact to predict children’s social and emotional development and adjustment.

Children's relationships with their parents and their peers have typically been examined in isolation from one another (Furman & Buhrmester, 1992; Stocker, 1994). Indeed, the existing research addressing specific linkages between family and peers is limited in that it has generally not examined more complex issues, such as the interactive effects that parents and peers might have on child well-being (Masten, 2005; Parke & Buriel, 2006). However, a growing theme of socialization research is the simultaneous consideration of the roles played by different relationships in children's adjustment (Vandell, 2000).

Systems theorists such as Bronfenbrenner (1979) have called for studies of networks of relationships and their interrelations so that an integrated account of children and adolescents' rich social lives may be obtained. Since relations are linked to and even embedded in other relationship systems, they should be understood according to their place within the broader constellation of relationships (Bukowksi, Newcomb & Hartup, 1996; Rubin et al., 2006; Stocker, 1994). Moreover, according to Ladd (1989), given that peer relationships occur within a larger social framework, their contribution to child development should be studied in relation to other socialization contexts, such as the family. In turn, examining children's relationships from a network perspective makes it possible to evaluate the relative contributions of different relationships to adjustment (Furman & Buhrmester, 1985; Ladd, 1989).

It is believed that interest in the interplay between family and peer relations developed from the parent-child attachment literature (Franco & Levitt, 1998). According to several attachment researchers, it is necessary for children to have had positive relationships with their parents in order to build positive relations with their peers

(Franco & Levitt, 1998; Parke & Buriel, 2006). In this view, supportive family relations provide the child with the emotional security needed to develop relationships with others. Specifically, it has been suggested that children transfer the strategies they acquire in the family to their peer relationships through internal mental representations, or working models, that guide their social behaviour (Parke & Buriel, 2006). In general, however, attachment studies do not look specifically at how parent and peer relationships interact.

Other findings suggest that parents have pervasive influence on the nature of friendships that children are able to establish. According to Franco and Levitt (1998), the capacity to develop supportive relationships with friends may be acquired through family relationships. Furthermore, it has been proposed that family relations are especially likely to contribute to the qualitative aspects of friendship because these relationships share similar characteristics such as intensity and reciprocity (Doyle & Markiewicz, 1996). Again, it is suggested here that the parent domain influences children's friendships, but it is not clear how the two domains taken together predict child outcomes.

Another way of examining family-peer linkages is the parent-child interactional approach, which is based on the assumption that exchanges with parents may provide children with the opportunity to learn and refine skills that are necessary to interact with individuals outside the home. Learning about relationships through interaction with parents is considered an indirect pathway since the goal is generally not explicitly to influence children's social relationships with individuals outside the family, such as peers (Parke & Buriel, 2006). Parents may also influence their children's relationships directly in their role as instructor, educator or advisor (Parke, Burks, Carson, Neville & Boyum, 1994). In general, studies examining family-peer linkages have investigated how various

characteristics of parents (e.g., personal characteristics) or of parent-child relationships (e.g., parenting styles, disciplinary techniques, interaction patterns, quality of parent-child attachment, parental support) influence children's peer relations, but not necessarily how parent and peer relations interact together (Ladd, 1992; Furstenberg, Cook, Eccles, Elder & Sameroff, 1999).

Finally, Bronfenbrenner noted in the 1980s that previous research in the sphere of the family and the peer group had focused primarily on the parents' capacity to counteract pressures toward socially deviant behaviour from the peer group (1986). Indeed, a popular approach to investigating family-peer linkages has been to focus on parental regulation of their children's peer relationships, such as the parental management of children's access to peers. Again, this research does not inform us regarding the interaction between one relationship domain and the other. Although the research described above establishes a link between the family and peer systems, it is limited by its focus on the ways in which parents affect peers, as opposed to how the two relationship domains interact to affect adjustment. In contrast, examining relationships from a network approach enables us to investigate the interplay between the various relationships in children's lives.

The network perspective can be traced back to Harry Stack Sullivan who, in 1953, proposed a model of social development focusing on the roles of both parents and peers. He believed that particular social needs emerge during certain stages of development and that changes occur in the relationship partners that children rely on to fulfill these needs. Specifically, he argued that peer relationships gradually supplant family relationships as children grow older. Indeed, although early childhood is generally dominated by parent-



child relationships and middle childhood is a period during which both parents and peers serve important roles as companions, evidence suggests that the importance of peer relationships increases over time such that the influence of friends is equal to, or greater than, that of family members by late adolescence (Buhrmester & Furman, 1987; Furman, 1989). Conversely, as friendships grow closer, the intensity and exclusivity of parent-child relationships decrease (Laursen & Bukowski, 1997). In summary, there are age differences with regards to the network members that children report relying upon the most as sources of support. Specifically, preadolescent children report that they depend mostly on their parents, while early and middle adolescents report turning most often to friends (Furman & Buhrmester, 1992). Considering that the contributions of parents and peers to children's adaptation change with age and maturity, some functions may be transferred to friends as the time adolescents spend with their parents declines (Laursen & Bukowski, 1997).

Likewise, social relationship theory recognizes the possible compensatory or protective functions of different relationships when others go awry or are lacking altogether (Laursen & Bukowski, 1997; Vandell, 2000). Relationships within different domains (e.g., family and school) may operate together or compensate for each other (Stocker, 1994). Indeed, since close relationships respond to changes in other relationships, it has been proposed that experiences in one may compensate for those in another. In other words, children whose experiences within one relationship domain are lacking or inadequate may be able to obtain the provisions unavailable in this domain from other relationships (Furman & Buhrmester, 1985; Gauze, Bukowski, Aquan-Assee & Sippola, 1996). Studies investigating the functions of various relations in children's

social networks have found that there is considerable overlap among children's relationships and that most social provisions can be obtained from multiple sources (Furman & Buhrmester, 1985). Functionally, it seems valuable for children to be able to obtain provisions from more than one person in case someone is unavailable or unable to provide it. For instance, it follows that the importance of a particular social experience for a child, such as having a friend, will vary according to a child's experiences in other relationships. Specifically, the effect of the peer system is likely to vary according to differences between children in the provisions they obtain within their family (Bukowski & Sippola, 2005).

The interplay of peer and family influences may be especially salient during early adolescence for at least two reasons. First, as alluded to above, as children enter adolescence, they spend increasingly more time with peers than in previous years (Larson & Richards, 1991). Second, the nature of peer relationships changes during adolescence (Berndt, 1996). For instance, during this period, there is an increase in intimate disclosure among friends (Buhrmester, 1990). In conclusion, it seems plausible that peer relationships in adolescence may provide more opportunities for the mitigation of the effects of negative family experiences than they do in childhood.

#### *Protective Effects of Peer Relationships*

One approach to understanding the effects of peer relationships on adjustment is to examine whether they moderate the association between risk factors and adjustment (Bukowski & Adams, 2005). Indeed, protection figures among the numerous functions that have been ascribed to friendship (Bukowski, 2001). A central proposal of Sullivan's (1953) theory of interpersonal relationships was that positive experiences with peers,

especially the experiences of a close friendship or “chumship” in early adolescence, could be so powerful as to enable adolescents to overcome the “warps” that may have resulted from social experiences within the family. Recently, researchers have begun to investigate the possible protective functions of friendships and whether, as Sullivan believed, the experience of friendship could buffer children from stresses in their lives. One such line of research examines whether the developmental significance of friendship is higher for children whose relationships with parents are less than optimal; in other words, whether the link between parenting and child outcomes of a maladaptive nature can be attenuated by a child’s friendship quality or status in the peer group (Rubin et al., 2006). However, only a limited number of studies have addressed this question. The following is a summary of the key studies that have investigated whether friendship – and peer relationships more broadly – can protect children from the risks associated with negative family experiences.

In a longitudinal study of 138 fourth-and fifth-graders, Gauze and colleagues (1996) found that the association between family adaptability and cohesion and children’s perceived social competence and self-worth was stronger for those without a friend or with lower quality friendships. In other words, low cohesion and low adaptability in the family (as rated by parents) was significantly associated with lower levels of perceived social competence and self-worth. However, this association was not significant for early adolescents who had a high quality or a reciprocated best friendship. More specifically, Gauze and colleagues observed stronger moderating effects for the friendship quality measure than for the friendship reciprocity measure. They concluded that the significance of having a friend or of being in a high-quality friendship depends

on one's experiences within the family. Therefore, friendships may be critically important for the adjustment of children from less optimal family environments.

In a recent study, Rubin and colleagues (2004) examined the interactive effects of parent-child and friendship relationships in order to determine whether friendship quality would serve as a moderator to protect young adolescents with poor parent-child relationships from negative outcomes. They found that parental support (from mother and father) and friendship quality made both independent and interactive contributions in the prediction of fifth graders' social and emotional adjustment. Among the specific effects uncovered, the authors found that low maternal support was associated with lower perceived social competence among boys who reported low-quality friendships. Also, high friendship quality buffered the effects of low maternal support on girls' internalizing difficulties. In summary, when early adolescents reported difficulties in their relationships with their mothers, having a strong supportive (i.e., high quality) best friendship buffered them from negative self-perceptions and internalizing problems.

In a longitudinal study that followed early adolescents from fifth until seventh grade, Lansford, Criss, Pettit, Dodge and Bates (2003) found that high levels of friendship quality and peer group affiliation attenuated the association between unilateral parental decision making and adolescent externalizing behaviour, especially when adolescents associated with peers low in antisocial behaviour. Peer group affiliation also served as a protective factor for adolescents exposed to low parental supervision and awareness. In contrast, having low-quality peer relationships and interacting with peers perceived to be highly antisocial amplified the association between unilateral parental

decision-making and adolescent externalizing behaviour. Finally, this study found stronger support for the moderating role of peer groups than of friendships.

A study conducted by Criss, Pettit, Bates, Dodge and Lapp (2002) using a younger sample yielded similar results. They examined family adversity, positive peer relationships and children's externalizing behaviour and found that peer acceptance moderated the three measures of family adversity, namely ecological disadvantage, violent marital conflict and harsh discipline. In contrast, friendship only moderated one of the measures of family adversity – harsh discipline. To summarize, at low levels of positive peer relations, the association between family adversity and child externalizing behaviour was significant, whereas at high levels of positive peer relationships, this association was no longer significant.

In a three-year longitudinal study of maltreated children and early adolescents, Bolger, Patterson and Kupersmidt (1998) found that, as expected, greater severity and chronicity of maltreatment were associated with greater difficulties in self-esteem and peer relationships (i.e., lower peer acceptance). However, the association between child abuse and subsequent self-esteem was not significant among children with high-quality friendships or with a reciprocated best friend. In fact, for some groups of maltreated children, namely those who experienced chronic maltreatment or who were physically abused, having a good friend was associated with an improvement in self-esteem over time. The authors concluded that both friendship quality and reciprocated friendship moderated the association between maltreatment and self-esteem.

Similarly, Schwartz, Dodge, Pettit and Bates (2000) conducted two longitudinal studies investigating the moderating role of friendship in the pathway between early

harsh home environment and later victimization in the peer group. In both studies, living in an early harsh, punitive and hostile family environment was associated with higher levels of subsequent peer victimization for children who had a low number of friendships in elementary school. However, this association was not significant for children with an extensive friendship network (i.e., numerous friendships). In other words, the presence of an extensive friendship network moderated the association between harsh home environment and peer group victimization both in younger and older elementary school-aged children and this, even when controlling for the effect of peer group acceptance.

Finally, Laible, Carlo and Raffaelli (2000) conducted a study investigating the impact of parent and peer attachment on levels of depression and anxiety in a sample of middle adolescents (mean age of 16 years). As expected, adolescents with high levels of parent and peer attachment were best adjusted, whereas those with low levels of parental and peer attachment were the least well-adjusted. The main finding of this study was that adolescents who reported high peer attachment but low parent attachment were better adjusted than those who reported high parent attachment but low peer attachment.

However, not all studies in this area provide evidence for the protective effects of peer relationships. For instance, van Aken and Asendorpf (1997) examined social support and compensation across various relationships in early adolescents' social networks. As expected, they found that children receiving low support from their mother, their father or their classmates reported lower general self-worth. More importantly, they found that low support by one parent could only be compensated for by a supportive relationship with the other parent or, in other words, that it could not be compensated for by classmates. However, one should note that this study measured social support from classmates with

whom the child interacted with on a regular basis, but who were not necessarily friends; the authors did not identify whether the classmates were considered friends by the child in question.

