The Influence of Parental and Contextual Variables on the Quality of the Mother-Child Relationship and Child Cognitive and Behavioural Outcomes: Implications for the Intergenerational Transfer of Risk

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A Thesis

in

The Department

of

Psychology

Presented in Partial Fulfilment of the Requirements
for the Degree of Doctor of Philosophy at
Concordia University
Montreal, Quebec, Canada

October, 2002

Your file Votre référence
ISBN: 0-612-96946-0
Our file Notre référence
ISBN: 0-612-96946-0

ABSTRACT

The influence of parental and contextual factors on the quality of the mother-child relationship and child cognitive and behavioural functioning: Implications for the intergenerational transfer of risk

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Concordia University, 2002

The present set of two studies were designed to investigate the quality of the mother-child relationship in a sample of mothers and fathers with histories of childhood aggression and social withdrawal, and their at-risk children. In proposing a transfer of risk, it was hypothesized that childhood aggression and social withdrawal may affect the quality of emotional availability between mothers and children. Alternatively, the mother-child relationship may be compromised as a result of the multiple stresses that mothers experience. Participants were recruited from the Concordia Longitudinal Risk Project, a project that began in 1977 when 1,770 children in Grades 1, 4, or 7, from low SES neighbourhoods, were classified along the dimensions of aggression and social withdrawal. Study 1 focused on the high-risk mothers in the sample. Study 2 focused on the high-risk fathers within which it was possible to compare the quality of parenting and home environments provided by their spouses to the high-risk mothers who participated in Study 1. The interactions of mothers and their children were videotaped in their homes. Mothers completed questionnaires regarding income levels, parenting stress, levels of social support and depressive symptoms. In Study 1, evidence that the quality of emotional availability may be compromised by mother's childhood risk status was found. In particular, mother's childhood aggression in combination with social withdrawal predicted higher levels of hostility. There was also evidence for the transfer

of risk as a result of contextual stresses. Mothers with higher stress levels were found to be less sensitive and more hostile in their interactions with their children. In evaluating the transfer of risk to children's cognitive and behavioural functioning both direct and indirect effects of childhood risk factors were found. In Study 2, there was less evidence for the intergenerational transfer of risk as a result of fathers' childhood risk status, or through the quality of their spouses' interactions with their children. In considering pathways for the intergenerational transfer of risk, the results of Study 1, in particular, support the notion that both parenting and environmental variables are important influences in children's development and can confer risk through different mechanisms. The results also underscore the importance of including both maternal and paternal variables in intergenerational research in order to further delineate mechanisms that impact the development of competence in young children.

Acknowledgements

A very special thank you to my supervisor, Dr. Dale Stack, who has been very supportive of this project from the start. We have been working together for a long time, Dale, and I continue to greatly appreciate the strong support, enthusiasm, encouragement, and commitment you show to your students in their work.

I would also like to thank my committee members, Dr. Lisa Serbin and Dr. Michel Dugas for their support, their encouraging comments and the speed with which they read my thesis! Lisa, who is part of the High Risk Team has also provided invaluable feedback along the way greatly facilitating the complicated analytical process.

I would also like to acknowledge all the students who form part of the High Risk Team for their helpful suggestions. The Concordia Longitudinal Risk Project is a collaborative effort and the enthusiasm, expertise and exciting findings of other students helps to keep the project interesting and alive. Special, special thanks to Claude Senneville for his incredible support over the years. Claude, you are always willing to help in any way you can and have facilitated this process greatly for me. I am also grateful to Ming, Nadine, Joanne and Leslye for their assistance in this project, and Margaret who conducted my reliability coding.

Thanks also to three special people, David, Susan and Allan who have believed so much in me. Finally, a very special thank you to my family and wonderful friends, both near and far, who have encouraged, supported and loved me during this project. Within relationships it is possible to experience the essence of life itself. The relationships that I hold with my family and friends have inspired and motivated me to more fully understand the best way they are nurtured, and under which conditions they flourish.

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Chapter 1

"Interpersonal relationships are pivotal for studying psychopathology in general and developmental psychopathology in particular. This is so at multiple levels of analysis, from defining psychopathology, to describing preconditions and contexts, and to understanding its origins and nature" (Sroufe, Duggal, Weinfield & Carlson, 2000, page 75).

In recent years, there has been a surge of interest in understanding the processes that either encourage or limit the development of competence in children (Lewis, 2000; Masten & Coatsworth, 1998; Pushkar & Stack, 1998; Rutter, 1999; Salovey & Sluyter, 1997; Shipman & Zeman, 2001). The quality of the early social context in which children are raised is thought to provide an important foundation for healthy development, however, the mechanisms by which this occurs are rarely examined (Downey & Walker, 1992; Shaw, Owens, Vondra, Keenan & Winslow, 1996). Some social environments will afford certain advantages to children, providing critical tools to help them adapt and cope successfully with stresses they may encounter on their life path. Other social environments may place a child at a disadvantage at a very early age making successful adaptation very difficult (Freitas & Downey, 1998; Cicchetti, Heister, Ogawa, Ostoja, Susman, & Weinfield, 1994; Sameroff, 2000; Seifer, Sameroff, Baldwin & Baldwin, 1992; Shaw & Emery, 1987). Examining the mechanisms by which environmental conditions influence child development becomes essential in order to more fully understand human development.

Retrospective research that focused on children who fared poorly in high-risk environments led to the impression that maladjustment was inevitable when children were exposed to certain risk conditions (Werner & Smith, 1992). From these early high-

risk studies, developmental psychologists identified a broad range of factors in a child's social environment that are thought to impede successful adaptation, (e.g., parental mental health, socioeconomic status, parental education, quality of parenting, and family functioning). These studies, however, failed to consider the dynamic interplay among social and psychological variables which inevitably affects child development (Sameroff & Chandler, 1975). Increasingly, researchers have found that there is not necessarily a direct linear relationship between any risk indicator and psychopathological outcome (Achenbach, 1991; Jensen, Bloedau, Degroot, Ussery & Davis, 1989; Harrington, Rutter, & Fombonne, 1996; Lewis, 2000; Rutter & Sroufe, 2000; Sameroff, 2000; Seifer et al., 1992). Results from longitudinal intergenerational studies of children at-risk demonstrate that developmental outcomes can be complex and unpredictable. For example, there is evidence that shows that children in high-risk conditions are exposed to multiple risks, and that it is the additive effects of these risks which may account for maladaptive outcomes rather than any one factor alone (Jensen et al., 1989; Rutter, 1985; Luthar & Zigar, 1991; Sameroff, 2000). In addition, while many researchers may have assumed a continuity of risk from one generation to another, results indicate only moderate consistencies suggesting individual differences in coping and adaptation to life stresses (Cairns, Cairns, Xie, Leung & Hearne, 1998; Rutter, 1998; Sameroff & Seifer, 1992). Some children appear to develop normally even in the most disorganized and stressful homes (Werner & Smith, 1992). Whereas for other children, growing up in risk environments will place them at a severe disadvantage. Thus, any in-depth understanding of child development lies in finding explanations for the discontinuities as well as continuities of risk.

The present challenge posed to developmental researchers is not necessarily to identify all of the risk or protective factors that may be involved in healthy development. Rather, the issue is how to disentangle from the multitude of interacting systems those factors that will promote or inhibit competence in individuals (Cicchetti, 1992; Serbin & Stack, 1998; Shipman & Zeman, 2001). In so doing, theorists have emphasized the importance of differentiating between risk indicators versus risk mechanisms (Rutter, 1985; 1999). For example, the presence of parental psychopathology may represent a risk factor for children's development. However, it is the child's experience in the face of parental maladjustment which will determine whether the outcome is positive or negative. Some parents despite their own personal difficulties may be able to provide a warm and nurturing family environment for their children. For others, the challenges of parenting may place added stresses on an already difficult family environment resulting in child neglect or abuse.

In considering important mechanisms which may be most salient to children's psychological functioning, researchers are increasingly paying close attention to the development of social relationships and the effects of such relationships in the development of psychopathology (Emde & Spicer, 2000; Shipman & Zeman, 2001; Sroufe, Duggal, Weinfield & Carlson, 2000). A multitude of studies have consistently demonstrated that a positive mother-infant relationship is associated with healthy behavioural outcomes, and provides a powerful adaptive system in the face of adversity (Werner & Smith, 1992; Masten & Coatworth, 1998). For example, Cowan, Wyman, Work and Parker (1990) found that within a sample of highly disadvantaged children, those with positive parent-child relations had higher ratings of likeability, academic

achievement and peer ratings than those children exposed to harsh parenting. Capaldi and Clark (1998) along with others (e.g., Elder, Caspi & Downey, 1986) also propose that parenting skills are the most proximal environmental contributors to problem behaviour in children. While the importance of the mother-child relationship in child development is well established, what is less understood are the processes within this relationship which promote a "competent mother-infant pair" (Masten & Coatsworth, 1998).

Parenting as a proximal influence on child outcome

In developing a theory of attachment, John Bowlby (1969) was the first to highlight the importance of the mother-infant relationship and the functions that this relationship serves. Bowlby proposed that the attachment system evolved as a mechanism to maintain proximity between infants and caregivers. This proximity seeking mechanism allowed infants to survive while providing a "secure base" from which to explore their environments (Bowlby, 1988). Bowlby proposed that it is through the interactions with a primary caregiver that an infant develops beliefs of what to expect from significant others. These expectations, or beliefs, were thought to develop into "internal working models" that may be activated later in life. For example, if a child develops an expectancy of adult availability and responsiveness through the early mother-child relationship, these expectancies will bear a significant impact on how that child will relate to others and cope with demands of new relationships (Aber & Allen, 1987; Ainsworth, 1989; Cooper, Shaver & Collins, 1998). Alternatively, a child whose needs are met with rejection or ridicule may learn not to seek the support from others and become overly self-dependent and isolated. At the heart of Bowlby's theory was the premise that

maternal deprivation in infancy would inevitably lead to the development of psychopathology later in life (Holmes, 1993).

It was Ainsworth and her colleagues (Ainsworth, Blehar, Waters & Wall, 1978) who first explored Bowlby's hypotheses in a series of naturalistic studies, subsequently developing the Strange Situation as a procedure for examining individual differences in attachment among mother-infant dyads. Since that time, attachment theory has been extensively studied and researchers have sought to apply attachment concepts to an understanding of the development of psychopathology (Cicchetti, 1994; Holmes, 1993; Main, 1995; Rosenstein & Horowitz, 1996; Sroufe & Fleeson, 1986). Results from studies have confirmed that the quality of maternal care contributes greatly to infant attachment status (Rutter, 1992). For example, mothers of securely attached infants were found to be more sensitive to their infants' cues as well as more affectionate and responsive in their face-to-face interactions (Field, 1987; Moss, Parent, Gosselin, Rousseau & St. Laurent, 1996). In contrast, mothers of insecure children were often rejecting, insensitive and more likely to ignore their children's bids for attention (Belsky, Rovine, & Taylor, 1984; Egeland & Farber, 1984; Rosenstein & Horowitz, 1996). Many subsequent studies indicated that insecure attachment in infancy placed a child at risk for later psychopathology (Sroufe, Egeland & Carlson, 1999).

Findings from attachment research emphasized the critical role that early social relationships played in child development and led researchers to further explore the relationship between early attachment experiences and developmental outcomes. Recently, however, researchers have been quick to emphasize the correlational nature of attachment studies, and how, as a result, they provide minimal information concerning

the salient aspects of the mother-child relationship that can either promote or impede healthy development. Emotional regulation and social interaction patterns, both of which are critical to child development, are affected by the quality of the maternal care (Berscheid, 1986; Emde, 1989; Fogel, 1993; Sameroff & Seifer, 1992). As Rutter and Sroufe (2000) state " there is a danger that attachment concepts become too all explanatory" (p. 273). Researchers now agree that the caregiving or attachment system is widely believed to serve multiple functions and that attachment features represent only one aspect of the mother-child relationship.

Historically, and especially within the attachment paradigm, maternal sensitivity (or maternal responsiveness) was thought to be the most important aspect of maternal behaviour and, invariably, the measure of choice in the study of mother-infant interactions (Pederson et al., 1990, Biringen & Robinson, 1991). Although studies have found that maternal sensitivity is related to an infant's social and emotional development, in general, the construct has been found to account for only a modest amount of the variance (Biringen & Robinson, 1991; Crittenden & Bonvillian, 1984; Seifer & Schiller, 1995).

Recent research has demonstrated that there are other aspects of the mother-child relationship which have important developmental implications (Masten & Coatsworth, 1998). Vygotsky was one of the first to emphasize the importance of social interactions in stimulating cognitive growth (Vygotsky, 1978). In particular, Vygotsky considered that through interactions with more skilled partners, children can develop new concepts and problem-solving skills. Vygotsky's views have been since incorporated into the work of Wood (1980) who introduced the term "scaffolding" to describe parental teaching

skills. In numerous studies, the quality of maternal structuring, or scaffolding, has been found to be an important predictor of children's language and cognitive development (Bee et al., 1982; Hodapp, Goldfield, & Boyatzis, 1984; Meadows, 1996). Successful scaffolding occurs when a parent encourages the exploration of the child's environment in a manner which is sensitive, stimulating and educational, adjusting his/her teaching skills to the child's abilities (Biringen & Robinson, 1991; Bretherton, 1996). Another aspect of scaffolding can be parental control (Biringen & Robinson, 1991). Baumrind (1971) suggested that a moderate degree of parental control is optimal in order to encourage autonomy and enhance the child's self esteem. Maternal behaviours that are either overcontrolling or overly permissive appear to impede the development of self confidence and child competence.

Another vital process that occurs within mother-child interactions is the development of emotional expression and emotional competence (Salovey & Sluyter, 1997). The degree to which emotional experience is integrated adaptively may derive from our experience of our early attachment relationships (Saarni, 1997). In considering the mechanisms by which successful emotional adaptation arises, Cassidy (1994) considered that warmth, responsiveness and empathy within a child's emotional experience contribute to competent self-regulation strategies. After all, the first experience a child has with emotional expression is within the context of the early parent-child relationship. Positive emotions, such as warmth and joy are more likely to be present in parents who are sensitive and affectionate with their children (Ainsworth et al, 1978; Belsky et al., 1984). In contrast, negative emotions such as hostility or aggression are thought to indicate harsh and insensitive parenting (Dix, 1991; Patterson, 1982). The content of all

social exchange is emotional, yet the emotional component of the mother-child interaction has been relatively neglected. Preliminary findings indicate that this component of the mother-child relationship appears to be equal to, or even more important than the mother's sensitivity (Dix, 1991; Laible & Thompson, 1998; Maccoby, 1984; Radke-Yarrow, Richters & Wilson, 1988). In addition, Kochanska (1998) found that shared positive affect in the mother-child relationship promoted adaptive socialization in children.

Another way that the role of emotions in children's development has been conceptualized has been in the form of "emotional intelligence" (Goleman, 1995). Salovey and Sluyter (1997) define emotional intelligence as "the ability to perceive emotions, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth " (p. 5). In their view, emotions influence both affective and cognitive processes, and the successful management thereof is an important precursor to healthy child outcomes. It is believed that emotional competence is likely to influence all aspects of a child's life and underscores the necessity of enhancing our knowledge of socialization factors that impact on the development of such processes (Lewis, 1998).

Of vital significance is that researchers are now beginning to consider the brain structures underlying positive emotion. Although more is known about the impact of trauma or stress on child development (Boyce et al., 1998), there is every reason to believe that positive experiences may also lay down the foundation for a neural system.(Greenberg & Snell, 1997). Schore (1994) considers that the one-on-one social interactions experienced by a child with his/her mother in the first few years of life

directly influences a child's biochemical growth process. Early positive experiences may facilitate the experience of pleasure and positive emotions later in life, preventing the development of certain kinds of psychopathology (Greenberg & Snell, 1997). Increasingly, in emphasizing the central role of emotions in child development, researchers are being challenged to find new ways to conceptualize and measure parenting mechanisms which include the emotional nature of parenting (Denham et al., 2000).

Emotional Availability

Over the years, a major challenge faced by researchers has been the lack of measurement tools that could capture the complexity of the early developmental processes occurring within the caregiver-child relationship (Crittenden, & Bonvillian, 1984; Pederson & Moran, 1995). Despite widespread acceptance of the reciprocal influence of the environment and the child during the course of development (Sameroff and Chandler, 1975) many researchers have focused only on maternal behaviours and few studies include both mother and child behaviours in their analyses (Biringen & Robinson, 1991). In extending the work commenced by Ainsworth and colleagues on attachment relationships, Pederson and Moran (1995) developed the Maternal Q-sort procedure designed to provide a detailed description of maternal sensitive behaviours which are considered important for secure mother-child attachments. The measure was intended to distinguish sensitive from non-sensitive behaviour but the researchers concluded that the scales did not go far enough to identify other maternal behaviours, such as hostility or avoidance, which can be found in ambivalent or avoidant mother-child relationships. Other researchers have also highlighted the need to adopt a dynamic perspective on

relationships which consider the early interplay of child behaviour and maternal caregiving style (Sameroff, 2000; Seifer & Schiller, 1995).

Biringen, Robinson and Emde (1988) adopted a multi-faceted approach to studying the quality of mother-child relationships by creating a new relational construct to measure the level of emotional availability expressed in this relationship. In the past, the term "emotional availability" has largely been used in a clinical context, to describe the quality of a client-therapist relationship in which the therapist is expected to be sensitive and responsive but also empathetically attuned to the emotions and needs of the client (Biringen & Robinson, 1991). The view that a mother should be "emotionally" or psychologically available to her child is not a new one. Both researchers and clinicians have used these terms in order to describe mother-child interactions that are marked by mothers who are warm, supportive and affectionate with their children (Dix, 1991; Egeland & Erickson, 1987; Emde, 1980; 1989). Emde (1989) describes emotional availability as the process by which one person "facilitates development by fostering security, exploration and learning" (p. 39). All this is done within a social context within which emotions are expressed. Emde has described the emotionally available mother as one who encourages the expression of both positive and negative emotions in her infant. The presence of smiling and laughter provides a way of signaling to the mother that the infant is enjoying the interaction. Crying, or anger also informs the mother that the child is in distress, or in need of attention. A mother who is emotionally available in her interactions with her infant will quickly come to understand and interpret these signals, responding to them in a way that will foster optimal development.

In the conceptualization of the "Emotional Availability Scales", Biringen, Robinson and Emde (1988) attempted to integrate different components of maternal and child behaviour that are present in the relationship, taking into account the relational nature of the interaction. The scales also reflect the affective component of the mother-child interaction which has often been absent in studies of mother-child behaviour (Denham et al., 2000). Coders are trained to observe and record the quality of affect displayed within the interactions. Thus those dyads who display mutually shared positive emotions such as joy or laughter will be scored higher on the scales than those with lower levels of affect. The scales have also been adapted for different age groups and are sensitive to important developmental transitions which affect the maturity of children's emotional and behavioural repertoires, thus impacting the quality of the mother-child interactions. This is of significance since researchers have long given consideration to the reciprocal qualities of the mother-child relationship, yet the child's emotional response and involvement in the interaction have often been ignored. Children's responses to their mothers have most commonly been measured within the attachment framework using discrete indices of behaviour such as proximity-seeking and avoidance (Biringin & Robinson, 1991). Children also have the capacity to initiate interaction, yet this aspect of child behaviour has been studied less often. Within the Emotional Availability framework it is possible to assess not only the mother's ability to be emotionally available to her child but also the child's emotional availability in the interaction.

Several studies have included the Emotional Availability Scales to further our understanding of the processes involved in the mother-child relationship. The majority of these investigations have been conducted with normal populations. For example, such

studies have shown that higher levels of emotional availability are associated with secure mother-infant attachments (Ziv, Sagi, Karie-Koren & Joaels, 1996), and that higher levels of maternal sensitivity and lower levels of hostility characterize mother-infant interactions (Pipp-Siegal, 1996). Developmental transitions have also been found to affect the quality of the mother-child relationship. Biringen, Emde, Campos and Appelbaum (1995) found that mothers' sensitivity was higher with infants who were early walkers as compared to later walkers who were less interactive in their social relations. Other developmental transitions, such as language, are likely to affect the mother-child relationship and require further investigation to consider the impact of such processes on the developing relationship. In considering populations at-risk, there is also evidence to suggest that parental psychopathology and adverse family conditions affect the emotional climate of a family (McCloyd, 1998). To date, however, few studies, if any, have considered the effects of such adverse social conditions on levels of emotional availability between the mother and her child.

Although few high-risk studies have included a measure of "emotional availability" in their investigations, a related construct, "psychological unavailability" has been used to describe maternal behaviour. Patterns of disengagement and psychological unavailability have been identified in the mother-child interactions of mothers with depressive symptoms, bipolar disorders, and/or living in high stress environments (Cohn, Matias, Tronick, Connell & Lyons-Ruth, 1986; Egeland & Erickson, 1987; Kochanska, Kuzynski, Radke-Yarrow & Welsh, 1987). These mothers, preoccupied with their own problems, have difficulty remaining present in their interactions with their children, thus appearing detached and rejecting of their children's bids for attention (Egeland &

Erickson, 1987). It appears that it is this "psychological unavailability" or neglect that may be particularly harmful to a child's social and emotional development (Crittenden & Bonvillian, 1984, Emde, 1980: Egeland & Erickson, 1987). However, few studies have focused on this aspect of maternal maltreatment perhaps due to the fact that neglectful behavior is subtle and harder to detect than more overt signs of abuse. In addition, there is still much we need to know about the conditions under which mothers may have difficulty being emotionally available to their children and also the processes by which emotional unavailability affects child outcomes (Hart, Olsen, Robinson, & Mandelco, 1997; Rutter, 1999).

