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**The Importance of Family Functioning and Peer Relations for
Children's Internalizing and Externalizing Behaviours**

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**A dissertation submitted to the School of Graduate Studies of the
University of Ottawa in partial fulfillment of the requirements
for the degree of Doctor of Philosophy**

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Abstract

In the last two decades, interest in factors related to children's adjustment has increased dramatically. A number of factors are known to have strong effects on children's adjustment, including family factors such as parental psychological distress, marital satisfaction, and marital conflict. Socioeconomic status has also been found to be associated with poor child adjustment. In addition, there is considerable evidence that children with poor peer relations are at risk for a variety of adjustment difficulties, including internalizing and externalizing problems. Recently, Rich Harris (1995) has suggested that family factors have little, if any, influence on child development. Because the research traditions have developed relatively independently, there are few studies to date which examine the association of both family and peer factors on the adjustment of children.

Two studies are reported here. The purpose of the first study was to examine the relative impact of the family climate (defined in terms of marital satisfaction, marital conflict, parental psychological distress, and SES) and the peer climate (defined in terms of peer likeability) on children's adjustment (measured by internalizing and externalizing behaviours) for 89 children from grades 6 to 11. Two path analytic models were assessed. The first assessed a single process family model which hypothesized that family functioning would have a direct effect on children's adjustment, but peer relations would have no significant effect on children's adjustment. The second model hypothesized dual processes, that is, that both family functioning and peer relations would predict children's adjustment. These models were assessed separately using mothers' and fathers' reports of

family factors, and mothers', fathers', and peers' reports of internalizing and externalizing behaviour. Results indicated strong support for a single process family model when data using fathers as informants about family functioning and children's adjustment were examined.

Results from data which used mothers as informants about family variables and children's adjustment provided support for a dual process model, in which both family and peers made significant contributions to child adjustment problems. When either mothers or fathers provided information about the family, and peers provided outcome scores, there was evidence for a single process peer model. The results are discussed in light of these differences between parents, and the issue of shared method variance. Although inconclusive, the results highlight the importance of both peers and family for children's adjustment problems.

In the second study, a mediational model was assessed. It was hypothesized that overt marital hostility would mediate the relationship between marital satisfaction and children's adjustment for 277 children from grades 6 to 11. Using path analytic strategies, these models were assessed using mothers' and fathers' reports of marital quality and mothers', fathers', and peers' evaluations of children's adjustment. Gender differences were also assessed.

Results indicated that marital hostility mediated the relationship between marital satisfaction and children's adjustment when parents provided the information regarding marital functioning and children's adjustment. However, when peer information about aggression and withdrawal was used as outcome measures, the relationship between

marital satisfaction and children's adjustment was no longer significant. Some gender differences were also noted, indicating that marital hostility mediated the relationship between marital satisfaction and internalizing and externalizing behaviours differently for boys and girls.

The findings from the two studies stress the importance of contributions of both families and peers to children's adjustment. The results also underscore the importance of controlling for shared method variance by including independent raters of criteria and outcome variables. Future studies should evaluate these findings in greater detail using larger samples and structural equation modeling to test for causality, and reciprocal influences. Finally, longitudinal studies would further elucidate our understanding of these factors on children's adjustment by providing a picture of the influences over time of chronic marital hostility, parental psychological distress, low socioeconomic status, and poor peer relations.

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CHAPTER ONE

The Importance of Family Functioning and Peer Relations for Children's Internalizing and Externalizing Behaviours

In the last three decades, interest in factors related to adjustment and maladjustment in children has increased dramatically. In part, this interest can be attributed to the realization that a large number of children suffer varying levels of impairment due to emotional, behavioural and developmental problems. Estimates of psychopathology in children range from 14% - 22% (Mash & Dozois, 1996).

Another reason for the growing interest in child psychopathology may relate to the fact that impairment can have lifelong consequences for the child. Many children do not outgrow their childhood problems, but continue to manifest difficulties of one sort or another into adulthood. Certain forms of childhood maladjustment, such as conduct disorders, have been shown to be associated with poor adult outcomes of both similar and different natures (Hinshaw & Anderson, 1996). Thus, a clear understanding of adult disorder requires knowledge of their childhood antecedents (Mash & Dozois, 1996).

A third reason for interest in child psychopathology involves the potential for early identification of children at risk for current or future disorders. This information is important for several reasons, including the development of preventive measures or treatments which can be utilized before the disorder becomes especially debilitating. Thus, the identification of factors which place children at risk and a better understanding of the course of early adjustment have become crucial.

Despite the current interest in child psychopathology, there is little consensus regarding what constitutes healthy or abnormal adjustment. Within the literature, adjustment has been operationalized in many ways, and terms such as disorder and dysfunction are often used interchangeably. It is clear that adjustment is a multi-dimensional construct, which involves social, intellectual, physical, and emotional components. Generally, researchers agree that two major dimensions of behaviour difficulties in children can be identified: internalizing problems, which include behaviours such as social withdrawal, anxiety, and depression; and externalizing problems, which include aggression, disruption, and delinquent acts (Achenbach, Howell, Quay & Conners, 1991).

Below, I explore several different literatures which examine a number of variables that are known to have strong effects on children's adjustment problems. To this end, studies examining family functioning and peer relations are reviewed.

Several theories have been developed to explain the effects of family relations and peer relations on development. Because the research traditions have remained relatively independent, there is no preeminent theory which encompasses both areas. At the end of the review, relevant theories are outlined and models to be tested are proposed. The purpose of the present study is to assess the relative association of both family variables and peer relationships with each other and with child adjustment difficulties.

The Importance of Family Factors and Children's Adjustment Problems

As Frick (1993) noted, it is not possible to have a clear understanding of children's adjustment without an understanding of the impact of the family on children's attitudes

and behaviour. A great deal of research has examined different family factors and their effects on children's current and future adjustment. The following section examines evidence for the importance of three of the factors that appear to have special significance for the child's experience within the family environment: parental psychological distress, marital functioning, and socioeconomic status (SES).

Parental psychopathology. The association between parental psychiatric disorder and child maladjustment has been demonstrated for a number of psychological disorders, across a variety of child outcome measures (Rutter, 1990). Many studies have indicated a greater frequency of psychological problems in children of depressed mothers and in children of schizophrenic mothers, including social and academic problems, internalizing and externalizing behaviours, and depression (Dodge, 1990; Downey & Coyne, 1990; Ledingham, 1990; Lee & Gotlib, 1989a; 1989b). Children with mothers diagnosed with an anxiety disorder have greater internalizing problems than do children of mothers with no psychiatric diagnosis (Turner, Beidel, & Costello, 1987). A number of studies have also shown children of substance abusers to be at greater risk for later problems, including impaired motor development, attentional, behavioural and school adjustment problems, substance abuse and depression (Davis, 1990; Deren, 1986; Johnson, Boney, & Brown, 1990-1991), although other studies indicate that the majority of children of substance-abusing mothers function well (Rubio-Stipec, Bird, Canino, Bravo, & Alegria, 1991; Searles & Windle, 1990). Although the literature is less extensive, there is some evidence of higher rates of psychiatric disturbances among children of patients with multiple personality disorder than would be expected in the general population (Coons, 1985).

Rutter and Quinton (1984) also found that the risk of disorder was greater among children whose parents had a personality disorder than among children whose parents experienced less chronic types of psychological difficulties.

The association between psychiatric disorders in parents and poor outcome in children, although consistent, tends to be moderate in magnitude, and demonstrates weak specificity. That is, there is only a very slight tendency for children to develop the same disorder as their parents (Ledingham, 1990; Rutter & Quinton, 1984), and there is evidence to suggest that children's poor outcome are not specific to a particular parental diagnosis (Gotlib & Goodman, 1999). Studies by Lee and Gotlib (1989a; 1989b; 1991) which examined the adjustment of children of depressed and nondepressed psychiatric patient mothers, nondepressed medical patient mothers, and a control group of community mothers, found that children whose mothers were psychiatric patients were rated as being more poorly adjusted than were the children of mothers in the other two groups. Thus, it seems to be the case that children's adjustment difficulties are associated with impaired functioning resulting from general psychological distress, rather than from a specific diagnosis. Turner et al. (1987) also reported similar results: children whose mothers were diagnosed with either an anxiety disorder or dysthymia had increased rates of poor adjustment, as compared with control groups.

Nevertheless, it is far from inevitable that the children of disordered parents will exhibit difficulties; many children do not. The relationship between parent psychological problems and poor outcomes for their children has been explained in a number of ways. There is evidence for genetic transmission of vulnerability to depression, anxiety disorders

and other psychological problems (Gotlib & Goodman, 1999). Psychosocial factors, including disturbances in parenting and in the parent-child relationship, and marital difficulties (Cummings & Davies, 1994), have also been implicated as moderators of the relationship between parental psychological difficulties and children's outcome.

Marital functioning. For decades, researchers have studied the association between marital functioning and children's adjustment. The two constructs have been defined and measured in numerous ways, and methodologies and samples have varied greatly across studies (Fincham & Osborne, 1993). The findings are somewhat inconsistent; however, most studies support the hypothesis that poor marital functioning is positively correlated with poor outcomes for children (Emery, 1982; Emery & O'Leary, 1984; Grych & Fincham, 1990; Reid & Crisafulli, 1990).

One of the reasons for the inconsistent results in this area is the lack of a clear operational definition for marital functioning. Across studies, marital functioning has been variously referred to as marital adjustment, satisfaction, quality, or distress (Heyman, Sayers, & Bellack, 1994). For the purposes of this paper, these terms will be used interchangeably to refer to global marital functioning. In contrast, the terms discord, hostility, or conflict are used here to refer to more specific marital difficulties that are concerned with issues such as disagreements, arguments, complaints, verbal and physical abuse.

Marital dissatisfaction is associated with poor outcomes in children. Emery (1982) noted that marital dissatisfaction has been found to be significantly related to children's externalizing behaviour problems across a variety of samples and methodologies, and that

the association between children's internalizing behaviour problems and marital dissatisfaction was also significant, although somewhat less consistent across studies. Fendrich, Warner, and Weissman (1990) examined the relationship between family risk factors and children's adjustment. They found that poor marital adjustment, as measured by the Locke-Wallace Marital Adjustment Scale (Locke & Wallace, 1959), was associated with a significant increase in both internalizing and externalizing behaviour problems. In a meta-analysis of extant research, Reid and Crisafulli (1990) examined the association between marital discord and externalizing problems in children. They concluded that, overall, there was a positive relationship between marital discord and externalizing problems, but that the effect size was small.

Several factors affect the relationship between marital satisfaction and children's adjustment. Stronger correlations are found in clinical than in non-clinical samples (Emery, 1982; Emery & O'Leary, 1984; Porter & O'Leary, 1980), although significant relationships have been found using both types of samples. In addition, the association between marital functioning and outcome of the child is usually greater when a single informant is used to measure both marital functioning and children's adjustment than when different informants are used for these constructs (David, Steele, Forehand, & Armstead, 1996; Emery, 1982; Fincham & Osborne, 1993; Reid & Crisafulli, 1990). Finally, several researchers have noted differences as a function of sex of the child in the association between child adjustment problems and marital functioning (Emery, 1982; Fincham & Osborne, 1993; Snyder, 1998). However, the evidence is mixed, and at this point it is not clear whether boys and girls have different reactions to marital conflict between their

parents (Snyder, 1998).

General marital dissatisfaction can influence children in both direct and indirect ways (Fincham, Grych, & Osborne, 1994). It may lead directly to symptoms of anxiety, depression, or other signs of psychological distress in the child or may result in increased hostility towards parents if the child is drawn into the marital conflict. More indirectly, maritally-dissatisfied parents may, because of their own psychological distress, have their functioning affected both as individuals and as parents. It is also possible that parents with poor marriages model maladaptive coping patterns, so that their children learn less effective problem-solving strategies (Boyum & Parke, 1999). Cummings and Davies (1994) found that distress was the most common reaction for children who observed anger being expressed between adults, but that there was also increased physical aggression in younger children, and increased verbal aggression in older children.

Although researchers initially examined the influence of global marital satisfaction, they have focused more recently on specific aspects of the marital relationship, particularly marital conflict witnessed by the child and its association with children's adjustment (Davies & Cummings, 1994; Fincham et al., 1994; Grych & Fincham, 1990). Marital hostility observed by the child has been associated with internalizing problems such as depression (Johnson & O'Leary, 1987; Katz & Gottman, 1993; McHale et al., 1991) and anxiety (Long, Slater, Forehand, & Fauber, 1988), and with lower levels of social competence (Burman, John, & Margolin, 1987). Overt marital conflict has also been found to predict externalizing behaviours, including conduct problems (David et al., 1996; Johnson & O'Leary, 1987; Long et al., 1988; McHale et al., 1991) and aggression

(Johnston, Gonzalez, & Campbell, 1987). The evidence also suggests that marital conflict predicts behaviour problems even in children whose parents have already divorced, and that it may be even more important than family status as an indicator of outcomes for the child (Amato & Keith, 1991; Emery, 1982).

Overall then, there has been a consistent relationship demonstrated between marital conflict and children's adjustment difficulties in samples of intact, separated, and divorced families, using both clinical and non-clinical samples, for both boys and girls. Grych and Fincham (1990) concluded that marital conflict is a stronger predictor of child outcome than is general marital satisfaction.

Researchers have suggested several ways in which marital conflict can affect children's adjustment. Grych and Fincham (1990) have suggested that children may imitate poor conflict resolution strategies that they observe their parents use, and that children's cognitions regarding the conflict play a mediating role between marital conflict and children's reactions. Other researchers have suggested that the effects of marital conflict are largely indirect, and occur through disruptions in parenting ability and the parent-child relationship (Chen & Rubin, 1994; Conger et al., 1992; 1993). Specifically, Conger et al. reported that marital conflict has a direct negative effect on skillful parenting, which in turn has a direct effect on adolescents' adjustment.

Socioeconomic Status. There is strong empirical evidence that SES has significant implications for family well-being and problems of adjustment in children, including poor peer acceptance (Dishion, 1990; Patterson, Vaden, & Kupersmidt, 1991; Shaw & Emery, 1988) and disruptive behaviour problems in school (Bolger, Patterson, Thompson, &

Kupersmidt, 1995). Offord et al., (1992) reported that, in a community sample of children, low family income predicted children being diagnosed with at least one psychological disorder four years later. Achenbach and Edelbrock (1981) found that rates of parent-reported behaviour problems were significantly higher for low SES children than for high SES children. In addition, a significantly greater proportion of externalizing, as opposed to internalizing, behaviours were endorsed by low but not high SES parents. Duncan, Brooks-Gunn, and Kato Klebanov (1994) also reported that family income predicted internalizing and externalizing scores on the Child Behavior Checklist. Finally, Tarnowski, Brown and Simonian (1999) reported that SES predicted externalizing behaviour assessed by teachers, and aggression assessed by peers.

Researchers have noted that it is important to examine more proximal mediating factors between SES and children's adjustment. Parental behaviour has been shown to mediate the effects of economic hardship on children (Tarnowski et al., 1999). Conger and colleagues (Conger et al., 1992; 1993; Conger, Ge, Elder, Jr., Lorenz & Simons, 1994) reported that low SES was related to adolescent behaviour problems through disrupted parenting and an increase in marital and parent-child conflict, and Parker, Rubin, Price, and DeRosier (1995) found that poverty was associated with anger, inconsistency, and punitiveness in child rearing, and less sensitive and responsive parenting.

The association between SES and child outcome could also be reflecting the influence of other variables, such as unemployment, single-parent status, lower parental education and consequently lower knowledge of effective childrearing skills, or higher rates of parental psychopathology (Mash & Dozois, 1996). Poverty is associated with

greater parental psychological distress (Tarnowski et al., 1999), and this, coupled with the literature indicating that parental psychological distress is associated with poorer adjustment in children, suggests that parental psychological distress could be mediating the SES-child outcome link. Thus, although the effects of SES seems to be mediated through other factors, SES still appears to be an important marker for these more proximal influences.

Although the association between SES and adjustment is statistically significant and replicated across many different studies, the significance of these findings should be interpreted with caution. Achenbach and Edelbrock (1981), for example, reported that SES accounted for no more than 1% of the variance in children's adjustment. It may be better to view SES as one indicator of risk that, when added to other risk factors, could increase adjustment difficulties. In addition, some researchers have suggested that it is not poor economic circumstances at one point in time that are the best predictors of later difficulties; rather, it is the chronicity of poverty that is most important (Bolger et al., 1995; Sameroff, Seifer, & Bartko, 1997).

Summary. There is strong evidence that factors leading to disruptions in family functioning are associated with negative effects on children's adjustment. Variables pertaining to individual characteristics of the parent such as their level of psychological distress, interpersonal aspects such as marital satisfaction and marital conflict, and other contextual factors such as economic hardship have been found to contribute to poor adjustment in children.

There is evidence for a number of mechanisms to relate these factors to children's

adjustment. It has been suggested that parents who are poorly adjusted themselves or who suffer from mental illness or chronic adversity are unable to provide an optimal environment for their children (Parker et al., 1995; Putallaz & Heflin, 1990). Sameroff et al. (1997) have suggested that such parents may not be able to buffer their children from stress or provide social support to them. Studies by Conger et al. (1992; 1993) and Miller, Cowan, Cowan, Hetherington, and Clingempeel (1993) indicated that parenting skills may be disrupted by parental psychopathology, marital conflict or poverty. This disruption in parenting appears in turn to lead to poorer adjustment in children.

The Importance of Peer Relations for Children's Adjustment Problems

Children's peer relations have been studied for decades. Theorists such as Sullivan (1953) and Piaget (1965) outlined early theories about the importance of the role that peer relations play in children's development. More recently, researchers have examined empirically the association between poor outcomes for children and poor peer relations (Putallaz & Dunn, 1990). Most of this evidence supports the hypothesis that children who are not well accepted by their peers are at risk for a variety of negative outcomes, including behavioural, psychological, and academic maladjustment (Parker & Asher, 1987; Parker et al., 1995; Putallaz & Dunn, 1990). Although the majority of the research has focused on difficulties in peer relations, Parker et al. pointed to evidence that children with more positive peer relations tend to have more positive, healthy outcomes than children with average or poor peer acceptance.

In this section, research linking peer relations to both short-term and long-term adjustment in children is reviewed. First, the assessment of peer relations is described.

Then, a brief overview of predictors of both concomitant and long-term adjustment is presented.

Assessment of Peer Relations

Peer relations have been measured in a number of ways, including sociometric evaluations, naturalistic observations, and reports from relevant others, such as teachers or parents, or even the child's own ratings. Each of these measures yields quite different indications of how the child experiences the peer context (Ledingham & Younger, 1985), such as how many peers like or dislike the child, whether the child has a best friend, or feels lonely, and whether the parent or teachers consider the child to be popular with peers. However, of all these methods, the "gold standard", the measure that is most frequently used to assess peer relations involves asking peers to say how much the child is liked, either by nominating children who are liked or disliked, or rating the likeability of each child.

These scores are sometimes used to identify discrete categories of children, including rejected, neglected, popular, average, and controversial (Coie, Dodge, & Copotelli, 1982). In samples of elementary school children, nomination scores, particularly extreme scores, tend to be stable (Asher & Hymel, 1981). That is, popular children tend to remain popular, and rejected children tend to remain rejected. Membership in the lower status groups (e.g., rejected or neglected) can predict a number of internalizing and externalizing problems, thus sociometric categories have utility in identifying children at risk for future adjustment difficulties.

Concomitant Adjustment

Researchers examining children's development have found that there is wide variability in the extensiveness and quality of children's relationships with peers (Parker et al., 1995). A large body of literature has examined whether children's adjustment is compromised by interacting little with peers or by being disliked by peers. Below, I review the significance of poor peer relations for several different outcomes, including behaviour problems, school adjustment, and psychological difficulties.

Behavioural adjustment. How peers respond to you is related to how you behave. Rejected children have been repeatedly found to engage in more aggressive behaviours than do other children (Dodge, 1983; Ladd, 1983). Coie, Christopoulos, Terry, Dodge, and Lochman (1989) examined the association between the peer rejection and aggression, and found that approximately 30 - 40% of rejected children are highly aggressive. The magnitude of the association was found to depend on a number of factors, including age, sex, and method of assessment; however, significant correlations between aggression and peer rejection have been noted for preschool, elementary, and middle-school children in the reports of peers, teachers, and independent observers (Little & Garber, 1995). Dishion, Duncan, Eddy, Fagot, and Fetrow (1994) found that both parents and teachers rated rejected children as more antisocial than average children. Although evidence from research by Coie and Kupersmidt (1983) and Dodge (1983) indicated that aggression can be an antecedent condition of rejected status, most studies leave open the possibility that peer rejection leads to increases in aggression. Consistent with this interpretation is the fact that not all rejected children are aggressive, and that not all aggressive children are

rejected. In fact, several investigators have suggested that rejected status is not homogeneous and includes both aggressive and nonaggressive subtypes, at least for boys (French, 1988; 1990; Waas, 1988). Although rejected children appear to experience more negative interactions than do more popular children, they also spend less time in social interactions (Ladd, 1983) and more time in solitary play (Rubin & Daniels-Beirness, 1983).