The results by van Aken and Asendorpf (1997) contradict those obtained in an earlier study (Wehner & Furman, 1989) which investigated patterns of significant relationships in children's social networks and the impact of these relations on adjustment. In this study, adolescents were asked to rate their relationships with several individuals, including parents and friends. The authors found that the presence of two or more unsatisfying relationships, regardless of type (parent or best friend), was associated with poor self-reported adjustment. On the other hand, they found that children who benefited from two satisfying relationships showed relatively better self-reported adjustment, especially if one of the two relationships was with a best friend.

Overall, these studies provide evidence that friendships and the broader peer group can offset the risk implications of problematic family environments. To summarize, researchers have found that peer relationships moderate effects of family experiences on various aspects of children's adjustment such as social competence (Gauze et al., 1996; Rubin et al., 2004), self-esteem (Bolger et al., 1998; Gauze et al., 1996; Rubin et al., 2004), internalizing difficulties (Rubin et al., 2004), externalizing difficulties (Criss et al., 2002; Lansford et al., 2003), peer victimization (Schwartz et al., 2000) and depression and anxiety (Laible et al., 2000).

Interestingly, however, despite the widely accepted distinction between various aspects of peer relationships, several of these studies only investigated the moderating role of friendship (Bolger et al., 1998; Gauze et al., 1996; Rubin et al., 2004). The few

studies reviewed above that examined both friendships and broader peer group relations found stronger support for the moderating role of peer groups than friendships (Criss et al., 2002; Lansford et al., 2003). The limited number of such comprehensive studies suggests that the current literature on the interplay between the family and peer contexts has not yet established which specific aspects of positive peer relations are more developmentally significant for children with non-optimal parental relations. Furthermore, the studies reviewed examined a range of different indices of child adjustment, making it difficult to draw general conclusions regarding which child outcomes are most affected by the moderating role of positive peer relations. For instance, it is not yet known how friendship and peer acceptance differentially moderate children's psychosocial adjustment. In sum, there is a need for further research examining how relationships with parents and peers interact to predict the well-being of early adolescents.

The current study was designed to address the above questions. Specifically, we investigated the association between early adolescents' adjustment and their relationships with their parents, best friends and classmates. The independent and interactive contributions of parent and peer relationships to adjustment were examined.

#### *The Present Study: Overview of Hypotheses*

The objective of the current study was to investigate whether positive peer relations could protect children from the detrimental effects of non-optimal family experiences, particularly within the parent-child domain. This study investigated whether the developmental significance of positive peer relations would be greater for early adolescents (10 to 12 years of age) whose parental relationships were high in negativity.



Specifically, we examined whether the link between negative parent-child relationships and early adolescents' self-perceived adjustment would be moderated by two aspects of positive peer relationships; namely, friendship quality (i.e., friendship support) and peer group acceptance. We chose to assess these two dimensions of peer relationships because of the theoretical and empirical distinction that has been made in the literature between relationships with individual peers (i.e., dyadic friendships) and the overall peer group (i.e., peer acceptance) (Ladd, 1999; Parker & Asher, 1993). Friendship quality and peer group acceptance were each evaluated as a potential moderator of the effects of negativity in the parent-child relationship. A moderator variable is one that specifies the conditions under which a given effect occurs, as well as the conditions under which the direction or strength of an effect vary (Baron & Kenny, 1986). A compensatory model would suggest that supportive relationships with peers can compensate for problematic or less supportive relationships with other partners, for instance parents (Stocker, 1994). In summary, this study aimed to assess whether experiences with peers would be more important for the adjustment of early adolescents whose parental relations were high in negativity than for children who had healthy positive relationships with their parents. The current study addressed four specific hypotheses.

*Hypothesis 1: Main effect of parents.* First, we expected that, in a sample of early adolescents, negativity in the parent-child relationship would be inversely associated with perceived social competence and self-worth.

*Hypothesis 2: Main effect of peers.* We also predicted that positive peer relations (friendship support and peer group acceptance) would be associated with higher levels of perceived social competence and self-worth.

*Hypothesis 3: Interaction between parents and peers.* However, we hypothesized that parent and peer measures would interact to predict social and emotional adjustment during early adolescence. Indeed, while we expected the association between parental negativity and self-perceptions to be significant among early adolescents with poor-quality friendships or who were less accepted by their peers, we expected this association to be attenuated for adolescents who had high-quality friendships or who were highly accepted by their peers.

*Hypothesis 4: Moderating role of peer acceptance versus friendship.* Based on previous findings (Criss et al., 2002; Lansford et al., 2003), there is reason to expect that peer group acceptance would play a stronger moderating role than friendship. However, one should note that both Criss and colleagues (2002) and Lansford and colleagues (2003) investigated the moderating role of peer relations on children's externalizing behaviours, not on perceived social competence and general self-worth. It is quite possible that the strength of the protective effects provided by peer groups versus friends varies for different indices of adjustment.

On the other hand, theorists such as Sullivan (1953) would support the claim that friendships have a greater potential to protect children from deficiencies within their families. In other words, there appear to be two competing hypotheses regarding the moderating role of friendship relative to the peer group. For this reason, we decided to examine this question more closely.

*Gender.* Finally, a factor that may potentially impact the relationship between the variables of interest in this study is gender (Bukowski & Saldarriaga, 2007; Maccoby, 1998). For instance, females typically report greater closeness and intimacy in their

friendships and in their relationships with their mother than their male counterparts (Furman & Buhrmester, 1985; 1992). Furthermore, Parker and Asher (1993) also found that friendships provisions varied for boys and girls. For this reason, we assessed main and interactive effects of gender; however, it was not within the scope of this study to formulate specific hypotheses about potential gender effects.

## Method

### *Participants*

The sample consisted of 430 early adolescents (222 male, 208 female) in fifth and sixth grade. Participants were taken from 19 classes in three English-speaking public elementary schools of the greater Montreal region. Data collection took place in two sessions during the 2005-2006 school year, including once in late January (Time 1) and in early February (Time 2).

Although the total sample consisted of 430 participants, analyses were conducted on a subsample of 374 participants (87%) who had complete data on all of the study variables. In other words, participants with missing data were not included in the analyses (i.e., deletion was listwise). This subsample consisted of 199 boys and 175 girls in fifth (164) and sixth (210) grade. The mean age for the sample was almost 11 years with a range between 10 and 13 years old ( $M = 10.90$ ,  $SD = .72$ ).

Recruitment for the study took place as follows: after permission from the relevant school board and school principals was obtained, the research team met with the potential participants in December to give a ten-minute information session intended to brief the children about the nature and implications of the study. At that time, letters of information and parental consent forms were distributed and sent home (see Appendix A and B). Participants completed a questionnaire during a first session lasting one hour and completed another questionnaire less than a week later during another hour-long session. All participating children signed a consent form on the first day of data collection (see Appendix C) and were free to stop at any time. Of the potential pool of participants available in the Montreal sample, 88% (430/491) of the children participated at Time 1

while 86% (424/491) of the children participated at Time 2. Each child received an honorarium of 10\$ and a t-shirt for their participation.

### *Procedure*

Data for this study were taken from a larger project examining peer relationships and well-being. Only measures relevant to the present investigation will be described below. Participants were assessed using a set of questionnaires designed to be completed in two one-hour sessions during class time. It is worth noting that, in the context of the same data collection, parents and homeroom teachers were also asked to take part by filling out questionnaires intended to complement the data collected from participating children.

The data collection sessions in the classrooms were led by graduate students with the help of undergraduate students and research assistants all affiliated with the laboratory running the research project. Participating students were administered the questionnaires in their homerooms using a group administration procedure. The participants completed paper and pencil measures designed to assess the following: (a) sociometric nomination (peer acceptance), (b) characteristics of the child and (c) qualities of the child's relationship with significant members of his/her social network.

### *Measures*

*Sociometric nomination.* As shown in Appendix D, this questionnaire consisted of a list of every participating member of the class, organized into two columns, with girls on one side and boys on the other. The children were asked to identify their same-sex best friends by writing a number in the box beside the name of each child they considered a friend (1 = best friend, 2 = second best friend, 3 = third best friend, 4 = friend).

Children were asked to write only one 1, one 2 and one 3; however, they could write as many 4s as they wished (as long as they considered that person as a friend). The participants were then asked to do the same for other-sex friends.

Data from the sociometric nomination procedure was used to create a measure of peer acceptance. This technique is considered to be an ideal way of measuring peer acceptance (Cillessen, in press). In this study, the measure of same-sex peer acceptance referred to the total number of times a child was nominated as a friend (i.e., given a rating of 1, 2, 3 or 4) by his/her same-sex peers. Children in this sample nominated between 0 and 13 children as their same-sex best friends. On average, the participants nominated six same-sex best friends ( $M = 6.07$ ,  $SD = 2.38$ ). Finally, the sociometric nomination variable (i.e., peer acceptance) was standardized within sex and class.

*Perceived competence scale for children.* Children completed a revised version of the Perceived Competence Scale for Children (Harter, 1982) assessing their self-perceptions of their social competence, school performance, physical abilities and sense of general self-worth (see Appendix E). Ratings were done using a standard five-point Likert scale ("1 = Really disagree" to "5 = Really agree"). The two subscales that were used in this study were the perceived social competence and general self-worth subscales, each of which consisted of nine items. Both subscales were found to be reliable based on a calculation of unstandardized Cronbach's alphas; the internal consistencies of the social competence and general self-worth subscales were of .80 and .78, respectively. An illustrative social competence item reads: "I am popular with others my age" and an illustrative general self-worth item is: "I am happy with who I am". A number of relevant past studies have used these two subscales as an index of psychosocial adjustment

(Bolger et al., 1998; Gauze et al., 1996; Rubin et al., 2004; van Aken & Asendorpf, 1997).

*Network of relationships inventory.* As can be seen in Appendix F, children's perceptions of the characteristics of their relationships with their mother, father and school-based best friend were assessed using the Network of Relationships Inventory (NRI) (Furman & Buhrmester, 1985). If participants knew more than one person in a category (e.g., biological mother and step-mother or several best friends), they were instructed to rate the relationship with the one which was most important to them. The NRI has been used with second grade children through to college-aged students (Buhrmester & Furman, 1987; Furman & Buhrmester, 1992). The NRI was developed based on Weiss' (1974) theory of social provisions. This tool makes it possible to systematically compare the similarities and differences in relationships with each network member, thereby providing information about the perceived contribution that each relationship makes to a child's social life.

The adapted version of the NRI used in this study consisted of 36 questions assessing the following 12 relationship qualities: support, intimacy, companionship, nurturance (from person to child), affection (from person to child), affection (from child to person), reliable alliance, satisfaction, conflict, antagonism, criticism and punishment. Each relationship quality was assessed using three items. Responses to the three items assessing each of the 12 relationship qualities were averaged for each type of relationship (mother, father, best friend) yielding 36 scale scores. Some of the scales were modified from the original version of the NRI because of the directionality of the items. In this study, we were particularly interested in the relationship provisions that a child received

from his/her mother, father or best friend. For this reason, we retained the content of some items while reversing the direction. To maximize clarity, we have identified the directionality (person to child or child to person) for the scales that were revised. The other scales were not substantially modified and always refer to provisions provided by the person to the child or to characteristics of the relationship.

An illustrative positive item (from the intimacy subscale) reads: "How much do you share your secrets and private feelings with this person?" An illustrative negative item (from the conflict subscale) reads: "How often do you and this person get upset or mad at each other?" The participants rated the qualities of their relationships using three standard five-point Likert scales ("1 = Almost never" to "5 = Almost always", "1 = Little" to "5 = A lot" and "1 = Not at all" to "5 = Extremely") depending on the item.

The internal consistencies of the 36 scale scores of the NRI ranged from .61 to .91 (excluding Friend Punishment) with a mean alpha of .76, which resembles previous findings (Furman & Buhrmester, 1985, 1992). The reliability of each specific scale can be found in Table 9 (see Appendix G). One should note that the poor reliability of the Friend Punishment scale is due to the fact that the content of these three items make little sense when referring to the relationship between a child and his/her best friend; indeed, punishment applies much more to parent-child relationships.

Generally, two dimensions are derived from the NRI: a support factor (also known as the social support or support provisions factor) consisting of an average of all of the positive subscales and a negativity (or negative interactions) factor consisting of an average of all the negative subscales (Furman, 1996). Upon close review of each scale, we decided that the satisfaction scale differed from the other scales in that it is more of an



overall evaluation of the relationship. For this reason, in this study, satisfaction was not included as part of the support factor. Therefore, the support factor consists of seven positive scales; it is an aggregate of the support, intimacy, companionship, nurturance (from person to child), affection (from person to child), affection (from child to person) and reliable alliance scales. As for the negative interaction factor, it consists of four negative scales; conflict, antagonism, criticism and punishment. The six NRI factor scores were reliable (see Table 9, Appendix G). The present study focuses on three of the six NRI factors; namely, maternal negativity ( $\alpha = .85$ ), paternal negativity ( $\alpha = .83$ ) and friendship support ( $\alpha = .90$ ).