One of the objectives of the present research was to investigate the quality of emotional availability in a sample of mothers and children considered to live within disadvantaged high-risk conditions.

Intergenerational Transfer of Risk

Intergenerational research is especially relevant to understanding how early childhood experiences may affect the formation of future adult relationships, including the parent-child relationship in the next generation (Cicchetti, Cummings, Greenberg, & Marvin, 1990). How a mother will interact with her infant will be affected by the quality of her interpersonal relationships with her family of origin and the emotional qualities that she possesses and brings to the relationship (Ricks, 1985). In an attempt to identify how events in one generation can influence the well being of the next generation, Elder, et al. (1986) proposed that childhood problem behaviour in one generation may result in unstable and problematic social and family relationships which will ultimately affect the behaviour of the next generation. Retrospective reports have confirmed that difficult

childhood behaviour in mothers is associated with negative emotional expression in the parenting role (Elder et al., 1986). Patterson and Dishion (1988) also found evidence that parents with histories of antisocial behaviour were more likely to use harsh parenting with their children, suggesting a possible pathway for the transmission of risk to behaviour problems in the next generation.

Aggression and social withdrawal represent two maladaptive behaviour patterns which when established in childhood have been found to have implications for future social and academic functioning and psychosocial adjustment in adulthood (Ledingham, 1981; Serbin, Peters, McAffer & Schwartzman, 1991). The interest in these behaviour patterns is longstanding since together these emotional and behavioural difficulties have been found to underlie many psychological problems (Lafreniere & Dumas, 1992; Lyons, Serbin & Marchessault, 1988; Pepler & Rubin, 1991; Rubin & Mills, 1991). In the research on psychopathology in children, these two dimensions of behaviour are commonly referred to as externalizing or internalizing disorders (Salovey & Sluyter, 1997). Although more is known about the stability and consequences of aggression than social withdrawal, research findings to date suggest that both patterns of behaviour can have negative sequelae throughout the life span (Huesmann, Eron, Lefkowtitz, & Walder, 1984; Ladd & Burgess, 1999; Serbin & Stack, 1998).

Aggression is commonly defined as behaviours that attempt to harm either through physical or verbal means (McCord, 1988; Bjokqvist & Niemela 1992; Moskowitz, Schwarztman, & Ledingham, 1985). In contrast, social withdrawal is defined as behaviours that are socially isolating and can be associated with avoidance and fear (Moskowitz & Schwartzman, 1989). However, aggression and social withdrawal can

also be conceptualized in terms of the underlying emotional regulation processes and represent either an undercontrolled or overcontrolled emotional response (Salovey & Sluyter, 1997). For example, aggression suggests difficulties in the regulation of anger or socially prohibited behaviors. In contrast, social withdrawal is associated with the inhibition of emotional expression although inwardly withdrawn individuals may be experiencing negative emotions such as anxiety or despair. Many researchers study these two behaviours separately, however, there is evidence that aggressive and withdrawn behaviours co-occur in some children (Salovey & Sluyter, 1997). Although, in general, less is known about the long-term sequelae for children who display both of these behaviours, it is hypothesized that these children may be at especially high-risk for long-term psychiatric problems (Salovey & Sluyter, 1997; Moskowitz & Schwartzman, 1989). In charting the relationship trajectories of aggressive-withdrawn children, Ladd and Burgess (1999) found that these children were consistently less satisfied with their social relationships on many dimensions, (e.g., lonely, disliked), and that these problems also extended into their relationships with their teachers.

The Concordia Longitudinal Risk Project (CLRP) is an ongoing 25-year longitudinal study which was designed to follow the development of individuals who during childhood were identified as aggressive and/or socially withdrawn. Within this project it has been possible to follow the trajectories of aggressive and socially withdrawn children and consider both cognitive and socioemotional outcomes during childhood, adolescence, and recently in adulthood as parents of the next generation. Findings from the earlier studies of the CLRP suggest relatively high stability of aggression and withdrawal for both boys and girls (Moskowitz, Schwartzman, & Ledingham, 1985; Serbin, Moskowitz,

Schwartzman, & Ledingham, 1991; Serbin, Peters, & Schwartzan, 1996). Specifically, higher levels of aggression in early childhood predicted poor academic achievement, and while the withdrawn group fared a little better academically, their negative self perceptions led them to have low expectations of their future success. The aggressive and withdrawn children also had low achievement scores but their problems were compounded by developmental immaturity and poor social judgement (Serbin et al., 1991). Results from teacher and parent ratings also confirmed that aggressive and withdrawn children may be at risk for a variety of psychosocial problems. Ledingham (1981) found that both aggressive and aggressive-withdrawn children displayed more social aggression and antisocial behaviours than the withdrawn children. The withdrawn and the aggressive-withdrawn children also seemed to be displaying higher levels of emotional detachment and were more prone to emotional upset. However, again it was the aggressive and withdrawn children who appeared to be faring the worst. Teachers described this group as having higher attentional difficulties, being more easily influenced and slower in their day-to-day activities. Parents of aggressive and withdrawn children described their children as more sensitive and needing more attention than other children. Thus reports from both parents and teachers appear to confirm the hypothesis that the aggressive-withdrawn children may be especially at-risk long term (Schwartzman, Ledingham & Serbin, 1985).

In a second phase of the CLRP, these children were followed into their teens allowing the continued assessment of both their social and academic competencies. During adolescence, the aggressive and aggressive-withdrawn children continued to show problems in their intellectual development and appeared especially at-risk for school

drop-out and special class placement (Serbin et al., 1991). There was also evidence that these teenagers may have been experiencing problems in their social relationships. The teenagers from all three groups viewed themselves as low on social competence, with the aggressive/withdrawn group scoring especially low in this domain (Moskowitz & Schwartzman, 1989). Later studies also revealed other psycho-social and health problems for young women with childhood histories of aggression and aggression and withdrawal, in particular. The medical records obtained for approximately 95% of the sample revealed that the aggressive group were the most at risk for psychiatric and non-psychiatric medical problems. Women rated as aggressive and aggressive-withdrawn in childhood were also experiencing elevated levels of sexual and gynecological problems including patterns of early pregnancy suggesting increased risk for them and their future offspring (Serbin et al., 1991; Serbin et al., 1998).

Many of the original participants of the CLRP are now having children of their own, which provides a unique opportunity to continue to investigate issues surrounding parenthood and pre- and perinatal maternal health which have been related to negative child outcomes (Furstenberg, Brooks-Gunn & Morgan, 1987). Using medical records, Serbin et al., (1998), focused specifically on prediction of delivery complications during childbirth, multiparity and close spacing of births. Results revealed that rates of multiparity (two or more children before age 24) were higher in the aggressive and aggressive-withdrawn mothers. In addition, for those women who demonstrated patterns of multiparity before age 24, close birth spacing was also likely to be observed among the aggressive-withdrawn women. An examination of other perinatal problems, such as delivery complications, also revealed that delivery complications occurred in 33% of first

births to aggressive-withdrawn mothers when compared to the contrast mothers. Taken together, these findings suggest the transfer of risk may be greatest for offspring of mothers with childhood histories of aggressive and aggressive and socially withdrawn behaviours.

While there are many possible pathways for the transfer of risk from one generation to another, on a socioemotional level, there is evidence that both aggressive and socially withdrawn children may have difficulties with understanding the perspectives and feelings of others, making peer and family relationships difficult (Dodge, 1990; Rubin, Bream & Rose-Krasnor, 1991). Within the CLRP, the low social competence of the three groups already identified when the participants were in their childhood and teenage years suggests that this population may be experiencing problems in their interpersonal relationships. Other researchers have also described how the explosive social interactional style of aggressive children can develop into a conflictual and temperamental behavioural style in adulthood (Caspi, Elder, & Bem, 1987). In the "Oregon Youth Study", a longitudinal sample of aggressive men, Capaldi and Clark (1998) considered that the pervasive pattern of problematic outcomes for these men, e.g., lack of employment, substance abuse, and number of arrests may interfere with the development of other competencies, such as social skills. Indeed, the results confirmed their hypothesis as boys' antisocial behaviour in early adolescence was found to predict later aggression towards a female partner. In general, the aggressive young men of this sample appeared to lack essential social skills required to enter into healthy intimate relationships.

Social interaction problems can also be found among children who are withdrawn. The social reticence of these children can result in little effort to make friends and can sometimes appear rejecting by others, leading to social isolation. These results are not surprising given the skills required for successful social interaction. For example Mills and Rubin (1993) state that "social competence encompasses skills and abilities relating to all aspects of interpersonal problem solving, from the self-regulation of emotions aroused in social interaction, to the negotiation of solutions to interpersonal conflicts" (p. 230). Externalizing and internalizing difficulties make emotional regulation and arousal problematic. Given, the social and emotional skills required to be an emotionally available and sensitive parent, and the long-term problems that individuals with childhood aggression and social withdrawal face, it is important to consider how these individuals function as parents and their ability to foster emotional competency in their children.

Within the current phase of the CLRP, investigators have begun to explore the parenting behaviours and home environments provided by the parents in the sample. The results from several studies suggest that parenting and environment factors are important variables in predicting the developmental outcome in the next generation. For example, Serbin et al. (1991) found that mother's childhood aggression and withdrawal predicted an unresponsive parenting style. Mothers' childhood withdrawal also predicted a poor quality of home environment. Further observations of mothers and children of the CLRP have also identified a link between parental risk status and quality of parenting with school-aged children. Cooperman (1996) found that the aggressive and socially withdrawn mothers were more likely to show unresponsive maternal behavioural styles.

In addition, Saltaris (1999), who specifically considered the teaching styles of mothers, found that childhood aggression predicted a problematic teaching style and that both childhood aggression and withdrawal threatened the quality of the rearing environment.

These studies were important in signaling that there may be problems in the parent-child relationships within the sample. However, these studies were conducted with school aged children. During infancy and toddlerhood, important developmental processes take place such as quality of attachment, emotional regulation as well as cognitive and language development, all of which occur within the parent-child relationship. Given the dynamic nature of the interaction and the length of time these mothers had already spent with their children, it was impossible to determine from these studies of school-aged children how these mothers would have been with their children as young infants and toddlers.

In addition, it is important to consider other mechanisms of risk. While parental risk status represents one pathway through which the quality of parenting may be affected, given the adverse environmental conditions some children within this sample find themselves, it seems likely that the current risk environment may also impact the quality of parenting and may represent another mechanism of risk. Within the current phase of the CLRP it has been possible to design studies that consider both the relative influences of both maternal childhood histories and current risk factors on parenting and child outcomes.

Understanding high-risk environments

There have been important shifts in the ways researchers now conceptualize and study the settings in which children grow and develop (Boyce et al., 1998). It has been two

decades since Bronfenbrenner (1977) adopted an ecological approach to child development emphasizing the influences of multiple dimensions that are likely to interact in important ways. It is only recently, however, that researchers have attempted to study the complexity of a child's rearing environment (Cicchetti, Rogosch & Toth, 1998; Rutter, 1999; Seifer & Schiller, 1995).

In adopting a cumulative risk approach, some researchers consider that individual adjustment is a function of the number of risk factors that a person is exposed to (Rutter, 1985; Seifer et al., 1992; Serbin et al, 1998). The study of disadvantaged families demonstrates that socio-demographic risk factors such as poverty and lack of education, frequently co-occur with other parental variables such as parental stress and psychopathology (Shaw et al., 1996). Sameroff and Seifer (1992), in the course of conducting the Rochester Longitudinal Study considered 10 risks that were present in the lives of children in their study. These included maternal, child and socio-demographic variables. Their findings indicated that a composite risk score predicted child functioning better than any one risk factor alone. Fergusson and Lynsky (1996) found that teenagers were more likely to engage in antisocial behaviours when faced with multiple genetic and environmental risks while separate individual risk factors were not predictive of such outcomes. Other studies of children's behavioural and emotional development have reported similar findings (Williams, Anderson, McGree & Silva, 1990), suggesting that in the prediction of risk, multiple factors need to be considered.

While the cumulative risk approach emphasizes the analysis of multiple risks to which children are subject, in developing theoretical models of continuity and discontinuity researchers have also emphasized the importance of examining developmental pathways

in individual adjustment (Cicchetti & Sroufe, 2000; Rutter & Sroufe, 2000; Sameroff, 2000). Developmental psychologists recognize that there are many trajectories to any one outcome (Cicchetti & Sroufe, 2000). However, further research is required to isolate specific processes that may explain how and under what conditions human development turns awry.

To date, psychosocial studies have provided researchers with important knowledge concerning key risk factors in child development. This research, however, provides little knowledge regarding the mechanisms or processes by which risk indicators confer their influence. In order to further delineate mechanisms of risk, researchers have made a distinction between distal and proximal influences on child development (Rutter, 1999; Sameroff & Seifer, 1992). In this context, risk factors such as poverty, inadequate social support, parental stress and parental psychopathology, frequently found in high-risk environments, are considered to be distal. The relationship between these distal contextual variables and child outcomes are thought to be mediated by more proximal environmental influences such as the parent-child relationship (Felner et al., 1995; Rutter, 1999).

Adverse environmental conditions are known to contribute to child functioning, however, there is evidence to suggest that these effects may not be as influential as maternal and parenting factors (Loeber & Dishion, 1983; Shaw et al, 1996). It is hypothesized that these more proximal processes that the child experiences with his or her caregivers can serve to buffer the child from the realities of their environments or further add to their already stressful lives (Baldwin, Baldwin & Cole, 1990; Hammen, 1992). Poverty, for example, places children at great risk for a variety of health, academic and

psychosocial problems (Dodge, Pettit, & Bates, 1994; Halpern, 1990; McCloyd, 1998). McCloyd (1998, 1990), in extensively studying the effects of socioeconomic disadvantage on child development, considers that the link between disadvantaged rearing conditions and children's socioemotional functioning appears to be mediated by quality of parenting. Many researchers have also found that parenting can account for the variation in children's achievement across low and high income groups (Felner et al., 1995). Baldwin et al., (1990) found that poor, inner-city children who succeeded academically had parents who were warm and highly involved. Children within this sample were exposed to a high-risk distal environment, however, it was considered that that the proximal environment was low-risk.

Poverty is also invariably linked with other psychosocial stressors, such as inadequate support networks which in turn leads to further stress in the parental and family responsibilities (Felner et al., 1995). The availability of social support is important for mothers with young families. Invariably, poor families lack the financial resources to acquire help for themselves and their children. There is also evidence of social isolation among people living in inner-city neighbourhoods leading to further stress (Halpern, 1990). Levels of social support have been found to act as a mediator between poverty and parenting. McCloyd (1990) considers that poor parents who have little emotional support from family or friends become more stressed in their parenting role and are more likely to be critical and harsh with their children than poor parents who experience more favourable social networks.

Living in poverty with inadequate social support and resources often places emotional strain on parents and family members which, in turn, can lead to more severe forms of

psychopathology. Maternal depression, for example, is commonly found among women living in disadvantaged neighbourhoods. There is a well established literature that demonstrates that being a depressed caregiver is a risk factor for adverse and abusive parenting (Cicchetti et al., 1998). Goodman and Brumley (1990) found that depressed mothers were less responsive and more hostile with their children. Hammen (1992) emphasizes the interpersonal context of depression and that all family relationships are likely to be affected by a depressed individual including the parent-child relationship. Hammen also considers, however, that it is the multiple stresses often present in the lives of depressed mothers that can further add to difficulties they face in their parenting role. Some depressed mothers may be living in contexts which offer more social support or resources which can moderate the effects of their depression and how they care for their offspring.

While parenting has been identified as an important mediator of risk environments, it is also possible that distal and proximal factors may serve both an independent and interactive function (Felner et al., 1995; Hammen, 1992). Further research is needed, however, which includes multiple dimensions of a child's risk environment to tease apart such processes. In the past, many studies of risk environments have been limited due to their narrow focus on one or two variables, retrospective data, and/or lack of observational measures. Few research studies have attempted to consider the interrelationships among these different risk factors and how they unfold in the early life of a child (Loeber & Dishion, 1983; Rutter, 1999; Shaw et al., 1996.)

Another aspect of understanding risk environments which is rarely the focus of study, is the role of fathers in child development (Lamb, 1997). Historically, fathers were

portrayed as distant breadwinners with little involvement in the parenting role. There are many social changes such as women's increased participation in the workforce, that have also brought about changes in fathers' parenting roles (Pleck & Pleck, 1997). The modern father may now be quite involved in their children's development, yet most studies recruit only mothers for their research (Cabrera, Tamis-LeMonda, Bradley, Hofferth & Lamb, 2000; Deklyen, Biernbaum, Speltz & Greenberg, 1998; Phares, 1996; Rutter, 1998; Serbin & Stack, 1998). Results from recent investigations suggest that children are affected differently by maternal and paternal roles. For example, Belsky, Hsieh and Crnic (1998) in attempting to identify early developmental antecedents to children's internalizing and externalizing problems, found that mothering was more likely to predict externalizing problems in young children than fathering. There are many dimensions of father's involvement in child development. The questions still unanswered concern the mechanisms through which father's behaviours influence their children's outcomes, and which outcomes are likely to be most affected (Cabrera et al., 2000). In considering possible mechanisms for the transmission of risk to offspring, it is likely that fathers' childhood characteristics and psychopathology will affect their children's development, in ways, as yet, relatively unexplored. An important component of the present research was the inclusion of paternal childhood variables in order to consider their influence on child outcomes.

In the case of intergenerational research, the partner an individual chooses to marry may also have a significant impact on the environmental transmission of risk from parent to offspring (Peters, 1999; Rutter, 1998). There is evidence that individuals choose marriage partners who are similar to them on certain traits and behaviours (Buss, 1985).

Capaldi and Clark (1998) found that antisocial men were more likely to choose partners who also displayed high levels of antisocial behaviours. Spousal selection will, thus, have an impact on the quality of care and home environment provided to a child. Thus far, the majority of studies conducted within the CLRP have focused on the child rearing environments provided by the high-risk mothers. Little is known about the quality of caregiving provided by the spouses of the high-risk fathers. In addition, given what is currently known about the long term effects of childhood aggression and social withdrawal for both men and women, in considering the transfer of risk to the next generation it is essential that the impact of fathers' childhood histories are also investigated. Our current knowledge regarding factors involved in the development of psychopathology makes it essential for future research to take an integrative approach which includes many aspects of a child's social environment, including contributions from father and spousal data.

The present studies

Given the prospective, longitudinal design of the project, in the latest phase of the CLRP it has been possible to begin the complex process of exploring mechanisms contributing to continuity and discontinuity of risk across two generations. A unique feature of the CLRP has been the inclusion of both women and men who in childhood were considered aggressive and socially withdrawn, allowing for the consideration of both genders in their parenting roles.

The present two studies were designed to further examine the social environments of toddlers and pre-schoolers born to mothers and fathers with histories of childhood aggression and withdrawal. Early social relationships are viewed by many as important

contexts within which psychopathology can develop (Sroufe et al., 2000). In proposing a transfer of risk, the present research focuses on the quality of emotional availability present in the lives of the children within the CLRP. Maternal psychological or emotional availability is considered essential for the well-being of young children (Egeland & Erickson, 1987). Previous research within the CLRP suggests that aggressive and socially withdrawn children have difficulties in developing closeness and intimacy in their social relationships. Subsequently, it was hypothesized that these problems may also manifest themselves in their relationships with their children. Within the present research it was possible to examine the quality of the mother-child relationship and consider the relative influences of both parental and contextual variables in the transfer of risk to the offspring through this relationship. Specifically, the influence of mothers' and fathers' childhood aggression and social withdrawal, and current contextual variables of poverty, social support, parenting stress and maternal psychosocial functioning were considered. A model of intergenerational transfer of risk is proposed in Figure 1 which highlights possible pathways for the continuity and discontinuity of risk through the mother-child relationship. Specifically, the model suggests two pathways. The first pathway for the transfer of risk begins with the identification of the parents' aggression and social withdrawal in their own childhood and suggests that these early childhood problems may interfere with parents' abilities to be emotionally available to their own children. However, children may also be at-risk due to the current stresses faced by mothers in a high-risk environment. The model suggests a second alternative pathway for the transmission of risk, namely that the quality of the mother-child relationship may be compromised as a result of the multiple stresses that mothers experience. It was also

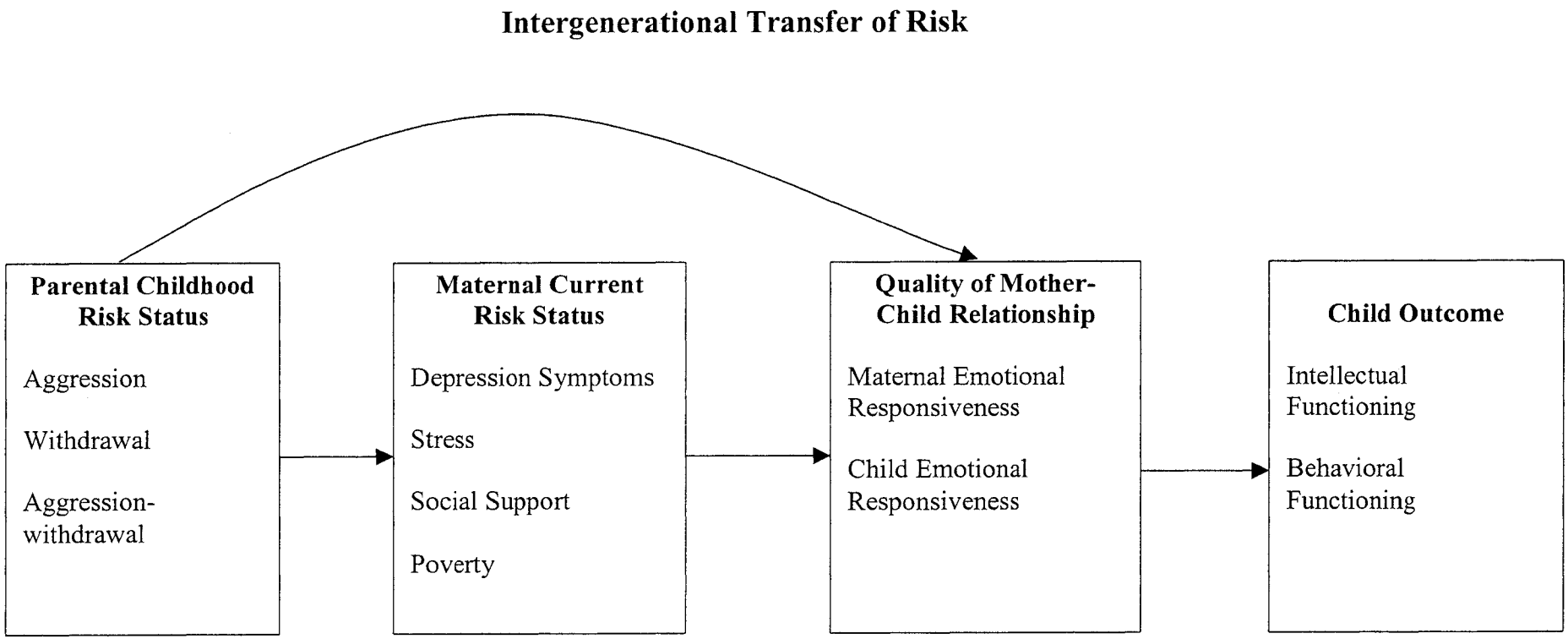

Figure 1. Conceptual framework for the intergenerational transfer of risk through the mother-child relationship.

thought possible that the current stresses faced by mothers could mediate the relationship between their childhood aggression and social withdrawal and their ability to be emotionally available for their children. Two studies were designed to investigate these pathways further and consider both parental and contextual factors and their relationship to the mother-child relationship and child outcomes. The first study focused on the high-risk mothers in the sample. The second study focused on the high-risk fathers within which it was possible to compare the quality of parenting and home environments provided by their spouses to the high-risk mothers in Study 1, and how this affects offspring development.