Several studies have shown that children with lower sociometric status have more negative interactions than do children of higher status. Ladd (1983), examining a group of third and fourth grade children, found that rejected children spent less time engaged in cooperative play than did popular and average children. Rubin and Daniels-Beirness (1983) reported similar results in a sample of kindergarten children. Rejected children have also been reported to be more disagreeable and disruptive and more likely to engage in off-task behaviour (Coie & Kupersmidt, 1983; Putalliez, 1983; Putalliez & Gottman, 1981).

Psychological adjustment. In a review of the literature, Parker et al. (1995) noted that poor peer relations accounted for approximately 26% to 30% of children's referrals to mental health professionals and that many children referred for other reasons also were experiencing peer difficulties. For instance, evidence indicates a high comorbidity rate between peer difficulties and psychiatric disorders such as Attention-Deficit/Hyperactivity Disorder (Landau & Moore, 1991) and Conduct Disorder (Cole & Carpentieri, 1990).

A number of researchers have examined the association between sociometric status and self-reported loneliness across various age groups (Asher, Hymel, & Renshaw, 1984;

Asher & Parker, 1989; Asher & Wheeler, 1985; Crick & Ladd, 1993). On the whole, the evidence suggests that rejected children and adolescents report more loneliness and social dissatisfaction than do their more popular counterparts.

Wylie (1979) reviewed the research assessing the association between popularity and self-concept and found that in 23 of 34 studies, there was a small but significant positive correlation. In later work, Bukowski and Hoza (1989) reported that popularity was positively related to self-concept, and Putaliez and Dunn (1990) reported that lower social status children also have lower self-esteem. In a study of 12 - 15 year olds, Silbereisen and Albrecht (1992) found that peer rejection was a risk factor leading to an increase in self-derogation over time.

Several researchers have examined the relationship between sociometric status and the way children explain the social world. Crick and Ladd (1993) demonstrated that, compared with non-rejected peers, rejected children were more likely to exhibit a self-serving attributional bias, that is, they attributed relationship failures to external causes, such as the other child. The other sociometric status groups exhibited a non-self-serving attributional pattern, that is, they blamed themselves for relationship failure, and failed to take credit for social successes. Similar results were reported by Waas (1988) who asked elementary school boys to make attributions about a hypothetical interchange between themselves and a peer. When given social information, all status groups made similar attributions. When no social information was provided, the rejected group made more hostile attributions, and suggested more hostile responses. Thus, rejected children perceive others as planning to do them harm and respond more negatively to others, and

place the blame for social problems on factors outside of themselves.

Lower social status children also express more depressive symptomatology than do their popular peers. Cole and Carpentieri (1990) found that rejected children had more depressive symptoms, as assessed by peers, teachers, and the child. Parker et al. (1995) noted that there is evidence for possible causal pathways extending in both directions.

Academic adjustment. In terms of current academic adjustment, lower social status children have been found to differ from more popular children on a number of school-related variables (Putallaz & Dunn, 1990). Coie et al. (1982) found that both peers and teachers perceived rejected children as more disruptive, aggressive, dependent, and uncooperative.

Rejected children also evidence more difficulty in terms of achievement. Green, Forehand, Beck, and Vosk (1980) found that lower status third-grade children performed more poorly on achievement tests than did higher status children. In a sample of early adolescents, rejected children were less academically skilled than the other children: popular and neglected children had significantly higher grade point averages than average children, whereas rejected children earned lower grades than did average children (Dishion, 1990). Vandell and Hembree (1994) also reported that peer rejection was predictive of poor academic adjustment, as measured by grades, work habits, IQ scores, and achievement test scores.

Summary. There is evidence that peer relations are associated with concurrent adjustment. Generally, children with poor peer relations tend to exhibit more behaviour problems, have more difficulties at school, and show greater psychological distress than do

other children. We turn now to an examination of the predictive value of peer relations for long-term adjustment.

Long-term Adjustment

The belief that problems with peer relationships in childhood are associated with difficulties later in life has motivated a great deal of research. Follow-back studies have generally indicated that disordered adults (including psychiatric patients, drop-outs, juvenile delinquents, and those who did poorly academically) more frequently had a history of poor relationships than did non-disordered adults (Putalliez & Dunn, 1990). However, follow-back studies provide only part of the picture (Parker et al., 1995). Prospective, longitudinal studies provide us with more information regarding the prediction of relative risk. Below, I review some of the research examining the effect of peer relations on future behaviour problems, psychological difficulties and academic adjustment.

Behavioural adjustment. Several longitudinal studies support the idea that poor peer relations are predictive of juvenile delinquency and criminality. Children categorized as rejected or controversial in grade four had two to three times more court offenses five years later than did children categorized as neglected, popular or average (Ollendick, Weist, Borden, & Greene, 1992). Roff and Wirt (1984) followed a sample of third to sixth grade children into young adulthood. They found that children of low sociometric status were twice as likely as their higher status peers to become juvenile delinquents before the age of 14. Evidence from a prospective study of men indicated that poor peer relations in childhood, as judged by teachers, were associated with coming into contact with the

police, or being arrested as an adult twelve to fifteen years later (Janes, Hesselbrock, Gilpin Myers, & Penniman, 1979).

Researchers have found that rejected status is predictive of aggression at follow-up in samples of adolescents. In a study of black, low income children first identified in third grade, peer rejection predicted externalizing symptoms, as reported by parents, and poor adjustment, as reported by teachers, in early adolescence (Coie, Lochman, Terry, and Hyman, 1992). Ollendick et al. (1992) reported similar results.

As noted above, determining the importance of peer rejection is complicated by its correlation with aggression. However, Coie et al. (1992) and Kupersmidt and Patterson (1991) have reported data suggesting the importance of both peer relations and aggressive behaviour as separate indicators of adjustment. Rejection appears to be a stronger predictor of dropping out of school, whereas aggression seems to be a stronger predictor of delinquency (Parker & Asher, 1987).

The relationship between peer status and other adjustment difficulties in adolescence was investigated by Ollendick et al. (1992). Rejected children first identified in grade four reported higher levels of substance abuse and were perceived by their peers as less likeable and more aggressive five years later in grade nine than were the more popular children. Kupersmidt and Patterson (1991) followed children first identified in second, third, and fourth grade. They found that rejected children and neglected girls had more negative outcomes two years later than did children in other sociometric status groups. Kupersmidt and Coie (1990) also reported that children rejected in the fifth grade were more likely to have experienced negative outcomes seven years later.

Janes et al. (1979) reported a number of other adjustment difficulties of adults with poor peer histories. These included illicit drug use, being fired for behavioural reasons, and receiving a dishonourable discharge from the military.

Psychological adjustment. A number of studies have examined the association between peer relations and later psychological problems. Putaliez and Dunn (1990) reviewed a number of follow-back studies and reported an association between poor peer relations in childhood and a number of later psychological difficulties, including schizophrenia. Findings from prospective studies, using both clinical and community samples, are also consistent with the idea that children with peer difficulties are at risk for subsequent poor outcomes (Parker et al., 1995; Putaliez & Dunn, 1990)

Janes et al. (1979) found that men with poor peer relationships in childhood were more likely to have been hospitalized for a psychiatric disorder than were other children. Roff and Wirt (1984) also reported a significant (though low) correlation between childhood sociometric status and the probability of later psychiatric hospitalization. Finally, Ollendick et al. (1992), who followed fourth grade children for five years, found that they were at risk for a number of psychological disturbances, including conduct problems, substance abuse and attentional problems.

Academic adjustment. Poor peer relations have been found to be associated with school problems across a variety of samples and methodologies. There is substantial evidence that poor peer relations in childhood are predictive of early school withdrawal. In general, this relationship appears to hold whether peer relations are assessed by teachers or peers (Parker & Asher, 1987). Janes et al. (1979) reported that boys whose teacher

indicated that they didn't get along with others were more than twice as likely to drop out before finishing high school. Ollendick (1992) followed 4th grade children for five years. At follow-up, children who had been classified as rejected five years earlier were perceived by their peers as less likeable, and more aggressive. Teachers judged the rejected children as having more conduct problems, attention problems, and aggressive behaviours than children in other sociometric status groups. The rejected children failed more grades, and were more likely to drop out of school than were non-rejected children.

Peer status has also been shown to be related to academic performance. Several researchers have indicated that rejected children performed less well academically at follow-up. Rejected children were more likely to be held back a grade (Ollendick, 1992), and to earn lower grades (Ollendick et al., 1992). Coie et al. (1992) reported similar findings: rejected status predicted grade retention and poor adjustment to a school transition three years later.

Summary. There is considerable evidence that children with poor peer relations, especially those with rejected status, are at risk for various adjustment difficulties in adolescence and adulthood. At least one study (e.g., Ollendick et al., 1992) has suggested a similar pattern of difficulties for controversial children. The evidence tends to be more consistent in the areas of school difficulties and criminality than in the area of psychological adjustment (Parker et al., 1995).

Research Relating Family and Peer Systems

The literatures examining the links between family functioning and children's adjustment and between peer relations and children's adjustment have evolved largely

independently of one another. Recently, however, there has been a great deal of interest in exploring the connections between family and peer domains. As Ladd (1991) has noted, family researchers have become interested in peer relations as a way of understanding developmental processes such as vulnerability and adaptation, whereas researchers examining peer relations explore family processes in search of the origins of children's competence.

Social Competence

Much of the literature that has studied links between family factors and peer relations has examined how family factors, usually parenting styles and attachment status, affect social competence with peers. Although families generally are composed of multiple combinations of potential dyads and triads, the majority of research on families has focused on the parent-child relationship (usually the mother-child relationship).

Parenting attitudes and behaviours. The literature suggests that there are several differences between the parenting styles of parents of socially competent and of socially incompetent children (Maccoby & Martin, 1983). Putallaz and Heflin (1990) and Hinde and Tamplin (1983) found that the parents of socially competent children were more authoritative (scored higher on both warmth and control) than the parents of less socially competent children and that authoritarian mothers (high on control and low on warmth) had children who were less friendly and more hostile to peers. More recent findings from Baumrind (1991) replicated these results.

Pettit, Dodge, and Brown (1988) asked mothers to respond to hypothetical stories about discipline. They found that children's competence with peers was greater when they

had mothers who proposed less restrictive discipline strategies. Dishion (1990) found that rejected boys, compared to other boys, had parents who used more unskilled and negative discipline practices.

Managing peer relationships. Parents can influence their children's peer relationships by arranging opportunities for peer contact, monitoring or supervising the interactions, and coaching their children for specific interactions (Ladd, 1991). Parents who arranged peer interactions for their children had children who were better liked by their peers and had larger networks of play partners (Ladd & Golter 1988). However, Ladd and Hart (1992) found that parental overinvolvement as well as underinvolvement can interfere with peer relations, at least for boys. They found that boys with moderately-involved mothers showed gains in peer status over time, compared with boys with under- or over-involved mothers.

Monitoring is related to social competence. Ladd and Golter (1988) reported that indirect monitoring (awareness of the interaction although not physically present) was related to social competence; however, children whose parents monitored them directly were rated as more hostile, and were more rejected. Because the evidence tends to be correlational, however, we cannot infer that parent behaviour causes social competence.

Parents' guidance and suggestions for better interactions have implications for their children's success with peers (Parker et al., 1995). When parents are effective in coaching their children, their children are more successful with peers. Bhavnagri and Parke (1991) studied preschoolers and parents in the laboratory. Parents were instructed at various times to either help or not help their children play together. Children were rated as

higher in social competence, measured by length of play, turn taking, and cooperation, when parents coached them than when they did not. Finnie and Russell (1988) found that mothers of teacher-identified low status preschoolers supervised their children less and were less skillful at supervising than were mothers of high status children. They also responded to hypothetical problems regarding children's interactions with peers with more avoidant strategies than did high status mothers, who themselves suggested more positive and assertive strategies.

In summary, it would appear that socially successful children have involved parents who are warm, responsive, and use positive discipline practices. These children also tend to have parents who are effective at arranging play dates with peers, monitoring their interactions, and coaching appropriate behaviour. It is important to remember, however, that much of the research is correlational, and it could be that the behaviour of the parent is the result of the child's social behaviour, rather than the cause of it. This research has also tended to focus on concurrent adjustment; there is no evidence of the effects of parenting on later adjustment.

Children's Adjustment Problems

Researchers have looked at family-peer connections on a molecular level, but few have looked at the effects of more molar variables, including parental distress and marital functioning. Few studies have examined both family and peer factors in relation to children's adjustment. Woodward and Fergusson (1999) reviewed the literature regarding peer and family influences on adjustment. They noted that some researchers have reported that peer relationships make a unique contribution to prediction of adjustment problems.

Others suggested that, once child and family factors are controlled, peer relationships are no longer predictive. Woodward and Fergusson explored the adjustment of late adolescent children. Their results indicated that children who reported earlier peer relationship problems were at greater risk for poor adjustment at age 18. However, once the effects of family and child factors were accounted for, early peer relationship problems did not predict later adjustment. Turner and Barrett (1998) described similar results.

Although positive peer attachment was associated with both internalizing and externalizing behaviour problems, after the effects of parent attachment were removed, peer attachment was not a significant predictor of adolescents' adjustment. Finally, Vuchinich, Bank, and Patterson (1992) studied a community sample of adolescent boys longitudinally. Contrary to their hypothesis, peer popularity did not directly influence antisocial behaviour, however antisocial behaviour predicted peer relations concurrently, but not longitudinally.

Theories of Family and Peer Influence

Different models have been developed to explain the role of peers and families in children's adjustment. The theories tend to fall into two categories: single-process and dual process models. Single-process models postulate that either the family or the peer context, but not both, are important for children's adjustment problems. Attachment theory is one well-known example of a single process model according to which family processes are considered to be the main influence on children's adjustment difficulties. A different single process theory has been suggested by Rich Harris (1995) who argued that it is peer socialization and not family factors that is the primary influence on children's behaviour.

The view that specific social competencies develop independently of another within different social contexts is the main tenet of a dual process model. According to such a model, both family and peer contexts are expected to make a unique contribution to children's adjustment (Hartup, 1983). These theories are outlined in greater detail below, and empirical evidence supporting them is presented.

Single Process Models

Based on the theories of Bowlby (1973) and Ainsworth et al., (1978), the main premise of attachment theory is that, through repeated interactions with the attachment figure, the infant develops internal working models of the self and other. A securely-attached child feels comfortable to explore and master the environment, and through this exploration, working models are then generalized to interactions with others, including peers (Putallas & Heflin, 1990). When parenting is harsh and rejecting, or inconsistent and unresponsive, an insecure attachment is formed, and the child tends to develop poor interpersonal relationships with those outside the family as well.

Many researchers have demonstrated an association between security of attachment to mother, as measured between 8 months and 18 months, and subsequent interactions with peers (e.g., Jacobson & Wilie, 1986; LaFreniere & Sroufe, 1985). Vandell and Wilson (1982) compared mother-infant interactions with infant-peer interactions three months later. They found a strong association between infant-mother relationships at time one and infant-peer relationships at time two.

Although attachment theory allows for some changes in working models with subsequent experiences, in its strongest form it postulates that the early relationship with

the primary caregiver affects all subsequent relationships, including those involving peers. In other words, family factors should predict children's adjustment problems significantly, and there should be no significant contribution of peer relationships.

Dual Process Model

Several researchers have outlined dual-process models. Lewis and Feiring (1989) described a "social network model" and Youniss (1980) outlined a model based on theories of Sullivan and Piaget. Common to both these models is the premise that relations with social partners in different contexts, typically parents and peers, "serve equally important but distinct functions in children's social development" (Youniss, 1980, p. 1); that is, relationships with multiple partners are structured differently, satisfy different needs, and provide opportunities to learn different social behaviours. It may be that they not only serve different functions, but that different social partners are more important at different periods during development. For instance, family seems to be especially important for adjustment in the first two years of life, whereas peers seem to be especially salient to children during adolescence (Feiring & Lewis, 1998).

There is some evidence to support the dual process model. There is evidence that children behave differently with parents and peers (Whiting & Whiting, 1975). Vandell (1980; Vandell & Wilson, 1982) conducted a number of studies with infants. Peer interactions tended to consist of reciprocal social behaviour, whereas mother-child interactions were more likely to be social on the part of the mother, and non-social on the part of the child. In the presence of both peers and mothers, infants were more likely to touch mothers and to vocalize to peers. In addition, infant-mother behaviour at six months

did not predict infant-peer interactions at nine months. The authors concluded that peer and parent systems were quite different. However, Lamb and Nash (1989) noted that, although infants may display different behaviours with mothers and peers this does not necessarily mean that different processes are involved. Perhaps infants behave differently with mothers and peers because peers and adults behave differently. It is also possible that the behavioural differences resulted from infants' different degrees of familiarity with the different partners.

Lewis and Feiring (1989) reported data on maltreated children in a day care setting who were observed interacting with mothers and peers and compared with a matched control group. The maltreated children interacted less with their mothers than did the control group, but there were no significant differences in peer interactions between the two groups. Thus, a poor mother-child relationship was not necessarily associated with poor peer relationships. Rogosch and Cicchetti (1994) also studied maltreated children. They found, in contrast, that peers rejected the maltreated children, and so the peer experiences of maltreated children were different from nonmaltreated children.

Summary

It appears that neither single- nor dual-process theories have received unequivocal support from the data. In some cases, findings can be interpreted as support for both models. Lamb and Nash (1989) concluded that the inconsistencies may be due to unreliable measures and small sample sizes, and stressed the need for further research.

The Proposed Studies

Two studies were carried out here. The purpose of the first study was to examine

the relative importance of family functioning and peer relations for child adjustment problems. Family functioning was measured by family variables known to be related to child adjustment problems: marital satisfaction, marital conflict, parental psychological distress, and socioeconomic status. Peer likeability was used as an index of peer relations. All these variables were used to predict children's adjustment difficulties as measured by both parents and peers. The second study examined whether marital hostility mediated the relationship between marital satisfaction and children's adjustment difficulties.

CHAPTER TWO

The Relative Influence of Families and Peers on Children's Adjustment Problems

Numerous studies have demonstrated the importance of the family on the adjustment of children. There is also strong empirical evidence for a significant association between peer relationships and children's outcomes. Recently, there has been greater interest in understanding the relative importance of both of these factors for children's adjustment.

Family Influences on Children's Adjustment Problems

Families have been shown to influence their children's adjustment in a variety of ways. A child is affected by different factors related to the family, including parental adjustment, the parent-child relationship, the marital relationship, and the educational and economic resources of parents (socioeconomic status). The following section examines evidence for the importance of three family factors: parental psychological distress, general marital satisfaction, marital hostility, as well as socioeconomic status (SES). Although these factors have less of a direct impact on the child than face-to-face interactions between parent and child, they are important determinants of family climate.

Parental psychopathology. There is strong empirical support for the idea that being raised by a parent with a psychiatric disorder is associated with difficulties of adjustment (Rutter, 1990). This association has been demonstrated for a number of psychological disorders, across a variety of children's outcome measures. Many studies have indicated a greater rate of psychological problems in children of depressed mothers

and in children of schizophrenic mothers, including social and academic problems, internalizing and externalizing problems, and depression than in mothers without psychiatric disorders (Dodge, 1990; Downey & Coyne, 1990; Ledingham, 1990). Children with mothers diagnosed with an anxiety disorder have greater internalizing problems than children of mothers with no psychiatric diagnosis (Turner et al., 1987). A number of studies have also indicated that children of mothers with a substance abuse problem are at greater risk for a wide variety of problems (Davis, 1990; Deren, 1986; Johnson, Boney, & Brown, 1990-1991), although other studies have failed to find this association (Rubio-Stipec, Bird, Canino, Bravo, & Alegria, 1991; Searles & Windle, 1990). Finally, there is some evidence that children whose mothers have been diagnosed with a personality disorder have higher psychiatric disturbances than children whose parents have no difficulties or who have more discrete episodes of psychological difficulties (Coons, 1985; Rutter & Quinton, 1984).