#### *Data Analyses*

Descriptive statistics (mean, range, standard deviation) were initially calculated for all study variables. Next, correlations were computed to assess the associations between the parent measures, peer measures and child outcomes. Before conducting regression analyses, all of the variables were standardized. In order to address the various hypotheses of this study, a series of hierarchical multiple regression analyses were conducted. The regressions assessed possible interactions between parent and peer measures in their association with children's perceived levels of social competence and self-worth. Specifically, peer relationship measures (friendship support and peer group acceptance) were tested separately as potential moderators of the association between parental negativity (maternal or paternal) and self-perceptions of adjustment (social competence or general self-worth). To clarify significant interactions obtained between the peer and the parent measures, the plotting procedure described by Aiken and West (1996) was used. Regression slopes depicting the associations between the predictor (the

parent measure) and the child outcome were examined at low (-1 SD) and high (+1 SD) levels of the moderator (the peer measure). In other words, two-way interactions were clarified to test the hypothesis that the developmental significance of positive peer relationships would be greater for early adolescents whose parental relations were high in negative interactions. The last set of regressions included gender as an additional predictor in order to examine possible interactive effects of gender in its association with early adolescents' psychosocial adjustment.

## Results

### *Descriptives*

Means, standard deviations and ranges for the variables that were used in this study appear in Table 1.

### *Bivariate Associations between Variables*

The social competence and general self-worth Harter subscales were found to be positively correlated ( $r = .49, p = .000$ ) (see Table 2). The correlations between the NRI factors for mother, father and friend are also reported in Table 2. One should note that the correlations between the friend and parent (mother and father) factors were generally quite low (range = .02 to .34, mean  $r = .14$ ), suggesting that these are relatively independent relationship systems. As for the correlation between the mother and father negativity factors, it was of .63 – less than a 40% overlap. Given this low level of covariance between mother and father negativity, we decided to keep separate mother and father factors instead of collapsing them into a single parent factor. In this same table, one can also observe that the social competence and general self-worth measures are positively associated with the support factor (irrespective of relationship type) and inversely associated with the negativity factor (irrespective of relationship type).

Table 1.  
*Descriptive Statistics*

	Minimum	Maximum	Mean	Std. Deviation
<b>NRI factors</b>				
Mother Support Factor	1.57	5.00	4.22	0.59
Mother Negativity Factor	1.00	5.00	2.12	0.75
Father Support Factor	1.00	5.00	4.02	0.66
Father Negativity Factor	1.00	4.83	2.03	0.68
Friend Support Factor	1.33	5.00	3.75	0.82
Friend Negativity Factor	1.00	3.92	1.69	0.57
<b>Sociometric nomination</b>				
Peer Acceptance	0.00	13.00	6.07	2.38
<b>Harter scales</b>				
Social Competence	1.00	5.00	3.63	0.68
General Self-Worth	1.67	5.00	3.64	0.62

*Note.* Affection<sup>1</sup>: from person to child; affection<sup>2</sup>: from child to person.

*N* = 374

Table 2.  
Bivariate Associations between Variables

	Mother Support	Mother Negativity	Father Support	Father Negativity	Friend Support	Friend Negativity	Peer Acceptance <sup>1</sup>	Social Competence	Self- Worth
Mother Support	—	-0.41**	0.61**	-0.17**	0.14**	-0.06	0.13**	0.21**	0.27**
Mother Negativity		—	-0.20**	0.63**	0.02	0.28**	-0.08	-0.16**	-0.28**
Father Support			—	-0.29**	0.16**	-0.07	0.06	0.14**	0.20**
Father Negativity				—	-0.05	0.34**	-0.04	-0.16**	-0.30**
Friend Support					—	-0.23**	0.08	0.17**	0.10
Friend Negativity						—	-0.05	-0.25**	-0.22**
Peer Acceptance <sup>1</sup>							—	0.31**	0.10
Friendship Reciprocity								0.15**	-0.06
Social Competence								—	0.49**
Self-Worth									—

\*  $p < .05$ , \*\*  $p < .01$

Note. <sup>1</sup> The peer acceptance variable is standardized within sex and classroom.

### *Assessment of the Subsample*

Two types of analyses were conducted to examine whether the subsample was representative. First, t-tests were performed to look at the differences between the subsample (consisting of 374 participants) and the 56 participants who were removed due to incomplete data. The t-tests yielded non-significant results. Next, within-sample mean comparisons were calculated to verify that the reduced sample (374 participants) was similar to the complete sample (430 participants) on the study variables. Again, no significant results were found suggesting that the sample on which the analyses were conducted was representative of the total sample.

Next, chi-square analyses were conducted to examine the gender ratio in the total sample (430 participants) and the reduced sample (374 participants). These analyses revealed that there were no significant differences in the number of boys and girls lost from the complete sample to the subsample.

### *Additive and Interactive Effects*

*Friendship support.* A first set of multiple regression analyses was conducted to examine whether the effect of negative parental interactions on children's self-perceptions would vary as a function of friendship support. The predictors were entered in three steps; maternal and paternal negativity were entered on the first step, followed by friendship support on the second step and the two-way interactions between the parent measures and the friendship measure on the third step. Social competence and general self-worth were the outcome variables.

Social competence was found to be related to paternal negativity and friendship support and to an interaction between maternal negativity and friendship support (see

Table 3). As can be seen in Figure 1, the association between maternal negativity and social competence was significant under the condition of low friend support ( $\beta = -.23$ ,  $t = -2.42$ ,  $p < .05$ , effect size (percentage of variance accounted for) = 5.24%); however, it was non-significant under the condition of high friend support.

General self-worth was observed to be associated with maternal and paternal negativity (but not by friendship support) and with a marginally significant ( $p = .067$ ) interaction between paternal negativity and friendship support (see Table 4). As shown in Figure 2, the association between paternal negativity and self-worth was significant under the condition of low friend support ( $\beta = -.30$ ,  $t = -3.66$ ,  $p < .05$ , effect size = 9%), but it was non-significant under the condition of high friend support.

Table 3.  
*Regression Results: Friendship Support and Social Competence*

Variable	$\beta_a$	Semi- partial $r_a^2$	$\beta_b$	$R^2$ change
Step 1				.026**
Maternal negativity	-.04	.00	-.07	
Paternal negativity	-.13*	.01	-.11	
Step 2				.027**
Friendship support	.16**	.03	.17**	
Step 3				.016*
Interaction: Maternal negativity x Friendship support	.14*	.02	.14*	
Interaction: Paternal negativity x Friendship support	-.07	.00	-.07	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$

<sub>a</sub> = when entered, <sub>b</sub> = final equation



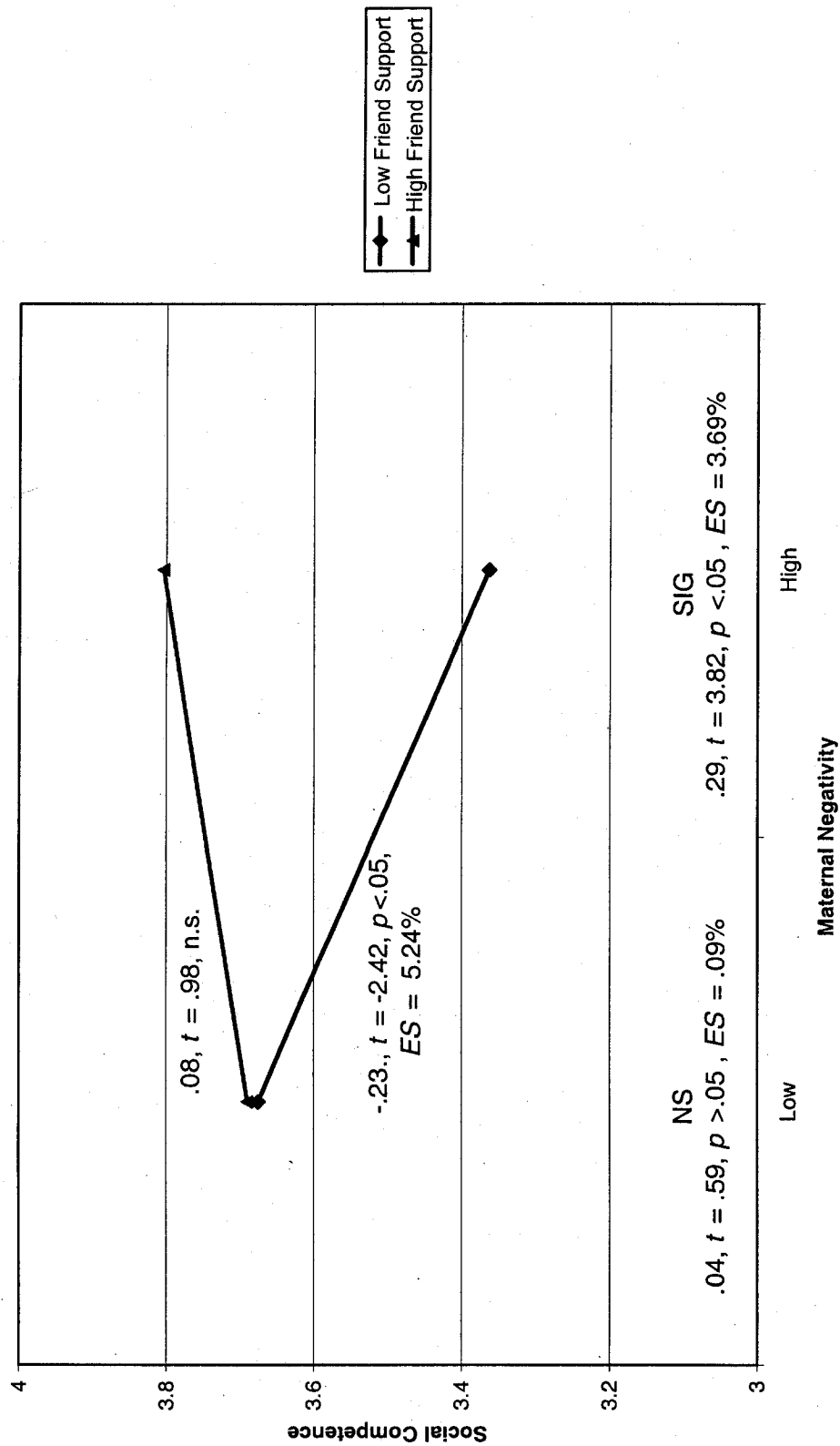


Figure 1. The association between maternal negativity and social competence varies as a function of friendship support.