The main objectives and hypotheses of Study 1 and 2 are described below, followed by the general methodological approach for both studies. The specific methodology used, together with the results and discussions for each study are outlined separately to facilitate ease of reading.

Hypotheses

Based on previous research findings some predictions were made regarding the association between parental childhood risk status and outcome variables. The studies also attempted to clarify, however, to what extent, and by what mechanisms, the predictors of parental childhood levels of aggression and/or social withdrawal represented a risk to the next generation.

Study 1: The influence of maternal risk variables on the quality of the emotional availability within the mother-child relationship and child outcome.

Hypothesis 1. The first hypothesis was that mother's risk status would predict lower levels of emotional availability within the mother-child dyads. It has already been

established within a small subgroup of this sample that mothers from the aggressive/withdrawn group are more hostile with their children aged 12 - 42 months (Bentley, Stack & Serbin, 1998). It was also considered possible, however, that aggression and social withdrawal alone may interfere with mothers' ability to be emotionally available with their children in ways not identified in this earlier study which had a limited sample size and focused only on younger children. Within the present study it was now possible to consider the impact of maternal childhood aggression and social withdrawal on the next generation of maternal childhood aggression and social withdrawal with a larger sample size, and a broader age range of the children, i.e., 12 - 72 months. In considering an intergenerational transfer of risk, the relationship between maternal childhood risk status and their children's levels of emotional responsiveness was also studied.

Hypothesis 2. The second objective considered the influence of mothers' current environmental stresses on the quality of the mother-child relationship. It was predicted that mothers who were experiencing higher levels of contextual stresses would also demonstrate lower levels of maternal sensitivity and higher levels of hostility. It was also predicted that mothers with higher stress levels would have children who showed lower levels of responsiveness in their interactions with each other.

Hypothesis 3. The third objective concerned the influences of maternal childhood risk status, current risk status and parenting in predicting both cognitive and behavioral outcomes in the offspring. As discussed in the prior section, in identifying psychosocial influences on child development, researchers have made a distinction between distal and proximal influences (Rutter, 1999; Sameroff & Seifer, 1992). Some researchers

consider that the relationship between these distal contextual variables and child outcomes are mediated by more proximal environmental influences such as maternal parenting behaviours (Felner et al., 1995; Rutter, 1999). Few studies, however, have been able to include both contextual and parenting variables to predict different child outcomes. The current study attempted to consider the relationships between mothers' current stress levels and mothers' parenting behaviours and their contribution to child functioning. It was predicted that parenting behaviours might emerge as the most important predictor in child outcomes. However, it was also considered possible that the mechanisms of risk might differ depending on the child outcome under investigation, i.e., whether the child outcome was cognitive or behavioural.

Study 2: The influence of paternal childhood risk, spousal current risk status on the quality of the mother-child interaction and child outcomes

The second study focused on investigating the association between fathers with a childhood history of aggression and social withdrawal and the quality of parenting and home environment provided by their spouses. The relative influences of paternal and maternal variables on child outcomes were also considered.

Hypothesis 1. Similar to Study 1, the first objective of this study was to consider the quality of the emotional communication between the spouses and children of men with a history of aggression and social withdrawal. Given the possibility of assortive mating (Peters, 1999), it was predicted that the men of this sample might have selected spouses who also showed elevated levels on the dimensions of aggression and social withdrawal. It was hypothesized, therefore, that fathers' childhood aggression and social withdrawal would be associated with lower levels of maternal sensitivity and higher levels of

hostility as demonstrated by their spouses. It was also considered possible that the children of fathers with a history of childhood aggression and social withdrawal would be less responsive in their play interactions.

Hypothesis 2. The second objective of this study was to compare the levels of emotional availability demonstrated by spouses of the high-risk fathers with their children in Study 2, to the levels of emotional availability shown by the high-risk mothers and their children in Study 1. It was hypothesized that the high-risk mothers would be less sensitive and more hostile with their children. It was also expected that children born to high-risk mothers would show lower levels of responsiveness in the interactions with their mothers, compared to children of high-risk fathers.

Hypothesis 3. A third objective concerned the influence of the current stresses faced by the spouses of the high-risk fathers and influence on the quality of the mother-child relationship. It was predicted that the stresses experienced by the mothers in this study would also influence the quality of their parenting behaviours (i.e., higher stress levels) would predict lower levels of emotional availability.

Hypothesis 4. A final objective of this study was to consider the relative influences of both paternal childhood risk status, mothers' current risk environment and parenting in predicting both cognitive and behavioural outcomes in the offspring. Predictions were similar to those made for Study 1. It was hypothesized that both maternal current stress levels and mothers' parenting behaviours would emerge as important influences of child functioning.

Chapter 2

The Studies

General Method

The participants for the present studies were recruited as a subsample from the pool of 1, 774 subjects (864 boys and 910 girls) making up the CLRP (Ledingham, 1981). The CLRP commenced in 1977 with the screening of 4, 109 school children when they were in grades 1, 4, or 7. The children were selected from a community sample attending French language public schools in Montreal inner city, low socio-economic neighbourhoods. This selection procedure differs from other risk studies in which children are often selected on the basis of clinical referral. The children were screened for aggression and social withdrawal using a peer nomination procedure (Pekarik, Prinz, Leibert, Weintraub & Neale, 1976; see Appendix A). A normative comparison group was also identified at that time. A thorough description of the initial screening method used in the CLRP is outlined in Appendix B.

Women and men from the original sample who now had children were contacted. The participants were selected on the basis of their having one offspring in the age range of 12 - 72 months. Both mothers and fathers from the original CLRP were contacted, however, testing was conducted only with mothers and children, including spouses of the original male participants. In total 175 families (109 high risk mothers, 60 high risk fathers) took part in this project.

Study 1: The influence of maternal risk variables on the quality of the emotional availability within the mother-child relationship and child outcome

Method

Participants:

In total, the sample for Study 1 consisted of 109 francophone mothers and children (61 girls and 48 boys), of which 55 were from risk groups (i.e., identified in childhood as aggressive and/or socially withdrawn) and 54 were from the comparison group. Based on the mothers' original risk classifications, the sample was drawn from the four groups as follows: aggressive (n = 18), withdrawn (n = 19) aggressive-withdrawn (n = 18), and comparison (n = 54). At the time these women were originally identified in 1977, 30 women (27.5%) were in Grade 1, 28 (25.7%) were in Grade 4, and 51 were in Grade 7 (46.8.%).

Due to the small sample size, the four risk classifications were not used as separate groups for the purposes of the present study. Rather, mothers' childhood aggression and withdrawal scores were treated as dimensions. The dimensional approach has been the preferred option for analyses in the past and it has generally yielded informative results. A test of skewness revealed that the distribution of aggression and social withdrawal z scores in the present sample followed a normal distribution.

The mothers who participated ranged in age from 25 to 35 years (M = 30.40, SD = 2.65). The children ranged in age from 1 to 6 years (M = 3.52, SD =1.53). For the purposes of cognitive testing, the children were divided into two age cohorts. Cohort 1 included children between 12 and 42 months (M = 2.24, SD =.75). Cohort 2 included children between 43 and 72 months (M = 4.88, SD = .92). In terms of marital status,

42% of the mothers were married, 35% were cohabitating, 13% were single, 3% were divorced and 6% were separated. In terms of education, the mothers had between 5 and 17 years of schooling (M = 11.65, SD = 2.28). Mothers' occupational prestige ratings ranged from 154 to 656 (M = 325.84, SD = 105.41). The mean prestige rating corresponds to the following types of jobs: salesperson, filing clerk, cashier and hairdresser (Nock & Rossi, 1979). The age of the mothers at the birth of their first child ranged from 16 to 32 years (M = 24.52, SD = 3.23). The means, standard deviations and ranges of mothers' age, children's age, as well as, educational levels and occupational prestige ratings are presented in Table 1.

In order to ensure that mothers and children from risk groups were similar to mothers and children from the comparison group across important socio-demographic variables, a comparison was conducted of mothers' age, children's age, mothers' education , mothers' occupational prestige ratings, as well as, age of the mothers at the birth of their first child. The results indicated no significant differences between groups for mothers' age and children's age. In general, comparison mothers had more years of education and higher levels of occupational prestige than risk mothers. The means and F values are displayed in Table 2.

It was also important to assess the representativeness of the current sample by comparing them to other participants who are also from the original CLRP but who were not part of the current project. The mothers who participated in the present study were compared to a subsample of 360 women who were contacted to participate in studies during 1993-1997, as well as a subsample of 373 women (who were part of the original sample of the CLRP) and who are also known to be mothers. The women were compared

Table 1

Means, Standard Deviations and Ranges of Demographic Information (N=109)

	Mean	Standard Deviation	Range
Mothers' current age (yrs.)	30.40	2.65	25.00 - 35.00
Mothers' age at first child (yrs.)	24.52	3.23	16.00 - 33.00
Education (yrs.)	11.65	2.28	5.00 - 17.00
Occupational Prestige	325.84	105.41	154.00 - 656.00
Childrens' age at testing (yrs.)	3.52	1.53	1.00 - 6.00

Table 2

Comparison of Demographic Variables Between Mothers from Risk Groups with Mothers from Comparison Group (N=109): Means and F values

	Risk Mothers	Comparison Mothers	F-Value
Education (yrs.)	10.96	12.28	3.00**
Occupational Prestige	304.51	347.17	2.08*
Mothers' age at first child (yrs.)	24.19	24.85	1.08
Children's age at testing (yrs.)	3.40	3.60	.56

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

along the dimensions of aggression and social withdrawal, as well as years of education, occupational prestige ratings, and age at birth of first child. The results from comparisons are illustrated in Table 3. In terms of risk status, no differences were found along the dimensions of aggression and social withdrawal between the three groups. The present sample was, therefore, considered to be representative of the original sample along these dimensions. In general, however, women who were not mothers completed more years of schooling than women who were mothers. Non-mothers were also found to have higher occupational prestige ratings than mothers in this present study. There were no significant differences between the mothers at the age they had their first child.

Materials

Mothers and children were asked to play on a mat (12.5 cm length x 16 cm width) which was situated either on the participants' living room floor, or on the floor of any other appropriate room in the house which offered the best lighting. During each home visit, toys were laid out on the mat according to a standardized format. The toys consisted of a tea set, a telephone, a doll, three books and some building blocks. Toys were carefully selected for their appropriateness and appeal to the age group being tested. Mother-child interactions were videotaped using a Sony Video 8AF camera which was fixed on a tripod during the observations. A Sony directional microphone attached to the video camera recorded mother and child verbalizations and vocalizations. A stopwatch was used to time all interactions.

Procedure

All participants were contacted by telephone in order to arrange an appointment for two home visits. Participants were informed that each visit would take place in their

Table 3

Comparison of Selection Variables Between Women Contacted 1993-1997 (n = 360), Mothers from Original Sample (n = 373) and the Current Subsample of Mothers (n = 109): Means and F Values

	Non-Mothers	Representative Sample (mothers)	Current Sample	F-Value
Aggression z-score	.16	.33	.39	1.56
Withdrawal z-score	.25	.40	.46	1.43
Education (yrs.)	13.19	11.85	11.61	24.06**
Occupation Prestige	360.90	341.37	325.64	4.77**
Mothers' age at birth of first child		24.39	24.52	.75

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

homes and would last approximately 2 to 3 hours. Mothers were given some information regarding the general nature of the study and procedures. They were not informed, however, of the specific hypotheses of the present study. Mothers were informed that they would be paid $80 upon completion of all the visits and questionnaires.

The present study was part of a larger research project during which a number of naturalistic observations, as well as interviews, took place. Some questionnaires were completed at the time of the home visits and mothers were also asked to complete questionnaires between the first and second visits. For the purposes of the present study the session of interest was a 15 minute videotaped free-play interaction which took place between the mother and her child during the first home visit.

Two members of a research team consisting of one part-time researcher (experimenter) and one research assistant/or graduate student visited each home for approximately 3 hours. The senior person on the team (experimenter) was a mental health professional with a M.A. degree. All experimenters were blind as to the risk status of the dyad being assessed. The experimenter spent some time with the mother and infant at the beginning of each session in order to explain the overall procedure of the visit and build rapport with the infant. Mothers were asked to read and sign an informed consent form at that time (Appendix C). When both the mother and child were ready to commence, the mother was brought into another room to participate in an interview while the child remained with the examiner to begin the cognitive assessment. After approximately one hour, both the interview and cognitive assessment were suspended in order to commence the videorecordings of a series of interaction tasks.

Before commencing the free play interaction, the examiner selected an appropriate room in the home which provided adequate space and lighting for the interaction to take place. The mat was placed on the ground and the toys were spread out in a standardized format so that they were facing the mother and infant. The camera equipment was set up facing the blanket in order to capture both mother and child play activities. Mothers were instructed to play with their children as they normally would at home for 15 minutes. They were also asked to limit their play activities to the mat provided and informed that they could use the toys if they so wished. All instructions were provided in French. The specific instructions used are found in Appendix D.

If during the testing, a child became distressed, or needed to take a restroom break for longer than 2 minutes, the session terminated and resumed at the next home visit (n = 2). For session breaks that lasted less than 2 minutes, the stopwatch was temporarily paused and resumed when the mother and infant returned to the carpet and play activities (n = 4). After the play interaction, mothers were asked to rate how natural they believed their interaction had been with their child on a scale of 1 to 4 (1 = not at all natural, 4 = very natural). For those who reported that their interaction was rated as a 2 or below, the play session was videotaped again at the next home visit (n = 1). Following the interactions, the examiner continued the cognitive testing of the child and the interview with the mother was also resumed. After three hours, testing ceased and another appointment was made for the following week. At this time, a feedback session also took place to discuss the participants' experiences of the testing procedure and to answer any questions. During the second home visit, the cognitive assessment of the child and interview with the mother were completed. A further set of interaction tasks was also videotaped.

Finally, mothers were asked about the quality of services they received in their neighbourhoods and whether there were any problems for which their families required help.

Measures

Demographics:

A Demographic Information Questionnaire (DIQ; see Appendix E) was used to gather socio-demographic information concerning the families participating in the study. From this questionnaire information was obtained concerning mothers' current age, age at the birth of first child, marital status, number and ages of children in her family, as well as number of years of education and occupational status. The DIQ was generally completed by the experimenter over the telephone at the time that the home visit was being scheduled.

Maternal education was used as a predictor in the present study since it has been found to be correlated both with maternal behaviours and child outcome measures (Auerbach, Lerner, Barasch & Palti, 1992; Cooperman, 1996). By including this variable in the analyses, it was possible to evaluate if maternal risk status predicted maternal and child interaction measures over and above important demographic variables.

Emotional Availability:

The Emotional Availability Scales (Biringen & Robinson, 1991) are global rating scales designed to assess the quality of the mother-infant interaction (see Appendix F for details). The scales consist of five general measures of the emotional availability of the mother toward the infant and of the infant toward the mother.

The maternal dimensions consist of: 1) maternal sensitivity which refers to maternal qualities that tap the mother's ability to be warm and emotionally responsive and connected to the child; 2) maternal structuring/ intrusiveness refers to the degree to which the mother appropriately structures the infant's play and sets limits for the infant's behaviour; 3) maternal covert and overt hostility which assesses the degree of hostility, ranging from mother being facially and vocally hostile towards her infant to more covert hostile behaviours such as impatience or sarcasm. The child dimensions consist of: 1) the child's responsiveness to mother, reflecting both the infant's eagerness to engage with mother following her bid for exchange and, pleasure that the infant shows in being in the interaction; 2) the child's involvement with mother, assessing the degree to which the infant engages mother in play and makes mother his/her audience.

All five dimensions are viewed as relationship variables and make a judgement about a particular behavioural style that occurs within the relationship context as opposed to making a judgement about an inherent trait of emotional availability that may be present in a mother or infant. Maternal sensitivity is coded according to a 9-point scale (1 = insensitive, 9 = highly sensitive). Maternal scaffolding is coded according to a 9-point scale (1 = none, 9 = overly high, 5 = optimal). Maternal hostility is coded according to a 5 point scale (1 = not hostile, 5 = overt hostility). Child responsiveness is coded according to a 9-point scale (1 = unresponsive, 9 = overly responsive, 7 = optimal). Child involvement is coded according to a 9-point scale (1= uninvolving, 9 = over-involving, 7 = optimal). Additional coding details can be found in Appendix F.

Researchers have used the Emotional Availability Scales to assess the quality of the mother-infant emotional communication in both normal and risk samples with children

from 1 to 8 years of age. For example, Easterbrooks, Biesecker, Lyons-Ruth and Carper (1996) found that maternal depression predicted impaired emotional availability in mother-child dyads. Excellent inter-rater reliabilities have been obtained (Cohen's Kappas of .76 for short interactions and over .90 for interactions of 15 minutes or more, (Biringen & Robinson, 1991; Robinson, Little & Biringen, 1993).

Child Cognitive Development

The Bayley Scales of Infant Development II (BSID-II: Bayley, 1993) were administered to assess the current status of the child's cognitive and motor development in Cohort 1. The Bayley Scales of Infant Development II were developed specifically for children between the ages of 12 - 48 months to evaluate cognitive processes, verbal and motor expressive functions, auditory and visual receptive functions, and basic neurological functions. Individual items are combined to form three basic scales: Mental, motor and behaviour rating. The psychometric properties of the BSID-II are well documented (Bayley, 1993). For the purposes of the present study only the mental scale was considered. The mental scale assesses cognitive, language and personal/social development (Bayley, 1993).

The Stanford-Binet Intelligence Scale (4th-ed,; SB-IV Thorndike et al., 1986.) was administered to the preschool-aged children in this sample who were in Cohort 2. This standardized test was developed to assess the intellectual functioning of individuals aged 2 to 23 years old. In the present study eight of the possible 15 subscales were administered which are appropriate for children aged 2 to 6 years old: vocabulary, bead memory, quantitative, memory for sentences, pattern analysis, comprehension, absurdities, and copying. Raw scores obtained on each sub-test were then converted into

standard age scores. A composite score was subsequently derived from these standard age scores which has been found to have excellent psychometric properties (Sattler, 1988).

Child Behavior

The Child Behavior Checklist - Parent Report Form (CBCL-PRF; Achenbach, 1991) was administered in order to assess children's behavioural and emotional problems (see Appendix G). The CBCL is a standardized, multiaxial, empirically based assessment tool designed to record children's competencies and problems in a standardized format as reported by their parents. Parents are required to rate their child's behaviour over the previous six months. Scores range from (0) "not true", through (1) "sometimes true" to (2) "often true". The CBCL contains eight subscales: withdrawn, somatic complaints, anxious-depressed, social problems, thought problems, attention problems, delinquent behaviour, and aggressive behaviour. T-scores are calculated based on summed scores which reflect the severity of a child's problem behaviour compared to other children of the same age and sex. Three global scales are also computed: Internalizing, Externalizing and Total Problems. Within the present study, the Internalizing and Externalizing scales were used. T-scores of 70 or greater are considered to fall within the clinical range.