Although consistent, these associations tend to be moderate, and demonstrate weak specificity; that is, there is only a very slight tendency for children to develop the same disorder as their parents (Ledingham, 1990; Rutter & Quinton, 1984). There is also some evidence to suggest that poor child outcome may not be specific to a particular diagnosis (Gotlib & Goodman, 1999). Studies by Lee and Gotlib (1989a; 1989b; 1991), which examined the adjustment of children of depressed and nondepressed psychiatric patient mothers, nondepressed medical patient mothers and a control group of community mothers, found that children whose mothers were psychiatric patients demonstrated poorer adjustment than did the children of mothers in the other two groups. The authors

suggested that children's adjustment difficulties may be associated with psychological distress in general, rather than with a diagnosis of depression specifically. Turner et al. (1987) also reported an increased risk of poor adjustment in children whose mothers were diagnosed with either an anxiety disorder or dysthymia, as compared with control groups, indicating that it might be emotional disturbance per se, rather than a specific diagnosis, that accounts for the poorer outcome of the child.

Marital adjustment. Numerous studies over the last twenty years have explored the relationship between marital adjustment and children's adjustment problems (Katz & Gottman, 1993). Despite a variety of sampling and measuring procedures, and operational definitions, most studies have demonstrated an association between marital dissatisfaction and a variety of negative outcomes for children (Emery, 1982; Emery & O'Leary, 1984; Grych & Fincham, 1990; Reid & Crisafulli, 1990). Grych & Fincham (1990) noted that many studies that claimed to investigate marital conflict and children's adjustment really measured global marital quality using a measure of marital satisfaction. The authors noted that not all unhappy marriages are necessarily conflictual ones. Across studies, marital functioning has been variously referred to as marital adjustment, satisfaction, quality, or distress (Heyman, Sayers, & Bellack, 1994). For the purposes of this paper, these terms will be used interchangeably to refer to global marital functioning. In contrast, the terms discord, hostility, or conflict are used here to refer to more specific marital difficulties that are concerned with issues such as disagreements, arguments, complaints, verbal and physical abuse, and so on.

Fendrich, Warner, and Weissman (1990) examined the relationship between family

risk factors and children's adjustment difficulties. They found that poor marital adjustment, as measured by the Locke-Wallace Marital Adjustment Scale (Locke & Wallace, 1959), was associated with a significant increase in both internalizing and externalizing behaviour problems. In his 1982 review, Emery noted that marital dissatisfaction has been found to be significantly related to children's externalizing problems across a variety of samples and methodologies and that the association between children's internalizing problems and marital satisfaction was also significant, although somewhat less consistent across studies.

The association between marital quality and children's adjustment problems has been shown to differ depending on a number of factors. In general, stronger correlations are found in clinic as opposed to non-clinic samples (Emery, 1982; Emery & O'Leary, 1984; Porter & O'Leary, 1980), although significant relationships have been found using both types of samples. In addition, researchers have noted that the association between marital functioning and outcome of the child is generally greater when a single informant is used to measure the constructs than when different informants are used to measure the two constructs (David et al., 1996; Emery, 1982; Fincham & Osborne, 1993). Finally, several researchers have noted sex-related differences in the association between children's adjustment problems and marital functioning (Emery, 1982; Fincham & Osborne, 1993; Snyder, 1998). The evidence is mixed, and at this point, it is not clear whether boys and girls experience different reactions to marital conflict (Snyder, 1998).

General marital dissatisfaction can influence children in both direct and indirect ways (Fincham et al., 1994). It may lead to symptoms of anxiety, depression, or other signs of psychological distress in the child. In addition, the child may be drawn into the

marital conflict directly. More indirectly, maritally dissatisfied parents may experience their own psychological distress, and this may affect their functioning level both as individuals and as parents. It is also possible that modelling of maladaptive coping patterns occurs, so that children may exhibit less useful problem-solving strategies (Boyum & Parke, 1999). Cummings and Davies (1994) found that, for children who observed anger being expressed between adults, distress was the most common reaction, but that there were also increased levels of physical aggression in younger children and of verbal aggression in older children.

Marital hostility. Although researchers initially examined the influence of global marital satisfaction, they have focused more recently on the influence of overt marital conflict on children's adjustment. It has been consistently demonstrated that marital hostility witnessed by the child is associated with poorer outcomes in children (Davies & Cummings, 1994; Grych & Fincham, 1994; Reid & Crisafulli, 1990). Internalizing problems, such as depression and anxiety, have been associated with overt marital hostility (Johnson, Gonzalez, & Campbell, 1987; Katz & Gottman, 1993; McHale et al., 1991). Overt marital hostility also predicts low self-esteem (Pawlak & Klein, 1997). In addition, overt marital hostility has been found to predict externalizing behaviours, including conduct problems (David, et al., 1996; Johnson & O'Leary, 1987; Long et al., 1988; McHale et al., 1991) and aggression (Johnson et al., 1987). The evidence also suggests that marital conflict predicts behaviour problems in children whose parents have divorced, and that marital conflict may be even more important than family status as an indicator of children's outcome (Amato & Keith, 1991; Emery, 1988; Emery & Katzmann, 1995).

Socioeconomic status. There is strong empirical evidence that socioeconomic status has implications for family well-being and negative child outcome, including poor peer acceptance (Dishion, 1990; Patterson et al., 1991; Shaw & Emery, 1988), and conduct problems at school (Bolger et al., 1995). Offord et al. (1992) reported that, in a community sample of children, low family income predicted diagnosis with one or more psychiatric disorders four years later, including conduct disorder. Achenbach (1981) found that rates of parent-reported behaviour problems were significantly higher for lower SES children than for higher SES children. In addition, a significantly greater proportion of externalizing, as opposed to internalizing, problems were endorsed by the lower SES parents. Duncan et al. (1994) also reported that family income predicted internalizing and externalizing scores on the Child Behavior Checklist. Dodge, Pettit, and Bates (1994) reported that SES predicted externalizing problems as assessed by teachers, and aggression as predicted by peers. However, as Tarnowski, Brown, and Sidonia (1999) have noted, because the association between SES and child outcomes is so well established, it is perhaps more important to examine the more proximal mediating factors between SES and children's adjustment difficulties.

Parental behaviour has been shown to mediate the effects of economic hardship on children. Conger and his colleagues (Conger et al., 1992; 1993; 1994) reported that low SES was related to adolescent behavioural problems through disrupted parenting and an increase in marital and parent-child conflict. Parker et al., 1995) reported that poverty is associated with anger, inconsistency, and punitiveness in child rearing. Poverty is also associated with psychological distress of the parent (Tarnowski et al., 1999), and this,

coupled with the literature indicating that parental psychological distress is associated with poor outcomes for children, suggests that parental psychological distress could be a mediator between SES and children's outcome. Thus, although socioeconomic status is associated with children's adjustment problems, its effect seems to be mediated through other factors, in particular, parenting behaviour, the parent-child relationship, and marital hostility. Nevertheless, this variable appears to be an important marker variable for these more proximal influences.

In sum, disruptions in family functioning, including parental psychological distress, marital dissatisfaction, marital hostility, and economic hardship are associated with negative effects on children's adjustment. Nevertheless, although understanding family functioning is important to understanding children's adjustment problems, it also appears to be important to examine relationships with other significant individuals, including peers.

Peer Relations and Children's Adjustment Problems

Peer relations appear to constitute a quite different social arena for children. Children behave quite differently when interacting with peers as opposed to with parents (Hartup, 1983; Ledingham & Younger, 1985; Whiting & Whiting, 1975), and children's motivation to spend time with peers increases over time (La Greca & Prinstein, 1999). Moreover, peer acceptance is based on factors that differ from those that predict parental liking for children.

The majority of the evidence examining peer relations and children's concurrent adjustment supports the hypothesis that children who are not well accepted by their peers are at risk for a variety of negative outcomes, including behavioural, psychological, and

academic maladjustment (Parker & Asher, 1987; Parker et al., 1995; Putallaz & Dunn, 1990). There is significant overlap between difficulties with peers and Attention-Deficit/Hyperactivity Disorder (Landau & Moore, 1991), Conduct Disorder (Cole & Carpentieri, 1990), and loneliness (Asher et al., 1984; Crick & Ladd, 1993). Bukowski and Hoza (1989) reported that popularity with peers was positively related to self-concept, and Putallez and Dunn (1990) noted that lower social status children have lower self-esteem. Finally, Cole and Carpentieri (1990) found that rejected children had more depressive symptoms, as reported by peers, teachers, and the children than did children in other sociometric categories.

Poor peer relations have also been associated with school difficulties, both behavioural and academic. Coie et al., (1982) found that both peers and teachers perceived rejected children as more disruptive, aggressive, dependent, and uncooperative. Lower status children have also been found to perform more poorly than more popular children on achievement tests (Green et al., 1980), and to have lower grade point averages (Dishion, 1990, Vandell & Hembree, 1994).

There is evidence that children with poor peer relations have a greater chance than other children of developing problems later in life (Parker & Asher, 1987). Many studies have found that children categorized as rejected or controversial in grade school had a much greater likelihood of later contact with police and being arrested (Janes et al., 1979; Roff & Wirt, 1984), court offenses (Ollendick et al., 1992), being fired from a job for behavioural reasons, dishonourable discharge from the military (Ollendick et al., 1992), and other externalizing behaviour problems (Coie et al., 1992).

Researchers reported that poor peer relations in childhood are associated with later psychological difficulties, including schizophrenia, increased risk of hospitalization for psychological problems, attention problems, conduct disorder and substance abuse (Janes et al., 1979; Ollendick et al., 1992; Putallaz & Dunn, 1990; Rolf & Wirt, 1984).

Finally, poor peer relations have been found to be associated with later academic difficulties, including early withdrawal (Janes, et al., 1979) and attention and conduct problems in the classroom (Ollendick et al., 1992). Rejected children have been shown to be held back a grade more often, and to earn lower grades than nonrejected children (Coie, et al., 1992; Ollendick et al., 1992).

In sum, peer relations are associated with both concurrent and longitudinal adjustment difficulties. Generally, children with poor peer relations tend to exhibit more behaviour problems, have more difficulties at school, and show greater psychological distress than do other children.

Links between Family and Peer Systems

Studies have consistently reported strong associations between family factors, including marital satisfaction, marital conflict, and parental psychopathology, and children's outcome (Emery & O'Leary, 1984; Howes & Markman, 1989; Shaw & Emery, 1988). There is also evidence for a link between family factors and peer relationships, generally in terms of the effect of factors such as parenting style and attachment status on children's social competence (Finnie & Russell, 1988; Hinde & Tamplin, 1983; Putallaz & Heflin, 1990). Putallaz and Heflin found that parents who are high on warmth and gentle control, and who are sensitive, responsive, and involved with their children have a positive

influence on their children's social competence. These interactions between parent and child are thought to lead to a secure mother-child attachment, in which the child feels secure and comfortable in exploring new relationships. Evidence suggests that children who are securely attached tend to be more successful in their social relationships (Ainsworth et al., 1978)

Finally, many studies have demonstrated associations between peer relations and children's outcome (Parker & Asher, 1987). However, few studies have examined both family and peer factors in relation to children's adjustment.

This may be, in part, because many researchers have viewed the family and peers systems as quite separate systems (Feiring & Lewis, 1998). However, recent suggestions by Rich Harris (1995) that the family is much less important than peers for children's adjustment have led to renewed interest in the relative impact of both family and peers on children's functioning.

Results from studies that have controlled for both family and peer factors in predicting children's adjustment are not consistent. Whereas some studies report that peer relationships make an independent contribution to the prediction of children's adjustment, other researchers suggest that, once certain child or family factors are controlled, peer relationships do not predict adjustment (Turner & Barrett, 1998; Woodward & Ferguson, 1999). Thus, there is no consensus in the literature regarding the relative impact of family and peers on adjustment.

Theories of Family and Peer Influence

Different models have been developed to explain the role of peers and families in

children's adjustment. The theories tend to fall into two categories: single-process and dual process models. Single-process models postulate that either the family or the peer context, but not both, are important for children's adjustment. Attachment theory is one well-known example of a single process model according to which family processes are considered to be the main influence on children's adjustment. The main premise of attachment theory is that, through repeated interactions with the attachment figure, the infant develops internal working models of the self and other, which are generalized to interactions with others, including peers (Putallaz & Heflin, 1990). Although attachment theory allows for some changes in working models with subsequent experiences, in its strongest form it postulates that the early relationship with the primary caregiver affects all subsequent relationships, including those involving peers. In other words, family factors should predict children's adjustment problems significantly, and there should be no significant contribution of peer relationships beyond the effects of family.

A different single process theory has been suggested recently by Rich Harris (1995) who argued that it is peer socialization and not families that is the primary influence on children's behaviour. She suggested that it is through group socialization processes with peers that children learn values and how to behave, and that parents have very little influence on this process.

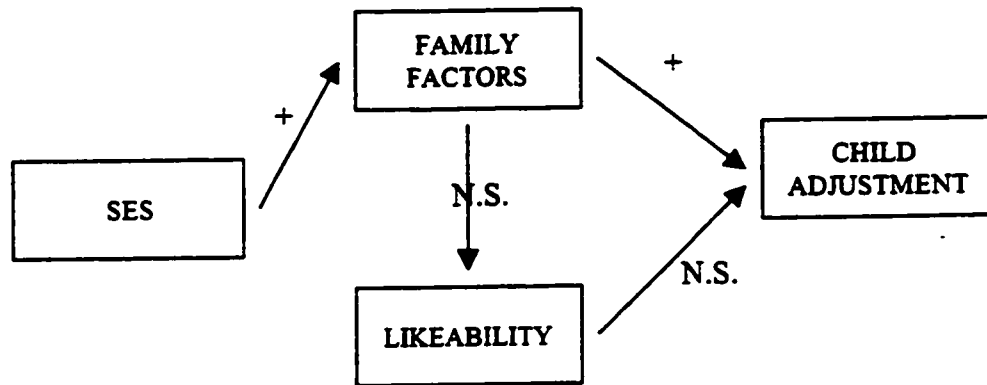
The view that different repertoires of social behaviour may develop independently of one another within different social contexts is the main tenet of the dual process model. According to this model, both family and peer contexts are expected to make distinct contributions to children's adjustment difficulties (Hartup, 1983).

Several researchers have outlined dual process models. Lewis and Feiring (1989) described a "social network model" and Youniss (1980) outlined a model based on the theories of Sullivan and Piaget. Common to both these models is the premise that relations with different social partners in different contexts, typically parents and peers, "serve equally important but distinct functions in children's social development" (Youniss, 1980, p. 1), that is, that relationships with multiple partners are structured differently, satisfy different needs, and provide opportunities to learn different social behaviours. It may also be the case that different social partners are more important during different periods of development. For instance, family seems to be especially important for adjustment in the first two years of life, whereas peers seem to be especially salient to children during adolescence (Feiring & Lewis, 1998).

The Present Study

The objective of the current study was to examine the relative effects of family factors and peer likeability on children's adjustment problems. Specifically, the goal was to test the usefulness of a single-process family model and a dual process model as outlined above. The single process family model (Model One, Figure 1) argues that family variables should predict both internalizing and externalizing problems, whereas peer relations should not. The dual process model (Model Two, Figure 1), predicts that both peer relations and family factors should be significant predictors of children's internalizing and externalizing problems and that there should be no significant correlation between family variables and peer relations. No differences were predicted as a function of type of informant (mothers or fathers) in either of the models.

Model One: Single Process Family Model



Model Two: Dual Process Family and Peer Model

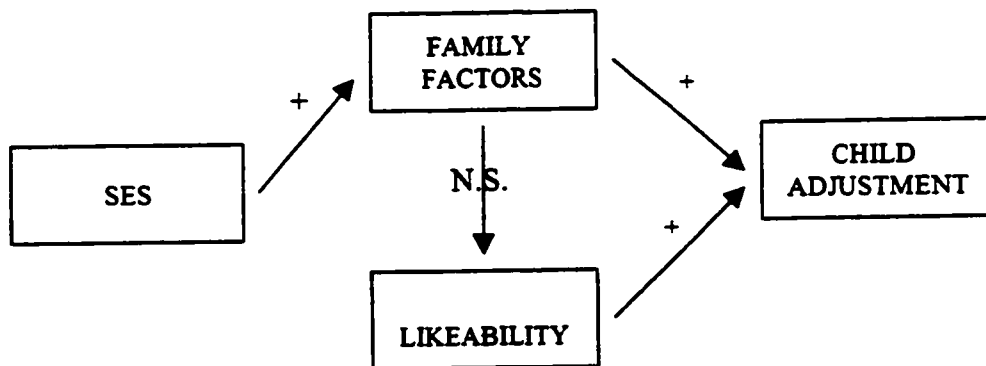


Figure 1. Path-analytic models: Influence of peer relations and family factors on child adjustment.

Method

Participants

Participants were drawn from the Concordia University High Risk Project (Ledingham, 1981), a prospective, longitudinal study begun in 1976 to follow French-language school children from Montreal. Most of these children came from families of lower socioeconomic status. The children were judged by their classmates to display high rates of aggressive or withdrawn behaviours, or a combination of both. The original sample of approximately 800 children was selected from an initial screening of 152 classes which included 4,109 children in grades one, four, and seven. The aggressive group consisted of 198 children who scored above the 95th percentile on aggression and below the 75th percentile on withdrawal. The withdrawal group consisted of 220 children who scored above 95th percentile on withdrawal and below the 75th percentile on aggression. The 238 children in the aggressive-withdrawn group scored above the 75th percentile on both aggression and withdrawal, and a contrast group of children were randomly selected from among 1114 children who had scores between the 25th and 75th percentile on both aggression and withdrawal. Thus, the sample included a significant overrepresentation of behaviourally deviant children from urban, lower SES families.

Between 1984 and 1985, home visits were carried out on a total of 493 families. Participants for the present study were those who had been visited during this period and who had had mothers or fathers participate in the interview and complete the measures of psychological distress, marital functioning, and the CBCL, and who also had peer

nomination scores from the third round of testing in 1984-1985. A total of 89 families met these criteria. At initial testing, the target children in these families had been classified as follows: 11 aggressive (4 boys, 7 girls), 7 withdrawn (5 boys, 2 girls), 16 aggressive-withdrawn (5 boys, 11 girls), and 43 non-deviant contrasts (17 boys, 26 girls). A total of 12 children had no peer classification from 1977-8. Peer classifications from 1984-5 for the sample used in the present study were as follows: 8 aggressive (3 boys, 5 girls), 6 withdrawn (3 boys, 3 girls), and 61 children who did not meet criteria for the behaviourally deviant groups (24 boys, 37 girls). Thus, at the time of data collection for the present study, the sample was behaviourally less deviant than at the time it was first identified.

Means and standard deviations for the demographic and study variables as reported by mothers and fathers are presented in Table 1 and Table 2. On average, the mothers were in their early forties, and had been married approximately 20 years. Generally, this was their first marriage. Mothers reported an average of 9 years of education (in Quebec, high school finishes after grade 11). Average family income was between \$20,000 and \$22,000. Thirty-three percent of the mothers reported that they were homemakers, and 10% reported that they were on welfare or unemployment insurance. The mothers reported an average of 1.8 minor children residing in the home. The mean score on the Marital Adjustment Test was 115 (falling in the range of "satisfied"). According to mothers' reports, 23% of their marriages met criteria as distressed according to Locke and Wallace's (1959) cutoff.

The data obtained from fathers were similar. On average, fathers were in their

Table 1

Means and Standard Deviations for Demographic Variables as a Function of Informant

Variable	Informant:					
	Mothers			Fathers		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
Age of Parent ^a (years)	41.6 ^b	6.4	86	44.0 ^b	7.1	80
Education of Parent ^a (years)	8.8	2.7	86	9	3.1	80
Length of Marriage (years)	19.8	5.7	85	20	5.9	79
No. of Minors at Home	1.8	0.9	86	1.8	1.0	80
Previous Marriages	0	0.1	86	0	0.1	80
Income Category	7.7	3.4	84	7.9	3.2	80

Note. ^aMothers and fathers reported only on their own age and education.

^bThese means are significantly different at $p < .05$.