Table 4.  
*Regression Results: Friendship Support and Self-Worth*

Variable	$\beta_a$	Semi- partial $r^2_a$	$\beta_b$	$R^2$ change
Step 1				.102**
Maternal negativity	-.13*	.01	-.15*	
Paternal negativity	-.22**	.03	-.20**	
Step 2				.008 <sup>t</sup>
Friendship support	.09 <sup>t</sup>	.01	.09 <sup>t</sup>	
Step 3				.021*
Interaction: Maternal negativity x Friendship support	.07	.00	.07	
Interaction: Paternal negativity x Friendship support	.10 <sup>t</sup>	.01	.10 <sup>t</sup>	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$

<sub>a</sub> = when entered, <sub>b</sub> = final equation

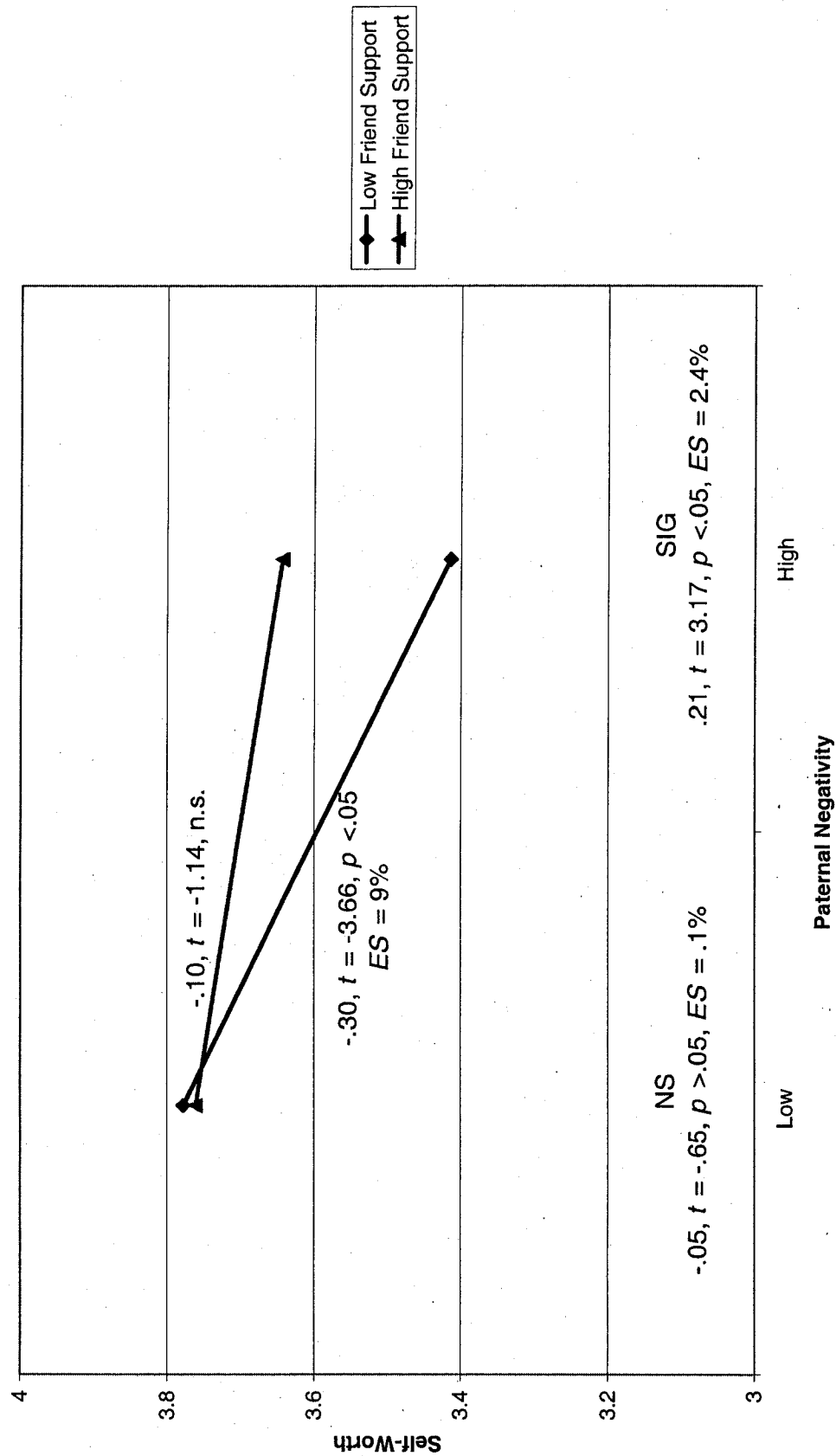


Figure 2. The association between paternal negativity and general self-worth varies as a function of friendship support.

*Peer acceptance.* A second set of multiple regression analyses was conducted in order to assess whether the effect of negative parental relations on children's self-perceptions varied as a function of peer group acceptance. The predictors were entered in three steps; maternal and paternal negativity were entered on the first step, followed by peer acceptance on the second step and two-way interactions between the parent measures and the peer measure on the third step. Again, social competence and general self-worth were the outcome variables.

Social competence was related to a combined effect of maternal and paternal negativity with neither being unique predictors, and to peer group acceptance (see Table 5). Interactions between parent and peer measures were not related to the measure of social competence. General self-worth was observed to be associated with maternal negativity and paternal negativity, but not with peer acceptance (see Table 6). As in the case of social competence, parent and peer measures were not associated with children's self-worth.

Table 5.  
*Regression Results: Peer Acceptance and Social Competence*

Variable	$\beta_a$	Semi- partial $r^2_a$	$\beta_b$	$R^2$ change
Step 1				.030**
Maternal negativity	-.10	.01	-.08	
Paternal negativity	-.10	.01	-.10	
Step 2				.096**
Peer acceptance	.31**	.10	.31**	
Step 3				.006
Interaction: Maternal negativity x Peer acceptance	-.07	.00	-.07	
Interaction: Paternal negativity x Peer acceptance	-.07	.00	-.07	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$

<sub>a</sub> = when entered, <sub>b</sub> = final equation

Table 6.  
*Regression Results: Peer Acceptance and Self-Worth*

Variable	$\beta_a$	Semi- partial $r^2_a$	$\beta_b$	$R^2$ change
Step 1				.102**
Maternal negativity	-.16*	.01	-.15*	
Paternal negativity	-.20**	.02	-.20**	
Step 2				.002
Peer acceptance	.05	.00	.05	
Step 3				.000
Interaction: Maternal negativity x Peer acceptance	-.01	.00	-.01	
Interaction: Paternal negativity x Peer acceptance	.00	.00	.00	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$

<sub>a</sub> = when entered, <sub>b</sub> = final equation

*Friendship support and peer acceptance.* Further multiple regression analyses were conducted to examine the effect of each moderator (friendship support and peer group acceptance) simultaneously; in other words, when controlling for the other. This time, the predictors were entered in four steps; maternal and paternal negativity were entered on the first step, followed by peer acceptance and friendship support on the second step. The two-way interactions between the parent measures and peer acceptance were entered on the third step, whereas two-way interactions between the parent measures and friendship support were entered on the fourth and final step. Peer acceptance was entered in before friendship support in order to control for the effects of peer acceptance which has been shown to be an antecedent to friendship (Bukowksi, Pizzamiglio, Newcomb & Hoza, 1996). Once again, social competence and general self-worth were the outcome variables.

Social competence was associated with paternal negativity, peer acceptance and friendship support (see Table 7), as well as with two-way interactions between peer acceptance and maternal negativity and between friendship support and maternal negativity. The interaction between peer acceptance and maternal negativity was significant when controlling for the effect of friendship support. Here, the association between maternal negativity and social competence was significant under the condition of high peer acceptance ( $\beta = -.23$ ,  $t = -2.23$ ,  $p < .05$ , effect size = 5.29%); however, was non-significant under the condition of low peer acceptance (see Figure 3).

The other significant interaction was between friendship support and maternal negativity. Indeed, the association between maternal negativity and social competence was significant under the condition of low friend support ( $\beta = -.22$ ,  $t = -2.40$ ,  $p < .05$ ,

effect size = 4.84%); but it was non-significant under the condition of high friend support (see Figure 4). Again, this interaction was significant when controlling for the effect of the other moderator, here peer acceptance.



Table 7.

*Regression Results: Peer Acceptance, Friendship Support and Social Competence*

Variable	$\beta_a$	Semi-partial $r^2_a$	$\beta_b$	$R^2$ change
Step 1				.026**
Maternal negativity	-.04	.00	-.08	
Paternal negativity	-.13*	.01	-.09	
Step 2				.112**
Peer acceptance	.29**	.09	.29**	
Friendship support	.15**	.02	.16**	
Step 3				.019*
Interaction: Maternal negativity x Peer acceptance	-.16*	.01	-.16*	
Interaction: Paternal negativity x Peer acceptance	.04	.00	.02	
Step 4				.012 <sup>t</sup>
Interaction: Maternal negativity x Friendship support	.13*	.01	.13*	
Interaction: Paternal negativity x Friendship support	-.05	.00	-.05	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$ <sub>a</sub> = when entered, <sub>b</sub> = final equation

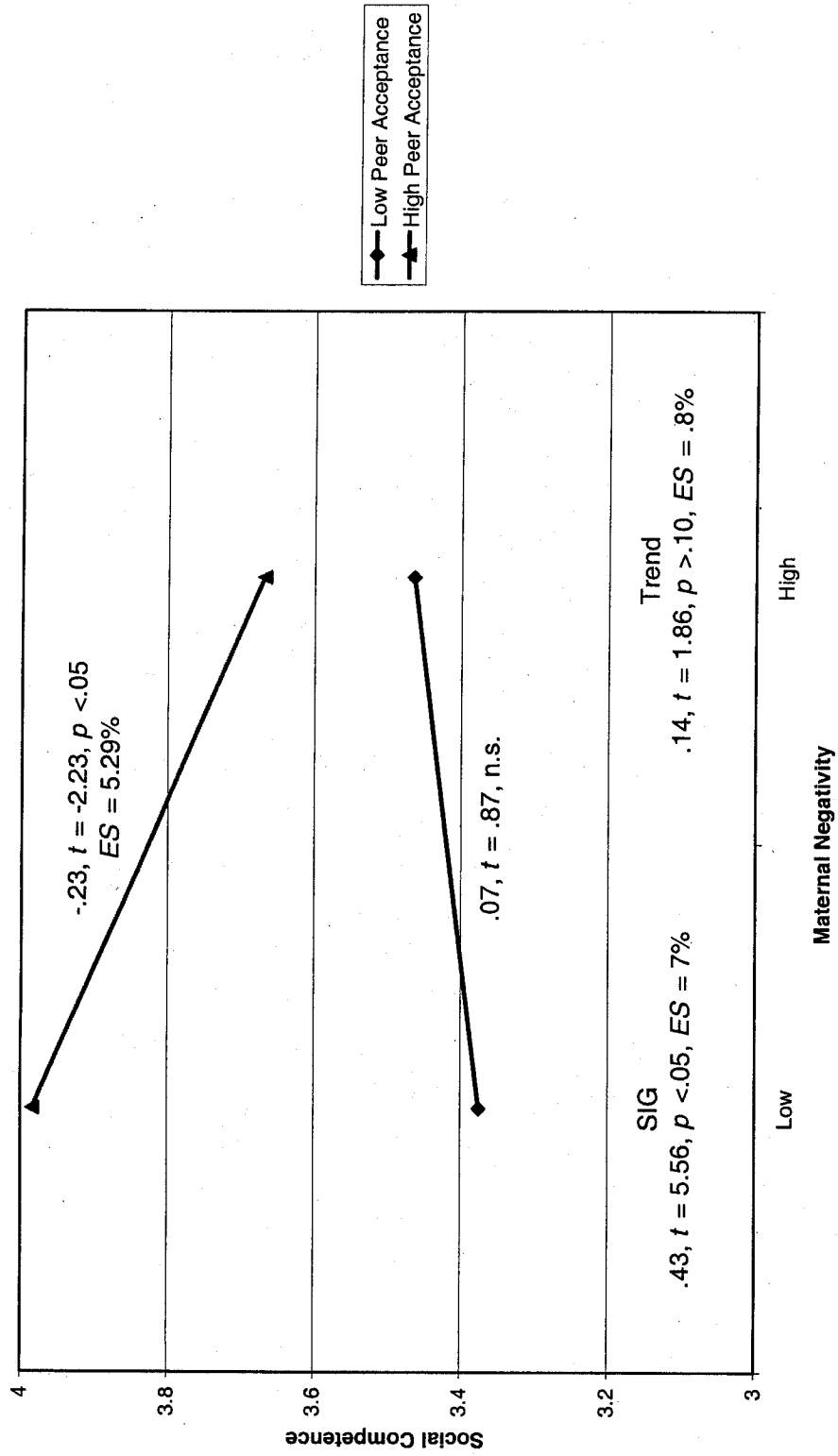


Figure 3. The association between maternal negativity and social competence varies as a function of peer acceptance (controlling for friendship support).