The psychometric properties of the CBCL are well documented (see Achenbach, 1991). With respect to reliability, the internal consistency of the subscales of the CBCL ranges from .46 to .96. Test-retest reliability has been found to range from .63 to .97. In terms of construct validity, the CBCL scales have been found to be correlated with scales from other parent questionnaires such as the Connors parent questionnaire (1973)

and the Quay and Peterson (1983) Revised Behaviour Problem Checklist. Correlations range from .59 to .88.

Poverty

Statistics Canada's Low Income Cut Off (LICO) (Ross, Shillington, & Lockhead 1994) was used as the measure to determine poverty levels. The LICO was developed following a 1959 Statistics Canada survey of family expenditure. Poverty status is calculated using data concerning family income, number of people per family, and the type of community the family resides in, (e.g., urban, suburb or rural). The larger the community, the higher the low-income cutoff will be for any family size. The LICO is updated on a regular basis to reflect increased standards of living in Canada.

Information regarding participants' family income was obtained from the DIQ. Participants were then divided into three categories; those who were on welfare, the "working poor", and those above the poverty line.

Parenting stress

Parenting stress was measured using the Parenting Stress Inventory (PSI-III; Abidin, 1990). The PSI is a 37 item, self-report inventory used to identify sources and levels of stress perceived by the caregiver as they parent their child (Appendix H). Overall, the PSI captures stress in three main domains; as a parent, in relation to the child, and total life stress. Each of these domains corresponds with a subscale containing 12 items. The parent domain addresses parent distress, or parents' dissatisfaction in their parenting role. This scale includes items on depression, social isolation, and the restrictiveness of the parenting role. The child domain addresses the degree of difficultness of the child.

Parents report on both the child's objective behaviour as well as parents' own appraisal of the effects of the child's temperamental disposition on parents themselves. Subscales within the child domain include: adaptability, acceptability, demandingness, mood, distractibility/ hyperactivity, and reinforcement. Finally, the life stress domain assesses the extent to which parents find themselves in stressful circumstances that are often beyond their control (e.g., the death of a relative, or loss of a job).

Internal consistency coefficients for each subscale range between .70 and .84 (Adibin, 1995). Reliability coefficients for the two domains and the Total Stress scale were found to be .90 or greater (Haunstein, Scarr, & Abidin, 1987). In terms of test-retest reliability coefficients, the PSI was administered to a clinical sample twice during a three month interval. Correlations ranged between .63 and .96 which indicated that the scores were stable.

A number of studies provide evidence for the construct and predictive validity of the PSI . In particular, the PSI has been used to measure stress levels within families of developmentally delayed children (Moran, Pederson, Pettit & Krupka, 1992), and children exposed to cocaine (Black, Schuler & Nair, 1993). The PSI has also been used with other risk groups; for example, higher stress levels were found among depressed mothers (Webster-Stratton, 1988) and neglectful mothers (Ethier, Lacharite, & Couture, 1993).

Parenting social support

In order to assess the level of parenting social support, a modified version of the Parenting Social Support Index (PSSI; Tellen, 1985) was administered (see Appendix I). The PSSI is a self-report measure consisting of 22 items which tap into 7 forms of

support that could be received by parents: relationship with a confidant, material aid, advice about child rearing, positive feedback, assistance with household tasks, child care, and social participation. Respondents are required to consider the past 30 days and rate their need for the particular type of support on a 5-point Likert scale ranging from "no need at all" to " very great need". Participants are then asked to identify the providers of such support in their current lives. Finally, participants are asked to rate their satisfaction with the support they receive on a 5-point Likert scale ranging from "very dissatisfied" to "very satisfied". Three total scores are then generated by summing across all the items: total perceived need for support, total network size, and total support satisfaction.

The PSSI has been found to have good reliability and validity. Internal consistency scores range between .79 and .86 (Telleen, 1985). Test-retest reliability scores are within the .70 range which is considered satisfactory. In terms of construct validity, the PSSI has been found to be significantly correlated with the Wilcox Social Support Scale (r = .52) (Telleen, 1985).

Symptom Checklist-90

The Symptom Checklist-90 (SCL-90) is a self report measure designed to assess psychological symptoms related to various aspects of psychopathology (Derogatis, 1977; see Appendix J). Participants rate the degree to which they are distressed by each symptom, using a 5-point Likert scale. The items are scored and interpreted in terms of nine primary symptom dimensions: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Paranoid Ideation, and Psychoticism. Internal consistency measures for the 9 dimensions range from .77 for Psychoticism to .90 for Depression. Test-retest coefficients obtained from a sample of psychiatric outpatients

who were assessed one week apart have also been found to be satisfactory and range between .80 and .90. High convergent validity of the subscales were found when administered with the MMPI to a group of psychiatric outpatient volunteers (Derogatis, Rickels & Rock, 1976). The SCL-90 also yields three global indices of distress. These indices are the Global Severity Index (GSI), the Positive Symptom Distress Index (PSDI), and the Positive Symptom Total (PST). The GSI was used in the present study since it is considered the best indicator of overall emotional distress (Derogatis, 1977). The means, standard deviations and ranges of mother and child measures are included in Appendix K.

Observational Coding:

Emotional Availability:

In the present study, the quality of mother-child relationship was assessed from video records of naturalistic mother-child play interactions using the Emotional Availability Scales (Biringen & Robinson, 1991). The primary coder, the author, was trained to use the scales during a 3-day workshop given by Dr. J. Robinson. The second coder (the interrater, an undergraduate student in social sciences) was trained using videotaped examples until high reliability was attained. The coders were blind as to the group membership. The interrater was also blind to the hypotheses of the study. Coders were considered highly reliable if the scores obtained were within .5 and 1 point of each other. To ensure the accuracy of the coding, 30% of the current sample was randomly selected and double-coded following completion of coding. Intraclass correlation coefficients were calculated to assess per category agreement between the two coders (Shrout & Fleiss, 1979). R's ranging from .82 to .99. were obtained.

Results

Data Screening

Before commencement of data analyses, all variables were examined for accuracy of data entry and missing values. There were no missing data for the primary predictors of mothers' childhood aggression and withdrawal, mothers' education, child age or sex or any of the Emotional Availability ratings. IQ scores were obtained for all children tested with the Stanford Binet. There were missing data in the case of two Bayley Mental Development Index scores which were not obtained at the time of testing. In addition, while questionnaires were carefully checked to endeavour to keep missing data to a minimum, there were two participants who did not complete information regarding levels of parenting stress and symptom checklist. Information regarding mothers' social support and income levels were complete. Missing values were replaced by the mean value of all participants on that particular measure. Mean substitution is considered to be a conservative approach when dealing with missing data (Tabachnick & Fidell, 1996).

Descriptive statistics were first conducted on each dependent measure to evaluate the normality of the distribution of each variable, to assess the presence of outliers and determine if significant skewness and/or kurtosis were present. Among the Emotional Availability measures, outliers were present in the case of child responsiveness and maternal hostility. These outliers were controlled by assigning the participants a score that was one point higher or lower than the next extreme score. After correcting for outliers, the majority of variables were found to be normally distributed. Scores on the measure of social support, however, were found to be negatively skewed which was corrected for by a square root transformation. After controlling for univariate outliers,

examination of multivariate outliers was conducted via Mahalanobis' distance, Cook's distance, and visual scanning of residuals. No significant outliers were revealed at $p < .05$.

Following the descriptive statistics, intercorrelations between variables were assessed for multicollinerarity or singularity which can inflate the error term and weaken the quality of the analyses (Tabachnick & Fidell, 1996). Among the Emotional Availability ratings, maternal sensitivity and maternal scaffolding were found to be correlated at .75. Similarly, child responsiveness and child involvement were found to be highly correlated at . 77 (see Table 4). Tabachnick and Fidell (1996) consider that the presence of multicollinearity occurs in the case of a bivariate correlation in excess of .90, however, there is likely to be redundancy in using variables that are correlated above .70. Since one of the goals of the present studies was to identify the quality of emotional responsiveness and communication among mothers and children, maternal sensitivity and child responsiveness were selected for inclusion as they were deemed the most relevant to the hypotheses in question. In order to guard against multicollinearity and reduce the number of analyses that were conducted, maternal scaffolding and child involvement were dropped from all analyses. Table 5 includes the intercorrelations between predictors and emotional availability ratings. Tables 6 and 7 include the intercorrelations between predictors and dependent variables for the toddler and preschool samples which were tested separately in the case of child IQ. The intercorrelations between predictors and child behaviour outcomes are presented in Table 8.

Table 4

Correlations among Emotional Availability Scores

	1.	2.	3.	4.	5.
1. Maternal Sensitivity		.75***	-.57***	.58***	.52***
2. Maternal Scaffolding			-.47***	.57***	.56***
3. Maternal Hostility				-.27**	-.16
4. Child Responsiveness					.77***
5. Child Involvement					

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

Table 5

Correlations among Predictor Variables and Emotional Availability Scores (N = 109)

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Childhood Aggression		-.10	-.25**	.03	.08	.22*	-.04	.12	.10
2. Childhood Withdrawal			-.17	-.07	-.00	.17	-.09	.04	-.20*
3. Mothers' Education				-.10	.13	-.26**	.16	-.05	.13
4. Child Age					-.15	.12	.16	.05	.00
5. Child Sex						-.13	.18	-.16	.29**
6. Mothers' Current Risk							-.34***	.28**	-.16
7. Maternal Sensitivity								-.57**	.58***
8. Maternal Hostility									-.27**
9. Child Responsiveness									

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

Table 6

Correlations among Predictor Variables and Scores on Bayley Mental Development Index (N = 57)

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Childhood Aggression		-.21	-.11	-.13	.06	.20	-.03	.01	.11
2. Childhood Withdrawal			-.11	-.17	-.03	.16	-.08	.06	.36**
3. Mothers' Education				-.17	.16	-.20	.07	.06	.25^{t}
4. Child Age					-.06	-.12	.12	-.08	.07
5. Child Sex						-.09	.10 -	.22^{t}	.24^{t}
6. Mothers' Current Risk							-.31**	.47***	.31*
7. Maternal Sensitivity								-.55***	.50***
8. Maternal Hostility									-.22
9. Bayley Mental Developmental Index									

^{t} < .10 * p < .05 ** p < .01 ***p < .001

Table 7

Correlations among Predictor Variables and Stanford-Binet IV Total IQ (N = 52)

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Childhood Aggression		.04 -	.43**	.03	.12	.25[t]	-.03	.08	-.53***
2. Childhood Withdrawal			-.26[t]	.11	-.00	.22	-.13	.01	-.15
3. Mothers' Education				-.07	.07	-.36[t]	.25[t]	-.21	.51***
4. Child Age					.03	.17	-.16	-.01	.20
5. Child Sex						-.13	.20	-.11	.05
6. Mothers' Current Risk							-.34	.08	.05
7. Maternal Sensitivity								-.62***	.04
8. Maternal Hostility									.07
9. Stanford Binet IV Total IQ									

[t] < .10 * p < .05 ** p < .01 ***p < .001

Table 8

Correlations among Predictor Variables and Scores on the CBCL Internalizing and Externalizing Scales (N = 83)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Childhood Aggression		-.03	-.25**	.13	.09	.32**	-.03	.17	.24*	.22*
2. Childhood Withdrawal			-.17	-.11	-.01	.20^{t}	-.13	.14	.09	-.10
3. Mothers' Education				.01	.01	-.24*	.13	-.10	-.07	-.18^{t}
4. Child Age					-.07	.19^{t}	.20^{t}	-.05	.03	.14
5. Child Sex						-.10	.11	-.05	-.13	-.12
6. Mothers' Current Risk							-.34***	.25*	.33**	.40***
7. Maternal Sensitivity								-.58***	.06	-.11
8. Maternal Hostility									.06	.04
9. CBCL Internalizing										.50***
10. CBCL Externalizing										

^{t} < .10 * p < .05 ** p < .01 ***p < .001

Preliminary Analyses

Given the relatively small sample size available for the present study and the number of analyses that were planned, it was deemed necessary to reduce the number of variables to be included in the study. The analyses involved a minimum of ten participants per predictor variable which is within the recommended minimum required for a hierarchical regression analysis (Tabachnick & Fidell, 1996). Previous research has already identified a number of contextual variables that are known to affect parenting and child outcome (Felner et al., 1995). Within the context of the present study it was possible to consider four of these variables: poverty, social support, parenting stress and maternal psychosocial functioning. Intercorrelations between indices of poverty, social support, stress, and global index of the SCL-90 were run to consider to what extent these variables were related. Tabachnick and Fidell (1996) consider that a factor analysis may be recommended when several correlations are significantly correlated but not high enough to suggest multicollinearity. The results revealed significant correlations ranging from .21 to .50. (see Table 9), therefore, a principal components factor analysis was conducted on these contextual variables. One factor was retained which had an eigenvalue of 1.88 and explained 47.1% of the variance. The variables included in the factor represented psychosocial stresses that mothers in the study were currently facing, thus the factor was named mothers' current risk status (see Table 10).

General Approach to Statistical Analyses

Statistical analyses for both studies were conducted using the Statistical Package for Social Sciences (SPSS; Norussis, 1990). The critical alpha level of $p < .05$ was used as the criterion for all analyses and significance levels of .05, .01 and .001 are reported in

Table 9

Intercorrelations Between Maternal Psychosocial Stressors

	1.	2.	3.	4.
1. Poverty		.26**	-.21**	-.29**
2. Social Support			-.27**	-.20**
3. Parenting Stress				.51**
4. SCL-90 (Global Symptom Index)				

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

Table 10

Factor Loadings of the Variables Included in Mothers' Current Risk Status

Variables	Factor Loadings
Poverty	-.60
Social Support	-.59
Parenting Stress (PSI)	.76
SCL-90 (Global Symptom Index)	.77

the text. Results significant at $p < .10$ are also reported for some analyses if they were deemed relevant to the theoretical hypotheses of the study and are consistent with the literature, however these were interpreted cautiously given .05 was the criterion for significance.

Hierarchical multiple regression analyses were selected to analyze the data since they allow for the examination of the specific contribution of a given predictor, while partialling out the effect of other independent variables known to be correlated with the dependent measures. Using this approach, for example, it is possible to examine the influence of childhood aggression and social withdrawal on parenting and child outcome, which was a major goal of the present studies, while also examining whether variables such as mothers' current risk status, or quality of parenting added variance to the equation after other variables had been accounted for. In addition, through this approach, it is possible to both consider whether the variables have a direct effect on the dependent variable, or whether their effect operates through other factors entered later in the equation. Within the present studies, a series of predictors were entered sequentially based on a chronological sequence. In general, maternal childhood risk factors were entered first. Maternal and child demographic variables known to be correlated with the dependent measures were entered second. Contemporaneous variables were entered in the final steps. Since previous research from the CLRP indicated that the presence of both childhood aggression and social withdrawal together may be more strongly predictive of negative outcomes than aggression or withdrawal alone, the interaction between levels of aggression and social withdrawal was also included. The interaction term was always introduced in the final step in order to consider the influence of the main

effects first, i.e., maternal childhood aggression, or maternal childhood withdrawal, prior to the inclusion of the interaction term which makes the interpretation of the main effects redundant. In cases where the interaction term was found to be significant, appropriate post-hoc analyses were conducted in order to isolate the source of the interaction. In order to keep the number of predictors to a minimum, the interaction term was only retained in those analyses where it was significantly related to the dependent variables.

For each of the regression analyses that were found to be significant, a table is provided in the text (Tables 11-19). When the results of an analysis were not significant, a summary table of the regression analysis is provided in an Appendix. Each table reports the standardized regression coefficient (Beta), the semi-partial predictor (sr^2) and the t value associated with each predictor as well as R^2_{ch} and F_{ch} after the entry of all predictors for each step. Results from the following regression analyses are reported in order according to each of the hypotheses described at the end of the introduction.

Mothers' childhood levels of aggression and social withdrawal as predictors of levels of emotional availability

The first set of analyses was run in order to examine the relationship between mothers' childhood levels of aggression and social withdrawal and levels of emotional availability as measured by maternal sensitivity, maternal hostility and child responsiveness. Three separate hierarchical regression analyses were conducted. For each analysis mothers' aggression and social withdrawal were entered as a first step, maternal education and child age were entered in consecutive steps. The influence of child sex was also examined for each of the dependent variables. In order to keep the number of predictors to a minimum, child sex was only included in the regressions when

it was found to be significantly associated with the dependent variables. Similarly, the interaction of childhood aggression and social withdrawal was included in a final step but only retained in those analyses in which it was found to add significantly to the prediction of the dependent variables.

Maternal Sensitivity

In the regression examining mothers' childhood aggression and withdrawal as predictors of maternal sensitivity, the results indicated that the hierarchical regression accounted for 23% (2% adjusted) of the total variance. After all the independent variables were entered at Step 3 the multiple R did not reach significance (Appendix L, Table 1). The demographic variables of maternal education and child age did not emerge as significant predictors of maternal sensitivity. In addition, mothers' childhood aggression and social withdrawal did not appear to influence mothers' abilities to be sensitive with their children.

Maternal Hostility

In the regression examining mothers' childhood aggression and withdrawal as predictors of maternal hostility, Table 11 indicates that the hierarchical regression accounted for 32% (6% adjusted) of the total variance. After all the independent variables were entered at Step 4 the multiple R was significant, $F = 2.34$, $p < .01$. Mothers' years of education and child age did not emerge as significant predictors of maternal hostility. Mothers' childhood levels of aggression or withdrawal alone did not significantly increase the likelihood that mothers would show hostile behaviours with their children. However, there was a significant interaction of mothers' levels of aggression and social withdrawal, Beta = 1.18, $p < .01$ which accounted for 8% of the

Table 11

Mothers' Childhood Levels of Aggression and/or Social Withdrawal and Hostility (N=109)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.02	.86
Childhood Aggression	.12	.12	1.23		
Childhood Withdrawal	.05	.05	.58		
Step 2				.00	.02
Childhood Aggression	.11	.11	1.15		
Childhood Withdrawal	.05	.05	.52		
Mothers' Education	-.01	-.01	-.14		
Step 3				.00	.33
Childhood Aggression	.11	.11	1.14		
Childhood Withdrawal	.05	.05	.46		
Mothers' Education	-.02	-.02	-.20		
Child Age	-.06	-.06	- .58		
Step 4				.08	9.49**
Childhood Aggression	-.93	-.25	-2.63**		
Childhood Withdrawal	-.57	-.24	-2.57*		
Mothers' Education	-.03	-.03	-.35		
Child Age	-.09	-.09	-.92		
Childhood Aggression / Withdrawal	1.18	.29	3.08**		
	R = .32	R^2_{Adj} = .06		F = 2.34**	

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

variance. These results indicated that mothers' levels of hostility were modulated by maternal childhood levels of aggression and social withdrawal. To isolate the source of the interaction, a subsequent post-hoc analysis was conducted. Using a median split, two groups were created based on levels of withdrawal (low, high). It was then possible to consider the association between high and low withdrawal and levels of aggression as they related to maternal hostility. The results indicated that the simple slope was significantly different from zero for high levels of withdrawal ($t = 2.58$, $p < .01$) but not for low levels. This interaction is illustrated in Figure 2 and indicates that mothers with high childhood levels of social withdrawal in combination with higher levels of aggression were more likely to express hostile behaviours when interacting with their children.

Child Responsiveness

In the regression examining mothers' childhood aggression and withdrawal as predictors of child responsiveness, Table 12 indicates that the total variance accounted for by the hierarchical regression was 38% (10% adjusted). At step 1, mothers' child withdrawal significantly predicted levels of child responsiveness and accounted for 5% of the variance. Mothers with higher levels of childhood withdrawal were likely to have children who demonstrated lower levels of responsiveness, Beta = -.21, $p < .05$. Maternal education and child age did not significantly predict levels of child responsiveness. Child sex, however, entered at Step 3 did significantly predict child responsiveness, Beta = .30, $p < .01$, and accounted for 9% of the variance. Girls were more responsive than boys in their play interactions with their mothers.