Table 2

Means and Standard Deviations for Measures of Marital Functioning and Child Adjustment as a Function of Informant

Variable	Informant					
	Mother			Father		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
<u>Marital Functioning</u>						
O'Leary Porter Overt Hostility Scale	10.00	4.89	86	9.02	6.10	80
Locke-Wallace Marital Adjustment Test	115.81	25.70	86	120.57	25.67	80
<u>Children's Adjustment</u>						
Child Behavior Checklist: Internalizing Scale	57.78 ^a	8.37	86	54.66 ^a	8.33	80
Child Behavior Checklist: Externalizing Scale	57.99	8.61	86	56.54	8.23	80
Global Symptom Index	58.72	10.00	86	58.41	10.23	80
Peer-Nominated Aggression	.21	1.03	86	.17	1.03	80
Peer-Nominated Withdrawal	-.14	.93	86	.11	.97	80
Peer-Nominated Likeability	.11	1.00	86	.10	.96	80

Note. ^aThese means are significantly different at $p < .05$.

mid-forties and had been married about 20 years. For the majority, this was their first marriage. The mean score on the Marital Adjustment Test was 120 (in the "satisfied" range). Eighteen percent of the marriages of the fathers met criteria for being considered maritally distressed. Fathers reported an average of 9 years of education and a yearly family income of approximately \$20,000 to \$22,000. Sixteen percent reported that they were on either welfare or unemployment insurance, and 1% reported that they were retired. They reported an average of 1.8 minor children living at home at the time of the study.

According to the 1986 census data from Statistics Canada (1987), the average family income in Montreal was \$37,865. The census data also indicated that 40% of people 15 years of age and older had 11 years or less of education. Thus, compared with other Montreal families, the present sample had low levels of education and income.

In terms of child characteristics, the sample included 53 girls (60%) and 36 boys (40%). Grade levels ranged from grade 6 to grade 11. Sixty-two percent of the children had been in grades 7 and 8, and 33% had been in grades 10 and 11 at the time of the home visit.

Procedure

Peer nomination assessments were conducted at three-year intervals, resulting in grade 1 children being retested in grades 4, 7, and 10, grade 4 children being retested in grades 7 and 10, and grade 7 children being retested in grade 10. Data reported here are cross-sectional, and included peer nomination scores from the third round of testing in 1984-5, and thus included only children who had been in grade one or four at the time of

subject selection.

Assessment of the different peer status groups of children included measures of intellectual and academic adjustment, and social and emotional adjustment. Laboratory measures examined areas such as motor development and intellectual abilities of the children. In addition, two home interviews, conducted three years apart, explored the family environment, the adjustment of the target child, the adjustment of parents, and the marital relationship. Results from the second of these are reported here.

Measures

Demographic information. Demographic data such as parental age, education level, family status, number of minor children in the home, and length of marital relationship were gathered separately for mothers and fathers. Two measures of socioeconomic status were collected. Parents were asked to indicate their gross family income category (e.g., \$18,000 - \$20,000) and to indicate the number of years of education they had completed. Information about the target child was collected, including sex and grade level at first testing.

Marital functioning. General marital satisfaction was evaluated using a French translation of the Marital Adjustment Test (MAT; Locke & Wallace, 1959), a 15-item inventory completed by both fathers and mothers. The questionnaire included several items that assessed perceived level of agreement between spouses in several areas (e.g., finances, recreation, demonstrations of affection), as well as items evaluating happiness with the marriage. The MAT has good internal consistency, with split-half correlations of .90 (Locke & Wallace, 1959). The MAT has also been shown to differentiate between

distressed and non-distressed marriages (Locke & Wallace, 1959; O'Leary & Arias, 1987).

The French translation of the MAT correlated significantly with the O'Leary-Porter Marital Hostility Scale for both mothers and fathers ($r = -.42$, $p < .01$; and $r = -.49$, $p < .01$, respectively), indicating acceptable concurrent validity¹. The alpha coefficients were adequate ($\alpha = .76$ for mothers and $\alpha = .71$ for fathers).

Parents' perceptions of overt marital hostility was evaluated using a French translation of the O'Leary-Porter Overt Hostility Scale (OPS; Porter & O'Leary, 1980). It was completed by both fathers and mothers in the present study to assess mothers' and fathers' perceptions of the frequency and type of marital hostility that occurred in the presence of their child. Each of the 9 items measuring marital conflict were scored on a 5-point Likert scale of frequency, ranging from 'never' to 'very often', and summed to yield a total score for each parent. Items assessed differences between spouses on discipline, strategies, complaints about each other, physical and verbal abuse, and displays of affection. Higher scores on the OPS are indicative of greater marital hostility. The instrument has demonstrated good test-retest reliability ($r = .96$) and good internal consistency ($\alpha = .86$). The OPS has been found to correlate significantly with the Locke-Wallace Marital Adjustment Scale in both clinic and non-clinic samples ($r = .63$ and $r = .43$ respectively), and with reports of conduct problems among children ($r = .30$ for girls, and $r = .40$ for boys) (Porter & O'Leary, 1980).

1

Values for this and subsequent psychometric analyses were based on the entire home visit sample of 493 families.

The French translation of the OPS used in the present study demonstrated reasonable concurrent validity; as indicated above, it was significantly correlated with the MAT for both mothers and fathers. It also correlated significantly with scores of the child's internalizing and externalizing problems as reported by parents (for mothers, $r=.30$, $p<.01$ for internalizing scores and $r=.32$, $p<.01$ for externalizing scores; for fathers, $r=.29$, $p<.01$ for internalizing and $r=.30$, $p<.01$ for externalizing). The alpha coefficients for the translated version used in the present study were .77 for mothers and .84 for fathers.

Parents' psychological distress. A French translation of the Symptom Checklist-90-Revised, a measure of psychological distress, was completed by both mothers and fathers (SCL-90-R; Derogatis, 1977). It is a 90-item checklist assessing self-reported symptoms of psychological distress. The items are scored on a 5-point Likert scale, ranging from "not at all" to "extremely". The measure provided scores for nine symptom scales, including somatization, obsessive-compulsive, depression, anxiety, hostility, as well as three global indices of distress. For the present study, the Global Symptom Index (GSI) was used. The GSI combines information on a number of different symptoms, along with information on the intensity of perceived distress.

For the standardization sample, test-retest reliabilities over one week ranged from .78 to .90, and alpha coefficients ranged from .70 to .90 for the nine subscales. Alpha coefficients for scale scores were .90 for the fathers and .92 for the mothers (Derogatis, 1977).

Children's adjustment problems. A French translation of the Child Behavior Checklist Parent Report Form (Achenbach & Edelbrock, 1981) was completed for each

child by mothers and fathers. The CBCL is a well-established instrument consisting of 20 items which measure parents' perceptions of social competence and 118 items that comprise behaviour problem items. The CBCL yields scores on a number of specific factors, including somatic symptoms, attention problems, withdrawn behaviour, and aggressive behaviour, and, in addition, three scores on global scales (internalizing problems, externalizing problems, total behaviour). In the present study, only the Internalizing (INT) and Externalizing (EXT) scales were used. Raw scores were converted to T scores separately for each sex, using the T-score scales provided by the authors (Achenbach & Edelbrock, 1981).

The CBCL Parent Form has good to excellent psychometric properties. Norms were derived from a sample of 1300 non-clinic children. The authors reported one-week test-retest intraclass correlation coefficients greater than .90 for the behaviour problems scales. The CBCL also differentiates between clinic and non-clinic populations (Achenbach, 1978; Achenbach & Edelbrock, 1981)

In the current study, the Externalizing scale was significantly correlated with peer nominations of aggression (Peer Evaluation Inventory aggression and ASSESS aggression scores) for mothers ($r=.26$, $p<.05$) and fathers ($r=.41$, $p<.01$).

Peer nomination measures. A French translation of the Peer Evaluation Inventory (PEI; Pekarik, Prinz, Weintraub & Neale, 1976), a peer nomination instrument, was used to assess peers' perceptions of target children's behaviour. The PEI contains 35 items that load on three factors: aggression (including items like "those who are mean and cruel to other children"), withdrawal (including items such as "those who often don't want to

play"), and likeability (with items like "those whom everybody likes"). Each class from grade one through to eight, was asked to nominate up to a maximum of four children from their class who best fit the description of each item. Different administrations were used to nominate boys and girls, and total nominations received on the aggression, withdrawal and likeability factors were converted to Z scores separately for boys and girls within each class. The likeability factor was used in the current study as a measure of peer popularity, and the aggression and withdrawal subscale factors were used as measures of children's adjustment problems.

The PEI has been shown to have adequate internal consistency; split-half correlations among the scales were greater than $r = .70$ for the aggression and withdrawal scales, although the correlations for males in grades 7 through 9 were .64. Test-retest correlations for all three factors were greater than .80. Teacher nominations were correlated with peer ratings to measure concurrent validity. The correlations were modest (ranging from $r = .28$ to .73, with a median of .56), but consistent with other correlations reported between teachers and peers (Pekarik, et al., 1976).

In the present study, the alpha coefficients for the translated instrument were .97 for the aggression factor, .93 for the withdrawal factor and .90 for the Likeability factor. As noted above, the aggression factor was significantly correlated with fathers' reports of internalizing and externalizing problems, and with mothers' reports of externalizing problems. Moreover, there was evidence for the predictive validity of the PEI, as groups of children chosen on the basis of their aggression and withdrawal scores differed in rates of academic failure three years later (Ledingham & Schwartzman, 1984).

A French translation of Adjustment Scales for Sociometric Evaluation of Secondary-School Students (ASSESS; Prinz, Swan, Weintraub & Neale, 1978), a 41-item peer nomination instrument, was also used in the current study. ASSESS was designed as an extension of the Peer Evaluation Inventory for use with older students, and there is substantial overlap with the PEI in item content, particularly for the aggression, withdrawal, and likeability/social competence scales. ASSESS has five factors: aggression, withdrawal, anxiety, social competence, and academic difficulty, but only scores from the aggression, withdrawal, and social competence scales were used here.

The test demonstrates good reliability. Alpha coefficients of the factors reported for the original sample ranged from .82 to .96. Test-retest reliability over three weeks was .91 for the aggression subscale, .89 for the withdrawal scale, and .72 for the social competence scale (Prinz et al., 1978).

Alpha coefficients for the French-language version of ASSESS were .95 for the aggression factor, .95 for the withdrawal factor, and .91 for the social competence factor. Evidence for the validity of this translated instrument comes from the fact that aggression subscale correlated significantly with CBCL internalizing and externalizing behaviour problems scores completed by fathers, and with CBCL externalizing behaviour problem scores of mothers.

Aggression, withdrawal and likeability are moderately stable behaviours. Stability coefficients of the translated versions of the PEI and ASSESS over a six-year period were significant across grade levels for boys and girls, with the exception of grade one boys' withdrawal scores. The significant stability coefficients ranged from $r = .17$ to $r = .50$

(Ledingham & Orpana, 2000).

Children of different ages were combined in the analyses reported below. For these analyses, peer nomination scores for comparable scales of the PEI and ASSESS instruments were treated as equivalent (e.g., PEI aggression and ASSESS aggression, PEI withdrawal, and ASSESS withdrawal, PEI likeability and ASSESS social competence).

Results

Preliminary Analyses

Major analyses were performed using multiple regression techniques and the SPSS 9 statistics package. Results are presented in three sections. First, preliminary analyses of the data were performed to determine that data entry was accurate, to look for missing values and outliers, to check that multivariate normality was achieved, and to look for evidence of heteroscedasticity. Second, the correlations among the demographic and study variables were computed. Finally, regression analyses were carried out to evaluate different models of association between the family context, the peer context, and children's adjustment difficulties.²

2

Missing data were evaluated for each variable. There were a number of measures that were not completed by participants, thus the sample for the current study is substantially smaller than the original family sample.

Within the measures completed, only the MAT had missing data. In all, there were 5 instances of missing data points (less than .1%), and no participant was missing more than one data point. These data points appeared to be randomly distributed; thus, the participants were retained, and the total score was calculated using an extrapolation procedure as suggested by the authors (Locke & Wallace, 1959).

Visual inspection of the frequency distributions of each variable suggested that, with the exception of the PEI and ASSESS, all variables appeared to be normally distributed. Excluding the peer nomination information, an examination of skewness and kurtosis revealed a skewness range of -.422 to .697 ($|M|=.09$), and a kurtosis range of -.707 to

Intercorrelations among variables for each informant. Pearson product-moment correlations among variables reported by mothers and among variables reported by fathers are presented in Table 3. Correlations among measures completed by mothers followed expected patterns. Scores on the MAT were moderately and negatively correlated with the scores on the OPS and GSI. OPS scores were positively correlated with the Global Symptom Index and Internalizing and Externalizing scores from the CBCL. The Global Symptom Index was correlated with both Internalizing and Externalizing scores of the CBCL. There was also a strong positive correlation between Internalizing and

.674 ($|M|=.047$). These figures were well within the -1.0 to 1.0 values judged acceptable by Muthén and Kaplan (1985).

The summary statistics for both the PEI and the ASSESS data indicated significant skewness and kurtosis. For the PEI aggression subscale, skewness =1.99, and kurtosis =4.31; for the withdrawal subscale, skewness =2.39 and kurtosis =6.61, and for the likeability subscale, skewness= 1.70 and kurtosis =3.72. The ASSESS data were similar: for the aggression subscale, skewness =2.61, and kurtosis =8.84; for the withdrawal scale, skewness =2.77, and kurtosis =9.81, and for the social competence scale, skewness =1.68, and kurtosis=3.85. These PEI and ASSESS scores were subjected to a square root transformation to reduce skewness. This resulted in skewness and kurtosis figures well within acceptable range (Muthén & Kaplan, 1985).

Although multivariate normality is not readily testable, the summary statistics indicated no reason to expect the variables to depart significantly from normality. As well, an examination of the distribution of standardized residuals indicated they appeared to approximate normality.

Spotchecks of various bivariate frequency distributions revealed approximately normal configurations. As well, as mentioned above, the standardized residuals appeared normal.

The standardized scores for each variable were examined to identify univariate outliers. In all, 4 instances of univariate outliers were found. The potential for multivariate outliers was assessed using Mahalanobis' distances, Cook's distances, and leverage. No outliers were identified using these methods. Despite these null results, however, the univariate outliers were reduced to within three standard deviations of the sample mean, in order to minimize any possible influence.

Table 3

Correlations Among Marital Functioning and Child Adjustment Scores Separately for Reports by Mothers^a and Fathers^b

Variable	GSI	MAT	OPS	INT	EXT	AGGR	WITHD	LIKE
Global Symptom Index (GSI)		-.32**	.28**	.42**	.32**	.10	-.01	-.06
L-W Marital Adj. Test (MAT)	.29**		-.33**	-.08	.01	-.03	-.01	-.07
O'Leary Porter Overt Hostility Scale (OPS)	.49***	-.51***		.38***	.35***	.05	.06	.00
CBCL- Internalizing (INT)	.45***	-.10	.22		.77***	.02	.19	-.20
CBCL- Externalizing (EXT)	.41***	-.10	.19	.79***		.26*	.03	-.23*
Peer Nominated Aggression (AGGR)	.16	.05	-.02	.30**	.41***		-.36***	-.05
Peer Nominated Withdrawal (WITHD)	-.11	.04	-.04	.13	-.04	-.39***		-.51***
Peer Nominated Likeability (LIKE)	.02	.05	.03	-.18	-.13	-.00	-.53***	

Note. ^aCorrelations among mothers' reports are above the diagonal, ^bcorrelations among fathers' reports are below.

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

Externalizing scores on the CBCL.

On measures completed by fathers, scores on the MAT were negatively correlated with both OPS and GSI scores. OPS scores were significantly correlated with GSI scores. Global Symptom Index scores were correlated with INT and EXT scores of the CBCL. As was the case with mothers' data, fathers' Internalizing and Externalizing scores were highly positively correlated. Finally, fathers' Externalizing scores from the CBCL were positively correlated with peer nominations of likeability.

Correlations between reports by mothers and fathers. There were a number of significant correlations between measures completed by mothers and those completed by fathers (see Table 4). Mothers' and fathers' MAT scores were significantly correlated, as were their OPS scores ($r=.37$; $p<.001$, and $r=.39$, $p<.001$ respectively). There were significant correlations between mothers' and fathers' scores on the Internalizing scale of the CBCL ($r=.40$, $p<.001$), and on the Externalizing scale ($r=.55$, $p<.001$), indicating that there was significant agreement between parents in their perceptions of their children's behaviours. Finally, mothers' INT scores and fathers' EXT scores were significantly correlated ($r=.35$, $p<.01$), and fathers' EXT and mothers' INT were significantly correlated ($r=.34$, $p=.01$).

Testing of Models

Path analysis using multiple regression procedures was used to test the hypothesized models. The results are presented separately for data provided by mothers and fathers for the whole sample, and then separately for boys and girls.

Table 4

Correlations Between Mothers' and Fathers' Reports of Marital Functioning and Child Adjustment Scores

Variable	Mothers				
	GSI	MAT	OPS	INT	EXT
Fathers					
Global Symptom Index (GSI)	.04	.00	.22	.14	.14
L-W Marital Adj. Test (MAT)	-.08	.37***	.34**	.04	.05
O'Leary Porter Overt Hostility Scale (OPS)	.13	-.26*	.39***	-.01	.03
CBCL- Internal-izing (INT)	.07	-.04	.23*	.40***	.34**
CBCL- External-izing (EXT)	.08	-.10	.28*	.35**	.55***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Mother-reported family and outcome variables. Mothers' marital satisfaction scores were not related to their reports of either internalizing or externalizing problems. Given that these correlations were virtually zero, model testing using MAT scores was not carried out. In addition, the two socioeconomic indicators provided by mothers, education and family income, were not significantly correlated with the Global Symptom Index, the MAT or the OPS; thus, SES was not included in model testing.

Generally, the data from mothers indicated support for a dual process model, highlighting the importance of both family and peers. The results are reported in Table 5. First, the models were tested using mothers' scores of psychological distress (i.e., GSI) and peer likeability (LIKE) as the independent variables. Using internalizing behaviour problems (INT) as the outcome measure, the regression equation was significant ($F(2,85)=10.82, p<.001$), accounting for 19% of the variance. GSI was a significant predictor of internalizing problems, but peer likeability on its own did not predict significantly. In addition, as noted above, there was no correlation between GSI and peer likeability. This was the only regression equation using mothers' scores which supported the single process family model. When externalizing problems (EXT) was used as the outcome measure, the regression equation was again significant ($F(2,85)=6.96, p<.002$), accounting for 12% of the variance. This time, both GSI and peer likeability significantly predicted child outcome, providing support for the dual process model.

Next, the models were tested using overt marital hostility (OPS) and peer

Table 5

Model Testing Using Mothers' and Fathers' Reports to Assess Both Family and Peer Variables and Children's Outcome

Outcome Variable						
	<u>CBCL Internalizing</u>			<u>CBCL Externalizing</u>		
	β	F	d.f.	β	F	d.f.
<u>Mothers</u>						
GSI	.409	17.44***	1, 83	.306	9.04**	1, 83
LIKE	-.177	3.26	1, 83	-.207	4.15*	1, 83
	Model Adj. R ² = .188			Model Adj. R ² = .123		
OPS	.381	14.82***	1, 83	.354	12.58***	1, 83
LIKE	-.199	4.01*	1, 83	-.223	5.00*	1, 83
	Model Adj. R ² = .166			Model Adj. R ² = .156		
<u>Fathers</u>						
GSI	.45	20.38***	1, 77	.408	15.68***	1, 77
LIKE	-.188	3.54	1, 77	-.141	1.86	1, 77
	Model Adj. R ² = .215			Model Adj. R ² = .163		
OPS	.227	3.92*	1, 77	.188	2.86	1, 77
LIKE	-.183	2.81	1, 77	-.137	1.51	1, 77
	Model Adj. R ² = .058			Model Adj. R ² = .028		

Note. GSI=Global Symptom Index of SCL-90-R; OPS=O'Leary-Porter Marital Hostility Scale; LIKE=Combined Likeability scale of the Peer Evaluation Inventory and Social Competence scale of ASSESS. * $p < .05$. ** $p < .01$. *** $p < .001$.

likeability as independent variables. When internalizing problems (INT) were used as the dependent variable, the regression equation was significant ($F(2,85)=9.45$, $p<.001$), accounting for 16.5% of the variance. Both OPS and LIKE were significant predictors of internalizing problems, indicating support for the dual process model. When externalizing problems were the dependent measure, the equation was again significant ($F(2,85)=8.82$, $p<.001$); and both OPS and LIKE were significant predictors of externalizing problems, indicating support for a dual process model. The equation accounted for 15.5% of the variance in externalizing problems.

Finally, both Global Symptom Index and OPS scores were entered into hierarchical regression equations to determine which was the better predictor of internalizing and externalizing problems. Together GSI and OPS scores accounted for 25% of the variance in internalizing problems, and 17.7% of the variance in externalizing problems. In both cases, GSI was a slightly better predictor of children's behaviour problems than was OPS.