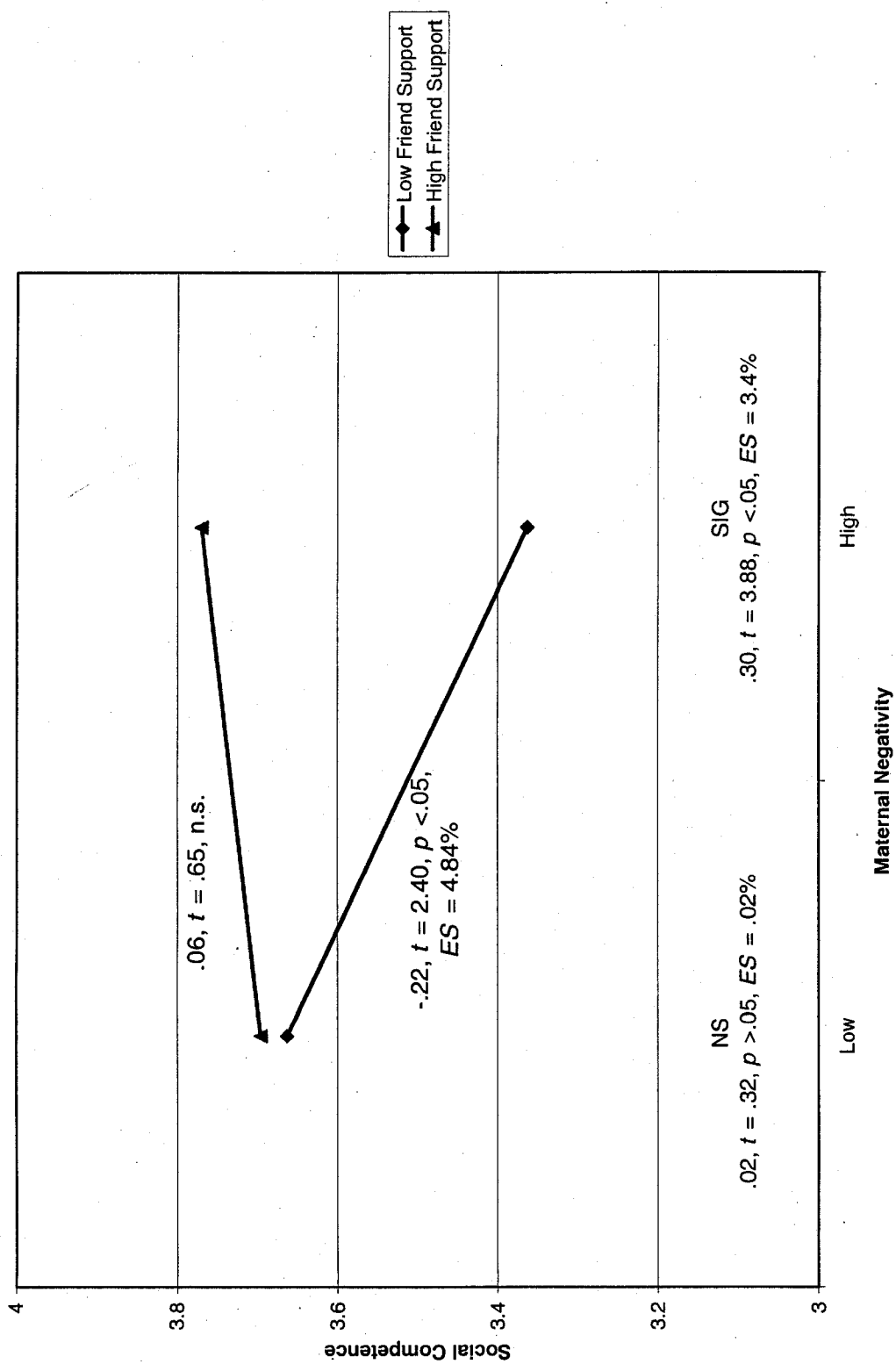


Figure 4. The association between maternal negativity and social competence varies as a function of friendship support (controlling for peer acceptance).

As in the first set of regressions (friendship support alone), general self-worth was associated only with maternal negativity and paternal negativity (see Table 8). A marginally significant interaction ( $p = .052$ ) was found between paternal negativity and friendship support. The association between paternal negativity and self-worth was significant under the condition of low friendship support ( $\beta = -.29$ ,  $t = -3.48$ ,  $p < .05$ ,  $ES = 8.41\%$ ); however, was non-significant under the condition of high friendship support (see Figure 5).

Table 8.

*Regression Results: Peer Acceptance, Friendship Support and Self-Worth*

Variable	$\beta_a$	Semi- partial $r^2_a$	$\beta_b$	$R^2$ change
Step 1				.102**
Maternal negativity	-.13*	.01	-.17*	
Paternal negativity	-.22**	.03	-.19**	
Step 2				.008
Peer acceptance	.03	.00	.02	
Friendship support	.09 <sup>t</sup>	.01	.09 <sup>t</sup>	
Step 3				.002
Interaction: Maternal negativity x Peer acceptance	-.06	.00	-.08	
Interaction: Paternal negativity x Peer acceptance	.03	.00	.03	
Step 4				.022*
Interaction: Maternal negativity x Friendship support	.07	.00	.07	
Interaction: Paternal negativity x Friendship support	.11 <sup>t</sup>	.01	.11 <sup>t</sup>	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$ <sub>a</sub> = when entered, <sub>b</sub> = final equation

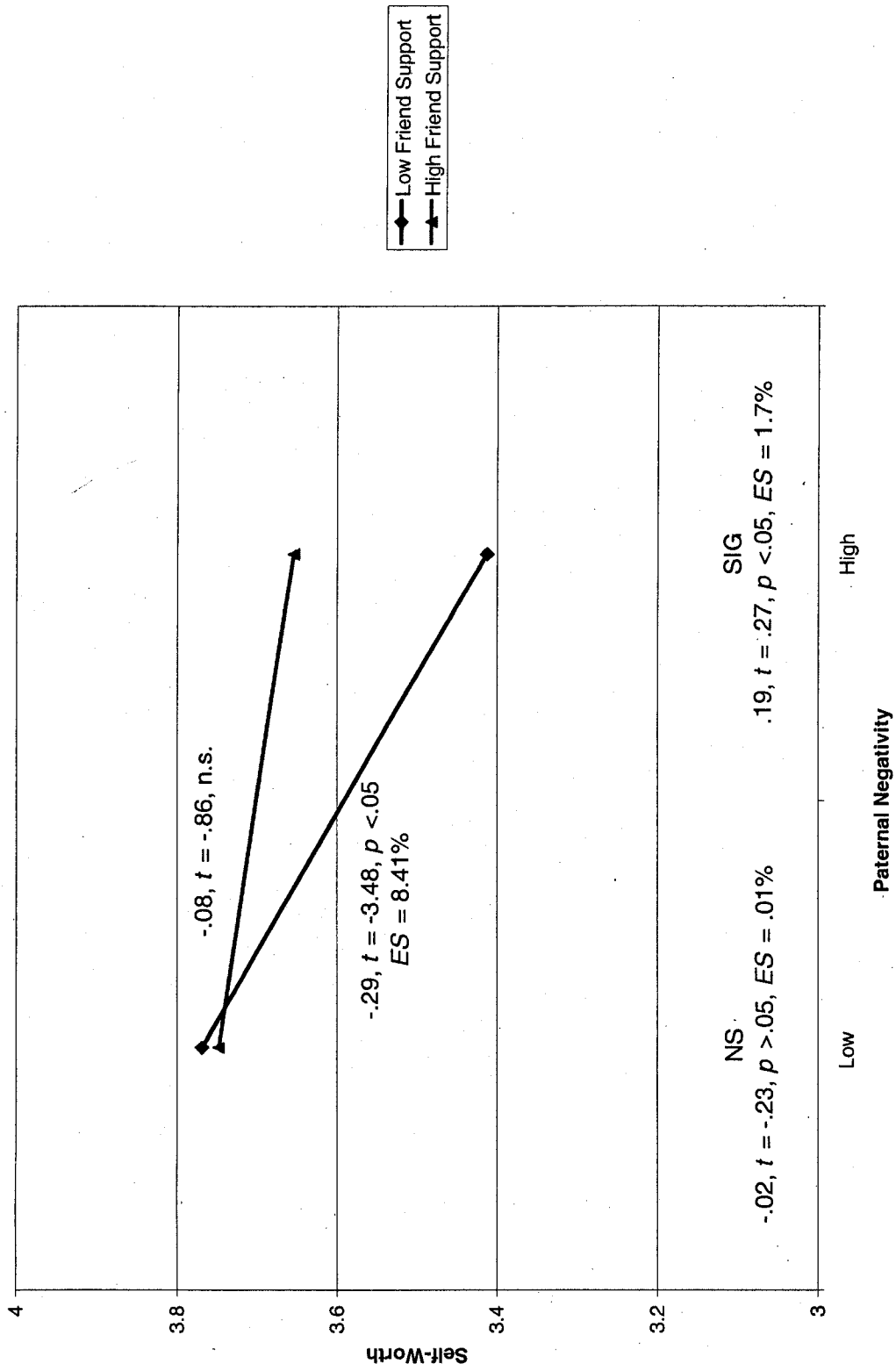


Figure 5. The association between paternal negativity and general self-worth varies as a function of friendship support (controlling for peer acceptance).

*Gender.* A final set of multiple regression analyses was conducted in order to examine possible gender differences in the moderating role of positive peer relationships. In other words, we assessed whether the associations between parent, peer and outcome measures varied as a function of the child's gender. The predictors were entered in four steps; gender, maternal and paternal negativity were entered on the first step, followed by the peer measure on the second step. On the third step, two-way interactions between the parent measures, the peer measure and gender were entered. On the fourth and final step, three-way interactions between the parent measure (mother or father), peer measure (friendship support or peer acceptance) and gender were entered. As in previous analyses, social competence and general self-worth were the outcome variables.

Of four possible main effects and 20 possible interactions, only on only one was observed to be statistically significant, specifically a two-way interaction between gender and maternal negativity (see Appendix I). Furthermore, gender did not qualify any of the interactions between parental negativity and peer variables; in other words, there were no significant three-way interactions. As such, and since gender was not of central concern in this study, gender effects will not be discussed further.

## Discussion

The objective of this study was to examine the possible protective effects of positive peer relationships for early adolescents experiencing negativity in their relationships with their parents. Therefore, the main focus was on potential interactive effects between parent and peer measures. The results obtained generally support the claim that relationships with both parents and peers, especially friends, are significant in that they make independent (i.e., additive) and interactive contributions to children's psychosocial adjustment.

First, correlational analyses showed that the parent and peer systems were relatively independent. This is consistent with research demonstrating associations among different relationships (e.g., mother and friend) and also independence between them (Stocker, 1994). The low to moderate correlations obtained in this study between the parent measures (maternal and paternal negativity) and peer measures (friendship support and peer acceptance) suggest that there are important variations between these relationships, as well as links between them. This finding is important because, as argued by several researchers (Rubin et al., 2004; Stocker, 1994), examining whether relationships can compensate for each other only makes sense if these relationships do not entirely overlap, in other words, if they are somewhat unique. Indeed, when there are variations between characteristics of children's relationships with different partners, it is possible that positive features of one relationship could compensate for negative qualities of another relationship. Although the correlational analyses were informative, it is the regression analyses that made it possible to examine the specific hypotheses of this study,



several of which were confirmed. The following section explains the results obtained for each hypothesis.

*Hypothesis 1: Main effect of parents.* The results obtained from the various regression analyses provide evidence that, as expected, negativity in the relationship between children and their parents was inversely associated with children's perceived social competence and self-worth. Specifically, the father-child relationship was found to be associated with social competence, whereas both the mother-child and father-child relationships were associated with self-worth. Overall, it appears that parental negativity plays a more important role in children's feelings of self-worth than of perceived social competence. This is consistent with previous research showing that the family context influences children's self-perceptions of self-esteem (McCauley Ohannessian, Lerner, Lerner & von Eye, 1998). Taken as a whole, these results help clarify the relationship between parental provisions and child outcomes.

*Hypothesis 2: Main effect of peers.* The findings of this study also confirm the association between positive peer relations (friendship support and peer group acceptance) and perceived social competence. Indeed, friendship quality and peer acceptance made independent contributions to social competence. This is consistent with previous empirical findings, such as those of Parker and Asher (1993) who found that these same two specific measures made separate contributions to the association with loneliness. In this study, the association between each peer measure (friendship support and peer acceptance) and social competence was relatively strong in that they jointly accounted for a moderate amount of the variability (about 11%). Likewise, Newcomb and Bagwell (1996) reviewed the literature and showed that individuals who have friends

tend to be more socially competent. The results of the current study point in the same direction; however, they add to the well-established literature (Rubin, Bukowski & Parker, 2006) by showing that, beyond the presence or absence of friends, friendship quality contributes to social competence.

As for self-worth, it appears that peer relations do not make independent contributions to this aspect of psychosocial adjustment once the effect of parents is accounted for. This is consistent with earlier results reported in a meta-analysis which failed to find a unique contribution of friendship to self-worth (Newcomb & Bagwell, 1995). However, it is inconsistent with findings by Gauze and colleagues (1996) who had found an association between quality of friendship and feelings of self-worth in early adolescents. Therefore, although it appears that peer relations play an important role in social competence, their impact on self-worth during early adolescence is less clear. In sum, the findings obtained regarding the independent contributions of parents and peers to children's perceived social competence and self-worth (Hypotheses 1 and 2) are consistent with the proposal that relations with parents and peers serve equally important but distinct functions in children's social development (Youniss, 1980).

*Hypothesis 3: Interaction between parents and peers.* Insofar as the main purpose of this study was to examine interactive effects, the bulk of the discussion emphasizes this aspect of the findings. Indeed, the central focus of this project was to examine the main effects of parent-child relationships on psychosocial adjustment under different peer-related conditions (e.g., under high friendship support versus low friendship support). Several interactive effects were uncovered in this study. First, the association between maternal negativity and social competence was moderated by friendship support.