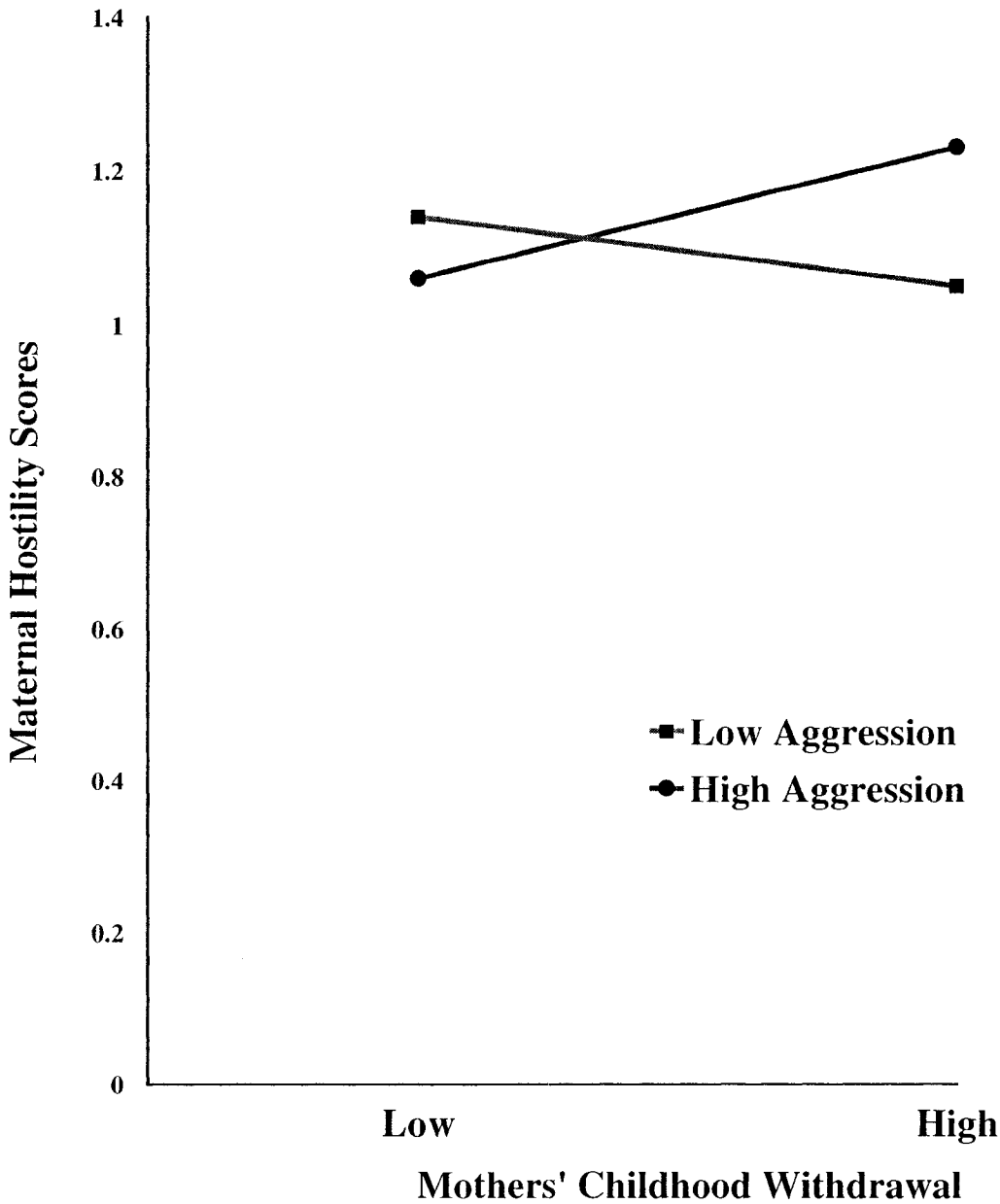

Figure 2. Levels of maternal hostility as a function of mothers' childhood levels of aggression and social withdrawal

Table 12

Mothers' Childhood Levels of Aggression and/or Social Withdrawal and Child Responsiveness (N=109)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.05	3.10*
Childhood Aggression	-.12	-.12	-1.30		
Childhood Withdrawal	-.21	-.21	-2.25*		
Step 2				.00	.49
Childhood Aggression	-.10	-.10	-1.06		
Childhood Withdrawal	-.20	-.20	-2.06*		
Mothers' Education	.07	.07	.70		
Step 3				.09	5.13**
Childhood Aggression	-.14	-.13	-1.46		
Childhood Withdrawal	-.20	-.20	-2.20*		
Mothers' Education	.03	.02	.27		
Child Age	.04	.04	.49		
Child Sex	.30	.29	3.20**		
	R = .38		R^2_{Adj} = .10	F = 3.49**	

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

Summary

In summarizing the findings from the first set of regressions, maternal levels of aggression alone did not predict levels of emotional availability. Mothers' childhood withdrawal emerged as a significant predictor of child responsiveness. Mothers with higher levels of childhood withdrawal were also likely to have children who were less responsive in their play interactions. In addition, the interaction of aggression and withdrawal together significantly predicted levels of maternal hostility. Higher levels of childhood aggression in combination with high levels of social withdrawal significantly predicted higher levels of maternal hostility. With respect to demographic variables, maternal education and child age did not predict any of the measures of emotional availability. Child sex, however, significantly predicted child responsiveness, indicating that girls were likely to be more responsive than boys.

Mothers' childhood aggression and social withdrawal and mothers' current risk status as predictors of levels of emotional availability

A second set of analyses was run to consider the relative effects of mothers' childhood aggression and social withdrawal, and mothers' current risk status on levels of emotional availability. Predictors were entered in the same hierarchical sequence as in the first set of regressions with the addition of mothers' current stress level entered in a final step. As in the above analyses, child sex and the interaction of mothers' childhood aggression and social withdrawal were only included when they were found to be significantly associated with the dependent variables.

Maternal Sensitivity

The results of the regression examining mothers' childhood aggression and withdrawal and mothers' current risk status as predictors of maternal sensitivity indicated that the total variance accounted for by the hierarchical regression was 36% (9% adjusted, Table 13). After all the predictors were entered the multiple R was significant, $F = 3.15$, $p < .01$. In steps 1, 2 and 3, mothers' childhood aggression and social withdrawal and the demographic variables of maternal education and child sex did not significantly predict levels of maternal sensitivity. At step 4, however, mothers' current risk status accounted for 8% of the variance and significantly predicted levels of maternal sensitivity, Beta = -.30 $p < .01$. Mothers who were experiencing higher levels of contextual stress in their lives expressed lower levels of maternal sensitivity in their play interactions with their children.

Maternal Hostility

In the regression examining mothers' childhood aggression and withdrawal and mothers' current risk status as a predictor of maternal hostility, Table 14 indicates that the total variance accounted for by the hierarchical regression was 38% (10% adjusted). After all the predictors were entered the multiple R was significant, $F = 2.96$, $p < .01$. Mothers' childhood aggression and social withdrawal, as well as the demographic variables of maternal education and child age did not significantly predict levels of maternal hostility. At Step 4, however, mothers' current risk status did significantly predict levels of maternal hostility and accounted for 7% of the variance, Beta = .29, $p < .01$, indicating that mothers with higher levels of contextual stress in their lives were likely to be more hostile with their children. At step 5, the interaction of mothers'

Table 13

Mothers' Childhood Levels of Aggression and/or Social Withdrawal, Current Risk and Maternal Sensitivity (N=109)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.01	.54
Childhood Aggression	-.05	-.05	-.49		
Childhood Withdrawal	-.09	-.09	-.97		
Step 2				.02	2.04
Childhood Aggression	-.01	-.01	-.09		
Childhood Withdrawal	-.07	-.06	-.67		
Mothers' Education	.14	.14	1.43		
Step 3				.02	2.49
Childhood Aggression	-.01	-.01	-.10		
Childhood Withdrawal	-.08	-.08	-.81		
Mothers' Education	.13	.12	1.27		
Child Age	-.15	-.15	-1.58		
Step 4				.08	9.60**
Childhood Aggression	.05	.05	.50		
Childhood Withdrawal	-.03	-.03	-.31		
Mothers' Education	.08	.07	.77		
Child Age	-.12	-.12	-1.23		
Mothers' Current Risk	-.30	-.28	-3.10**		
	$R = .36$	$R^2_{Adj} = .09$		$F = 3.15$**	

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

Table 14

Mothers' Childhood Levels of Aggression and/or Social Withdrawal, Current Risk and Hostility (N=109)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.02	.86
Childhood Aggression	.12	.12	1.23		
Childhood Withdrawal	.05	.05	.56		
Step 2				.00	.02
Childhood Aggression	.12	.12	1.14		
Childhood Withdrawal	.05	.05	.52		
Mothers' Education	-.01	-.01	-.14		
Step 3				.00	.33
Childhood Aggression	.12	.11	1.14		
Childhood Withdrawal	.05	.05	.46		
Mothers' Education	-.02	-.02	-.20		
Child Age	-.06	-.06	-.58		
Step 4				.07	8.24**
Childhood Aggression	.06	.06	.59		
Childhood Withdrawal	-.00	-.00	-.01		
Mothers' Education	.03	.03	.28		
Child Age	-.09	-.09	-.94		
Mothers' Current Risk	.29	.27	2.87**		
Step 5					
Childhood Aggression	-.81	-.21	-2.32	.06	6.74**
Childhood Withdrawal	-.51	-.21	-2.34		
Mothers' Education	.01	.01	.08		
Child Age	-.11	-.11	-1.17		
Mothers' Current Risk	.24	.21	2.35*		
Childhood Agg/Withdrawal	.99	.24	2.60**		
	$R = .38$		$R^2_{Adj} = .10$	$F = 2.96$**	

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

childhood aggression and social withdrawal was also significant, accounting for an additional 6% of the variance, Beta = .99, p < .01. This results suggests that mothers' levels of hostility were modulated by mothers' childhood levels of aggression and social withdrawal over and above the levels of stress mothers may have been experiencing. A subsequent post-hoc analysis was conducted which considered the association between high and low withdrawal and levels of aggression as they related to hostility. The results indicated that the simple slope was significantly different from zero for high levels of withdrawal (t = 1.94, p < .05) but not for low levels. As illustrated in Figure 3, mothers with higher childhood levels of social withdrawal in combination with higher levels of aggression were more likely to be hostile with their children than those mothers with low levels of aggression and social withdrawal.

Child Responsiveness

In the regression examining mothers' childhood aggression and withdrawal, mothers' current risk status and child responsiveness, Table 15 indicates that the total variance accounted for by the hierarchical regression was 38% (10% adjusted). Mothers' childhood withdrawal significantly predicted child responsiveness accounting for 6% of the variance, Beta = -.21, p < 05, indicating that mothers with histories of socially withdrawn behaviours were more likely to have children with lower levels of child responsiveness. Mothers' childhood aggression, however, was not a significant predictor of child responsiveness. Mothers' education and child age did not significantly predict child responsiveness. Child sex, entered at Step 3 did significantly predict child responsiveness, Beta = .30, p < .01, and accounted for 9% of the variance. Girls were more responsive than boys in their play interactions with their mothers. Mothers' current

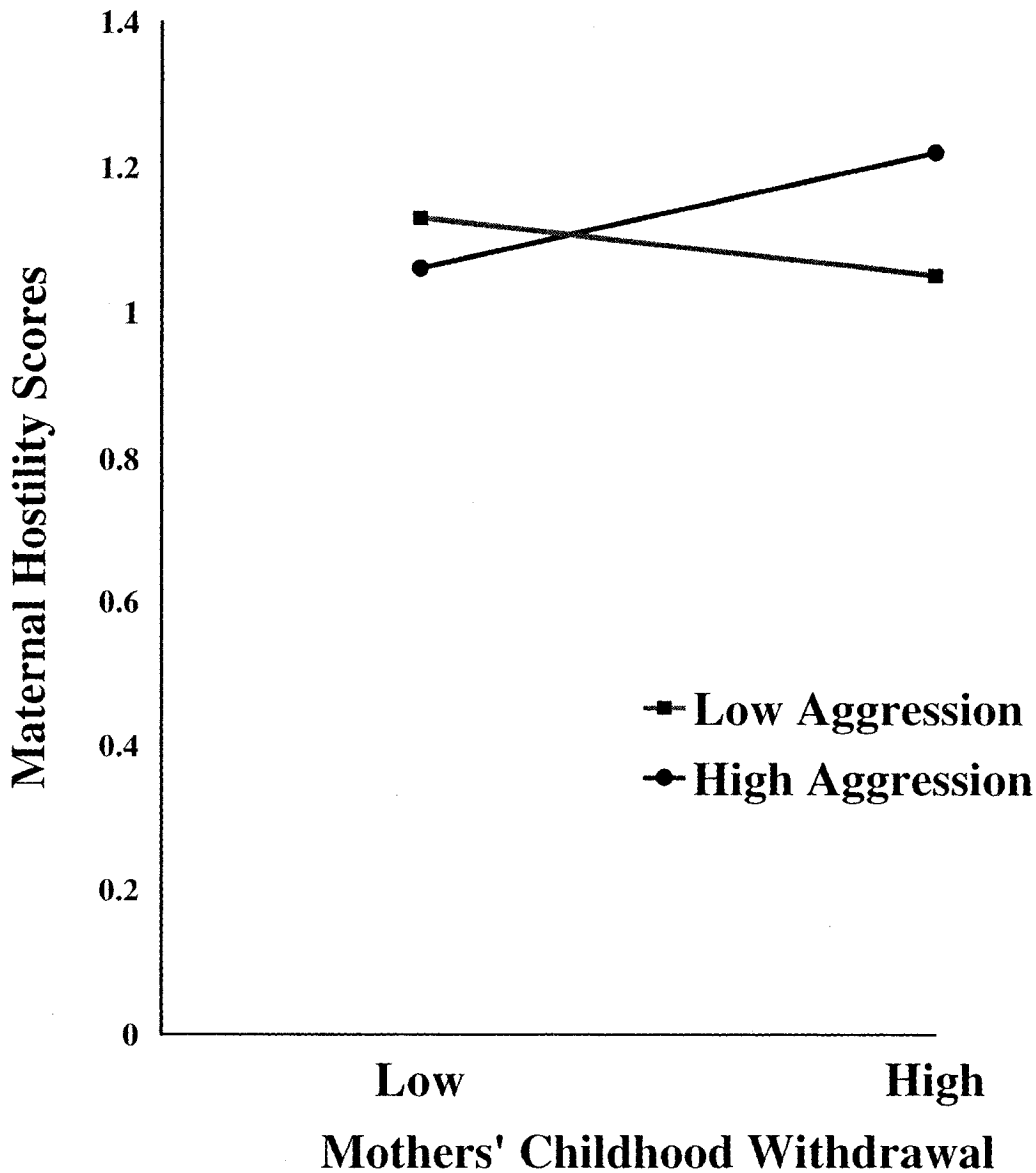

Figure 3. Levels of maternal hostility as a function of mothers' childhood levels of aggression and social withdrawal

Table 15

Mothers' Childhood Levels of Aggression and/or Social Withdrawal, Current Risk and Child Responsivesness (N=109)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.06	3.10*
Childhood Aggression	-.12	-.12	-1.30		
Childhood Withdrawal	-.21	-.21	-2.25*		
Step 2				.00	.48
Childhood Aggression	-.10	-.10	-1.06		
Childhood Withdrawal	-.20	-.20	-2.06*		
Mothers' Education	.07	-.07	.69		
Step 3				.09	5.13**
Childhood Aggression	-.14	-.13	-1.46		
Childhood Withdrawal	-.21	-.20	-2.20*		
Mothers' Education	.03	.02	.27		
Child Age	.04	.04	.48		
Child Sex	.30	.29	3.20**		
Step 4				.00	.30
Childhood Aggression	-.13	-.12	-1.31		
Childhood Withdrawal	-.20	-.19	-2.07**		
Mothers' Education	.02	.02	.27		
Child Age	.05	.05	.54		
Child Sex	.29	.29	3.11**		
Mothers' Current Risk	-.05	-.05	-.55		
	$R = .38$	$R^2_{Adj} = .10$		$F = 2.94$**	

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

risk status entered at Step 4 did not significantly predict child responsiveness and did not add to the total variance already accounted for by mothers' childhood withdrawal and child sex.

Summary

In summary, the results indicated that mothers' current psychosocial functioning had a direct effect on mothers' abilities to be emotionally available in their play interactions with their children as measured by maternal sensitivity and hostility. Mothers' current risk status, however, did not predict children's responsiveness, which appeared to be more directly influenced by mothers' levels of childhood withdrawal.

Mothers' childhood aggression and social withdrawal, mothers' current risk status and levels of emotional availability as predictors of child cognitive and behavioural outcomes

A third set of analyses were conducted to consider the relative influence of mothers' childhood aggression and withdrawal, mothers' current risk status and levels of emotional availability in predicting child IQ as well as internalizing and externalizing behaviours as measured by the CBCL. In the case of child IQ, the regression analyses were considered separately by age cohort. Cognitive development in the infant and toddler group (ages 12 - 42 months) was evaluated by the Bayley Infant Development Mental Scale. Cognitive functioning in preschool and school age children was measured by the Stanford-Binet IV Total IQ. In terms of children's behavioural outcomes, the regressions predicting the CBCL included the younger (but beginning at 24 months) and older cohorts since both were evaluated using the CBCL Internalizing and Externalizing scales.

Predictors were entered in the same hierarchical sequence as the first two set of regression analyses described above with the addition of maternal sensitivity and

maternal hostility entered together in the final step in order to consider to what extent maternal parenting behaviours are influential in child outcomes.

Child Bayley Mental Development Indices: Infants and Toddlers aged 12 - 42 months

In the regression examining mothers' childhood aggression and withdrawal, mothers' current risk status, and maternal sensitivity and hostility, as predictors of the Bayley Mental Development Index, the results indicated that the total variance accounted for by the hierarchical regression was 63% (31% adjusted, Table 16). After all the predictors were entered the multiple R was significant, $F = 4.65$, $p < .001$. At Step 1, Childhood withdrawal significantly contributed to the prediction of child Bayley scores, Beta = -.36, $p < .01$, accounting for 13% of the variance. Mothers' who were identified as socially withdrawn as children were more likely to have children who scored lower on the Bayley Mental Development Scale. Mothers' childhood aggression, however, was not associated with children's Bayley scores. At steps 2 and 3, maternal education as a predictor of child Bayley Mental Index scores, approached significance, Beta = .22, $p < .08$, indicating that mothers with higher education were more likely to have children who had higher Bayley scores. Child age, however, was not found to be a predictor of child Bayley scores. At Step 4, mothers' current risk status was found to be a significant predictor of child Bayley scores, Beta = -.26, $p < .05$, indicating that mothers' with higher levels of contextual stress in their lives were more likely to have children who scored lower on the Bayley Mental scale. In the final step, mothers' childhood withdrawal remained a significant predictor of child Bayley Scores. The inclusion of maternal sensitivity accounted for an additional 16% of the variance, Beta = .47, $p < .001$, over and above mothers' childhood withdrawal. These results indicate that mothers who were more

Table 16
Mothers' Childhood Levels of Aggression and/or Social Withdrawal, Current Risk, Maternal Sensitivity and Hostility predicting Scores on Bayley Mental Development Index (N=57)

Variables	Beta	sr2	t	R^2ch	Fch
Step1				.13	3.98*
Childhood Aggression	.03	.03	.26		
Childhood Withdrawal	-.36	-.34	-2.70**		
Step 2				.05	3.09t
Childhood Aggression	.06	.06	.49		
Childhood Withdrawal	-.32	-.31	-2.49*		
Mothers' Education	.22	.22	1.76[t]		
Step 3				.00	.07
Childhood Aggression	.06	.05	.44		
Childhood Withdrawal	-.32	-.31	-2.48*		
Mothers' Education	.22	.21	1.66		
Child Age	-.06	-.03	-.27		
Step 4				.06	4.13*
Childhood Aggression	.11	.10	.85		
Childhood Withdrawal	-.28	-.26	-2.15*		
Mothers' Education	.17	.16	1.31		
Child Age	-.07	-.06	-.53		
Mothers' Current Risk	-.26	-.25	-2.03*		
Step 5				.16	6.54**
Childhood Aggression	.08	.08	.70		
Childhood Withdrawal	-.27	-.26	-2.31*		
Mothers' Education	.14	.13	1.14		
Child Age	-.11	-.10	-.93		
Mothers' Current Risk	-.18	-.15	-1.35		
Maternal Sensitivity	.47	.38	3.45***		
Maternal Hostility	-.21	.09	.79		
	R = .63	R^2 adj = .31	F = 4.65 ***		

[t] $p < .10$ * $p < .05$ ** $p < .01$

sensitive with their children were also likely to have children who scored higher on the Bayley Mental Scale. Maternal hostility was not to be a significant predictor in child Bayley Scores. However, the influence of mother's current risk stress on child Bayley scores, was no longer significant once maternal sensitivity was included in the analyses, suggesting that the effect of this variable on child IQ operates through parenting as expressed in maternal sensitivity with their children.

Stanford-Binet IV Total IQ Scores: Preschoolers aged 42 - 72 months

Table 17 presents the results from the hierarchical regression predicting preschool Stanford-Binet Total IQ scores. Overall, the multiple R reached significance, $F = 5.84$, $p < .001$ with 69% (40% adjusted) of the variance accounted for when all the predictors were entered. In the first step, mothers' childhood aggression was found to be a significant predictor of preschool cognitive functioning accounting for 29% of the variance, (Beta = -.52, $p < 001$). Mothers who were aggressive in their own childhood had children who had lower IQ scores as measured by the Stanford-Binet Intelligence Scale IV. At Step 2, the inclusion of maternal education accounted for an additional 8% of the variance, Beta = .32, $p < .05$. Mothers with higher levels of education were also likely to have children who scored higher on the Stanford-Binet Intelligence Scale IV. At Step 4, mothers' current risk status accounted for an additional 5% of the variance, Beta = -.25, $p < .05$. This finding indicates that increased stresses faced by the mothers had a detrimental effect on children's Stanford-Binet IQ scores. In the final step, the parenting variables of maternal sensitivity and maternal hostility were not found to be significant predictors of preschool cognitive functioning. The effects of mothers' childhood

Table 17
Mothers' Childhood Levels of Aggression and/or Social Withdrawal, Current Risk, Maternal Sensitivity and Hostility predicting Scores on Stanford Binet Total IQ (N=52)

Variables	Beta	sr2	t	R^2ch	Fch
Step1				.29	10.18***
Childhood Aggression	-.52	-.52	-4.35***		
Childhood Withdrawal	-.13	-.13	-1.06		
Step 2				.08	6.24*
Childhood Aggression	-.38	-.35	-3.02**		
Childhood Withdrawal	-.04	-.04	-.38		
Mothers' Education	.32	.29	2.50*		
Step 3				.03	2.06
Childhood Aggression	-.32	-.28	-3.04**		
Childhood Withdrawal	-.03	-.03	-.24		
Mothers' Education	.32	.28	2.48*		
Child Age	-.16	-.16	-1.44		
Step 4				.05	4.38*
Childhood Aggression	-.35	-.31	-2.88**		
Childhood Withdrawal	.00	.00	.04		
Mothers' Education	.27	.23	2.07*		
Child Age	-.13	-.13	-1.18		
Mothers' Current Risk	-.25	-.23	-2.09*		
Step 5				.03	1.34
Childhood Aggression	-.34	-.30	-2.75**		
Childhood Withdrawal	.00	.01	.09		
Mothers' Education	.30	.25	2.33*		
Child Age	-.13	-.13	-1.19		
Mothers' Current Risk	-.26	-.23	-2.09*		
Maternal Sensitivity	-.06	-.04	-.40		
Maternal Hostility	.14	.10	.97		
	R = .69	R^2 adj = .40	F = 5.84***		

^{t} p < .10 * p < .05 ** p < .01 *** p < .001

aggression, maternal education and mothers' current risk status remained significant once all the predictors were entered indicating that all these variables were influential in predicting child Stanford-Binet IQ scores.