In summary, the data from the mothers indicated support primarily for a dual process family and peer model; however, the measures of mothers' scores on measures of psychological distress and overt marital hostility were much stronger predictors of children's adjustment problems than was the peer likeability measure.

Father-reported family and outcome variables. As with the mothers' data, the zero-order correlations (see Table 3) indicated that the measure of marital satisfaction (MAT) was not associated with ratings of either internalizing or externalizing problems; thus, this variable was dropped from any further analyses. Because neither education nor family income for fathers was correlated with MAT, GSI or OPS scores, socioeconomic

status was also dropped from the models.

In contrast to data from mothers, the results from analyses using fathers as informants yielded exclusive support for a single process family model. Peer likeability did not predict ratings of either internalizing or externalizing problems in any of the regression equations using fathers' scores. The first set of regression equations included the measure of fathers' psychological distress (GSI) and peer likeability (LIKE) as independent variables. When internalizing problems (INT) were used as a measure of children's adjustment problems, the regression was significant ($F(2,77)=11.80, p<.001$), accounting for 21.5% of the variance, and GSI significantly predicted child outcome. When externalizing problems were used the outcome measure, the equation was again significant ($F(2,77)=8.67, p<.001$), accounting for 16% of the variance, and GSI significantly predicted externalizing problems.

Next, the models were tested using overt marital hostility (OPS) and peer likeability (LIKE) as independent variables. Two regression equations were run, the first with internalizing problems as the dependent variable, and the second using externalizing problems as the dependent variable. The first equation was significant ($F(2,77)=3.30, p<.05$), accounting for 5.8% of the variance in internalizing problems, and OPS was a significant predictor of child outcome. The second equation was not significant, indicating that neither OPS nor peer likeability were significant predictors of externalizing problems in the child. Thus, in contrast to data from the mothers, the data using fathers as informants provided support for a single process family model.

Peer-evaluated outcome. The results obtained using parents to report on both

family climate factors and children's adjustment difficulties may have been influenced by the method variance common to both family and outcome variables. In an effort to evaluate the importance of this issue, the single process and dual process models were reevaluated using peer evaluations of withdrawal and aggression as outcome variables. The results are reported in Table 6.

The results were similar whether mothers' or fathers' scores on family variables were used in the regression equations. There was no support for a single process family model, or for a dual process model. Neither GSI nor OPS, as reported by fathers or mothers, were significant predictors of peers' evaluations of children's aggression or withdrawal. Peer likeability, however, significantly predicted withdrawal but not aggression, thus providing partial support for a single process peer model.

Discussion

The goal of this study was to examine the relative impact of the family environment and the peer environment on children's adjustment problems. Two path analytic models were proposed. The data indicated some support for both a single process family model and a dual process family and peer model. The results from data which used mothers' scores of family variables and children's adjustment problems indicated strong support for a dual process model. Both peer likeability and overt marital hostility were significant joint predictors of mothers' ratings of both internalizing and externalizing problems. In addition, peer likeability and mothers' psychological distress jointly predicted mothers' ratings of externalizing problems. It is important to note that, although peer likeability was a significant predictor of internalizing and externalizing problems, the

Table 6

Model Testing Using Mothers' and Fathers' Reports to Assess Family Variables and Peer-Nominated Reports to Assess Children's Outcome

	Outcome Variable					
	β	<u>Withdrawal</u> <u>F</u>	<u>d.f.</u>	β	<u>Aggression</u> <u>F</u>	<u>d.f.</u>
<u>Mothers</u>						
GSI	-.04	.19	1, 83	.10	.77	1, 83
LIKE	-.51	29.22***	1, 83	-.04	.13	1, 83
		Model Adj. R^2 =.24			Model Adj. R^2 =.01	
OPS	.05	.31	1, 83	.05	.21	1, 83
LIKE	-.51	29.07***	1, 83	-.05	.17	1, 83
		Model Adj. R^2 =.24			Model Adj. R^2 =-.02	
<u>Fathers</u>						
GSI	-.10	1.14	1, 77	.16	1.93	1, 77
LIKE	-.53	30.71***	1, 77	-.01	.00	1, 77
		Model Adj. R^2 =.28			Model Adj. R^2 =.00	
OPS	-.03	.09	1, 77	.00	.00	1, 77
LIKE	-.53	30.40***	1, 77	.00	.00	1, 77
		Model Adj. R^2 =.27			Model Adj. R^2 =-.03	

Note. GSI=Global Symptom Index of SCL-90-R; OPS=O'Leary-Porter Marital Hostility Scale; LIKE=combined Likeability factor of the Peer Evaluation Inventory and Social Competence factor of ASSESS. Aggression=combined Aggression factor of the PEI and ASSESS; Withdrawal=combined Withdrawal factor of the PEI and ASSESS. *** p <.001.

family factor was a much stronger predictor each time. Support for a single process family model was evident only when mothers' psychological distress and peer likeability were used to predict children's internalizing problems.

Analyses that used fathers' scores on family variables and children's adjustment difficulties provided exclusive support for a single process family model. Peer likeability did not significantly predict fathers' perceptions of their children's internalizing and externalizing problems in any of the equations. However, fathers' psychological distress was a significant predictor of fathers' ratings of children's internalizing and externalizing problems, and fathers' reports of overt marital hostility were a significant predictor of fathers' ratings of internalizing problems.

These results reflect the mixed reports in the literature. As Woodward and Fergusson (1999) noted, several studies have found that peer relationship problems make an independent contribution to the prediction of later adjustment problems, after controlling for family factors. This is consistent with the dual process found in this study using mothers' data. Other researchers have described evidence of a single process model, as reported here for fathers' data, in which peer relationships do not make an independent contribution to children's adjustment, once family factors are accounted for (Turner and Barrett, 1998; Woodward & Fergusson, 1999).

There are various possible explanations for the different findings obtained using data from mothers and fathers. Although it could be argued that spouses are not wholly independent sources of information, results indicated that there were some differences in how mothers and fathers viewed their children: mothers viewed their children as

displaying slightly more internalizing problems than did fathers, and viewed their marriages as somewhat less satisfying than did fathers. The results may reflect differences in the opportunities mothers and fathers have to appraise their children. Approximately 40% of the women in this sample described themselves as homemakers, and, regardless of whether they are employed or not, mothers spend more time with their children than do the fathers. Mothers are involved in more caregiving activities with children, whereas fathers engage in more playful activities (Parke, 1990). There is also evidence of different parenting styles under stress which may affect how mothers and fathers perceive their children. Howes and Markman (1989) found that husbands undergoing marital problems tended to withdraw from their children, and Snyder (1998) reported that maritally-distressed fathers, more than maritally-distressed mothers, were less likely to engage with their children. It may be, then, that the differences between mothers and fathers are a reflection of different parental duties and interaction styles with their children.

The dual process model, supported by data using mothers as informants about family variables and children's adjustment may be a more compelling model. Given that mothers provided information on both family climate and children's adjustment difficulties, the possibility of a strong correlation between these two variables was maximized. Even under these conditions, however, peer likeability was a significant predictor of children's internalizing and externalizing problems, indicating the importance of this factor in predicting children's adjustment problems.

There were some interesting null findings in the present research. First, marital satisfaction was not related to children's internalizing or externalizing problems for either

mothers or fathers. Given the modest correlations between marital satisfaction and child outcome variables in previous research, it is not entirely surprising that general marital satisfaction was not predictive of children's outcome (Emery & O'Leary, 1983; Reid & Crisafulli, 1990).

Second, neither mothers' nor fathers' education or family income was related to family factors. This is interesting, in light of previous research which has indicated that family income, in particular, is related to marital hostility (Conger et al., 1992; 1993; Parker et al., 1995). It may be that SES is more closely associated with parenting behaviours, which were not measured in the present study. It could also be that there was a somewhat restricted range on these particular variables, as the study participants were drawn from an area which was generally low in income and education. Finally, Sameroff, Bartkò, Baldwin, Baldwin, and Seifer (1998) noted that the effects of SES are rather small, and that it is only in addition to other hardships that its effect is especially strong. The participants in the present study were drawn from a community sample, and although lower in income, they were, on average, satisfied with their marriages and their children were not extreme on internalizing or externalizing problems. Thus, these families may not have experienced the multiple hardships that might make lower SES particularly significant.

Another surprising finding was that, in contrast to previous research, family factors, as reported by both mothers and fathers, did not predict peer likeability. This is in contrast to a large body of literature demonstrating links between parental behaviour and peer acceptance (Parker et al., 1995). It may be that the family factors measured in the

current study were not adequate to assess this association. Given the evidence that parenting behaviours, including monitoring, and coaching and authoritative styles, predict social competence with peers (Wilson & Gottman, 1999), it appears that more proximal measures of parent-child interaction might be more likely than parental psychological distress or marital functioning to be related to children's peer acceptance. Conger et al. (1993) used a structural equation model to explore the relationships among child behaviour, peer relations and family factors. Although their measures were very different from the ones used in the present study, they found that family factors predicted peer relationships in an indirect fashion: family factors predicted children's behaviours which, in turn, predicted peer relationships.

Importance of Type of Informant for Results Obtained

Support for the single and dual process models was demonstrated only when mothers or fathers provided information on both family factors and children's adjustment problems. When parents provided information on the family, and peer-assessed aggression and withdrawal scores were used as outcome measures, family factors did not predict children's adjustment problems. This is consistent with previous research which reported smaller correlations between measures assessed by different informants (Grych & Fincham, 1990). Emery and O'Leary (1984) found that mothers' reports of marital and children's adjustment showed significant correlations more frequently than did mothers' reports of marital adjustment and teachers' reports of child adjustment difficulties.

It could be that the higher correlation obtained when mothers' and fathers' information was used to assess both family factors and children's adjustment difficulties

was the result of a "negative halo" view of life, in which the parents evaluate different aspects both of their life and their children's life in a negative way (Katz & Gottman, 1993; McHale et al., 1991). It may be that parents who are themselves psychologically distressed, or who perceive their marriages as unsatisfactory or hostile may also perceive their children as more poorly adjusted. In support of this view, Cummings and Davies (1999) noted that associations have been found between maternal depression and negative cognitions about their children.

The fact that overt marital hostility or parental psychological distress did not predict children's adjustment problems when peer measures of child outcome were used might have been due to the fact that the peer outcome measures were less sensitive than the parent outcome measures. However, this seems unlikely, given the good predictive validity that these measures have demonstrated in prior research (Ledingham & Schwartzman, 1984). In fact, it could be argued that the peer nomination measures, based as they are on information from a classroom of children, are more accurate measures of children's adjustment difficulties than the report of one, or even two, parents. It could be that children behaved differently with their peers than with their parents. There is ample evidence to indicate that children often behave differently at home and at school, and with their parents as opposed to with their friends (Whiting & Whiting, 1975). The negative environment at home may "pull" for more negative behaviours from the child, whereas that influence may not be present when they are with their friends. If so, then it may be that children behave differently with their peers than with their parents, and that marital difficulties, in particular overt marital hostility, affect children differently in different

situations.

Limitations of the Present Study

As in any study, there are a number of areas that could be improved. First, the correlational nature of the data precluded our ability to draw causal conclusions. It is quite possible that the adjustment of the child influences parental psychological distress and the quality of the marital relationship as well as peer relations, or that there is a bi-directional influence among these variables. Future research using structural equation modeling would help to clarify some of these questions regarding causality, but would require a much larger sample than was available in the present study.

Second, the sample size of the present study was not adequate to test for age- and sex-related differences in children's adjustment. As Snyder (1998) has pointed out, there is a need to clarify the importance of these variables, given prior discrepant findings.

Third, we cannot entirely rule out the effects of rater bias on the current results. Although mothers and fathers were used to obtain two separate perspectives, spouses may not represent completely independent sources of information. The inclusion of peer-reported information on aggression and withdrawal in addition to parental reports of problem behaviours was an important strength of the study, but the measures were not completely parallel. Thus, item content as well as type of informant may have contributed to the different patterns of results obtained with different outcome measures. Future studies using independent raters of the marital relationship and of children's adjustment problems could better address the question of shared method variance by using more directly comparable instruments.

Fourth, the measures of family and peer climate used in the present study were not exhaustive, and did not include other measures that are known to be related to children's adjustment problems. In particular, parental styles, parent-child interactions, parent-child attachment, and children's cognitive appraisals of parents are as relevant to the nature of the family climate as marital functioning and parental psychological distress (Katz & Gottman, 1995). Similarly, the intimacy experienced in friendship with peers, perceived loneliness, and the quality of interactions with peers all contribute to peer climate beyond the significance of peer acceptance (La Greca & Prinstein, 1999). Although the current study provides a good global picture of the associations of family climate and peer likeability with children's adjustment problems, the presence of these unmeasured factors likely accounted for some of the unexplained variance. Future research that includes more operationalizations of family and peer environments should help to test the replicability of relationships found in the present study.

Finally, the current sample involved lower socioeconomic families. Although this may limit the generalizability of the findings, it does provide information about the climate of families whose children are at higher risk for poor adjustment.

Conclusions

Although more research is clearly needed, these results add to the small pool of studies that examine the relative importance of the family and peer environments in predicting children's outcomes. In contrast to recent suggestions that family climate has no appreciable influence on children's outcomes (Rich Harris, 1995), the results reported here highlight the importance of both family and peers for children's adjustment difficulties. In

addition, the present study provided much-needed information from the perspective of fathers as well as of mothers. This is particularly valuable given that there is little research examining the perspectives of fathers of adolescents.

Although the present study provided a good test of the significance of family and peer climate, future studies should examine more proximal influences of family and peers on children's behaviour. In particular, measures of parenting behaviours and attitudes may help to elucidate the processes by which families and peers together determine children's adjustment difficulties, as would measures of children's cognitive appraisals of their families and the parenting they receive.

CHAPTER THREE

Mediating Effects of Marital Hostility on Marital Satisfaction and Children's Adjustment Problems

The importance of direct parental influences on the subsequent behaviour of the child has been firmly established (Bavnagri & Parke, 1991; Boyum & Parke, 1999). However, how parents relate to each other also has significant consequences for children's behaviour. Over the last several decades, researchers have examined in detail the relationship between marital adjustment and child outcome. Although studies have been diverse in terms of operational definitions, and sampling and measurement procedures, most studies have demonstrated a significant association between marital dissatisfaction and negative outcomes for children (Emery, 1982; Emery & O'Leary, 1984; Grych & Fincham, 1990; Reid & Crisafulli, 1990). Across studies, marital functioning has been variously referred to as marital adjustment, satisfaction, quality, or distress (Heyman, Sayers, & Bellack, 1994). These terms are used interchangeably here to refer to global marital functioning. In contrast, the terms discord, hostility, or conflict are used to refer to more specific marital difficulties that are concerned with issues such as disagreements, arguments, complaints, verbal and physical abuse, and so on.

Poor marital adjustment has been found to be consistently related to a variety of children's adjustment problems, but the relationship is especially strong for externalizing problems (Emery & O'Leary, 1984; Porter & O'Leary, 1980; Reid & Crisafulli, 1990). Nevertheless, marital unhappiness has also been shown to be associated with internalizing problems and general psychopathology (Emery & O'Leary, 1982). The association

between marital quality and children's adjustment difficulties depends on a number of factors, including whether or not the families have been referred for treatment, how many informants contribute to assessments, and the sex of the child. In clinical populations, correlations between marital problems and children's adjustment problems are moderate to strong (Emery & O'Leary, 1982; Porter & O'Leary, 1980). In contrast, non-clinic samples have yielded more modest correlations (Emery & O'Leary, 1984). Fincham and Osborne (1993) and David et al., (1996) have also noted that the association between marital functioning and child outcome is generally greater when a single source is used to measure both constructs than when multiple sources of information are used. Finally, several researchers have noted sex-related differences in the association between children's adjustment problems and marital functioning, with boys responding more poorly than girls to problems between parents (Fincham & Osborne, 1993; Snyder, 1998). However it is important to note that, although the association is consistently found, the size of the association between marital problems and children's adjustment problems is small (Emery & O'Leary, 1984; Fincham et al., 1994). In their meta-analysis, Reid and Crisafulli (1990) reported a mean effect size of .16, considered only slightly larger than a small effect. Fincham et al., (1994) suggested that the association between marital happiness and children's adjustment accounts for less than 10% of the variance.

The discrepant findings in this area of research may be due, in part, to methodological problems, particularly measurement difficulties. In earlier work, marital quality was usually measured using a global index of marital satisfaction. Thus, it was difficult to determine which specific components of the relationship were contributing to

poor child outcomes (Fincham, 1994; Katz & Gottman, 1993; McHale et al., 1991; Bartko, 1991). Fincham and Osborne (1993) have noted that, as a global construct, marital functioning had probably outlived its usefulness in attempts to understand the link between family processes and children's adjustment.

More recently, researchers have focused their attention on marital conflict, particularly overt hostility witnessed by the child, and its association with children's adjustment difficulties (Davies & Cummings, 1994; Fincham et al., 1994; Grych & Fincham, 1990). Marital hostility, observed by the child has been associated with internalizing problems such as depression (Johnston et al., 1987; Katz & Gottman, 1993; McHale et al., 1991) and anxiety (Long et al., 1988), and with lower levels of social competence (Burman et al., 1987). Overt marital conflict has also been found to predict externalizing behaviour, including conduct problems (David et al., 1996; Johnson & O'Leary, 1987; Long et al., 1988; McHale et al., 1991) and aggression (Johnston et al., 1987). The evidence also suggests that marital conflict predicts behaviour problems in children whose parents have divorced, and that marital conflict may be even more important than family status as an indicator of children's outcome (Amato & Keith, 1991; Emery, 1988; Emery & Katzmann, 1995).

Gender differences have been demonstrated in the association between marital dissatisfaction or conflict and children's adjustment problems, although the nature of the differences is not well established. Several reviewers (e.g., Grych & Fincham, 1990; Purcell & Kaslow, 1994; Reid & Crisafulli, 1990; Snyder, 1998) have reached somewhat different conclusions regarding gender effects. Early research on the relationship between

marital adjustment and child outcome indicated that boys were at greater risk than girls for a variety of adjustment difficulties, and particularly for externalizing problems (Snyder, 1998). However, Purcell and Kaslow (1994) noted that this increased risk for boys was not always found. They concluded that evidence of adjustment difficulties in boys is stronger when clinic samples are used, externalizing behaviours are measured, family members are the only informants, and interparental aggression is included in the definition of marital discord. Snyder (1998) concluded that, given discrepant findings over a variety of study methodologies, it is not yet clear whether boys and girls respond differently to marital hostility.

Several researchers have examined the importance of both general marital satisfaction and overt marital hostility for children's adjustment. The results of several studies have demonstrated that marital hostility is a better predictor of a range of children's problems than is global marital satisfaction (Cummings and Davies, 1994; Emery & O'Leary, 1984; Grych & Fincham, 1990; Porter & O'Leary, 1980), but the extent of overlap between these two variables is not entirely clear. Significant correlations between marital satisfaction and overt marital hostility have been reported in several studies, ranging in magnitude from low to moderately high (Emery & O'Leary, 1984; Porter & O'Leary, 1980). If, as it is often assumed, marital hostility is an important aspect of unhappy marriages, then it may be that marital hostility acts as a mediator which accounts for part or all of the significant relationship between marital satisfaction and children's adjustment problems. In that case, measuring marital satisfaction separately may be redundant. However, it might be that general marital satisfaction on its own contributes

unique variance to the marital problems-child outcome relationship over and above the contribution of marital hostility.

Despite the existing evidence for the relationship of both general marital satisfaction and overt hostility to child outcome, some researchers have suggested caution in interpreting these results, citing the issue of rater bias (Kurdek, 1991; McHale et al., 1991; Katz & Gottman, 1993). In most instances, one parent, often the mother, is the sole source of information regarding both the marital relationship and child outcome. It may be that reports of marital dissatisfaction and poor child functioning reflect a general negative evaluation bias on the part of the parent rather than poor child functioning. Katz and Gottman (1993) suggested that self-report measures of marital satisfaction may be largely a reflection of general life stress, because marital satisfaction is associated with job stress, quality of life, and depression. Researchers have also demonstrated that depressed mothers tend to view their children more negatively than do non-depressed mothers (Webster-Stratton & Hammond, 1988). Finally, Emery and O'Leary (1984) examined the relationship between parental measures of marital hostility and teachers' reports of the child's adjustment. They reported a much smaller correlation using teachers' reports of the child's adjustment than is typically reported when both measures are completed by the mother.