Even when controlling for the effect of peer acceptance, the association between maternal negativity and social competence was significant for early adolescents who reported receiving little support from their best friend and non-significant for those reporting high levels of friendship support. In this way, friendship was found to moderate the detrimental effects of negativity in parent-child relationships.

On the other hand, peer acceptance was observed to moderate the association between maternal negativity and social competence, although only when the effects of friendship support had been accounted for. The interactive effect of peer acceptance revealed a much different picture than what was seen with friendship. Indeed, peer acceptance did not compensate for, or protect against, the detrimental effect of maternal negativity. Rather, maternal negativity did not affect perceived social competence under the condition of low peer acceptance. Although children with high peer acceptance had more positive views of their social competence than their peers, they appeared to be more impacted by the detrimental effect of negativity in their relationship with their mother. One might speculate that peer acceptance, though beneficial, may be a stressful experience in that it requires children to live up to certain expectations. Therefore, it is possible that the experience of negative interactions with the mother at home can detract from the positive benefits of being accepted by peers.

Next, when examining the predictors of children's self-worth, an interactive effect between friendship support and paternal negativity was uncovered, although it was only a trend. The inverse association between paternal negativity and self-worth was significant for children with a less supportive best friendship, but not for those with a highly supportive best friend. This pattern remained the same when controlling for the effect of

peer acceptance. However, the interaction between friendship support and paternal negativity in the association with self-worth should be interpreted with caution as this result was only marginally significant and contradicts previous findings reported by Rubin and colleagues (2004).

It is helpful to compare the interactive effects uncovered in the present study with those obtained by Gauze and colleagues (1996) who found that the association between family characteristics and children's perceived social competence and self-worth was stronger for children with lower quality friendships. As in the present case, the association between the family measure and social competence was not significant for early adolescents who had a high quality best friendship. However, our results differ to the extent that Gauze and colleagues examined a global family measure, whereas we looked specifically at the child's relationship with mother and father, as well as the provisions obtained from them. We also found a more clear and consistent moderating effect of friendship on social competence than on global self-worth.

*Hypothesis 4: Moderating role of peer acceptance versus friendship.* Some studies have found that peer group acceptance plays a stronger moderating role than friendship (Criss et al., 2002; Lansford et al., 2003). This finding was not replicated in the present research as we found a stronger and more consistent moderating role for friendship quality than peer acceptance. Again, it is important to keep in mind that those studies mentioned above investigated the moderating role of peer relationships on externalizing behaviours, not on feelings of social competence and self-worth, as was the case in the current study. In summary, it appears that friendship support moderates the effect of negativity in children's relationships with their mothers – and, to a lesser extent,

fathers – on adjustment, while the acceptance of peers does not. In other words, the results obtained suggest that, among the measures of positive peer relations examined, it is friendship quality that can protect early adolescents from the detrimental effects of maternal and paternal negativity, providing further evidence for the protective role of friendships. This finding is consistent, by and large, with Sullivan's (1953) model of interpersonal relationships. In contrast, although peer acceptance plays an important role in social competence, this aspect of peer relationships does not seem to provide a protective function. In sum, there is clearly a need for research to further investigate the relative importance of peer group phenomena and dyadic relationships as moderators.

*Other results.* Since correlations showed that mother and father measures were only moderately associated, we examined the effects of mother and father negativity separately as opposed to combining them into a single parent measure. It is clear that both maternal and paternal negativity were related to children's feelings of self-worth. Also, friendship support consistently interacted with maternal negativity in the association with social competence. On the other hand, there was an interaction between friendship quality and paternal negativity in the association with self-worth; however, it was consistently weaker. This suggests that friends may be less able to compensate for negativity between a child and his/her father than with his/her mother.

As mentioned in the introduction of this paper, we did not formulate specific hypotheses with regards to gender. Nevertheless, we examined whether the hypothesized protective role of positive peer relationships would vary for girls and boys. Our results (presented in Appendix J) indicate that the moderating role of peer relationships does not

vary according to gender. In other words, gender did not qualify the moderating effect of friendship.

### *Implications*

This study extends current research on the interplay between the parent and peer contexts by examining both dyadic and group-level peer relationships. Indeed, to our knowledge, this is the first study that investigates the moderating role of both friendship and peer acceptance on social competence and general self-worth. Another novelty of this study is the use of the Network of Relationships Inventory to assess aspects of both parent-child and friendship relationship quality. Since the NRI was first developed, studies using it as a measurement tool have been largely descriptive in nature focusing mainly on the characteristics of various relationships in a person's social network. In contrast, in this study, measures from the NRI were used as predictor variables (maternal and paternal negativity) and as a moderating variable (friendship support). The NRI was used because we believe that provisions are an important feature of relationship processes.

Next, although some researchers have relied on parents to provide information about the parent-child relationship (Gauze et al., 1996; Lansford et al., 2005), others have used the NRI to obtain children's perceptions of their relationships with their mother and father (Rubin et al., 2004; van Aken & Asendorpf, 1997). In this study, we chose to use the NRI because it is a measurement tool that can reveal the perspective of an insider in a relationship. It has been proposed that self-report measures, despite their limitations, are central to the study of interpersonal relationships (Furman, 1996). Indeed, children's perceptions can provide unique and valuable information about their impressions and

evaluations of their relationship experiences (Furman & Buhrmester, 1985, 1992). In fact, it has been suggested that children may be the final authorities when it comes to learning about what their relationships are like (Bukowski, Newcomb & Hartup, 1996).

A major strength of this study is that we examined the role of father-child relationships. Until recently, most of the theoretical work on parent-child relationships has focused on the significance of mother-child relationships and has ignored the role of fathers (Stocker, 1994). Indeed, in the past, socialization agents within the family were narrowly defined as primarily mothers. There is a growing consensus that, despite the fact that fathers are quantitatively less involved than mothers, they have an important impact on their offspring's development (Lamb & Tamis-LeMonda, 2004; Parke, 2004b, Rubin et al., 2004). In addition, although there is an overlap between mothers and fathers, recent evidence suggests that fathers make a unique and independent contribution to their children's social development (Parke & Buriel, 2006). Our research supports this finding since we found that the quality of the father-child relationship was uniquely associated with children's perceived social competence and feelings of self-worth. In summary, it appears that fathers may play a larger role in the socialization of their children than earlier theories suggested.

Furthermore, this project responds to the need for comprehensive studies in which interactive effects are emphasized and that also encompass a wide range of variables, such as measures of the child, friendship measures and parent-child measures. Moreover, the interactions uncovered in this study are noteworthy considering that moderator effects are notoriously difficult to detect in non-experimental field studies. Moderator effects are

so difficult to detect that even those explaining as little as 1% of the total variance should be considered important (Holmbeck, 1997; McClelland & Judd, 1993).

### *Limitations*

There are various methodological limitations imposed by the nature of the existing data set. First of all, as is apparent from the examination of the means of the parenting quality scales (see Table 10, Appendix H), the majority of the early adolescents experienced positive, not negative, parenting. Therefore, “negative parenting” in this sample should be interpreted as negative relative to the parenting experienced by other participants in the sample. In other words, it is unclear to what extent the relationships between the children in this sample and their parents are actually maladaptive, as opposed to less than optimal. Future research using clinical samples of abused or neglected children could contribute to our understanding of the potential for various aspects of positive peer relationships to buffer adolescents from more extreme forms of negative parenting. Alternatively, it would be possible to retain a community sample while increasing its diversity by over-sampling children from disadvantaged backgrounds.

Another limitation of this study is that it focused on the parent-child domain; in doing so, sibling relationships were ignored. Not only has the influence of siblings been recognized as important, it is clear that sibling relationships resemble the relationships that children have with their peers (Parke & Buriel, 2006). In addition to parents, siblings play a critical role in the socialization of children. In fact, most children are likely to spend more time in direct interaction with siblings than parents (Dunn, 1993; Larson & Richards, 1994). In future studies examining the interplay of children’s various relationships, the role of siblings should also be taken into account. Indeed, the study of



socialization has moved from a parent-child focus to an emphasis on the entire family as a social system (Parke, 2004b).

Next, a limitation specific to the Network of Relationships Inventory is that, although children were free to nominate a best friend who was not participating in the study, the friend had to be attending the same school. This means that some children in our sample may have provided information about a relationship with a school friend who was not actually their best friend. The fact that participants could not nominate a neighbourhood friend as their best friend somewhat limits the validity of the friendship findings. In addition, future research in this area using the NRI could examine more specific aspects of relationships with parents and friends, as opposed to using broader factors. This would allow us to better understand the role of specific relationship provisions in the prediction and moderation of child outcomes.

Also, as mentioned previously, the results of this study were based solely on children's self-reports about their peers, themselves and their relationships. When using self-report data, it is always possible that social desirability response biases skew individuals' reports. Furthermore, the reliance on children's self-report measures leads to a problem of shared method variance. This problem could be avoided by also using parent and teacher measures. Therefore, in addition to what children themselves tell us about their relationships, future research on the interplay between parents and peers could be based on parent and teacher report. Any problem that could derive from shared variance due to exclusive use of the child as the informant would appear at the level of the main effects. As a result, this limitation should not have affected any of the interactions we observed in the regression analyses.

Another limitation of the current study is that the type of relationship examined (i.e., mother-child, father-child, friend-child) was “confounded” with relationship feature (i.e., support versus negativity). In other words, the present study investigated different provisions for different relationships (friendship support, maternal and paternal negativity). Indeed, beyond the protective effect of friendship support for children experiencing high parental negativity, it would be interesting to investigate, for instance, whether friendship support can buffer children against low parental support.

Finally, there is the problem of directionality in that, without a longitudinal design, it is not possible to determine whether relationships contribute to adjustment and competence or vice versa. Indeed, it has been proposed that adjustment may influence the quality of children’s relationships (Stocker, 1994). Likewise, it is possible that, for instance, children with high self-esteem are better able to develop and maintain relationships; with regards to peer relationships, they may make and keep friends more easily and be better liked than those who are less competent. In contrast, children with adjustment difficulties who are less competent and self-confident may lack the skills necessary to develop close relationships or may be more prone to negative interactions with their others, such as their parents. In sum, we cannot determine from our data whether a more complex bi-directional relationship exists between these variables. Only longitudinal research that controls for prior adjustment can address this issue by disentangling the direction of effects.

## *Conclusions*

The results of this study may shed light on how children's personal relationships interact to affect their adjustment and, as such, may lead to a better understanding of the mechanisms underlying the compensatory functions of relationships. In addition, learning about the protective functions of peer relationships may help develop intervention programs for children from non-optimal family environments who have poorly developed relations with their peers. To summarize, our findings suggest that the importance of negativity within the parent-child domain depends on the provisions obtained from one's best friendship. In doing so, this research contributes to the effort of better understanding how children's personal relationships affect development.

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**Appendix A**  
**Information Letter**

January 16<sup>th</sup>, 2006

Dear Parent(s),

I am a professor at Concordia University, where I teach and do research on children and adolescents. One of the topics I study is how children's friendships, skills, and behaviors help them cope with daily hassles and stress in their lives. This topic is of interest to many parents, teachers, and health professionals. The purpose of this letter is to tell you about a study my students and I are conducting with fifth- and sixth-graders at your child's school. This study will help us learn more about children and their development.

As part of the study, I will meet with the participating children in their school, and ask them to complete a set of questionnaires about themselves and their friends on two occasions, once in late January/early February, and again in late May. In these questions, the children will be asked to tell us (a) who they typically associate with in school, (b) whether or not the other participating children in the class have particular characteristics, (c) how much they engage in behaviors like helping or leading a group, (d) how well they perform in school and (e) how they feel about themselves. We will also ask the school to provide us with the children's report card grades for the current academic year. All the questionnaires will be completed at the child's desk in school and none of the other children will know how any other child has answered the questions. We ask the children to maintain the privacy of their answers and we make certain that their answers are kept confidential. A copy of this questionnaire is available at the school principal's office.

*As a token of thanks, all participating children will receive a reward of \$10.00 from the research team. In addition, we will be providing lectures to the students about mental health, and about ways to cope with the stressors they encounter in their daily lives.*

We would also like you to complete a questionnaire for us. In it you will find some questions about your family's financial resources, your family environment, your child's behaviour and whether you take part in any "games" of chance such as buying lottery tickets. It should not take you more than 15 minutes to complete this questionnaire and we assure you that all your answers will remain completely confidential. We will send the questionnaire home with your son or daughter and you will return it to us via standard mail in a stamped and addressed envelope that we will provide. *As a token of our appreciation, all families who participate in this part of the project will receive \$20.00.* Although we hope that as many families as possible will participate in this part of the project, children may still participate in the classroom part of the project even if their parents choose not to complete the family questionnaire. A copy of the questionnaire for families can be consulted at the school principal's office as well.