Internalizing scores on the CBCL

In the regression examining children's internalizing behaviours, Table 18 indicates that the total variance accounted for by the hierarchical regression was 45% (14% adjusted). Together, the predictors were significant, $F = 3.36$, $p < .01$. In the first block of predictors, mothers' childhood aggression and social withdrawal approached significance accounting for 6% of the variance. Maternal education and child age, entered in subsequent blocks were not related to child internalizing behaviours. Once maternal education and child age had been entered in the second and third blocks, mothers' childhood aggression no longer significantly contributed to the prediction of lower internalizing scores. In the fourth block, mothers' current risk status was found to be a significant predictor of children's internalizing behaviours accounting for 14% of the variance. Mothers with higher levels of current stress were more likely to have children with internalizing problems Beta = .35, $p < .001$. In the final block of predictors, the inclusion of maternal sensitivity and hostility did not add to the variance accounted for. However, mothers' current risk status remained significant in this final step even after controlling for mothers' parenting behaviours.

CBCL Externalizing

The final regression for Study 1 considered the prediction of children's externalizing behaviours. Table 19 indicates that the total variance accounted for by this regression

Table 18
Mothers' Childhood Levels of Aggression and/or Social Withdrawal, Current Risk, Maternal Sensitivity and Maternal Hostility and CBCL Internalizing Scores (N=87)

Variables	Beta	sr^2	t	R^2ch	Fch
Step1				.06	.2.45t
Childhood Aggression	.21	.21	2.01t		
Childhood Withdrawal	-.10	-.10	-.90		
Step 2				.02	1.72
Childhood Aggression	.21	.21	1.96t		
Childhood Withdrawal	-.09	-.09	-.85		
Mothers' Education	-.13	-.12	-1.31		
Step 3				.00	.23
Childhood Aggression	.14	.13	1.41		
Childhood Withdrawal	-.08	-.07	-.78		
Mothers' Education	-.13	-.12	-1.31		
Child Age	.05	.05	.48		
Step 4				.14	14.30***
Childhood Aggression	.07	.07	.66		
Childhood Withdrawal	-.13	-.12	-1.45		
Mothers' Education	-.07	-.07	-.74		
Child Age	-.02	-.02	-.16		
Mothers' Current Risk	.35	.33	3.62***		
Step 5				.00	.20
Childhood Aggression	.08	.08	.76		
Childhood Withdrawal	-.14	-.15	-1.50		
Mothers' Education	-.05	-.05	-.55		
Child Age	-.03	-.03	.30		
Mothers' Current Risk	.42	.36	3.60***		
Maternal Sensitivity	-.04	-.03	-.32		
Maternal Hostility	-.08	-.06	-.63		
	R = .45	R^2 adj = .14	F = 3.36**		

$^t p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

Table 19
Mothers' Childhood Levels of Aggression and/or Social Withdrawal, Current Risk, Maternal Sensitivity and Maternal Hostility and CBCL Externalizing Scores (N=87)

Variables	Beta	sr^2	t	R^2ch	Fch
Step1				.08	3.50*
Childhood Aggression	.26	.26	2.45*		
Childhood Withdrawal	.10	.10	1.02		
Step 2				.00	.00
Childhood Aggression	.26	.26	2.41*		
Childhood Withdrawal	.10	.10	1.01		
Mothers' Education	.11	.11	1.16		
Step 3				.00	.09
Childhood Aggression	.26	.26	2.41*		
Childhood Withdrawal	.11	.11	1.13		
Mothers' Education	.11	.11	1.01		
Child Age	-.03	-.03	-.30		
Step 4				.08	7.30**
Childhood Aggression	.16	.15	1.45		
Childhood Withdrawal	.04	.04	.35		
Mothers' Education	.05	.04	.46		
Child Age	-.05	-.05	-.48		
Mothers' Current Risk	.31	.27	2.70**		
Step 5				.03	1.46
Childhood Aggression	.13	.11	1.17		
Childhood Withdrawal	.05	.05	.46		
Mothers' Education	.04	.04	.45		
Child Age	-.01	-.01	-.11		
Mothers' Current Risk	.36	.31	3.07**		
Maternal Sensitivity	.21	.16	1.60		
Maternal Hostility	.06	.04	.44		
	R = .43	R^2 adj = .12	F = 2.97*		

^{t} p < .10 * p < .05 ** p < .01 *** p < .001

was 43% (12% adjusted). Overall the multiple R reached significance, $F = 2.97$, $p < .05$. In the first step, mothers' childhood aggression significantly predicted children's externalizing behaviours, Beta = .26, $p < .05$, accounting for 8% of the variance. At Steps 2 and 3 mothers education and child age were not significant, however, mothers' childhood aggression remained significant even after controlling for these variables. At Step 4, mothers' current risk status emerged as a significant predictor of child externalising behaviours accounting for an additional 8% of the variance, Beta = .31, $p < .01$. After the addition of mothers' current risk status, mothers' childhood aggression was no longer significant, although it remained positively related at $p < .10$. At Step 5, the inclusion of the parenting variables, maternal sensitivity and hostility did not add to the variance in children's externalizing behaviours. Mothers' childhood aggression no longer represented a predictor of child externalizing behaviours with the inclusion of these new predictors. The effect of mothers' current stress levels remained significant even after these parenting variables were entered into the equation.

Summary

In summarizing the results of the regressions predicting children's outcomes, the findings highlight the importance of considering both mothers' childhood risk status and current psychosocial functioning in predicting outcomes in the next generation. In the younger age cohort, mothers' childhood withdrawal emerged as having a direct effect on infant and toddler cognitive development with this result remaining significant even after the inclusion of mothers' psychosocial functioning and parenting behaviours. While mothers' current psychosocial functioning was indeed positively related to infant and toddler cognitive development, mothers' abilities to be sensitive with their children

appeared to be a stronger predictor once this variable was included in the analyses. In the older age cohort, mothers' childhood aggression appeared to have a direct effect on children's cognitive functioning. Mothers' education and mothers' current psychosocial functioning also emerged as significant predictors together accounting for a relatively large proportion of the variance in children's cognitive development. In relation to children's internalizing and externalizing behaviours, mothers' childhood histories appeared not to be influential in the case of children's internalizing behaviours, although a trend was observed in the case of mothers' childhood aggression. Mothers' current psychosocial functioning appeared as the main predictor in children's internalizing scores once all the variables were controlled for. In children's externalizing behaviours, there was a link from mothers' childhood aggression and externalizing behaviours in the next generation. The effect of this link was reduced, however, once mothers' current psychosocial functioning was included in the analyses, emerging as a stronger predictor of children's externalizing tendencies.

Mother's childhood aggression and social withdrawal as predictors of mothers' current risk status

A final analysis was conducted to consider the relationship between mothers' childhood risk status and the current levels of stresses present in their lives. In the regression examining mothers' childhood aggression and social withdrawal as predictors of mothers' current stress levels, the results indicated that the total variance accounted for by the hierarchical regression was 40% (12% adjusted, Table 20). After all the predictors were entered the multiple R was significant, $F = 4.07$, $p < .01$. At Step 1, childhood aggression, Beta $= .24$, $p < .05$, and childhood withdrawal, Beta $= .19$, $p < .05$,

Table 20

Mothers' Childhood Levels of Aggression and/or Social Withdrawal and Mothers' Current Risk Status (N=109)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.08	4.92*
Childhood Aggression	.24	.24	2.59*		
Childhood Withdrawal	.19	.19	2.59*		
Step 2				.03	3.58
Childhood Aggression	.19	.19	2.02*		
Childhood Withdrawal	.15	.15	1.64		
Mothers' Education	-.18	-.17	-1.89t		
Step 3				.01	1.53
Childhood Aggression	.19	.19	2.03*		
Childhood Withdrawal	.16	.16	1.75t		
Mothers' Education	-.17	-.16	-1.76t		
Child Age	.11	.11	1.24		
Step 4				.04	4.58*
Childhood Aggression	-.50	-.13	-1.48		
Childhood Withdrawal	-.25	-.10	-1.16		
Mothers' Education	-.18	-.17	-1.88t		
Child Age	.09	.09	1.03		
Childhood Aggression/ Withdrawal	.79	.19	2.14*		
	$R = .40$	$R^2_{Adj} = .12$		$F = 4.07$**	

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

significantly contributed to the prediction of mothers' current stress levels, accounting for 8% of the variance. Mothers who were identified as aggressive, as well as mothers who were identified as socially withdrawn in childhood were more likely to show elevated levels of stress in their adult lives. At Step 2, maternal education as a predictor of mothers' current stress levels approached significance, Beta = -.18, $p < .10$. Mothers with higher levels of education were likely to experience lower levels of contextual stress. However, at Step 3, child age was not found to be a predictor of mothers' current stress levels. At Step 4, the interaction of mothers' childhood aggression and social withdrawal was also significant, accounting for an additional 4% of the variance, Beta = .19, $p < .05$. A subsequent post-hoc analysis was conducted which considered the association between high and low withdrawal as they related to mothers' current stress levels. The results indicated that the simple slope was significantly different from zero for high levels of withdrawal but not for low levels. As illustrated in Figure 4, mothers with high childhood levels of social withdrawal in combination with higher levels of aggression were more likely to experience higher levels of contextual stresses in their lives.

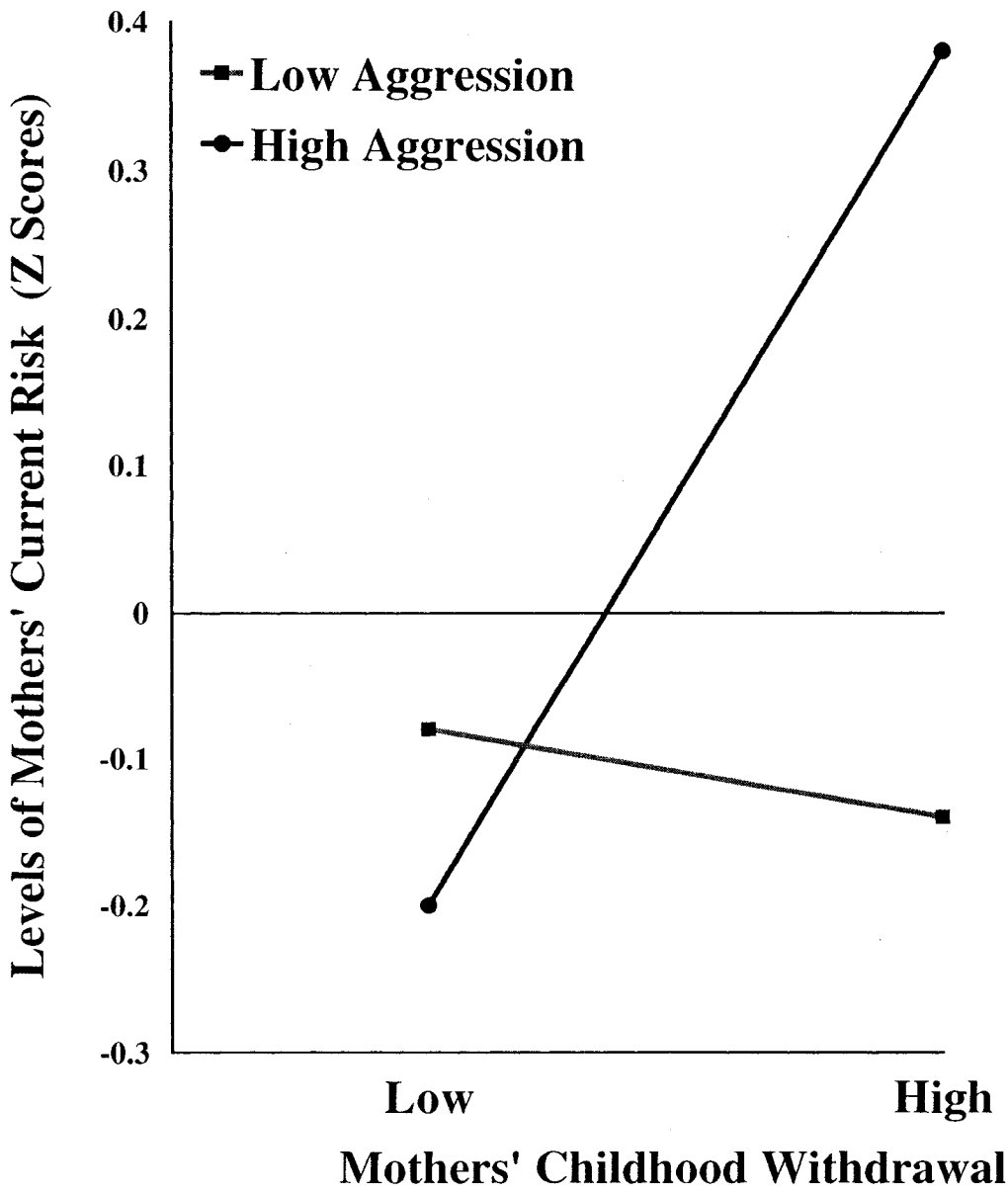

Figure 4. **Levels of mothers' current risk as a function of maternal childhood risk status**

Discussion

The results lent partial support for the prediction that the quality of emotional availability may be compromised by mothers' childhood levels of aggression and social withdrawal, representing a possible pathway for the transfer of risk. In particular, mothers' childhood aggression in combination with social withdrawal predicted higher levels of hostility in their interactions with their children. Contrary to predictions, neither mothers' childhood aggression or mothers' childhood social withdrawal alone were found to predict levels of maternal sensitivity and hostility. Mothers' childhood withdrawal, however, was found to predict lower levels of child responsiveness in their offspring suggesting a direct transmission of risk from maternal childhood behaviour to their offspring more than 20 years later.

The results also supported the notion that an alternative pathway for the transfer of risk may occur as a result of contextual stresses present in the lives of these high risk mothers. Mothers' current stress levels predicted levels of maternal sensitivity and hostility. However, mothers' current stress levels did not predict levels of child responsiveness.

In terms of child outcomes, the results indicated that both mothers' childhood risk status, current stress and parenting behaviours can play an important role in predicting child competence. The pattern of the results differed, however, depending on the age of the children studied and the child outcome under investigation. For example, mothers' childhood withdrawal and mothers' sensitivity in their interactions with their children predicted infant and toddler cognitive functioning. In the case of preschooler IQ scores, mothers' childhood aggression and mothers' current stress levels both contributed to

predicting cognitive functioning. However, mother's parenting behaviours did not appear to influence child IQ scores in the older age cohort.

In considering the relationship between maternal childhood risk status, mothers' current stress, parenting behaviours and child internalizing and externalizing behaviours, mothers' current stress levels emerged as the strongest predictor. Higher stress levels experienced by the mothers increased the likelihood that their children would be reported as demonstrating internalizing and externalizing behaviours. Mothers' childhood risk status did not appear to influence child internalizing scores. However, there was a relationship between mothers' childhood aggression and child externalizing scores in that mothers with higher levels of childhood aggression also had children with higher levels of externalizing behaviours. The effects of this relationship appeared to be mediated by mothers' current stress levels, as mothers' childhood aggression was no longer a predictor of child externalizing behaviours once mothers' current stress levels were included in the analyses.

The present study also considered the role of demographic variables such as maternal education, child age and child sex which have been found to influence the quality of parenting and child outcomes. Maternal education proved to be a significant predictor of preschoolers' cognitive functioning. Mothers with higher levels of education were likely to have children with higher IQ scores on the Stanford-Binet IQ scale of intelligence. This finding was expected and in line with a large body of literature which highlights the importance of mothers' education in predicting child intellectual and language development (Auerbach et al., 1992; Bee, 1982; Saltaris, 1999). Somewhat surprisingly, however, maternal education did not emerge as a significant predictor of cognitive

functioning within the younger cohort. The relationship between maternal education and emotional availability was also not significant. Nor was maternal education useful in predicting child internalizing or externalizing behaviours. In general, child age and child sex did not predict any of the outcome variables. However, an interesting finding did emerge in the case of child sex and levels of child responsiveness, as girls were found to be more responsive than boys in their interactions with their mothers.

The findings are presented in more detail below according to each hypothesis as presented in the Results section. The results are discussed within the context of the literature, with future directions also highlighted.

Mothers' childhood aggression and social withdrawal as a predictor of levels of emotional availability

The results suggest some support for the hypothesis that maternal childhood risk status would be associated with lower levels of emotional availability and that parenting within the CLRP represents a pathway for the intergenerational transfer of risk. In particular, it was found that these problems in parenting manifested themselves in the form of hostile behaviour towards their children on the part of mothers who in their childhoods were identified as being both aggressive and socially withdrawn. An interesting link was also identified between mothers' childhood withdrawal and lower levels of responsiveness in their children. Mothers' aggression alone, however, was not predictive of disrupted parenting or child behaviours.

In considering the intergenerational transfer of risk from mother to offspring, the results suggest that the mother-child relationship is particularly at-risk in dyads whose mothers had high levels of aggression and social withdrawal when they were children.

These findings are consistent with a study from a previous investigation conducted with a smaller sample of mothers and children aged 12 - 42 months (Bentley et al., 1998). The results from this study also indicated that it was the aggressive and withdrawn mothers who were found to be hostile when interacting with their children. Findings from the present study, conducted with a much larger sample and with children whose ages spanned 12 - 72 months confirms that aggression in combination with social withdrawal established in one generation may be predictive of maladaptive parenting behaviours in the next generation. These findings are particularly salient in the context of previous research within the CLRP that has examined the potential consequences of the combination of these two behaviours and found that this group may be particularly at-risk for psychosocial problems as adults (Moskowitz & Schwartzman, 1989). Until recently, however, little was known about the quality of the interpersonal relationships that develop in children who demonstrate both aggressive and socially withdrawn behaviours (Ladd & Burgess, 1999). The limited research conducted with aggressive and withdrawn children in early to middle childhood suggests that these children may develop problems in socially interacting with others (Lyons et al., 1988). They have also been found to possess lower levels of perceived competence, while exhibiting higher levels of dependency and peer rejection (Hymel, Bowker & Woody, 1993; Ledingham, 1981; Ledingham & Schwartzmn, 1984; Milich & Landau, 1984).

In a recent longitudinal investigation, Ladd and Burgess (1999) examined the premise that aggressive and withdrawn children were at risk for relationship maladjustment in school, and that these multiple behavioural risks predispose children to prolonged social-emotional difficulties. They highlighted a gap in the literature concerning the linkages

between aggressive and withdrawn behaviour styles and children's subjective feelings about relationships, (e.g., how lonely they felt and their relationship satisfaction). They reported that aggressive and withdrawn children are qualitatively different from children with either aggressive or withdrawn behaviours because they are likely to display behaviours that combine both hostility and self-isolating behaviours. Consequently, this particular behaviour pattern is likely to have different social consequences than either aggression or withdrawal alone (Saarni, 1997). When examined over time, Ladd and Burgess found that the comorbid pattern of aggressive and withdrawn behaviours in children were likely to result in a broad range of relational difficulties, ranging from loneliness, to social dissatisfaction with peers and conflictual relationships with their teachers. In addition, these problems were more evident and long lasting than those observed in children who were either aggressive or socially withdrawn, raising concerns regarding the challenges these children may face as they enter other stages of development.

Within the present study, there was a unique opportunity to continue to examine the relationship trajectories of aggressive and withdrawn children, now as mothers interacting with their own children. Few studies have been able to prospectively investigate the relationship between mothers' own childhood emotional difficulties and the quality of emotional availability in their interactions with their children, despite research that consistently shows that mothers with their own emotional and psychological difficulties can find the demands of mothering challenging (Beckwith, 1990; Dodge, 1990; Egeland & Erickson, 1987). The results indicated that for women who in childhood demonstrated both aggressive and socially withdrawn behaviours, continuity in interpersonal

difficulties appear to manifest themselves within the mother-child relationship in the form of hostility. It is particularly significant and concerning that more than 25 years later it is possible to observe some forms of hostility suggesting a continuity in aggressive behaviour in these mothers. The types of hostility observed included more covert forms of hostility such as sarcasm, impatience and boredom which also reflect a passive aggressive behavioural style. While social withdrawal in the mothers was not measured, these forms of covert hostility are rejecting and suggest continuity for both hostility and socially isolating behaviours. The results from the present study support the assertion, therefore, that the long term effects of aggressive and withdrawn behaviours are particularly negative when they are combined in childhood, and provide evidence of intergenerational risk to the offspring. It is important to consider that these behaviours were observed within a 15-minute free play interaction in a context where mothers' generally are on their best behaviour. These findings may signal other problems in the mother-child relationships of mothers with histories of childhood aggressive and withdrawn behaviours. A more extensive study of the parenting practices of this group, in particular, may be warranted for the future.