There are significant differences between mothers' and fathers' interactions with their children and their perceptions of their child's behaviour. Snyder (1998) noted a very complex picture, depending on the state of the marriage, the gender of the parent, and the gender of the child. For instance, husbands tend to avoid conflict in marriage and are more

likely to withdraw from their spouses, whereas wives are more likely to address the conflict directly (Snyder, 1998). Howes and Markman (1989) reported that husbands under stress also withdraw from their children. Thus, it may be that fathers and mothers perceive their children's adjustment problems in different ways because of different contact with the child.

The objective of the present study was to test the hypothesis that overt marital hostility mediates the relationship between general marital satisfaction and children's internalizing and externalizing problems. To examine differences in results using different raters, one set of analyses used mothers' ratings of their marriage and their children's adjustment problems, whereas a second used fathers as informants. Additional analyses related reports of marital adjustment and overt hostility by mothers and fathers to children's outcomes as indexed by peer evaluations of aggression and withdrawal.

Method

Participants

Participants were drawn from the Concordia University High Risk Project (Ledingham, 1981), a prospective, longitudinal study begun in 1976 to follow French-language school children from Montreal who were judged by their classmates to display high rates of aggressive or withdrawn behaviours, or a combination of both. The original sample of approximately 800 children was drawn from 152 classrooms and resulted in an initial screening of 4,109 children in grades one, four, and seven. Most of the children came from families of lower SES. The aggressive group consisted of 198 children who scored above the 95th percentile on aggression and below the 75th percentile on

withdrawal. The withdrawal group consisted of 220 children who scored above 95th percentile on withdrawal and below the 75th percentile on aggression. The 238 children in the aggressive-withdrawn group scored above the 75th percentile on both aggression and withdrawal, and a contrast group of children were randomly selected from among 1114 children who had scores between the 25th and 75th percentile on both aggression and withdrawal. Thus, the sample followed longitudinally included a significant overrepresentation of behaviourally deviant children from urban, lower SES families.

Between 1984 and 1985, home visits were carried out on a total of 493 families. Participants for the present study were those who had been visited during this period and who had mothers or fathers participate in the interview and complete the necessary measures. A total of 277 families met these criteria. At initial testing, the target children in these families had been classified as follows: 17 aggressive (6 boys, 11 girls), 11 withdrawn (6 boys, 5 girls), 25 aggressive-withdrawn (11 boys, 14 girls), and 70 non-deviant contrasts (32 boys, 38 girls). In the present study, peer nomination scores on aggression, withdrawal, and likeability came from the third round of testing carried out in 1984-1985. In all, 8 children were classified as aggressive (3 boys, 5 girls), 6 withdrawn (3 boys, 3 girls), no aggressive-withdrawn, and 61 non-deviant contrasts (24 boys, 37 girls).

Means and standard deviations for demographic information as reported by mothers and fathers are presented in Table 7. On average, the mothers were in their early forties, and had been married approximately 20 years. Generally, this was their first marriage. Mothers reported an average of 8.9 years of education (in Quebec, high school finishes after grade 11), and 40% of mothers reported that they were homemakers.

Table 7

Means and Standard Deviations for Demographic & Study Variables as a Function of Informant

Variable	Mother Informant			Father Informant		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
<u>Demographic Information</u>						
Age of Parent* (years)	42.45 ^c	6.23	268	45.20 ^c	7.17	242
Education of Parent* (years)	8.98	2.73	268	9.26	3.43	240
Family Income Category	7.97	3.35	257	8.5	3.18	214
Length of Marriage (years)	20.23	6.33	267	20.5	6.2	241
Previous Marriages	0	0.23	268	0	0.2	242
Number of Minors at Home	1.81	1.06	268	1.81	1.05	242
<u>Study Variables</u>						
O'Leary-Porter Overt Hostility Scale	10.34	5.28	268	9.47	5.89	242
Locke-Wallace Marital Adjustment Test	104.88 ^b	30.06	268	110.20 ^b	29.18	242
Child Behavior Checklist Externalizing Scale	58.74	8.32	268	57.86	8.54	242
Child Behavior Checklist Internalizing Scale	59.06 ^b	7.73	268	57.52 ^b	8.92	242

Note. *Mothers and fathers reported only on their own age and education.

^bThese means are significantly different at $p < .05$, as a function of informant.

^cThese means are significantly different at $p < .001$, as a function of informant.

Average family income was between \$20,000 and \$22,000. The mothers reported an average of 1.8 minor children residing in the home. The mean score on the Marital Adjustment Test was 104, which is in the satisfied range. According to the mothers' reports, 39% of their marriages met criteria as distressed according to the cutoff of 100 suggested by Locke and Wallace (1959).

Data obtained from fathers were similar. On average, fathers were in their mid-forties, and had been married about 20 years. They reported an average of 9.2 years of education, and a yearly family income of approximately \$22,000. Seventeen percent of fathers reported that they were on welfare, unemployment insurance or retired. For the majority, this was their first marriage. They reported an average of 1.8 minor children living at home at the time of the study. The fathers' mean score on the MAT was 110, within the satisfied range. According to the fathers' reports, 18% of their marriages met criteria for being considered distressed. The study sample represented 266 intact families, 2 mother-only families, and no father-only families (data regarding family status were missing for 9 families).

According to the 1986 census data from Statistics Canada (1988), the average family income in Montreal was \$37,865. The census data also indicated that 40% of people 15 years of age and older had 11 years or less of education. Thus, compared with other Montreal families, the present sample had low levels of education and income.

In terms of child characteristics, the sample included 277 children, 144 girls (52%) and 133 boys (48%). Sixty-one percent of the children had been in grades 7 and 8 and 33% had been in grades 10 and 11 at the time of the home visit.

Thus, the parents tended to be in their mid-forties and in their first marriages. They tended to have low levels of education and low incomes. The majority of the children were adolescents or preadolescents, and although the sample of children had been selected initially to have high rates of aggression and withdrawal, at the time of the home visit data reported here, it contained children who were less behaviourally deviant than they had been at initial screening.

Procedure

Peer nomination assessments were conducted at three-year intervals, resulting in grade 1 children being retested in grades 4, 7, and 10, grade 4 children being retested in grades 7 and 10, and grade 7 children being retested in grade 10. Data reported here are cross-sectional, and included peer nomination scores from the third round of testing in 1984-5. Because of this, there was an overrepresentation of children who had been in grade one or grade four at the time of subject selection.

Assessment of the different peer status groups of children included measures of intellectual and academic adjustment, and social and emotional adjustment. Laboratory measures examined areas such as motor development and intellectual abilities of the children. In addition, two home interviews, conducted three years apart, explored the family environment, the adjustment of the target child, the adjustment of parents, and the marital relationship. Results from the second of these are reported here.

Measures

Demographic Information. Demographic data such as parental age, education level, family status, number of minor children in the home, and length of marital

relationship were gathered separately for mothers and fathers. Two indices of socioeconomic status were collected: parents were asked to indicate their gross family and to indicate the number of years of education they had completed. Information collected about the target child, included sex, grade level, and peer classification at the first and third evaluations.

Measures of Marital Functioning. General marital satisfaction was evaluated using the Marital Adjustment Test (MAT; Locke & Wallace, 1959), a 15-item inventory completed by both fathers and mothers. This questionnaire included several items that assessed perceived level of agreement between spouses in several areas (e.g., finances, recreation, demonstrations of affection), as well as items evaluating happiness with the marriage. The MAT has good internal consistency, with split-half correlations of .90 (Locke & Wallace, 1959). The MAT has also been shown to differentiate between distressed and non-distressed marriages (Locke & Wallace, 1959; O'Leary & Arias, 1987).

The French translation of the instrument used in the present study was significantly correlated with the O'Leary-Porter Marital Hostility Scale for both mothers and fathers ($r = -.42$, $p < .01$; and $r = -.49$, $p < .01$, respectively), indicating acceptable concurrent validity.³ The alpha coefficients were adequate ($\alpha = .76$ for mothers and $\alpha = .71$ for fathers).

Overt marital hostility was measured using a French translation of the O'Leary-Porter Overt Hostility Scale (OPS; Porter & O'Leary, 1980), which was completed by

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Values for this and subsequent psychometric analyses were based on the entire home visit sample of 493 families.

both fathers and mothers in the present study to assess parents' perceptions of the frequency and type of marital hostility that occurred in the presence of their child. Each of the 9 items measuring marital conflict were scored on a 5-point Likert scale of frequency, ranging from 'never' to 'very often', and summed to yield a total score for each parent. Items assessed differences between spouses on discipline, strategies, complaints about each other, physical and verbal abuse, and displays of affection. Higher scores on the OPS indicate greater marital hostility. The test has demonstrated good test-retest reliability ($r=.96$) and good internal consistency ($\alpha=.86$). The OPS has been found to correlate significantly with the Locke-Wallace Marital Adjustment Scale among both clinic and non-clinic samples ($r=.63$ and $.43$ respectively), and with reports of conduct problems among children ($r=.30$ for girls, and $r=.40$ for boys) (Porter & O'Leary, 1980).

The French translation of the OPS used in the present study demonstrated reasonable concurrent validity; it was significantly correlated with the MAT for both mothers and fathers. It also correlated significantly with scores of the child's internalizing and externalizing problems as reported by parents (for mothers, $r=.30$, $p<.01$ for internalizing scores and $r=.32$, $p<.01$ for externalizing scores; for fathers, $r=.29$, $p<.01$ for internalizing and $r=.30$, $p<.01$ for externalizing). The alpha coefficients for the translated form in the present study were $.77$ for mothers and $.84$ for fathers.

Measures of Child Adjustment Problems. A French translation of the Child Behavior Checklist Parent Report Form (CBCL; Achenbach & Edelbrock, 1981) was completed for each target child or nondeviant contrast by mothers and fathers. The CBCL is a well-established instrument consisting of 20 items which measure parents' perceptions

of social competence and 118 items that comprise behaviour problem items. For the behaviour problems scales, the CBCL yields scores on a number of specific factors, including somatic symptoms, attention problems, withdrawn behaviour, and aggressive behaviour, and, in addition, three summary scores on broader dimensions (internalizing problems, externalizing problems, and total behaviour). In the present study, only the Internalizing (INT) and Externalizing (EXT) scales were used. Raw scores were converted to T scores separately for each sex, using the T-score scales provided by the authors (Achenbach & Edelbrock, 1981).

The CBCL Parent Form has good to excellent psychometric properties. Norms were derived from a sample of 1300 non-clinic children. The authors reported one-week test-retest intraclass correlation coefficients greater than .90 for the behaviour problem scales. The CBCL also shows discriminant validity, differentiating between clinic and non-clinic populations (Achenbach, 1978; Achenbach & Edelbrock, 1981).

In the present study, the Peer Evaluation Inventory Aggression factor score was significantly correlated with the Externalizing scale score for mothers ($r=.26$, $p<.05$) and fathers ($r=.41$, $p<.001$).

Peer Nomination Instruments. A French translation of the Peer Evaluation Inventory (PEI; Pekarik, Prinz, Weintraub & Neale, 1976), a peer nomination instrument, was used to assess peers' perceptions of children's behaviour. The PEI contains 35 items that load on three factors: aggression (including items like "those who are mean and cruel to other children"), withdrawal (including items such as "those who often don't want to play"), and likeability (with items like "those whom everybody likes"). Each class, from

grade one through to eight, was asked to nominate up to a maximum of four children from their class who best fit the description of each item. Different administrations were used to nominate boys and girls, and total nominations received on the aggression, withdrawal and likeability factors were converted to Z scores separately for boys and girls within each class.

The PEI demonstrated adequate internal consistency; split-half correlations among the scales were greater than $r = .70$ for the aggression and withdrawal scales. Test-retest correlations for all three factors were greater than .80. Teacher nominations were correlated with peer nominations as a measure of concurrent validity. The correlations were modest (ranging from $r = .28$ to .73), but consistent with other correlations reported between teachers and peers (Pekarik, et al., 1976).

In the present study, the alpha coefficients were .97 for the aggression scale, and .93 for the withdrawal scale. As noted above, the aggression and withdrawal subscales were significantly correlated with mothers' and fathers' reports of internalizing and externalizing problems. Moreover, there was evidence for the predictive validity of these scales, as groups of children chosen on the basis of their aggression and withdrawal scores differed in rates of academic failure three years later (Ledingham & Schwartzman, 1984).

A French translation of the 41-item Adjustment Scales for Sociometric Evaluation of Secondary-School Students (ASSESS; Prinz, Swan, Weintraub & Neale, 1978) was also used to assess peers' perceptions of children's behaviour. It was designed as an extension of the Peer Evaluation Inventory for use with older students, and there is substantial overlap with the PEI in item content for the aggression, withdrawal, and

likeability/social competence scales. The measure yields five factors: aggression, withdrawal, anxiety, social competence, and academic difficulty, but only the scores from the aggression, withdrawal, and social competence scales were used in the present study.

The test shows good reliability. Alpha coefficients of the factors reported by the authors ranged from .82 to .96. Test-retest reliability over three weeks was .91 for the aggression subscale, .89 for the withdrawal scale, and .72 for the social competence scale (Prinz et al., 1978).

Alpha coefficients for the French-language version of ASSESS were .95 for the aggression factor, and .95 for the withdrawal factor. Evidence for the validity of this translated instrument comes from the finding that the aggression subscale correlated significantly with internalizing and externalizing behaviour problem scores of the CBCLs completed by fathers, and with the externalizing behaviour problem scores completed by mothers.

Aggression, withdrawal and likeability are moderately stable behaviours. Stability coefficients of the translated versions of the PEI and ASSESS over a six-year period were significant across grade levels for boys and girls, with the exception of grade one boys' withdrawal scores. The significant stability coefficients ranged from $r = .17$ to $r = .50$ (Ledingham & Orpana, 2000).

Children of different ages were combined in the analyses reported below. For these peer nominations analyses, scores for comparable scales of the PEI and ASSESS instruments were treated as equivalent (e.g., PEI aggression and ASSESS aggression, PEI withdrawal and ASSESS withdrawal, PEI likeability and ASSESS social competence).

Results

Preliminary Analyses

Major analyses were performed using multiple regression techniques and the SPSS 9 statistics program. Results are presented in three sections. First, the preliminary analyses of the data are presented. These analyses were conducted to determine that data entry was accurate, to look for missing values and outliers, to check that multivariate normality was achieved, and to look for evidence of heteroscedasticity. Next, the intercorrelations are presented, and finally, the tests of the mediating hypothesis are presented separately for mothers and fathers and for boys and girls.⁴

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Missing data were evaluated for each variable. There were a number of measures that were not completed by participants, thus the sample for the current study is substantially smaller than the original family sample.

Within the measures completed, only the MAT had missing data. In all, there were 14 instances of missing data points (less than .1%). These data points appeared to be randomly distributed, and only one participant had 2 data points missing. This one participant was dropped from the analyses. For the remaining participants with a missing data point, the total scale score was calculated using an extrapolation procedure as suggested by the authors (Locke & Wallace, 1959).

Visual inspection of the frequency distributions of each variable suggested that, with the exception of the PEI and ASSESS, all variables appeared to be normally distributed. Excluding the peer nomination information, an examination of skewness and kurtosis revealed a skewness range of -.422 to .697 ($|M|=.09$), and a kurtosis range of -.707 to .674 ($|M|=.047$). These figures were well within the -1.0 to 1.0 values judged acceptable by Muthén and Kaplan (1985).

The summary statistics for both the PEI and the ASSESS data indicated significant skewness and kurtosis. For the PEI aggression subscale, skewness =1.99, and kurtosis =4.31; for the withdrawal subscale, skewness =2.39 and kurtosis =6.61. The ASSESS data were similar: for the aggression subscale, skewness =2.61, and kurtosis =8.84; for the withdrawal scale, skewness =2.77, and kurtosis =9.81. These PEI and ASSESS scores were subjected to a square root transformation to reduce skewness. This resulted in skewness and kurtosis figures well within acceptable range (Muthén & Kaplan, 1985).

Although multivariate normality is not readily testable, the summary statistics indicated no reason to expect the variables to depart significantly from normality. As well,

Intercorrelations among variables. Pearson product-moment intercorrelations coefficients calculated among the study variables are presented in Table 8.

Correlations among measures completed by mothers followed expected patterns. Scores on the MAT were moderately negatively correlated with scores on the OPS. As well, MAT scores were negatively correlated with Internalizing and Externalizing scores from the CBCL. The OPS was significantly and positively correlated with the Internalizing and Externalizing scores of the CBCL. There was also a strong positive correlation between the Internalizing and Externalizing scores of the CBCL, and the Externalizing Scale of the CBCL was significantly and positively correlated with peer evaluations of aggression.

Intercorrelations among measures completed by fathers demonstrated a pattern similar to that obtained using data from the mothers. Fathers' scores on the MAT were moderately negatively correlated with OPS scores, and were significantly correlated with Internalizing and Externalizing scores of the CBCL. The OPS was significantly correlated with both Internalizing and Externalizing scores of the CBCL. As with mothers' data,

an examination of the distribution of standardized residuals indicated they appeared to approximate normality.

Spotchecks of various bivariate frequency distributions revealed approximately normal configurations. As well, as mentioned above, the standardized residuals appeared normal.

The standardized scores for each variable were examined to identify univariate outliers. In all, 12 instances of univariate outliers were found. The potential for multivariate outliers was assessed using Mahalanobis' distances, Cook's distances, and leverage. No outliers were identified using these methods. Despite these null results, however, the univariate outliers were reduced to within three standard deviations of the sample mean, in order to minimize any possible influence.

Table 8

Intercorrelations among Marital Functioning and Child Adjustment Scores, Separately for Mothers^a and Fathers^b

Variable	MAT	OPS	INT	EXT	AGGR	WITHD
MAT		-.42***	-.21***	-.17***	-.03	.01
OPS	-.49**		.29***	.32***	.05	.06
INT	-.22***	.29***		.73***	.02	.19
EXT	-.18**	.30***	.79***		.26*	.03
AGGR	.05	-.01	.30**	.41***		-.36***
WITHD	.04	-.04	-.04	-.04	-.36***	

Note. MAT=Locke-Wallace Marital Adjustment Test; OPS= O'Leary Porter Overt Hostility Scale; INT=Child Behavior Checklist: Internalizing Scale; EXT=Child Behavior Checklist: Externalizing Scale; AGGR=Peer-Nominated Aggression Scale; WITHD=Peer-Nominated Withdrawal Scale.

^aCorrelations among mothers' reports are above the diagonal; ^bcorrelations among fathers' reports are below.

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

fathers' Internalizing and Externalizing scores of the CBCL were positively correlated. Finally, for data reported by fathers, both Internalizing and Externalizing scores of the CBCL were positively correlated with peer nominations of aggression.

Correlations between reports by mothers and fathers. There were a number of significant correlations between measures completed by mothers and fathers (reported in Table 9). Mothers' and fathers' MAT and OPS scores were significantly correlated ($r=.56$; $p<.001$, and $r=.45$, $p<.001$ respectively). Mothers' and fathers' scores on the Internalizing scale of the CBCL were also significantly correlated ($r=.43$, $p<.001$), as were their scores on the Externalizing scale ($r=.55$, $p<.001$), indicating significant agreement in terms of their perceptions of their children's problems. In summary, the correlation coefficient matrices indicated that mothers and fathers viewed their marriage and their children's behaviours in a similar fashion.

Does Overt Marital Hostility Mediate the Relationship Between General Marital Satisfaction and Child Outcome?

Using multiple regression techniques, we tested the mediator hypothesis that marital satisfaction would be indirectly related to child outcome through its association with overt marital hostility. In order to provide evidence of mediation, a number of conditions must be met (Baron & Kenny, 1986; Judd & Kenny, 1981). Notably, marital satisfaction would have to be significantly correlated with children's adjustment difficulties. Next, marital hostility would have to be significantly associated with both marital satisfaction and with children's adjustment difficulties. Finally, when marital satisfaction and overt marital hostility are entered simultaneously into a multiple regression equation

Table 9

Intercorrelations between Mothers' Reports and Fathers' Reports of Marital Functioning and Child Adjustment

Variable	Mothers			
	MAT	OPS	INT	EXT
Fathers				
MAT	.56***	-.31***	-.07	-.03
OPS	-.26***	.45***	.03	.12
INT	-.05	.15*	.43***	.36***
EXT	-.12	.20**	.36***	.55***

Note. MAT=Locke-Wallace Marital Adjustment Test; OPS= O'Leary Porter Overt Hostility Scale; INT=Child Behavior Checklist: Internalizing Scale; EXT=Child Behavior Checklist: Externalizing Scale.

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

predicting children's adjustment problems, the partial correlation between marital satisfaction and children's adjustment problems would have to drop below the level of the zero order correlation between marital satisfaction and children's adjustment problems. Analyses were carried out separately for measures completed by mothers and fathers.