People who do research with children or adults are required to describe the risks and benefits related to participating in their studies. We assure you that this study poses no risks, other than the risks children encounter in their day-to-day lives. It is not a treatment

**Appendix B**  
**Parental Consent Form**

# HEART, SOUL, MIND and BODY PROJECT

(GRADES 5 & 6)

WINTER 2006

## PERMISSION SLIP

Please read and sign the following:

I understand that I am being asked if my daughter/son can take part in a research study conducted by Dr. W. M. Bukowski. I know that the purpose of the study is to examine how children's friendships, skills, and behaviors help them cope with daily hassles and stress in their lives. I know that if my daughter/son participates she/he will be asked to answer some questionnaires at his/her desk in the classroom. I have been told that the questionnaires are about the social relations of young people and how they think and feel about themselves and their friends. I know that my daughter/son does not have to participate in the study, and that even if she/he starts to take part in it, she/he can quit at any time. I also know that all answers will remain confidential and will NOT be shown to anyone. Only Dr. Bukowski and his assistants will know what is in the questionnaires.

Please check one of the following and ask your daughter/son to bring this permission slip into the homeroom class tomorrow.

\_\_\_\_\_ My son/daughter has permission to take part in Dr. Bukowski's study

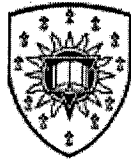
\_\_\_\_\_ My son/daughter DOES NOT have permission to take part in Dr. Bukowski's study.

Parent's Name: \_\_\_\_\_ PHONE: (\_\_\_\_) \_\_\_\_\_

Signature: \_\_\_\_\_ DATE: \_\_\_\_\_

Child's Name: \_\_\_\_\_ CHILD'S SEX: Male Female

**Appendix C**  
**Child Consent Form**



Concordia  
UNIVERSITY

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## VGTC Study / Concordia 2006

Name: \_\_\_\_\_

☐ Boy      Age: 

--	--

      Grade: 

--

☐ Girl

How many years have you been at this school? 

--

(For example: Write "1" if this is your first year here.)

What is your postal code? 

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Please read and sign the following if you wish to participate in the study:

"I understand that I have been asked to be in a research study that Dr. W. M. Bukowski is doing about how young people feel about themselves and how they get along with others.

I know that I will be asked to answer some questionnaires in class. I know that I do not have to participate in the study, and that even if I start to take part in it, I can stop participating at any time. I also know that all answers will be kept confidential and will NOT be shown to anyone. Only Dr. Bukowski and his assistants will know my answers."

(SIGN) \_\_\_\_\_

Date: 

--	--

 - 

0	4
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 - 

0	6
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(day - month - year)

Please fill in the boxes completely: ■

and not like this    ✗    ✓    (2)

If you make a mistake, cross out the incorrect box and fill in the correct one:

■ 1    □ 2    □ 3    ✗ 4    □ 5

**Appendix D**  
**Sociometric Nomination**



Draft

## Who are your friends?

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Class ID



First we would like to know who you are friends with and who you like to spend time with.

We want to know which boys and which girls are your friends.

In the box beside the name of the boy who is your **best friend** put a "1".

In the box beside the name of the boy who is your **second best friend** put a "2".

In the box beside the name of the boy who is your **third best friend** put a "3".

In the box beside the name of any other boys who are **one of your friends** put a "4".

Please only put one "1", one "2" and one "3", however you do not have to put a "2" or a "3".

Also, you can put a "4" beside as many names as you wish. Just be sure you think of the person as a friend.

Next, do the same for the names of the girls.

Jimmy Hoffa	<input type="checkbox"/>	<input type="checkbox"/>	Cara Michelle Santo
Clive Staples Lewis	<input type="checkbox"/>	<input type="checkbox"/>	Anna Karenina
Lev Vygotsky	<input type="checkbox"/>	<input type="checkbox"/>	Anna Freud
Kayser Soze	<input type="checkbox"/>	<input type="checkbox"/>	Jodie Foster
Marcus Aurelius	<input type="checkbox"/>	<input type="checkbox"/>	Michaela Joy Santo
Darth Vader	<input type="checkbox"/>	<input type="checkbox"/>	Virginia Wolf
William Bukowski	<input type="checkbox"/>	<input type="checkbox"/>	Holly Recchia
Jonathan Bruce Santo	<input type="checkbox"/>	<input type="checkbox"/>	Emma Bovary
Gordon Rosenoff	<input type="checkbox"/>	<input type="checkbox"/>	Brenda Milner
Harry Leroy	<input type="checkbox"/>	<input type="checkbox"/>	Jane Austen
Clark Kent	<input type="checkbox"/>	<input type="checkbox"/>	Juliet Capulet
Jean Piaget	<input type="checkbox"/>	<input type="checkbox"/>	Margaret Atwood
Harry Stack Sullivan	<input type="checkbox"/>	<input type="checkbox"/>	Nina Howe
Al Franken	<input type="checkbox"/>	<input type="checkbox"/>	Felicia Meyer
Luke Skywalker	<input type="checkbox"/>	<input type="checkbox"/>	Anne Rice
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	





Appendix E

Perceived Competence Scale



## How I feel about myself

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Now, we'd like to know more about you. Read each description and tell us how well that description fits you.

Really disagree	Disagree	Neither agree nor disagree	Agree	Really agree
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Example: I would rather play outdoors in my spare time.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input type="checkbox"/> 5
01. I am very good at school.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
02. I have trouble making friends.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
03. I am good at all kinds of sports.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
04. There are lots of things about myself that I would change if I could.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
05. I can influence others in my classroom.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
06. I am just as smart as other kids my age.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
07. I have a lot of friends.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
08. I wish I could be better at sports.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
09. I am sure of myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
10. The other kids in the class like me and are kind to me.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
11. I am slow in finishing my schoolwork.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
12. I don't think I am an important member of my class.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
13. It is easy for me to learn a new sport or activity.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
14. I feel good about the way I act.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
15. I can get others to agree with me.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
16. I often forget what I learn.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
17. I am always doing things with other kids.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
18. I am better at sports than other kids my age.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
19. I think that I am not a good person.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
20. Other kids in the class like me for who I am.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
21. I do well in school.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
22. I would like to get along better with others.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
23. I prefer watching rather than participating in sports.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
24. I am happy with who I am.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Really disagree	Disagree	Neither agree nor disagree	Agree	Really agree
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## How I feel about myself

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Remember, how well does each description fit you?

	Really disagree	Disagree	Neither agree nor disagree	Agree	Really agree
25. I can get others to do what I want them to do.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
26. I wish it were easier for me to understand what I read.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
27. I am popular with others my age.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
28. I am not good at new sports.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
29. I don't like the way I do a lot of things.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
30. I feel accepted by the other kids in my class.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
31. It is hard for me to figure out the right answers in school.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
32. I get along well with others.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
33. I am a good athlete.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
34. I am generally sure that what I am doing is right.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
35. I complete my homework quickly.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
36. It is easy for me to make friends.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
37. Sports are easy for me.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
38. If I could, I would change a lot of things about myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
39. In school, even when questions are difficult, I can get the right answer.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
40. Most kids in my class like being with me.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
41. Sports are a fun thing for me to do.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
42. There are a lot of things about myself that I am proud of.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Really disagree	Disagree	Neither agree nor disagree	Agree	Really agree
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Appendix F  
Network of Relationships Inventory



## Family Composition

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1. Who do you live with on a regular basis? (fill in all the boxes that apply)

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> Mother     | <input type="checkbox"/> Stepsister(s)                 |
| <input type="checkbox"/> Father     | <input type="checkbox"/> Stepbrother(s)                |
| <input type="checkbox"/> Stepmother | <input type="checkbox"/> Half-sister(s)                |
| <input type="checkbox"/> Stepfather | <input type="checkbox"/> Half-brother(s)               |
| <input type="checkbox"/> Sister(s)  | <input type="checkbox"/> Other (please specify): _____ |
| <input type="checkbox"/> Brother(s) |  |

2. If you have siblings, what ages are they? (Write the number of siblings and the age of each sibling)

<u>Sister(s)</u> Number of sisters: <input type="text"/> Age(s): _____	<u>Brother(s)</u> Number of brothers: <input type="text"/> Age(s): _____
<u>STEP-Sister(s)</u> Number of STEP-sisters: <input type="text"/> Age(s): _____	<u>STEP-Brother(s)</u> Number of STEP-brothers: <input type="text"/> Age(s): _____
<u>HALF-Sister(s)</u> Number of HALF-sisters: <input type="text"/> Age(s): _____	<u>HALF-Brother(s)</u> Number of HALF-brothers: <input type="text"/> Age(s): _____

3a. Are your parents separated or divorced? ☐ No ☐ Yes

If you answered YES to 3a, please answer the following question. (Only write in the box that applies to you.)

3b. How often do you see your father (if you regularly live with your mother) and how much time do you spend with him? Example: *I see my dad for a weekend every two weeks.*

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How often do you see your mother (if you regularly live with your father) and how much time do you spend with her? Example: *I see my mom for a weekend every two weeks.*

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Now we are going to ask you some questions about how you get along with your mother, your father, one of your siblings and your best friend.

First, we would like you to identify the mother figure, the father figure, the sibling, and the friend about whom you will be answering the questions.

1. Fill in the box corresponding to the person who you will be describing as your **mother**. (If there is more than one, choose the one you think of as most important.)

- |  |  |
|--|--|
| <input type="checkbox"/> Biological Mother | <input type="checkbox"/> Step-Mother                   |
| <input type="checkbox"/> Adopted Mother    | <input type="checkbox"/> Other (please specify): _____ |



## Family Composition

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2. Fill in the box corresponding to the person who you will be describing as your **father**. (If there is more than one, choose the one you think of as most important.)

☐ Biological Father

☐ Step-Father

☐ Adopted Father

☐ Other (please specify): \_\_\_\_\_

3. Please choose the **brother or sister** who is closest in age to you. (If you do not have a sibling, skip to question number 4.)

Your sibling is a: ☐ Boy

☐ Girl

How old is s/he?  years old

4. Please choose the most important **friend** you have in school now. **Do not choose a sibling.**

Your friend's name: First name: \_\_\_\_\_ Last name: \_\_\_\_\_

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Your friend is a: ☐ Boy

☐ Girl

How old is s/he?  years old

Now we would like you to answer questions about the four people you have just chosen.

### PART 1

	Almost Never		Some- times		Almost Always
1. How often do you turn to this person for support with personal problems?	Mother: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Father: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Sibling: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Friend: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. How often do you and this person get upset or mad at each other?	Mother: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Father: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Sibling: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Friend: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. How often do you and this person get on each other's nerves?	Mother: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Father: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Sibling: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Friend: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. How much do you talk about everything with this person?	Mother: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Father: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Sibling: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Friend: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5. How often does this person identify your weaknesses or put you down?	Mother: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Father: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Sibling: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Friend: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6. How often do you play and have fun with this person?	Mother: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Father: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Sibling: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
	Friend: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5



**NRI**

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7. How much does this person punish you?

	Almost Never		Some- times		Almost Always
Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

8. How often do you count on this person for help, advice or comfort?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

9. How often do you and this person disagree and argue?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

10. How often do you and this person get annoyed with each other?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

11. How much do you share your secrets and private feelings with this person?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

12. How often does this person criticize you?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

13. How often do you go places and do enjoyable things with this person?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

14. How much does this person discipline you for disobeying him/her?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

15. When you are feeling sad or upset, how often do you count on this person to cheer you up?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3



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16. How often do you and this person have arguments?

	Almost Never		Some- times		Almost Always
Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

17. How much do you and this person hassle or nag one another?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

18. How much do you talk to this person about things that you don't want others to know?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

19. How often does this person say mean things to you?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

20. How much does this person tell you that you are doing things you are not supposed to do?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**PART 2**

21. How much free time do you spend with this person?

	Little		Some		A lot
Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

22. How much does this person help you with things you can't do by yourself?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

23. How much does this person like or love you?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

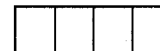
24. How much do you like or love this person?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5





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25. How much does this person protect and look out for you?