From the present study, it is not possible to determine what the long term effects of maternal hostility will be on the children born to mothers who in childhood showed both aggressive and withdrawn behaviours. Certainly, the results do not indicate that it is the children of these mothers who are less responsive, for example. Nor did mothers' aggressive and withdrawn risk status predict any of the other child outcome measures included in other analyses in this investigation. Given that the hostility observed was present in a social interaction, the long term consequences of this negative maternal

behaviour may best be understood within that context. For most children, the mother-child relationship is a child's first experience with an interpersonal relationship. This is now considered an essential relationship in understanding early emotional development since it provides children with an opportunity to test out how their emotional expressions are received and attended to. In interactions where children are met with negativity, children may learn to avoid socializing with that person, or begin to develop their own negative style of interaction (Bowlby, 1969; Aber & Allen, 1987; Ainsworth, 1989; Cooper et al., 1998; Goldberg, Mackay-Soroka, & Rochester, 1994; Sameroff & Emde, 1989; Emde & Spicer, 2000). An interesting area of further inquiry would be to observe these children interacting with other social partners, (e.g., siblings or peers), to consider the quality of their social functioning. It is also possible that the negative effects of the mother-child relationship would only emerge over time. Denham et al., (2000) in a longitudinal study of factors that predict children's behaviour problems, found that observed parental anger was the most disruptive in children's later social-emotional development. Other researchers have supported these findings and consistently emphasize the potentially destructive aspects of negative parental emotions (Dix, 199; Sroufe et al., 2000). Since the present study was cross-sectional in nature, it was impossible to consider whether maternal hostility predicts children's future behaviour patterns. Conclusions about the effects of maternal behaviours on child functioning cannot be drawn with certainty, however, until some of these possibilities are addressed systematically.

In line with predictions, evidence for transmission of risk from mothers' childhood behaviours was observed from behavioural responses in their offspring. Specifically,

mothers who in their own childhoods demonstrated higher levels of withdrawal now had children who showed lower levels of responsiveness in their play interactions. It is possible that this finding indicates a direct transfer of risk from mother to offspring in withdrawn behavioural tendencies. Elder et al., (1986) in a model of intergenerational transmission of behaviours suggested that "problem behaviours in the first generation become a likely medium for the development of problem behaviour among members of the next generation" (p. 298). The findings from the present study appear to support this hypothesis.

The observation that mothers' childhood withdrawal predicts lower levels of responsiveness in their children raises the question concerning the potential mechanisms involved in the transfer of risk from mother to offspring. From a social learning or social modeling perspective, it is possible that children's decreased responsivity reflects their social experiences with their mothers (Seligman, 1996). In interpreting the results it is important to note that within the present study, mothers' current levels of social withdrawal were not obtained. Thus, it is not known whether the mothers who in their own childhoods were exhibiting social withdrawal are now demonstrating these behaviours in their interactions with their children. The literature on the long term sequelae of social withdrawal is considerably less developed than the literature on aggression. Some researchers consider that social withdrawal is relatively unstable and is not predictive of behavioural maladjustment that can be observed during adolescence and adulthood (Ladd & Burgess, 1999; Rubin & Mills, 1991). Others have found evidence for moderate stability for withdrawn behavioural style over a 3-year period (Moskowitz, Schwartzman & Ledingham, 1985) and found that the stability of withdrawal may depend

on the extent of the inhibition. Kagan (1989) for example, found evidence for stability among children who were extremely withdrawn. In a study that examined assortive mating among men and women within the CLRP, Peters (1999) also found evidence for the stablility of socially withdrawn men and women.

Despite mixed findings regarding the stability of social withdrawal, social interaction problems have been noted among children who are withdrawn (Mills & Rubin, 1993). If indeed, childhood withdrawal is stable and leads to an inhibited behavioural style, children of mothers who are withdrawn may have less opportunities for social interaction. There is evidence to suggest that children's emotional expression may be inhibited in interactions where mothers are less engaged or responsive (Beckwith, 1990; Dix, 1991; Crittenden & Bonvillian, 1984; Egeland & Erickson, 1987; Kochanska, 1998; Saarni, 1997). It is not surprising, therefore, that these behavioural patterns identified in the childhoods of mothers may also be observed in their offspring. In support of this hypothesis, studies have found that interactions of high-risk mothers and their children are characterized by less smiling, laughing and generally demonstrate lower levels of positive affect (Field, 1987; Cohn & Tronick, 1989; Tronick, Als, Adamson, Wise & Brazelton, 1978). It would be important to evaluate whether socially withdrawn behaviours can still be observed in mothers with histories of emotional difficulties to better understand the mechanisms involved in the transmission of at-risk behaviours from mothers to their offspring.

At the outset of the study, it was expected that there may have been a relationship between maternal childhood risk status and levels of maternal sensitivity. Other investigations of high-risk samples have frequently found lower levels of maternal

sensitivity and responsiveness in mother-child interactions (Crittenden, 1981; Dodge, 1990; Egeland & Erickson, 1987; Serbin et al., 1991; Zahn-Waxler et al., 1984). Within the CLRP itself there have actually been very few studies conducted to date in which naturalistic observations of mother-child interaction have been investigated. However, within the studies that have been conducted, the links between maternal childhood risk status and maternal sensitivity have generally not been supported. Cooperman (1999) who measured maternal supportive behaviour in a group of high-risk mothers and their school-aged children did not observe any main effects for either mothers' childhood aggression or withdrawal. A trend emerged for social withdrawal in that mothers' with higher levels of social withdrawal in their childhood were less supportive in their interactions with their offspring. Bentley (1997) who investigated levels of maternal sensitivity with mothers and their children aged 12 - 42 months also found no significant effects for either childhood aggression or social withdrawal in this sample. Within the latter study it was suggested that one of the explanations as to why the expected link between mothers' childhood risk status and maternal sensitivity was not found was due to the 20 year time lag between the mothers' childhood risk status first being established and the current collection of mother and child data. In general, other investigations of at-risk mothers and their children are drawn from clinical samples where the expression of parental psychopathology is current and not related to their childhood functioning (Dodge, 1990). It is thus likely that within the present investigation mothers' current psychosocial functioning may be a stronger predictor of maternal sensitivity within the dyad.

Finally, maternal education did not emerge as a significant predictor of emotional availability. This result is somewhat surprising given that in other studies within the CLRP the more proximal measure of maternal education was found to have greater predictive validity than the distal measures of childhood aggression and withdrawal (Cooperman, 1999; Lehoux, 1995; Serbin et al., 1998). However, many of the mothers within the present study were fairly well educated and, in general, older than previous samples studied. These factors may have resulted in education having a reduced influence in predicting the quality of the mother-child relationship. It is also possible that education does impact parenting but in ways not investigated within the present research. It appears that other important contextual variables such as poverty and stress appear to have had a greater influence on the quality of parenting in this sample of mothers than education.

Mothers' childhood risk status and current stress levels as predictors of levels of emotional availability

The study of disadvantaged families demonstrate that environmental risk factors such as poverty, stress and psychopathology frequently co-occur and may result in a negative impact on the quality of family relationships (Boyce et al., 1998; Elder et al., 1986; Fergusson & Lynsky, 1996; Pianta et al., 1991; Sameroff & Seifer, 1991; Seifer et al., 1992: Serbin et al., 1998; Shaw et al., 1996). Many research studies have identified a link between contextual stress and child outcome, however, the mechanisms of risk, e.g., through the mother-child relationship, have not always been examined. In a recent review of psychosocial influences on childhood development, Rutter (1999) highlighted the need to include multiple factors in attempting to tease apart important processes that

were influential in predicting child outcomes. In particular, the role of proximal processes, such as parenting, were emphasized. Rutter considers that parenting may mediate the relationship between family stresses and child outcomes.

One goal of the present study was to investigate the extent to which quality of parenting mediates the relationship between environmental stresses and child outcomes. In a first step the extent to which stresses predicted mothers' levels of emotional availability was examined. In line with the hypotheses, mothers' current risk status was found to predict the quality of maternal parenting behaviours in their interactions with their children. These results support the notion that current environmental risk factors in the lives of CLRP mothers may represent an alternative pathway for the transmission of risk from mother to offspring (Elder et al., 1986; Werner & Smith, 1982). Specifically, mothers' current stress levels predicted levels of maternal sensitivity and maternal hostility. The higher the mothers' current stress levels the lower their levels of sensitivity and the more likely they were to show hostile behaviours when interacting with their children. In the case of maternal hostility, mothers' childhood aggression and social withdrawal remained a significant predictor even after the inclusion of mothers' current stress levels in the analyses suggesting that both predictors play an important role in predicting maternal hostility levels. Surprisingly, in the prediction of child responsiveness, maternal current stress levels appeared not to be an important predictor. Children's responsiveness appeared to be more directly influenced by mothers' childhood withdrawal and sex of the child.

The findings from the present investigation are consistent with an accumulating base of knowledge that suggests maternal stress plays a major role in the quality of maternal

care. For example, Mcloyd, (1996; 1998), reports that there is strong evidence from recent studies that contextual stress increases the likelihood that mothers will be hostile and more punitive in their interactions with their children. These findings are particularly alarming given that many children in North America grow up in conditions of social disadvantage and poverty (Felner et al., 1995). They lend support for the argument that intervention programs that can reduce stress and raise the incomes of poor families would go a long way in improving the lives of children living in disadvantaged homes (Gabarino, 1992; McCloyd, 1998).

In examining the findings from the present study it is important to take into account the manner in which contextual stress has been defined. An important conceptual and methodological issue involves the shared variance among stressors which is commonly found in studies within risk populations (Cooperman, 1999; Pianta et al., 1991; Saltaris, 1999). Such overlapping variance can lead to confusion if not examined. Within the present study considerable overlap was found between poverty levels, quality of social support, parenting stress and mothers' depressive symptoms, consequently, it was decided to combine these contextual variables into one factor score. Most researchers interested in risk research have concluded that the examination of individual risk factors does little to increase the amount of outcome variance accounted for and in fact reduces the power in analyses in which separate predictors need to be kept to a minimum due to sample size (Pianta et al., 1991: Rutter, 1985; Seifer & Sameroff, 1991). Sameroff and Seifer (1991) in conducting the Rochester Longitudinal Study, found that a composite score of 10 individual risk factors predicted child outcomes better than any single risk factor alone.

An alternative approach to conceptualizing and analyzing the issue of stressor overlap might involve assessing the extent to which some stresses lead to other stresses (Pianta et al., 1991). This is best conducted within studies with very large sample sizes using path analysis as the main means of attempting to identify causal hierarchy among variables (Baron & Kenny, 1996). The information gathered from this form of analysis may be useful in the treatment of families with multiple stresses. That is, there may be factors that may be more salient in predicting a sequence of stress-related factors. For example, it may be that divorce can lead to poverty for women, resulting in lower levels of social support and increased parenting stress. Marriage for women living in high-risk environments may then prove to be a protective factor for them and their children. The results from the present study confirm that multiple risk factors have greater predictive validity than individual risk factors, however, the direction of effects from one stress to another was not explored. The examination of such interrelationships would provide an interesting subject for future research, complimenting the findings from the present study in arriving at a complete understanding of high risk environments and how to help those living within stressful conditions.

Relationship between mothers' childhood aggression and social withdrawal and current stress levels

An important component of the present investigation, was the opportunity to consider the quality of the social environment provided by mothers with histories of childhood problems. Studies of families considered "at-risk" consistently demonstrate that environmental risk factors frequently co-occur (McCloyd, 1998; Rutter, 1999). In line with hypotheses, the findings demonstrated that aggression and social withdrawal were

critical risk factors in the prediction of contextual stress. In particular, it was found that higher levels of aggression when combined with higher levels of social withdrawal predicted higher levels of contextual stress in mothers. These findings are not surprising given that previous research conducted within the CRLP has consistently demonstrated a link between childhood aggression and social withdrawal and the continued manifestations of risk through a variety of psychosocial factors (Serbin et al., 1998). Aggressive tendencies in combination with social withdrawal in childhood has been linked to poor school achievement, substance abuse, psychological problems and increased need for medical care through emergency services in studies of adolescent outcomes (Schwartzman, Moskowitz, Serbin & Ledingham, 1990). In a later study, Cooperman (1999) found that individuals who were aggressive in childhood appeared to be at-risk for poverty. While a number of explanations were offered for the link between childhood aggression and poverty, a plausible explanation appears to be the low educational attainment and occupational difficulties faced by these individuals which may make gaining a comfortable living problematic. In support of this hypothesis, Caspi, Bem and Elder (1987) also found important links between problematic interactional styles in childhood and difficulties in adulthood manifesting in the form of lower educational attainment leading to lower occupational status and less stability. Findings such as these confirm the continuities of risk and consequences of childhood aggression and social withdrawal, and highlight the importance of examining both the direct and indirect ways that such continuities exert their influence at different stages of development. These findings are particularly salient given that the current sample was older and more educated than some of the previous investigations within CLRP which

have identified similar patterns of risk (Serbin et al., 1998). An example of the indirect effects of childhood aggression and social withdrawal was found in the present study. The results confirmed that high levels of stress influenced mothers' abilities to be emotionally available with their children. Therefore, while mothers' childhood levels of aggression and social withdrawal alone did not directly predict the quality of maternal parenting behaviours, evidence for the indirect effects of these risk factors is apparent through the family environments provided by these mothers. The mediating role of contextual stress on child outcomes was explored in the final set of analyses of Study 1.

Intergenerational transfer of risk from mothers' childhood aggression and social withdrawal, current stress levels, maternal parenting behaviours to child outcomes.

In considering the perpetuation of risk from childhood risk factors to child outcomes, the mediating role of both parenting and environmental variables was explored. In line with expectations, the results suggested that both mothers' childhood aggression and/or social withdrawal and mothers' contextual stresses played an important role in explaining child outcomes. Mothers' parenting was also predictive of cognitive outcomes in infants and toddlers. Contrary to expectations, however, parenting did not appear to contribute to the prediction of preschoolers' cognitive outcomes, nor children's internalizing and externalizing behaviours. In exploring the significance of these findings more closely, factors influencing child cognitive outcomes will be discussed first, followed by a consideration of factors involved in predicting children's internalizing and externalizing behaviours.

In evaluating the transfer of risk to infants and toddlers as measured by the Bayley Scales of Infant Development (Mental Developmental Index), evidence for both direct

and indirect effects of maternal childhood risk factors was found. Specifically, mothers' childhood withdrawal predicted lower IQ scores in young children. There appears to be a direct effect of childhood withdrawal given that the relationship remained significant even after controlling for maternal stress levels and quality of maternal care. Results from the current study provide support for the continuity of risk of social withdrawal and identifies critical areas of children's development that may be affected by maternal characteristics. These findings are particularly interesting, and in line with other studies that have identified stability in socially withdrawn behaviour patterns over time (Caspi, Elder, & Bem, 1988; Cooperman, 1999; Ledingham & Schwartzman, 1984; Moskowitz et a., 1985).

The relationship between maternal childhood behaviour and lower child IQ scores should also be considered within the context of other childhood measures found to be influenced by maternal childhood withdrawal, (i.e., mothers' childhood withdrawal) was also found to predict lower levels of child responsiveness on the Emotional Availability Scales. Post-hoc analyses confirmed that mothers' childhood withdrawal predicted lower levels of child responsiveness in younger children although the original analyses were conducted with both cohorts. These results suggest that children of women who in their childhoods were socially withdrawn are now displaying similar behaviour patterns which may reflect a reluctance and inhibition in engaging fully in social interactions. The Bayley Mental Development Index from the BSID II, taps into children's cognitive, language and social development (Bayley, 1993). While this scale may not reflect withdrawn behaviour as such, certainly lower scores on the Bayley Mental Development Index could indicate less expressiveness and responsiveness on the part of the child

which would ultimately influence their scores. These types of behaviours could also be reflective of developmental delays. Children who are delayed in their language and social skills may also show a reluctance to fully participate in the testing procedure.

Cooperman (1999), who found a relationship between mothers' childhood withdrawal and child cognitive functioning in a previous study, considered that prematurity and health factors might account in part for the lower scores on the Bayley. Infants who are born prematurely are likely to perform less well on the Bayley (McCune, Kalmanson, Fleck, Glazewski & Sillari, 1990). Cooperman found that mothers' childhood withdrawal was significantly related to prematurity in their children, however, further analyses revealed only a trend in the relationship between prematurity and lower scores on the Bayley. Nevertheless it is possible that prematurity might explain some of the variance between mothers' childhood social withdrawal and lower IQ scores in their children. This hypothesis would best be explored with a larger sample size which would provide greater power to the analyses. The relatively small sample size of the present study also precludes the inclusion of other child variables that may mediate the relationship between maternal factors and child outcomes (Lafreniere & Dumas, 1992; Pianta et al., 1991; Susman, Schmeelk, Ponirakis & Gariepy, 2001). At this stage of development, (i.e., 12-42 months) the relationship between the mother and child has already had considerable time to evolve. Direction of effects, therefore, is particularly difficult to tease apart. Future investigations within the CLRP which examine children's development from birth might be able to consider whether important child variables mediate the relationship between maternal risk factors and child cognitive outcomes.

As expected, the role of maternal parenting emerged as a powerful predictor in determining child intellectual competence. In identifying important mechanisms involved in predicting healthy child developmental outcomes, it has been argued that quality of parenting plays an essential role, and is thought to provide a powerful adaptive system in the face of adversity (Sroufe et al., 2000; Werner & Smith, 1992; Masten & Coatworth, 1998). In the present study, the strength of the relationship between the proximal processes of parenting and developmental outcomes is particularly salient given that this link was identified after other historical and demographic variables were also accounted for. Many researchers have discussed the critical role that maternal interaction styles play in predicting child IQ (Baldwin et al., 1990; Felner et al., 1995; Wood, 1980). Young children's communicative and cognitive skills are first stimulated and encouraged within mother-child interactions (Bee et al., 1982; Kaye & Fogel, 1980; Cohn & Tronick, 1989; Lafreniere & Dumas, 1992; Meadows, 1996). The measure of maternal sensitivity used in the present study captures the degree to which the emotional communication between mother and child is positive, appropriate and creative (Biringen et al., 1988). A mother who is emotionally sensitive to her child will read her child's signals accurately and will be in tune with her child's rhythm and timing. This is considered especially important with young children as they begin to learn and explore their environment (Wood, 1980). A child will be encouraged to learn when the interactions with their mother are stimulating and joyful. A mother who is critical or controlling may also disrupt important emotional regulation processes that are being developed at this stage of development (Salovey & Sluyter, 1997). These negative behaviours may result in withdrawal on the part of the child and limit the opportunity to develop skills such as

referential learning, problem-solving and attention skills which are linked to cognitive growth (Bakeman & Adamson, 1984; Brenner & Salovey, 1997; Pecheux, Findji & Ruel, 1992). The findings from the present study confirm the importance that mothers' parenting styles play in child cognitive outcomes, in particular, the quality of maternal sensitivity and responsiveness.

In addition to the important influence of parenting in child outcomes, adverse environmental conditions are known to contribute to child functioning (Cicchetti & Walker, 2001; Lupien, King, Meaney & McEwen, 2001; Loeber & Dishion, 1983). Families living in high risk environments are exposed to a variety of stresses such as financial difficulties and lack of social support. These stresses in turn can lead to parenting stress and poor psychological functioning which have all been linked to problematic developmental outcomes in children (Masten, Morrison, Pellegrini & Tellegen, 1992). Many researchers have argued that the more proximal processes such as quality of parenting, mediate the relationship between contextual variables and child outcomes. Findings from the present study lend support to these arguments. In the case of younger children, it appears that contextual stresses affect mothers' abilities to be emotionally available with their children, ultimately influencing their children's cognitive functioning.

In evaluating the transfer of risk to preschool cognitive functioning in the older cohort, both direct and indirect effects of maternal childhood risk factors were found. The pattern of results, however, differed from those observed for cognitive outcomes for toddlers. That is, mothers' childhood aggression emerged as a strong predictor of preschool cognitive functioning. Mothers who in childhood exhibited aggressive

behaviours were more likely to have children with lower IQ scores. This result remained significant even after controlling for other demographic and environmental variables. Consistent with studies both within the CLRP and others that have considered important predictors of children's IQ, maternal education also emerged as a significant predictor (Auerbach et al., 1991; Bee, 1982; Cooperman, 1999; Lehoux, 1995; Serbin et al., 1998). In moving to indirect effects, mothers' current stress levels were also found to be predictive of lower IQ scores over and above childhood aggression. Contrary to predictions, maternal parenting behaviours did not predict preschool IQ scores on the Stanford Binet Scales of Intelligence IV.

The stability of aggression over time and generations is well documented (Huesmann et al., 1984). Although there are a variety of ways in which childhood aggression manifests itself, lower cognitive functioning and poor academic achievement have consistently been associated with childhood aggression, (e.g., Brook & Newcomb, 1995; Caspi et al., 1987; Serbin et al., 1991). It is somewhat alarming, although consistent with the notion of intergenerational continuity of risk, that lower cognitive functioning is now observed in the offspring of mothers with childhood aggression. There are a number of mechanisms by which mothers' childhood aggression increases risk for lower cognitive scores in the next generation. One of these may be the emotional regulation problems often associated with aggressive behaviour (Salovey & Sluyter, 1997). For example, Brook and Newcomb (1995) found that childhood aggression is associated with poor impulse control and attention difficulties resulting in problems in academic domains. Within the same study, Brook and Newcomb also found that problems in school led to delinquent behaviour and increased drug use. Findings from the CLRP Project reflect a

similar story with childhood aggression in girls predicting lower school functioning, increased substance abuse and teen pregnancies (Serbin et al., 1998).