Reports by mothers. Using mothers' data, the mediational hypothesis was tested several times using different dependent variables. Results are reported in Table 10. In the first set of analyses, CBCL Internalizing scores reported by mothers were used as the dependent variable. Consistent with the first condition necessary for a mediational model, marital satisfaction, as measured by MAT, was significantly correlated with children's adjustment problems, as measured by the INT scale. Consistent with previous research, the magnitude of this association was small but significant ($\beta = -.21$, $F = 11.86$, $p < .001$), accounting for only 4% of the variance in children's adjustment problems. Marital satisfaction was also significantly correlated with marital hostility, as measured by the OPS, and OPS was significantly correlated with INT. Thus, the initial criteria for mediation were met. Next, Internalizing scores were regressed onto marital hostility and marital satisfaction using standard multiple regression. This regression equation was significant, $F(2, 265) = 13.35$, $p < .001$, and the two independent variables accounted for 9.2% of the variance. With both marital hostility and marital satisfaction included in the equation, MAT no longer predicted INT ($\beta = -.11$, $F = 2.64$). In order to confirm that the association between marital satisfaction and children's adjustment problems was significantly reduced, a hierarchical multiple regression, with OPS entered in the first step, and MAT entered in the second step, was conducted. Results confirmed that marital

Table 10

Multiple Regression Equations Predicting Children's Adjustment for Marital Satisfaction with and without Marital Hostility

	Outcome Measure							
	<u>CBCL Internalizing</u>				<u>CBCL Externalizing</u>			
	β	pr	F^a	$\Delta R\text{-sq}^b$	β	pr	F^a	$\Delta R\text{-sq}^b$
Mothers								
Equation 1: MAT	-.21	-.21	11.86***	.04	-.17	-.17	8.22**	.03
Equation 2: MAT	-.11	-.10	2.64	.01	-.05	-.05	.61	.00
OPS	.24	.22	14.26***	.08	.29	.27	21.09***	.10
Fathers								
Equation 1: MAT	-.22	-.22	11.75***	.05	-.18	-.18	7.94***	.03
Equation 2: MAT	-.10	-.09	1.80	.01	-.04	-.04	.37	.00
OPS	.25	.22	12.24***	.09	.28	.24	15.27***	.09

Note. MAT=Locke-Wallace Marital Adjustment Test; OPS=O'Leary Porter Overt Hostility Scale. ^aF-value is that associated with the change in R^2 . $\Delta R\text{-sq}$ is the change in R^2 when variable entered into equation; β =Beta weight; pr =partial correlation. ^bThe ΔR^2 was computed from hierarchical multiple regression to confirm the standard multiple regression. ** $p < .01$. *** $p < .001$.

satisfaction (MAT) did not contribute significantly to the prediction of internalizing problems once the influence of marital hostility had been removed (R^2 change = .00).

The same analyses were carried out using mothers' scores for externalizing problems (EXT) as the dependent variable, and similar results were obtained. The initial zero-order correlations indicated that MAT was significantly associated with EXT, although it accounted for only 3% of the variance in externalizing problems. Marital satisfaction was also correlated significantly with OPS, and OPS was correlated significantly with EXT. Next, EXT was regressed onto MAT and OPS. The standard multiple regression equation was significant, $F(2,265)=14.96$, $p<.001$, and the combination of MAT and OPS accounted for 10% of the variance. The association between marital satisfaction and externalizing problems dropped below the zero-order correlation and did not reach significance once the effect of marital hostility was removed ($\beta=-.05$, $F=.61$). The hierarchical multiple regression confirmed that MAT did not account for a significant amount of variance in externalizing problems once the effect of OPS was removed (change in $R^2=.00$). Thus, the findings suggested that, for data provided by the mother, mothers' perceptions of the frequency of marital hostility in sight of the child mediates the link between marital satisfaction and mothers' perceptions of both internalizing and externalizing problems.

In an effort to address the issue of single-rater bias, the mediational analyses were conducted again, this time using peer nominations of aggressive and withdrawn behaviours as the dependent variables. An examination of the zero-order correlations indicated that neither marital satisfaction nor marital hostility, as reported by the mother, were significant

predictors of peer evaluations of aggressive or withdrawn behaviour problems. Thus, the initial criteria for testing a mediational model were not met, and no further analyses were conducted.

Reports by fathers. The same analyses were carried out using data from fathers, and similar results were obtained. The results are reported in Table 10. There were significant zero-order correlations between fathers' scores of marital satisfaction and both internalizing and externalizing problems, accounting for 4.7% and 3.2% of the variance in children's adjustment problems, respectively. Marital satisfaction was also significantly correlated with marital hostility, and marital hostility was significantly correlated with both internalizing and externalizing problems. Thus, the initial criteria for assessing a mediational model were met. In the first standard multiple regression equation, INT was regressed on MAT and OPS. This equation was significant, $F(2,239)=12.26$, $p<.001$, with the two independent variables accounting for 9.3% of the variance. With both variables entered into the equation, the partial correlation between marital satisfaction and internalizing problems dropped below the zero-order correlation, and was no longer significant ($\beta=-.10$, $F=1.8$). Again, a hierarchical multiple regression, with OPS and MAT entered together, confirmed that MAT accounted for less than 1% of the variance.

The second equation, using EXT as the dependent variable, yielded similar results. The relevant zero-order correlations were significant. When both marital satisfaction and marital hostility were entered into a standard multiple regression equation, the equation was significant, $F(2,239)=11.84$, $p<.001$, with the two variables accounting for 9% of the variance in externalizing problems. The partial correlation between MAT and EXT

dropped below the zero-order correlation, and was no longer significant ($\beta = -.04$, $F = .37$). Again, a hierarchical multiple regression confirmed that MAT accounted for no additional variance once the effects of OPS were removed (change in $R^2 = .00$).

Finally, the mediational hypothesis was examined using marital information provided by fathers, and peer nominations of aggression and withdrawal. As was the case with mothers' reports, the correlations between fathers' scores on MAT and peer-reported aggression and withdrawal were not significant, and no further analyses were carried out.

Gender differences. In order to explore possible gender differences, analyses of the mediational effect of marital hostility were carried out separately on data for boys and girls. Again, the mediating hypothesis was tested separately for data reported by mothers and by fathers, using the Internalizing and Externalizing scales from the CBCL as the dependent variable.

Using data reported by mothers, patterns were different for boys and girls. The results are reported in Table 11. First, zero-order correlations indicated that marital satisfaction (MAT) was significantly correlated with the INT scale for boys and girls. The MAT was significantly correlated with the EXT scale for boys. Overall, there was evidence for a significant mediating effect of exposure to marital hostility for both boys and girls on internalizing problems, and for boys but not girls on externalizing problems.

An examination of the fathers' data indicated some interesting gender differences. As was the case with the mothers' data, MAT scores were significantly correlated with internalizing problems for both boys and girls, but were significantly correlated with externalizing problems for boys only. Again, mediational analyses were run for girls and

Table 11

Multiple Regression Equations Predicting Child Adjustment from Marital Satisfaction with and without Marital Hostility, Separately for Boys and Girls

		Outcome Measure							
		CBCL Internalizing				CBCL Externalizing			
	□	pr	F ^a	$\Delta R\text{-sq.}^b$	β	pr	F ^a	$\Delta R\text{-sq.}^b$	
Mothers									
<u>Girls</u>									
Equation 1: MAT	-.22	-.22	6.93**	.05	-.16	-.16	3.56	.03	
Equation 2: MAT	-.13	-.12	2.15	.01	-.04	-.04	.19	.00	
OPS	.23	.22	7.04**	.08	.31	.29	2.94***	.10	
<u>Boys</u>									
Equation 1: MAT	-.20	-.20	5.40*	.04	-.20	-.20	5.07*	-.04	
Equation 2: MAT	-.08	-.07	.67	.01	-.07	-.07	.56	.00	
OPS	.27	.22	7.86**	.09	.27	.25	7.91**	.09	
Fathers									
<u>Girls</u>									
Equation 1: MAT	-.19	-.19	4.76*	.04	-.17	-.17	3.78	.03	
Equation 2: MAT	-.11	-.10	1.79	.01	-.07	-.07	.58	.00	
OPS	.18	.16	3.19	.05	.22	.20	5.01*	.06	
<u>Boys</u>									
Equation 1: MAT	-.27	-.27	8.65***	.07	-.20	-.20	4.81*	.04	
Equation 2: MAT	-.07	-.06	.45	.00	.00	.00	.00	.00	
OPS	.37	.31	12.95***	.16	.37	.31	12.80**	.14	

Note. MAT=Locke-Wallace Marital Adjustment Test; OPS=O'Leary Porter Overt Hostility Scale. ^aF-value is that associated with the change in R²; $\Delta R\text{-sq}$ is the change in R² when variable entered into equation; β =Beta weight; pr=partial correlation. ^bThe ΔR^2 was computed from hierarchical multiple regression to confirm the standard multiple regression.

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

boys, using both INT and EXT as dependent variables. Overall, evidence for a significant mediating effect of marital hostility on the association between marital adjustment and children's adjustment problems was present for boys but not girls, when both internalizing and externalizing problems were used as the outcome variables.

The data for boys and girls was also examined using peer evaluations of aggressive and withdrawn behaviour. Zero-order correlations indicated that MAT was not significantly correlated with aggression or withdrawal indicators and that marital hostility was not significantly correlated with either aggressive or withdrawal indicators. Thus, no further analyses were conducted. However, the sample size for these analyses were low, suggesting that there may have been insufficient power to detect actual differences (Baron & Kenny, 1986; Judd & Kenny, 1981).

Overall, there was support for the mediational model, at least in analyses for which parents provided information regarding marital quality and children's adjustment problems. The mediational effects were greater for boys than for girls. For both mothers and fathers, the association between marital hostility witnessed by the child and both internalizing and externalizing problems was stronger than the relationship between general marital satisfaction and children's adjustment difficulties, and accounted for a greater percentage of the variance. In this sample, marital satisfaction did not contribute significantly to the regression equation beyond the contribution of marital hostility.

Discussion

The purpose of this study was to evaluate the role of children's exposure to marital hostility as a mediator in the relationship between marital satisfaction and children's

adjustment problems. Specifically, it was hypothesized that marital satisfaction would be associated with children's adjustment difficulties, but that this relationship would be mediated by parental perceptions of overt marital hostility. Data from mothers, fathers, and peers were used, and gender differences were examined. Consistent with past research (Emery, 1982; Reid & Crisafulli, 1990), marital satisfaction was a significant, but modest, predictor of both internalizing and externalizing problems for both mothers and fathers. Parental perceptions of marital hostility was a stronger predictor of children's adjustment difficulties than was marital satisfaction, and this finding is also consistent with the literature (Cummings & Davies, 1994). The data supported the mediational hypothesis, in that low marital satisfaction was predictive of parents' perceptions of high overt marital hostility, which itself was predictive of parents' perceptions of increased internalizing and externalizing problems. In this sample, marital satisfaction contributed no unique variance to children's adjustment problems once the variance attributable to parental perceptions of marital hostility was accounted for, indicating the effects of a full, rather than a partial, mediational model.

Importance of Type of Informant for Results Obtained

Evidence for the mediating role of overt marital hostility emerged only when mothers or fathers provided information on both the quality of the marital relationship and children's adjustment difficulties. When parents provided information on their marriage and peers provided information about children's aggression and withdrawal, neither marital satisfaction nor overt marital hostility was significantly associated with children's adjustment problems. This is consistent with previous research which has reported smaller

correlations between measures assessed by different informants (Emery & O'Leary, 1984; Grych & Fincham, 1990). Given the small magnitude of the correlation obtained between marital satisfaction and children's adjustment problems in the present study when mothers or fathers were used as informants for both measures, it is perhaps not surprising that this relationship would no longer be significant with two informants. It is therefore not clear from these results whether the quality of the marital relationship is important for children's adjustment problems after the artifact of method variance is removed.

It could be that the higher correlation obtained when mothers and fathers provided information on both marital quality and children's adjustment difficulties was the result of a generally "negative halo" view of life, according to which the parent evaluates different aspects of both their life and their child's life more negatively (Katz & Gottman, 1993; McHale et al., 1991). In support of this view, Cummings and Davies (1999) noted that associations have been found between maternal depression and negative cognitions about their children.

In the present study, marital quality did predict child outcome when both mothers and fathers were used as informants. One might argue that spouses may not be independent sources of information; however, the correlations reported in Table 7 indicate some differences between mothers and fathers. Generally, mothers tended to have a slightly more negative view of both their marriages and their children's behaviour: they viewed their children as displaying more internalizing and externalizing problems than did fathers, and they were less satisfied than their spouses with their marriages. This is consistent with the findings of Burman et al. (1987), who reported that mothers and

fathers perceived different numbers of adjustment difficulties in their children, and that these differences depended on the state of the marital relationship. Thus, there is some evidence that mothers and fathers can be considered to have unique perspectives on the state of their marriage and their children.

The fact that marital quality did not predict child outcome when peer measures of child outcome were used could be due to the fact that the peer outcome measures were less sensitive than the parent outcome measures. This seems unlikely given the good predictive validity that these measures have demonstrated in prior research (Ledingham & Schwartzman, 1984).

Finally, it could be that children behaved differently with their peers than with their parents. There is ample evidence to indicate that children often behave differently at home and at school, and with their families versus with their friends (Whiting & Whiting, 1975). The negative environment at home may "pull" for more negative behaviours from the child, whereas that influence may not be present when they are with their friends. If so, then it may be that children behave differently with their peers than with their parents, and that marital difficulties, in particular overt marital hostility, affect children differently in different situations. This would suggest that the pattern of results found here were not simply a reflection of the importance of shared method variance.

Gender Differences

Regression analyses were run separately for boys and girls. Using information provided by the mothers, results indicated support for the mediating effects of marital hostility on the internalizing problems of both boys and girls. The mediating effect of

marital hostility was significant for boys only for externalizing problems. This suggests that, in mothers' perceptions, marital conflict has a greater impact on parents' perceptions of boys' externalizing problems than on parents' perceptions of girls' externalizing problems. This finding is consistent with findings from previous studies which found that marital conflict was a stronger predictor of children's externalizing, rather than internalizing, behaviours, particularly for boys (Turner & Barrett, 1998).

Data which used fathers as informants found significant mediating effects of marital hostility for boys only, indicating that fathers in a hostile marriage perceive their sons, but not their daughters, to be affected in both externalizing and internalizing ways. Although the findings in the literature are not consistent, other studies have found boys to be more at risk for adjustment problems than girls (Emery & O'Leary, 1984; Porter & O'Leary, 1980), although few studies have reported fathers' perceptions.

Limitations of the Present Study

A number of weaknesses in the present study should be noted. First, the correlational nature of the data precludes our ability to draw causal conclusions. It is quite possible, particularly with regard to marital discord and children's adjustment problems, that the adjustment of the child influenced marital satisfaction and hostility or that there was a bi-directional influence among the variables. Future research using a larger sample and causal modeling techniques should yield more definitive results. Second, we cannot entirely rule out the effects of rater bias on the current results. Although information from both mothers and fathers were used to obtain two separate perspectives, spouses may not represent completely independent sources. The inclusion of peer-reported information on

aggression and withdrawal in addition to parent reports of outcome is important, but the measures were somewhat different in content. Thus, item content as well as type of informant may have contributed to the different patterns of results obtained with different outcome measures. Future studies which include multiple informants of the marital relationship and children's adjustment difficulties might better address the question of shared method variance by using more directly comparable instruments. The current work examined the relationships among marital satisfaction, marital hostility, and children's adjustment at just one point in time. It would be useful to explore the predictive quality of the different marital factors over time, and to measure the effects of intermittent or chronic marital hostility on children's longitudinal adjustment.

Finally, the generalizability of the findings may be limited because of the overrepresentation of lower SES families in this sample. However, there is no evidence to date to suggest that SES on its own should substantially alter the importance of marital hostility as a mediator in the relationship between marital unhappiness and children's adjustment.

Despite these limitations, the present study contributed to our understanding of the relationship of marital satisfaction and marital hostility to children's adjustment difficulties. The results indicated that overt marital hostility mediated the association between marital satisfaction and children's adjustment problems, and that, for this sample at least, marital satisfaction did not predict children's adjustment problems once the effect of marital hostility was accounted for. The present study compared results obtained using information from both fathers and mothers, and identified some differences between their

perceptions, and explored gender differences in adjustment.

The results of the present study suggest a number of avenues for further study.

The issue of method variance needs to be addressed in future work by adding outcome measures from an independent source. In addition, the concept of marital conflict needs to be examined more closely. Not all conflict may have equally deleterious effects, and it may be that there are different ways to express conflict that are less harmful for the children who witness it. Thus, like marital satisfaction, it may be that marital conflict, as a global term, has outlived its usefulness.

CHAPTER FOUR

General Discussion

Summary of Findings

Two studies were described above. The purpose of the first study was to assess the relative importance of children's experiences with family and peers for their adjustment. Family climate was measured by several variables known to be related to children's adjustment, namely marital satisfaction, marital conflict, and parental psychological distress. SES, known to be related to these factors, was also measured. Peer likeability was used an index of peer relations, and children's adjustment difficulties were measured using internalizing and externalizing behaviour problem scales. The second study examined whether marital hostility mediated the relationship between marital satisfaction and children's adjustment problems for mothers and fathers, and boys and girls.

Study one. This study explored the relationships among family and peer measures, including marital satisfaction, overt marital hostility, parental psychological distress, peer likeability, and children's internalizing and externalizing problems. Two path analytic models were proposed. A single process family model was hypothesized in which family factors would predict both internalizing and externalizing problems, but peer likeability would not predict either internalizing or externalizing problems. SES was hypothesized to predict family factors. The second model was a dual process model, in which it was hypothesized that both family factors and peer likeability would predict children's internalizing and externalizing behaviour problems.

SES did not predict any of the family factors (i.e., marital satisfaction, marital

hostility, or parental psychological distress), and was thus dropped from the models. In this study, general marital satisfaction was not related to children's adjustment, and it was dropped from further analyses.

The data were analysed separately using information provided by both mothers and fathers. The results from data using mothers' scores for family variables and children's internalizing and externalizing behaviours indicated strong support for the dual process model. Both peer likeability and parents' perceptions of overt marital hostility were significant joint predictors of both internalizing and externalizing behaviour problems. In addition, peer likeability and mothers' psychological distress jointly predicted externalizing problems. In each case, the family factors were stronger predictors than the peer factors, perhaps not surprisingly because the family factors and outcome variables were both reported by the same informant. Support for a single process family model was evident only when mothers' psychological distress and peer likeability were used to predict internalizing problems. In this case, peer likeability was not a significant predictor of children's adjustment, although it approached significance.

In contrast, the results of data using the fathers as informants provided exclusive support for a single process family model. Fathers' psychological distress predicted both internalizing and externalizing problems, and overt hostility as perceived by the father predicted internalizing but not externalizing problems. In no case, however, did peer likeability predict children's adjustment.

Finally, when peer evaluations of aggression and withdrawal were used as outcome variables, none of the family measures predicted the peer-reported outcome

variables significantly, regardless of whether mothers or fathers were used as informants on the family factors. Peer likeability, however, significantly predicted withdrawal, but not aggression, consistent with a single process peer model.

Study two. This study evaluated the role of parental perceptions of marital hostility witnessed by the child in the relationship between marital satisfaction and parental perceptions of children's internalizing and externalizing problems. It was hypothesized that marital satisfaction would be associated with children's adjustment problems, but that this relationship would be mediated by overt marital hostility. The results were analysed separately for mothers and fathers, and for boys and girls.

Contrary to the results of Study One, but consistent with previous research, marital satisfaction was a significant, although modest, predictor of both internalizing and externalizing problems, for both mothers and fathers. Marital hostility was a much stronger predictor of children's outcomes than was marital satisfaction, and this is also consistent with the literature (Cummings & Davies, 1994; Emery & O'Leary, 1984). Overall, the data provided support for the mediational hypothesis. Marital satisfaction predicted parental perceptions of overt marital hostility, which in turn predicted internalizing and externalizing problems. As expected, however, when the variance attributable to marital hostility was accounted for, marital satisfaction no longer made a significant contribution to the variance in internalizing and externalizing behaviours. The results were similar for data coming from both mothers and fathers.

The evidence for the mediating role of marital hostility was demonstrated only when mothers and fathers provided information on both the quality of the marriage and

children's adjustment. When analyses were repeated using mothers and fathers as informants about the marriage, but peers as informants about children's adjustment, neither marital satisfaction nor overt marital hostility predicted children's internalizing and externalizing problems. Thus, there was no support for a mediational model when peers assessed children's adjustment.