	Little	Some	A lot		
Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

26. How much does this person really care about you?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

27. How much do you really care about this person?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

28. How much does this person take care of you?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

29. How much does this person have a strong feeling of affection (loving or liking) toward you?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

30. How much do you have a strong feeling of affection (loving or liking) toward this person?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**PART 3**

31. How satisfied are you with your relationship with this person?

	Not at all	Somewhat	Extremely		
Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

32. How sure are you that this relationship will last no matter what?

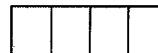
Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

33. How good is your relationship with this person?

Mother:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Father:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sibling:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Friend:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5



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34. How sure are you that this relationship will last regardless of fights?

	Not at all		Somewhat		Extremely
Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

35. How happy are you with the way things are between you and this person?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

36. How sure are you that this relationship will continue in the years to come?

Mother:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Father:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Sibling:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3
Friend:	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3

## Appendix G

### Reliability Statistics of NRI Scales and Factors

Table 9.  
*Reliability Statistics of NRI Scales and Factors*

	Cronbach's alpha (unstandardized)		
	Mother	Father	Friend
<b>NRI scales</b>			
Support	.78	.77	.78
Intimacy	.81	.83	.80
Companionship	.74	.74	.63
Affection <sup>1</sup>	.83	.79	.87
Affection <sup>2</sup>	.84	.87	.87
Nurturance	.61	.67	.79
Reliable Alliance	.63	.69	.72
Satisfaction	.91	.91	.87
Conflict	.82	.74	.77
Antagonism	.73	.67	.70
Criticism	.71	.67	.65
Punishment	.65	.63	.23
<b>NRI factors</b>			
Positive	.83	.85	.90
Negative	.85	.83	.79

*Note.* Affection<sup>1</sup>: from person to child; affection<sup>2</sup>: from child to person.

Appendix H

Descriptive Statistics of NRI Scales

Table 10.  
*Descriptive Statistics of NRI Scales*

	Mother		Father		Friend	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
<b>NRI scales</b>						
Support	3.95	1.03	3.46	1.12	3.44	1.15
Intimacy	3.27	1.19	2.73	1.20	3.24	1.20
Companionship	3.58	1.02	3.55	1.03	4.08	0.80
Affection <sup>1</sup>	4.84	0.49	4.80	0.52	3.89	1.07
Affection <sup>2</sup>	4.83	0.52	4.78	0.57	4.15	1.01
Nurturance	4.53	0.64	4.37	0.77	3.52	1.10
Reliable Alliance	4.54	0.75	4.47	0.81	3.97	0.94
Satisfaction	4.63	0.71	4.53	0.81	4.27	0.84
Conflict	2.26	0.99	2.11	0.88	1.93	0.87
Antagonism	1.95	0.93	1.83	0.83	1.78	0.79
Criticism	1.54	0.75	1.53	0.71	1.59	0.70
Punishment	2.73	0.94	2.64	0.94	1.44	0.51

*Note.* Affection<sup>1</sup>: from person to child; affection<sup>2</sup>: from child to person.

Appendix I  
Gender Analyses

The following section presents results for gender. In all of these analyses, girls were coded as 1 and boys as 0. The first set of regressions examined possible gender differences with regards to friendship support. Social competence was found to be related to by paternal negativity, friendship support and to an interaction between maternal negativity and friendship support (see Table 11). No other interactions were uncovered. As for gender, it was found to be significant at the second, third and fourth steps of the regression; however, not on the first step. Girls in this sample reported lower social competence than boys. As for general self-worth, it was related to by maternal negativity, paternal negativity, friendship support, as well as to an interaction between paternal negativity and friendship support (see Table 12). No other two or three-way interactions were uncovered.

The second set of regressions examined possible gender differences with regards to peer acceptance. Here, social competence was observed to be associated with peer acceptance and with an interaction between maternal negativity and gender (see Table 13). In Figure 6, one can see that the association between maternal negativity and social competence is flat for girls and negative for boys. No other two or three-way interactions were uncovered. In fact, this two-way interaction was the only interactive effect of gender revealed in all of the analyses. Since the interactive effect of gender was only obtained under very narrow circumstances, it appears that gender plays, at best, a small role in the processes underlying the moderating effects of peer relationships on children's psychosocial adjustment. Indeed, the meaning of the interaction between maternal negativity and gender in the association with children's perceived social competence is not clear. In this set of analyses, general self-worth was observed to be associated only



with maternal negativity and paternal negativity (see Table 14). No interaction effects were uncovered.

Table 11.

*Regression Results: Gender, Friendship Support and Social Competence*

Variable	$\beta_a$	Semi-partial $r_a^2$	$\beta_b$	$R^2$ change
Step 1				.030**
Gender	-.07	.00	-.14*	
Maternal negativity	-.03	.00	-.15 <sup>t</sup>	
Paternal negativity	-.14*	.01	-.02	
Step 2				.040**
Friendship support	.22**	.04	.21**	
Step 3				.020
Interaction: Maternal negativity x Friendship support	.12*	.01	.16*	
Interaction: Paternal negativity x Friendship support	-.06	.00	.03	
Interaction: Maternal negativity x Gender	.13	.01	.13	
Interaction: Paternal negativity x Gender	-.10	.00	-.10	
Interaction: Friendship support x Gender	-.01	.00	.00	
Step 4				.013 <sup>t</sup>
Interaction: Maternal negativity x Friendship support x Gender	-.03	.00	-.03	
Interaction: Paternal negativity x Friendship support x Gender	-.15	.01	-.15	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$ <sub>a</sub> = when entered, <sub>b</sub> = final equation

Table 12.

*Regression Results: Gender, Friendship Support and Self-Worth*

Variable	$\beta_a$	Semi- partial $r^2_a$	$\beta_b$	$R^2$ change
Step 1				.102**
Gender	-.01	.00	-.05	
Maternal negativity	-.13*	.01	-.07	
Paternal negativity	-.23**	.03	-.24**	
Step 2				.010*
Friendship support	.11*	.01	.05	
Step 3				.027*
Interaction: Maternal negativity x Friendship support	.08	.00	.07	
Interaction: Paternal negativity x Friendship support	.09	.01	.16*	
Interaction: Maternal negativity x Gender	-.12	.00	-.15	
Interaction: Paternal negativity x Gender	.09	.00	.11	
Interaction: Friendship support x Gender	.06	.00	.05	
Step 4				.008
Interaction: Maternal negativity x Friendship support x Gender	.07	.00	.07	
Interaction: Paternal negativity x Friendship support x Gender	-.16 <sup>t</sup>	.01	-.16 <sup>t</sup>	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$ <sub>a</sub> = when entered, <sub>b</sub> = final equation

Table 13.  
*Regression Results: Gender, Peer Acceptance and Social Competence*

Variable	$\beta_a$	Semi-partial $r^2_a$	$\beta_b$	$R^2$ change
Step 1				.034**
Gender	-.06	.00	-.06	
Maternal negativity	-.09	.01	-.19*	
Paternal negativity	-.11	.01	-.06	
Step 2				.096**
Peer acceptance	.31**	.10	.33**	
Step 3				.023 <sup>t</sup>
Interaction: Maternal negativity x Peer acceptance	-.05	.00	.02	
Interaction: Paternal negativity x Peer acceptance	-.04	.00	-.16	
Interaction: Maternal negativity x Gender	.22**	.02	.18*	
Interaction: Paternal negativity x Gender	-.15	.01	-.10	
Interaction: Peer acceptance x Gender	.00	.00	.00	
Step 4				.007
Interaction: Maternal negativity x Peer acceptance x Gender	-.08	.00	-.08	
Interaction: Paternal negativity x Peer acceptance x Gender	.15 <sup>t</sup>	.01	.15 <sup>t</sup>	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$

<sub>a</sub> = when entered, <sub>b</sub> = final equation

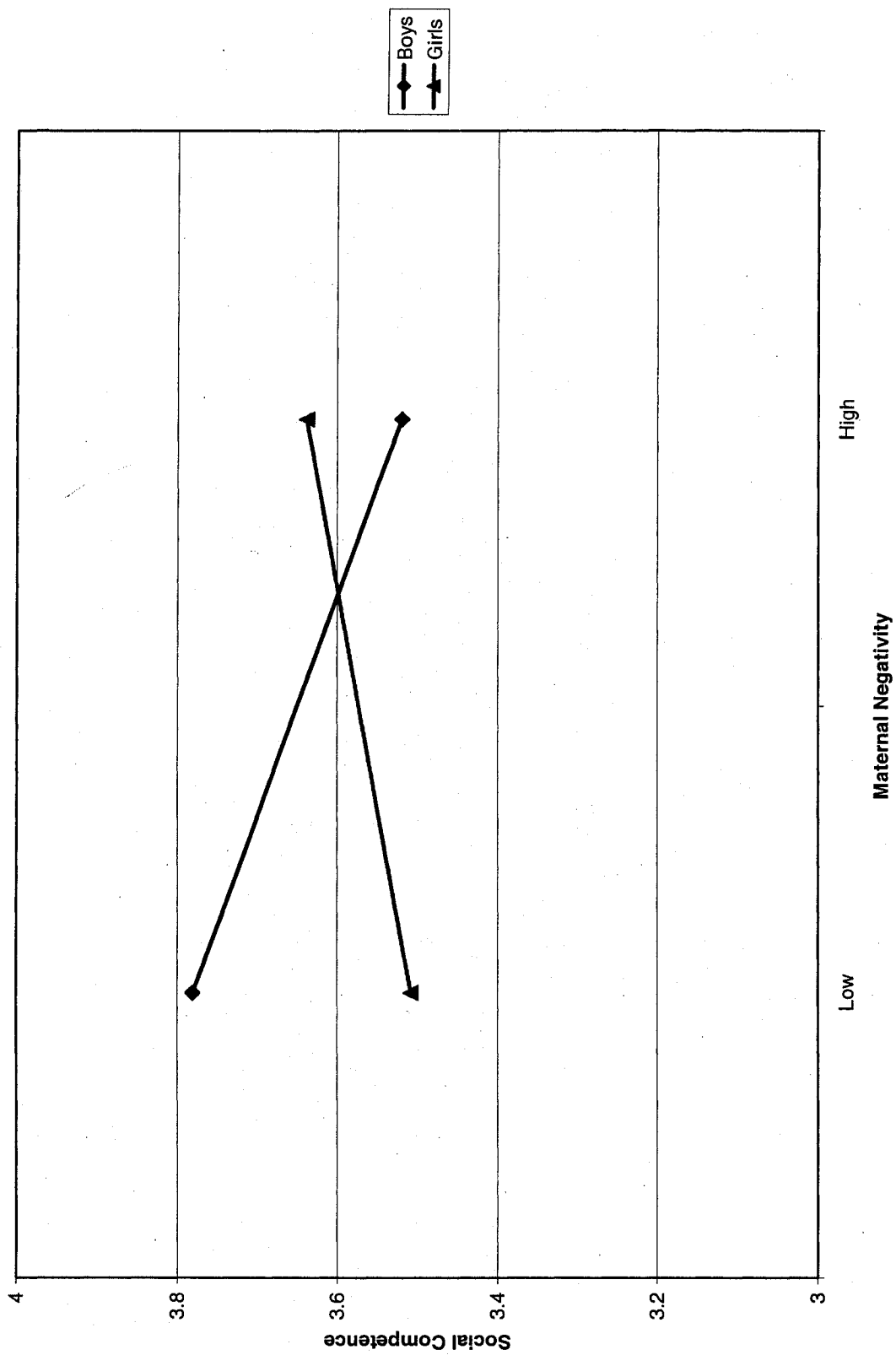


Figure 6. The association between maternal negativity and social competence varies as a function of gender (controlling for peer acceptance).

Table 14.  
*Regression Results: Gender, Peer Acceptance and Self-Worth*

Variable	$\beta_a$	Semi- partial $r^2_a$	$\beta_b$	$R^2$ change
Step 1				.102**
Gender	-.01	.00	-.01	
Maternal negativity	-.15*	.01	-.09	
Paternal negativity	-.20**	.02	-.30**	
Step 2				.002
Peer acceptance	.05	.00	.12 <sup>t</sup>	
Step 3				.011
Interaction: Maternal negativity x Peer acceptance	.00	.00	.02	
Interaction: Paternal negativity x Peer acceptance	-.02	.00	-.07	
Interaction: Maternal negativity x Gender	-.08	.00	-.10	
Interaction: Paternal negativity x Gender	.13	.01	.14	
Interaction: Peer acceptance x Gender	-.11	.01	-.11	
Step 4				.002
Interaction: Maternal negativity x Peer acceptance x Gender	-.02	.00	-.02	
Interaction: Paternal negativity x Peer acceptance x Gender	.07	.00	.07	

\*\*  $p < .01$ , \*  $p < .05$ , <sup>t</sup>  $p < .10$

<sub>a</sub> = when entered, <sub>b</sub> = final equation