Given evidence in the literature of a complex pattern of gender differences (Snyder, 1998), the data were analysed separately for boys and for girls. Results from data using mothers' scores for marriage quality and children's adjustment problems indicated support for the mediating effects of marital hostility for both boys and girls, but only when predicting internalizing problems. For externalizing problems, the mediating effect of marital hostility was evident for boys only. This is consistent with other studies which have found that marital conflict was a stronger predictor of externalizing, rather than internalizing behaviour, particularly for boys (Turner & Barrett, 1998).

The results from Study One and Study Two indicate the importance of family factors to children's adjustment. In the first study, parental psychological distress and parents' perceptions of overt marital hostility were shown to be strong predictors of children's adjustment. The second study underscored the importance of overt marital hostility, relative to general marital satisfaction, as a predictor of children's outcomes. Also notable was the demonstrated importance of peer factors, in addition to family factors, for children's adjustment in the first study.

Theoretical Implications

The evaluations of a single process family model and a dual process family and

peer model in Study One yielded some support for each model. Data using mothers as informants generally supported a dual process model, whereas data using fathers as informants supported a single process family model. Other research which has looked at the contribution of family and peers has yielded equivocal findings. Woodward and Fergusson (1999) reviewed several studies which had found that peer relationship problems made an independent contribution to the prediction of later adjustment problems after controlling for family factors, consistent with the results of the present study using mothers' information. However, Woodward and Fergusson also noted that a number of different studies also reported results consistent with the results obtained here using the fathers' data: after controlling for family factors, peer relations did not make an independent contribution to children's adjustment difficulties (Turner & Barrett, 1998) .

There are several possible explanations for the difference in findings between mothers' and fathers' reports in Study One, and these are discussed in some detail in that study. Briefly, these differences may reflect parenting style differences between mothers and fathers, notably that mothers spend more time with their children than do fathers, and tend to enforce rules more with their children, whereas fathers tend to spend more time in play with their children than do mothers (Parke, 1990). Wives and husbands have also been found to react differently to marital distress, with husbands more likely than wives to withdraw from their spouse and children (Howes & Markman, 1989; Snyder, 1998). These personal and parenting differences can lead to distinct experiences with their children, and hence, different evaluations of their children's adjustment.

One might argue that the evidence in support of a dual process model, which came

from data that used mothers as informants, was quite compelling. With mothers being used as informants of both family factors and children's adjustment problems, the possibility of a strong correlation between these factors was maximized, and evidence for significant family effects was highly likely to emerge. Even under these conditions, however, peer relations significantly predicted children's internalizing and externalizing problems, indicating the importance of this factor in predicting children's adjustment problems.

In both studies, significant results were obtained only when mothers or fathers provided information on the family and on child adjustment problems. When peer evaluations of aggression and withdrawal were used as outcome measures, the results were no longer significant. These results are consistent with previous research which reported smaller correlations between measures assessed by different informants (Emery & O'Leary, 1984; Grych & Fincham, 1990). It is important, however, to question results that use the same rater for both the marital relationship and children's adjustment. Katz and Gottman (1993) have suggested that stress associated with marital difficulties could generalize to a general stress dimension and affect evaluations of child adjustment problems. Evidence of an association between maternal depression and negative cognitions about their children (Cummings & Davies, 1999) is consistent with this view, and stresses the importance of using different raters.

The lack of significant findings when parents' scores on family factors and peers' scores on children's adjustment difficulties were analysed could reflect the fact that the peer outcome measures were less sensitive than the parent outcome measures. Both the

PEI and ASSESS have demonstrated good predictive validity, so this not likely to be the case (Ledingham & Schwartzman, 1984).

Finally, it may be that, as evidence has suggested, children behave differently with their peers than with their parents. There is ample evidence to indicate that children often behave differently at home and at school, and with their parents as opposed to their friends (Whiting & Whiting, 1975). David et al. (1996) reported that, although conflict was related to internalizing and externalizing behaviour, the effects were generally less evident at school. It could be that children are comfortable expressing their distress at home but not at school.

In an attempt to address the issue of how the perspective of a specific observer affects the results obtained in studies, information from both mothers and fathers were provided in both studies. Although mothers and fathers are part of a similar family environment and may be viewed as too similar to be considered independent sources of information, it is important not to assume their information is interchangeable (Snyder, 1998). The correlations from both studies indicated that, although the differences are generally not statistically significant, mothers viewed their marriages and children somewhat differently than did the fathers. The research regarding different parenting and personal styles under stress suggests that mothers and fathers can have somewhat different perspectives on the parent-child relationship and on the marital relationship, and that marital conflict may affect fathers more than mothers, particularly with regard to their parenting (Erel & Burman, 1995). Thus, an accurate measure of family climate must include the perspectives of both mothers and fathers.

Clearly, the present studies cannot completely rule out the effects of shared method variance. We are not able to say with certainty that the results obtained truly reflect the adjustment of children rather than their parents' expectations or biased appraisals. This difficulty highlights the importance of obtaining outcome measures of neutral, independent raters, and using multiple measurement techniques. In particular, obtaining children's perceptions of the marital relationship and family climate is especially important, in that they may or may not be aware of the subtle features of marital dissatisfaction. It may be, too, that some children are more concerned about hostility between their parents than others, thus both their cognitive and emotional appraisals are important to measure. Children's behaviour, as noted, can change under different circumstances, and with different social partners. A variety of raters, including teachers, peers, family, under different situations might provide a clearer picture of children's adjustment difficulties.

There were some interesting null results. In Study One, marital satisfaction was not a significant predictor of children's adjustment problems for either fathers or mothers. The correlations reported in the literature are consistent, but small, so it is not surprising that the association was not significant with the smaller sample in Study One. In Study Two, however, with a much larger sample, the association was statistically significant, which allowed for an assessment of the mediational hypothesis.

SES measures (family income and education) were not related to family factors in the present studies. Previous research found that family income in particular, was inversely related to marital hostility (Parker et al., 1995; Conger et al., 1992; 1993), so

this null result is somewhat puzzling. It could be that there is a somewhat restricted range in this sample, as the participants were, on average, low on education and income compared to norms for the city of Montreal. Researchers have noted that the effects of SES are rather small, and that it is only in addition to other hardships that the effect of SES is especially strong. The participants in the present study did not have extreme scores on marital functioning or children's adjustment, so it may be that these participants were not experiencing multiple hardships that would maximize the deleterious effects of low SES. Finally, it could also be that SES was more closely associated with child adjustment difficulties or peer likeability, rather than parental psychological distress or marital functioning, or was related to other measures not measured in the present studies.

Limitations to the Present Research

The results of both studies highlight the importance of both family and peer influences on children's adjustment. Despite these positive results, it is important to acknowledge the shortcomings in the present work.

From a psychometric point of view, there were some drawbacks associated with the measures used. Some of these stem from the use of archival data that was more than a decade old, where measures have changed dramatically over time. The measures used in the present study were state-of-the-art in 1985; however, they tended to be quite global measures of very complex constructs. In terms of marital satisfaction, for example, rather than measuring global satisfaction alone, a more important question might be to ask "what aspects of marital satisfaction, under what conditions, affect children's adjustment"? The O'Leary-Porter Marital Hostility Scale was created, in part, to address this issue, and

marital hostility is still considered to be one important aspect of a distressed marriage. However, as Fincham (1994) noted, marital hostility is not a unidimensional construct, and it may be important to examine which aspects of hostility between couples are associated with children's adjustment problems, and under what conditions. Future studies that look at the frequency and severity of verbal, physical, overt, and circumscribed marital hostility should add more to our understanding of the area. It would also be informative to examine the effects of different conflict resolution strategies on children's adjustment. Finally, as Fincham noted, there is little or no research on the potential positive aspects of conflict, and how conflict that falls within the normal range may be related to the outcomes of children who witness it.

The use of a global measure of peer popularity provided us with important information about the social acceptance of the child in a global sense. Unfortunately, we were not able to test for the importance of having a special friend, or other more specific aspects of peer relations. Future research might explore reciprocal best friend relationships, gather information from that friend, or by observing the participants with peers. The characteristics of one's peer network are also important information. For instance, research has shown that having a friend does not necessarily serve a protective function for children. Evidence shows that aggressive children are more apt to have aggressive friends, and relationships with children who also have adjustment problems may increase the chance of poor outcomes (Ledingham, 1999).

There were a number of methodological limitations in the current research. First, the studies were carried out using a correlational design which precluded our being able to

draw causal conclusions. The present studies hypothesized that family and peer factors affect children's internalizing and externalizing behaviours, however there is research supporting a different causal direction. For example, Vuchinich (1992) found that, contrary to their hypothesis that peer relations would predict adjustment in adolescents, adolescents' adjustment predicted peer relations. It is also quite probable that there are reciprocal influences among these variables, such that the adjustment of the child influences parental psychological distress and quality of the marriage which may, in turn, affect child adjustment difficulties. Future research using structural equation modeling or employing a true experimental approach might help to clarify some of these questions regarding causality and reciprocal influences.

Second, there are some potential restrictions to the generalizability of the results. The possibility of sample biases must be considered. It is possible that the families who volunteered to participate in lengthy home interviews which asked about potentially sensitive areas were less distressed, or that their children had fewer adjustment difficulties than those who refused to participate, or who completed some, but not all, of the relevant questionnaires. The present sample also overrepresented families who were low in SES and education. Although SES was not related to the family variables in the present study, low income and low parental education is known to affect family climate in a number of ways, including fewer parenting skills, more marital problems, and greater psychological distress. Although the present study gave us a good picture of how the variables examined here interrelated in a lower SES sample, it would be important to examine how the variables of interest affect families with a wider range of socioeconomic status.

A number of potentially important variables were not measured in the present study. Information about parental styles, attitudes, and parent-child attachment would have greatly enhanced our understanding of how family climate affects children's adjustment. However, at the time of data collection, psychometrically sound parenting measures were not readily available. Measures of parenting style and how home duties were shared between parents had been collected using measures which are not frequently cited in current research; unfortunately, these measures did not stand up well to psychometric scrutiny. Other measures, including children's cognitive and emotional appraisals of their family and peer situations would have provided important information from the perspective of the child. Although information from both parents was provided, the perspectives of other important family members, including siblings and grandparents, was not available. As well, information regarding biological factors associated with problems of child adjustment was unavailable. The inclusion of such variables might have allowed us to explain more of the variance in children's adjustment difficulties. Although the current study offered a good global picture of the association of family climate and peer likeability with children's adjustment difficulties, research that included the variables mentioned above would also enable us to examine possibly more proximal influences on children's outcomes.

Future Research

The results of the present study suggest a number of avenues for further study. The issue of method variance needs to be addressed in future work by adding independent sources of information, including non-family sources such as teachers or employers, or by

using different methods to collect information, such as observational accounts from different situational contexts (e.g., job, school, and home). In addition, it would be important to explore different aspects of marital conflict more closely. Not all conflict will affect children in the same way under the same conditions, and how conflict is resolved would likely affect its influence (Katz & Gottman, 1993). Using larger samples would enable structural equation modeling procedures to be carried out and should enhance our understanding of causal patterns, and by its use of latent variables yield results less specific to one type of informant. Finally, although the present study provides a good overview of the family and children's adjustment difficulties at one point in time, longitudinal studies could provide us with different information about the importance of family and peers, and allow for an assessment of the importance of differences between stable or remitting courses of marital hostility, socioeconomic stress, and peer relationship problems for children's adjustment problems.

Conclusions

The present study represented an attempt to extend our knowledge about the associations of peers and families with children's adjustment. Study One assessed two different models of influence. The results did not conclusively favour one model over the other, so that it cannot be said with certainty that either the single process family model, or the dual process model provided a better fit to the data. However, the study was relevant to the recent debate initiated by Rich Harris (1995) about the lack of relevance of family to children's development by highlighting the importance of both family and peer systems. The results from Study Two indicated that, in this sample, general marital

satisfaction contributed very little to children's adjustment that was not accounted for by the child having witnessed hostility between the parents. The information obtained from the fathers' perspectives was an important addition, as was the examination of gender differences in children's reactions to marital hostility between parents. There are a number of refinements that future studies could undertake, including the use of structural equation modeling statistical techniques to address issues of causality, and the inclusion of measures that would focus on more specific aspects of marital functioning and peer relationships. The addition of measures to assess other variables known to be associated with children's adjustment, including parenting measures and children's cognitive appraisals, would probably add to the amount of explained variance.

Berscheid (1999) noted that the study of relationships is severely fragmented. Despite this, she remarked that she has seen indications that researchers are crossing more boundaries, and integrating knowledge about different relationships and their influences on children's lives. I believe that it is this continuing discourse that will ultimately broaden our understanding of how children adapt over time.

Contributions of Collaborators

Dianne E. Chappell: proposed the hypotheses, analysed the data, wrote the articles, common introduction, and common discussion.

Jane E. Ledingham: thesis supervisor, edited the manuscript.

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APPENDIX A**DEMOGRAPHIC QUESTIONS ASKED DURING HOME VISIT**

QUESTIONS D'ENTREVUE SUR LES VARIABLES DEMOGRAPHIQUES

Date de naissance: _____

1. Quel âge avez-vous?
2. Combien d'années de scolarité avez-vous complétées?
3. a) Avez-vous un emploi présentement? Recevez-vous des prestations d'assurance-chômage? du Bien-Etre Social?
b) Si la personne ne travaille pas, demander la date et le genre du dernier travail.
4. Quel genre de travail faites-vous? (par ex.: ingénieur, magasinier, fermier) Pouvez vous être plus précis?
5. Dans le cadre de votre travail, quelles sont/étaient vos activités ou responsabilités les plus importantes? (par ex.: tenue de livres, vendre des automobiles, l'opération d'une presse d'imprimerie, maçonnerie)
6. De quel genre d'industrie ou compagnie s'agit/s'agissait-il? (par ex.: manufacturier d'appareils radio et TV, magasin au détail de souliers, Ministère de Revenu, ferme)
7. Etes/étiez-vous employé(e) d'une compagnie privée, dépendant d'un particulier ou d'une compagnie pour vos gages, salaire, commission? Un employé du gouvernement (fédéral, provincial ou municipal)? Travaillez-vous à votre propre compte pour votre commerce, pratique professionnelle, ou ferme? Votre propre commerce non incorporé (ou ferme)? Votre propre commerce incorporé? Travaillez-vous sans salaire pour un commerce ou une ferme familiale?
8. J'aimerais avoir une idée de votre niveau de revenu approximatif. Je vais vous lire des catégories de revenus et dites-moi laquelle décrit le mieux le revenu, avant déduction, des parents?

a. moins de 8,000\$	f. 16,000 à 18,000\$
b. 8,000 à 10,000	g. 18,000 à 20,000
c. 10,000 à 12,000	h. 20,000 à 22,000
d. 12,000 à 14,000	i. 22,000 à 24,000
e. 14,000 à 16,000	j. 24,000 à 26,000
	k. plus de 26,000
9. Combien d'enfants avez-vous?
10. Pourriez-vous me les nommer et me donner leur âge en commençant par le plus vieux?
(Marquer d'un asterix le rang de naissance de l'enfant-cible.)
11. Si vous avez à compléter un recensement, que'est-ce que vous marquerez pour votre statut civil?

12. a) Depuis combien de temps êtes-vous mariés?
- b) Si la personne n'est pas mariée présentement, demander:
Pendant combien de temps étiez-vous marié(e)?
13. Avez-vous déjà été séparé(e) de votre présent conjoint?
Si oui, pour combien de temps et depuis quand? (Date)
14. Avez-vous déjà été(e) marié avant?
Si oui, demander pendant combien de temps et depuis quand? (Date)
15. Dans le cas d'une famille monoparentale. Etes-vous divorcé(e),
séparé(e) ou veuf(ve)? Depuis combien de temps êtes-vous dans
cette situation?

APPENDIX B
MARITAL ADJUSTMENT TEST

NOM

TEST D'AJUSTEMENT MARITAL

1. Faites une croix sur un des points de l'échelle ci-dessous, cela traduisant le degré de bonheur, à tout considérer, de votre présent mariage. Le point milieu " heureux " représente le point de bonheur que la plupart des gens retirent de leur mariage. L'échelle descend graduellement sur un côté pour les quelques-uns qui sont très malheureux en mariage. Elle va de l'autre côté pour les quelques-uns qui font l'expérience d'un extrême jouissance de félicité dans leur mariage.

Très Malheureux	Heureux	Parfaitement Heureux
--------------------	---------	-------------------------

Etablissez une estimation approximative sur l'accord ou le désaccord entre vous et votre conjoint sur les items suivants.

S.V.P. cochez dans " une " colonne seulement pour chaque question

	Toujours d'accord	Presque toujours d'accord	Occasion- nellement en désaccord	Fréquemment en Désaccord	Presque Toujours en Désaccord	Toujours en Désaccord
2. Gérer le budget de la famille						
3. Questions de récréation						
4. Démonstrations d'affection						
5. Les amis						
6. Relations Sexuelles						
7. Conventions: bon juste, conduite propre						
8. Philosophie de la vie						
9. Manière de s'arranger avec les beaux-parents						

10. Quand des désaccords s'élèvent, cela a généralement pour résultat que:
le mari cède_____, l'épouse cède_____, l'accord se fait par concessions mutuelles_____.
11. Vous et votre conjoint vous engagez-vous dans des intérêts extérieurs ensemble ? Tous_____, quelques-uns d'entre eux_____, très peu d'entre eux_____, aucun d'entre eux_____.
12. Durant vos moments de loisirs, préférez-vous généralement: aller "trotter " ailleurs_____, rester à la maison_____ ? Votre conjoint préfère-t-il généralement: aller " trotter " ailleurs_____, rester à la maison_____ ?
13. Avez-vous déjà souhaité ne vous être jamais marié(e) ? Fréquemment_____, occasionnellement_____, rarement_____, jamais_____.
14. Si vous aviez à refaire votre vie, pensez-vous que vous: épouseriez la même personne_____, épouseriez une personne différente_____, ne vous marieriez pas du tout_____ ?
15. Vous confiez-vous à votre conjoint: presque jamais _____, rarement_____, dans beaucoup de cas_____, dans tous les cas_____ ?

APPENDIX C
PEER EVALUATION INVENTORY

DATE OF TESTING _____

- [illegible]

24. Who is unhappy or sad?
25. Who is especially nice?
26. Who acts like a baby?
27. Who is mean and cruel to other children?
28. Who often doesn't want to play?
29. Who gives dirty looks?
30. Who wants to show off in front of class?
31. Who says they can beat everybody up?
32. Who isn't noticed much?
33. Who exaggerates and makes up stories?
34. Who complains, nothing makes them happy?
35. Who always seems to understand things?

APPENDIX D

ADJUSTMENT SCALES FOR SOCIOMETRIC EVALUTION OF

SECONDARY SCHOOL STUDENTS

A.S.S.E.S.S.

Aggression

- 4. Those who push people around.
- 7. Those who act obnoxious.
- 10. Those who put others down.
- 13. Those who act phoney.
- 17. Those who quarrel and get mad easily.
- 18. Those who think they can beat everybody up.
- 26. Those who take things that aren't theirs.
- 28. Those who act really wild.
- 29. Those who are rude to teachers.
- 30. Those who want everything done their way.
- 37. Those who lie to get their way.

Withdrawal

- 2. Those who are shy with the opposite sex.
- 15. Those who are withdrawn, in their own world.
- 19. Those who you know nothing about.
- 31. Those who never seem to be having a good time.
- 32. Those who are not asked to join in group activities.
- 34. Those who prefer to be alone.
- 39. Those who are sort of ignored.

Social competence

- 6. Those who do most things well.
- 8. Those who enjoy being around people.
- 9. Those who can work well with a group.
- 16. Those who are good sports.
- 21. Those who share things with others.
- 24. Those who control their tempers.
- 27. Those who have confidence in themselves.
- 35. Those who are liked by others.
- 38. Those who are aware of everything going on.
- 41. Those who will probably do well in future positions.

Anxiety

- 3. Those who do nervous things.
- 5. Those who are afraid to speak up for themselves.
- 12. Those who seem to have doubts about themselves.
- 14. Those who feel put down.
- 22. Those who have their feelings hurt very easily.
- 25. Those who are nervous when called on to answer questions in class.

Academic problems

- 1. Those who don't care how well they do in anything.
- 11. Those who do poorly in school.
- 20. Those who waste time and have trouble getting things done.
- 23. Those who are messy.
- 33. Those who usually botch an assignment.
- 36. Those who give up when things get hard.
- 40. Those who fail to turn in assignments on time.