It is also possible that health related factors could mediate the relationship between mothers' childhood aggression and lower cognitive scores in their preschool children. Aggression has been identified as a risk factor for poor health in the next generation (Fagot, Pears, Capaldi, Crosby & Leve,1998; Serbin et al., 1998). DeGenna (2001) found that mothers who were aggressive as children were more likely to smoke through pregnancy and as a consequence place their children at-risk for associated health problems, (e.g., respiratory difficulties). Serbin et al. (1996) found that sons of women with histories of aggression were also at risk for elevated childhood injuries resulting in more frequent trips to emergency rooms. There may be other health risks associated with children of women with histories of aggression that may explain the lower cognitive scores in their children. Further research is required to clarify the mechanisms by which mothers' childhood aggression confers risk in their offspring.

In line with expectations, children whose mothers had completed a greater number of years of education also had children who had higher IQ scores. Many researchers have found that mothers' education is one of the best predictors of children's IQ (Auerbach, Lerner, Barasch & Palti, 1992). Educated mothers are likely to hold positive beliefs about the importance of education and encourage their children to succeed in that domain (Stevenson, Chen, & Lee, 1993). Mothers who value education are also more likely to be involved in their child's education by helping with homework (Clark, 1993) and by being in direct contact with their children's teachers (Steinberg, 1996). The findings from the present study confirm the important role that maternal education plays in predicting child

IQ especially given that this variable emerged as a direct contributor to child IQ even after controlling for other maternal risk variables also related to child IQ.

Maternal parenting behaviours such as maternal stimulation or scaffolding has been argued to mediate the relationship between maternal education and cognitive outcomes (Molfese, Dilallia & Lovelace, 1996; Saltaris, 1998). Mothers who have a higher education are more likely to provide stimulating toys, books and play activities that will foster the development of the child. In the present study, however, the mediating role of maternal parenting was not found. It could be argued that maternal scaffolding may be a more appropriate predictor of child IQ than maternal sensitivity or hostility. In order to test out this hypothesis, an additional regression was undertaken in which maternal sensitivity was replaced with maternal scaffolding as the parenting variable. The results of this regression confirmed the results from the previous analyses that measures of maternal parenting were not predictive of child IQ within the present study.

In seeking a potential explanation as to why maternal parenting behaviours were not predictive of child IQ in this study, it is important to consider the context within which these behaviours were observed and the nature of the measures used. Saltaris (1999) in a previous investigation using a subsample of high-risk mothers and their children found that the effects of maternal education on preschoolers' IQ scores appeared to operate through parenting variables, (i.e., maternal cognitive stimulation). In Saltaris' study the maternal parenting behaviour was observed in the context of a puzzle task during which mothers were instructed to complete an age-appropriate puzzle with their children. Mothers were rated on the extent to which they stimulated their child above his/her current ability and in ways that would encourage independent thinking. The child's

successful completion of the task was also rated. Within the present study, maternal parenting behaviours were observed within a free play context during which mothers and children could focus on a variety of tasks and games. In term of mothers' scaffolding behaviours, no judgement was made regarding the successful completion of any one endeavour. In addition, at times mothers and children would spend considerable amounts of time playing with a doll, or reading a book. A puzzle task lends itself better to teaching behaviours. Another important reason why different behaviours may have been observed is that the puzzle task was videotaped following the free play interaction. Mothers may have been more relaxed and, therefore, expressive in their behaviour with their children. The different measure, context (i.e., play vs. teaching) and time during which the behaviour was evaluated could account for the fact that the expected relationship between maternal parenting and child IQ was not found in this study.

Within the present study it was also possible to consider the behavioural outcomes of the children and the relative influences of mothers' childhood risk and current risk status. As expected, a link between childhood aggression and/or social withdrawal and child behavioural outcomes was found, however, only for childhood aggression. Mothers' childhood aggression emerged as a strong predictor of child externalizing problems as reported on the CBCL. In contrast, mothers' childhood social withdrawal was not found to contribute to the prediction of childrens' internalizing or externalizing behaviours. In the case of childhood aggression, the impact of this historical variable appeared to operate through mothers' current stress levels which emerged as the main predictor of child externalizing behaviours once the proximal contextual variables were included in

the model. The expected relationship between mothers' parenting behaviours and child behavioural outcomes was not found.

In a previous analysis, mothers' childhood withdrawal was found to be negatively related to levels of child responsiveness. Given that one of the behaviours measured by the internalizing scale of the CBCL is childrens' withdrawn behaviour, the relationship between mothers' childhood withdrawal and internalizing problems in their children might also have been expected to be found. It is important to consider, however, that the internalizing scale of the CBCL is not only a measure of withdrawal but also reflects more serious child behavioural problems such as somatic complaints and anxiety/depression (Achenbach, 1991). In the present study these kinds of children's problems appear to be best predicted through mothers' current stress levels. What these results appear to indicate is that the transfer of risk from mothers' childhood withdrawal to offspring is in the form of subtle forms of withdrawn behaviour, perhaps, such as decreased responsivity, as opposed to more serious behaviour problems, at least observed at this time. It would be important, however, to continue to follow these children and consider the relationship between mothers' current stresses and child behaviour problems in a longitudinal design to lend further validity to these findings.

Another consideration when explaining why the expected relationship between mothers' social withdrawal and child internalizing problems was not found is the age of the children studied, (i.e., 1 - 6 years). Inner directed problems such as anxiety or depression may be more difficult to identify in young children such as those in the present study. Childrens' behaviours, such as sluggishness, or behavioural inhibition identified in early childhood from naturalistic observations have been found to be a risk

factor for anxiety disorders in school-aged children and adolescents (Einsberg, Fabes, & Losoya (1997). In the case of social withdrawal, it is possible that the effects of risk from mother to child are not yet readily apparent (Moskowitz et al., 1983). Assessing children born to mothers with histories of social withdrawal at later stages of development would be important to consider in understanding whether some internalizing problems may emerge at later stages of development.

In seeking continuities of risk from mother to offspring, a consistent finding from the present investigation was the important role of mothers' childhood aggression in the prediction of child developmental outcomes. In the case of behavioural indices, there appeared to be stability from mother's childhood aggressive behaviour to externalizing problems now identified in their children. This finding is consistent with the conclusions drawn from many researchers of the far-reaching social and psychological consequences of aggressive behaviour (Rubin et al, 1991). Externalizing problems in children are normally associated with behaviours such as aggression, noncompliance, and emotional regulation difficulties such as high reactivity and negative emotionality. Research on regulation of emotionally driven behavior suggests that arousability thresholds differ among individuals. It is thought that individuals who are aggressive may be easily overaroused (Einsberg et al., 1997). A genetic link from mothers to offspring may be present on this dimension. Environmental influences are also likely to be at play as children's emotional regulation strategies are first learned in the context of their home environments. The expression of negative behaviour may arise from modeling their mothers' expressive styles. Previous research has found a relationship between parents' aggressive behaviours and their children's negative behaviour towards others (Patterson,

1982; Patterson, Reid & Dishion, 1992; Nix et al., 1999). From the present study, it is not possible to identify the mechanisms by which mothers' childhood aggression influenced children's externalizing behaviours. From what is known concerning factors that influence emotional regulation and emotional development in children, it is possible to hypothesize that both environmental and genetic factors may be at play (Greenberg & Snell, 1997).

Findings from the present study provide evidence for a mediated model whereby the impact of childhood aggression operates primarily through contextual variables, in this case maternal stress. The few researchers that have included both distal and proximal variables in their analyses have found that distal factors, such as maternal childhood psychopathology, no longer relate significantly to developmental outcomes once shared variance with more proximal variables is controlled for (Felner et al., 1995; McCloyd, 1998). In the prediction of both child internalizing and externalizing behaviours, maternal stress emerged as the most powerful predictor. Internalizing and externalizing behaviours have been identified as stress responses that are common among children exposed to stressful environmental conditions. Masten and colleagues (1992) consider that in the short-term these patterns may be adaptive. However, if these behaviours persist in other environments such as school or with peers they can result in problems in social and emotional functioning. Once again, the findings from the present study highlight the vulnerability of children living in stressful conditions. There is a clear need for further research to determine the long term consequences for children living under stress and how best to ameliorate conditions within high risk environments.

In interpreting the findings regarding pathways from maternal historical and contextual risk variables to child behavioural outcomes, it is important to consider a methodological issue with respect to the number of self-report measures used in the present study. In general, the most consistent predictor of child behaviour problems was maternal stress. In fact, three of the four measures used to determine maternal stress involved self report by the mother herself (i.e., social support satisfaction, depressive symptomatology, and parenting stress). Measures of child behaviour obtained from the CBCL were also obtained from the mother. It has been argued that mothers who may be experiencing emotional difficulties as a result of financial and family stresses are also likely to report increased behaviour problems in their children (Downey & Coyne, 1990). For this reason, conclusions regarding the role of maternal stresses in predicting child behaviour problems should be drawn tentatively. Future research which includes reports of children's behaviour from other sources, such as teachers and peers, would help to validate the findings.

In the exploration of factors influencing child behavioural outcomes, it was expected that parenting strategies would emerge as powerful predictors. Researchers have argued for the mediating role of these proximal processes on child development (Loeber & Dishion, 1983). In the present study, maternal sensitivity and hostility did not appear to affect child cognitive and behavioural outcomes in preschoolers. As already identified in the discussion regarding factors affecting child cognitive outcomes, it appears that the role of parenting might be most influential at younger ages. Alternatively, it is possible that another aspect of parenting, not evaluated in the current study is a more salient predictor of child internalizing and externalizing behaviours. The present research

focused its attention on one aspect of parenting, (i.e., emotional availability). It is possible, that there are other parenting practices that are better predictors of child internalizing and externalizing behaviours. In recent investigations, Nix et al., (1999) identified the role of mothers' hostile attribution tendencies as a prediction of children's externalizing behaviour problems at school. Mothers' negative cognitions can lead to anger and harsh disciplining practices which have also been found to predict child externalizing problems (Denham et al., 2000). The risks associated with childhood aggression have already been discussed. It is critical, therefore, that we continue to learn more about the mechanisms that influence the development of these maladaptive behaviours and assist parents to make changes that may prevent such behaviours from occurring. Finally, studying the effects of parenting in a longitudinal design would be the best method in considering how maladaptive or adaptive parenting influences child development.

Study 2: The influence of paternal childhood risk, spousal current risk status on the quality of mother-child interaction and child outcome

The findings from Study 1 illustrated that within a high risk sample, maternal childhood characteristics, maternal current stresses and parenting are important predictors in children's cognitive and behavioural functioning. The pattern of results can differ, however, depending on the age of the child and outcome variable under investigation. The second study in this series continues to explore the impact of parental and contextual variables on children's development within the CLRP. However, this study takes a step further in considering another variable (i.e., the impact of fathers' childhood aggression and social withdrawal) in the intergenerational transfer of risk. Children spend time with both parents, yet too often only the impact of maternal variables on child development are investigated (Serbin & Stack, 1998). There is still much to learn concerning how fathers influence their children's development either directly through their own characteristics, or indirectly, (e.g., through their spousal selection). The inclusion of paternal variables in Study 2, allows for the possibility of considering simultaneously the impact of both paternal and maternal variables on the quality of the mother-child relationship and child outcomes, thus adding to our understanding of environment influences in the transfer of risk. Finally, since a similar set of analyses was conducted for both studies, it was possible to draw some comparisons between Study 1 and Study 2 by comparing the quality of emotional availability between spouses of high-risk fathers to their offspring to that of high-risk mothers and their children. The specific hypotheses for Study 2 were outlined at the end of the introduction.

Method

Participants

Study 2 focused on the fathers who were original participants of the CLRP, their spouses and children.

In total, the sample for the present study consisted of 60 fathers and spouses and their children (31 girls and 29 boys), of which 21 were from risk groups while 39 were from the comparison group. Based on the fathers' original risk classifications, the sample was drawn from the four groups as follows: aggressive (n = 12), withdrawn (n = 5) aggressive-withdrawn (n = 4), and comparison (n = 39). At the time these men were originally identified in 1977, 9 (14.8%) were in Grade 1, 22 (34.4%) were in Grade 4 and 29 were in Grade 7 (50.8%).

Consistent with Study 1, due to the small sample size, the four risk classifications were not used as separate groups for the purposes of the present study. Rather, fathers' childhood aggression and withdrawal scores were treated as dimensions. The dimensional approach as been the preferred option for analyses in the past and it has generally yielded informative results. A test of skewness revealed that the distribution of aggression and social withdrawal z scores in the present sample followed a normal distribution.

The fathers who participated ranged in age from 25 to 34 years (M = 31.33, SD = 2.38). The children ranged in age from 1 to 6 years (M = 3.52, SD =1.54). For the purposes of cognitive testing the children were divided into two cohorts. Cohort 1 included children aged from 12 - 42 months (M = 2.24, SD = .75). Cohort 2 included children aged 43 to 72 months (M = 4.88, SD = .92). In terms of marital status, 30% of

the fathers were married, 62% were cohabitating and, 5% were separated. In terms of education, the fathers had between 8 and 16 years of schooling (M = 11.69, SD = 1.95). Fathers' occupational prestige ratings ranged from 162 to 694 (M = 347.33, SD = 107.13). The mean prestige rating corresponds to the following types of jobs: salesperson, filing clerk and cashier (Nock & Rossi, 1979). The age of the fathers at the birth of their first child ranged from 21 to 34 years (M = 27.34, SD = 2.90). The means, standard deviations and ranges of fathers' age, occupational prestige level, educational level as well as children's age are presented in Table 21.

The spouses who participated in the study ranged in age from 20 to 45 years (M = 30.04, SD = 4.49). In terms of education, the spouses had between 4 and 18 years of schooling (M = 12.03, SD = 2.41). Mothers' occupational prestige ratings ranged from 0 to 677 (M = 335.92, SD = 110.06). The mean prestige rating corresponds to the following types of jobs: salesperson, filing clerk and cashier (Nock & Rossi, 1979). The age of the mothers at the birth of their first child ranged from 14 to 38 years (M = 25.33, SD = 4.41). The means, standard deviations and ranges of spouses' demographic information are presented in Table 22.

It was also important to assess the representativeness of the men in this sample as compared to other participants who were also from the original CLRP but who were not part of the current project. The fathers who participated in the present study were compared to a subsample of 192 men who were contacted to participate in studies during 1993-1997, as well as a subsample of 119 men (who were part of the original sample of the CLRP) and who are also known to be fathers. The fathers were compared along

Table 21

Means, Standard Deviations and Ranges of Demographic Information: High Risk Fathers (N=60)

	Mean	Standard Deviation	Range
Fathers' current age (yrs)	31.33	2.38	25.00 - 34.00
Fathers' age at first child (yrs)	27.34	2.90	21.00 - 34.00
Childrens' current age (yrs)	3.52	1.53	1.00 - 6.00
Yrs of Education	11.69	1.95	8.00 - 16.00
Occupational Prestige	347.33	107.13	162.00 - 694.00

Table 22

Means, Standard Deviations and Ranges of Demographic Information : Spouses of High Risk Fathers (N=60)

	Mean	Standard Deviation	Range
Mothers' current age (yrs)	30.04	4.49	19.00 - 45.00
Mothers' age at first child (yrs)	25.33	4.41	14.00 - 37.00
Childrens' current age (yrs)	3.52	1.53	1.00 - 6.00
Yrs of Education	12.03	2.41	4.00 - 18.00
Occupational Prestige	335.92	110.06	0.00 - 677.00

dimensions of aggression and social withdrawal. The results of the comparisons are illustrated in Table 23. In terms of childhood aggression, in general, non-fathers were found to have higher levels of aggression than fathers. There was no difference, however, between the fathers included in the current sample and other fathers who form part of the CLRP. A similar result was found in terms of childhood social withdrawal, fathers in the present sample, and other fathers from the CLRP were found to be less withdrawn than the other men who were not fathers. Non-fathers were also found to have higher levels of education than fathers from the CLRP and the current sample of fathers. There were no differences between the three groups in terms of levels of social prestige. The fathers in the current sample also had their first child about the same age as other fathers included in the CLRP.

Materials, Procedure and Measures

The materials, procedure and measures used in Study 2 were the same as those described for Study 1. These have already been described in the context of Study 1. The means, standard deviations and ranges of mother and child measures used in Study 2 are included in Appendix M.

Observational Coding:

As in Study 1, the quality of the mother-child relationship was assessed from video tapes of naturalistic mother-child play interactions using the Emotional Availability Scales (Biringin & Robinson, 1991). Guidelines for coding are outlined at the end of the Method section in Study 1 and in Appendix F. To ensure the accuracy of the coding, 30% of the current sample was randomly selected and double-coded following completion of coding. Inter-rater reliability was assessed following completion of coding

Table 23

Comparison of Selection Variables Between Men Contacted 1993-1997 (n = 179), Mothers from Original Sample (n = 119) and the Current Subsample of Fathers (n = 60): Means and F values

	Non-Fathers	Representative Sample (fathers)	Current Sample	F-Value
Aggression	.03	.42	.40	7.27**
Social Withdrawal	.62	.37	.03	8.55**
Education	12.39	11.62	11.70	25.45**
Occupational Prestige	349.90	353.23	347.88	.48
Fathers' age at birth of first child		26.85	27.40	.60

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

using intraclass correlation coefficients (Shrout & Fleiss, 1979), and r's ranging from .72 to .99 were obtained. Cohen's kappa coefficient (Cohen, 1968) which corrects for chance agreement, was also calculated to assess reliability between the two coders. These values ranged from .87 to .99.

Results

The approach to data screening and preliminary analyses taken for Study 2 was similar to that described in Study 1. Data screening revealed no missing data on the primary predictors of fathers' childhood aggression and social withdrawal, mothers' education, or on levels of emotional availability as defined by maternal sensitivity, maternal hostility and child responsiveness. There were also no missing data for any of the child scores on the Bayley Scales of Infant Development II, Stanford Binet Intelligence Scale IV, or CBCL. Examination of the data revealed four values missing in the case of Social Support, SCL-90 and Parenting Stress. Cases with missing values were replaced by the mean of the group on that particular variable (Tabachnick & Fidell, 1989).

Upon completion of the data screening, descriptive analyses were conducted on all variables in order to determine if transformations were necessary to correct for skewness and/or kurtosis of the distributions, as well as to assess for the presence of univariate and multivariate outliers. The social support measure was found to be negatively skewed. A square root transformation was successful in normalizing the distribution. No univariate or multivariate outliers were found in the data.

Following the descriptive statistics, intercorrelations between variables were assessed for multicollinerarity or singularity which can inflate the error term and weaken the quality of the analyses (Tabachnick & Fidell, 1996). As was the case for Study 1, among the emotional availability ratings, maternal sensitivity and maternal scaffolding were found to be highly correlated (at .71). Similarly, child responsiveness and child involvement were found to be highly correlated at .85 (Table 24). In order to guard against multicollinearity and reduce the number of analyses that were conducted,

Table 24

Correlations among Emotional Availability Scores N=60

	1.	2.	3.	4.	5.
1. Maternal Sensitivity		.71***	-.60***	.58***	.33**
2. Maternal Scaffolding			-.36**	.55***	.43***
3. Maternal Hostility				-.42***	-.02
4. Child Responsiveness					.85***
5. Child Involvement					

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

maternal scaffolding and child involvement were dropped from all analyses. Table 25 includes the intercorrelations between predictors and emotional availability ratings. Tables 26 and 27 include the intercorrelations between predictors and scores on the Bayley Scales and Infant Development II, and Stanford Binet Intelligence Scale IV respectively. The intercorrelations between predictors and child behaviour outcomes are presented in Table 28.

General approach to statistical analyses

As in the case of Study 1, hierarchical multiple regressions were the main statistical procedure used to analyze the data. The goal of Study 2 was to consider the role of fathers' childhood risk and mothers' current risk as they related to levels of emotional availability and child outcomes for this sample. Entering predictors in a sequential order allows the assessment of whether the effect of certain variables, such as father's childhood risk status, entered early in the equation remain significant even after other variables are included in the model. In general, paternal childhood risk factors were entered first. Maternal and child demographic variables known to be correlated with the dependent measures were entered second. Contemporaneous variables were entered in the final steps. In the case of analyses conducted on child outcomes, because of the smaller sample size in Study 2, it was deemed necessary to reduce the number of predictors. Selection of predictors for these variables are discussed in the section describing the results of regressions predicting children's cognitive and behavioural functioning.

As for Study 1, in order to keep the number of predictors to a minimum, the interaction term of fathers' childhood aggression and social withdrawal and the

Table 25

Correlations among Predictor Variables and Emotional Availability Scores (N = 60)

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Childhood Aggression		-.17	-.43**	.01	-.05	-.02	-.08	.27*	-.05
2. Childhood Withdrawal			-.02	.15	.18	-.04	.10	-.09	-.03
3. Mothers' Education				-.13	-.17	.06	-.03	-.11	.02
4. Child Age					-.04	.13	.01	.04	.28*
5. Child Sex						.13	.09	.00	.15
6. Mothers' Current Risk							-.14	.04	-.16
7. Maternal Sensitivity								-.60**	.58***
8. Maternal Hostility									-.42***
9. Child Responsiveness									

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

Table 26

Correlations among Predictor Variables and Scores on Bayley Mental Development Index (N=32)

	1	2	3	4
1. Childhood Aggression		-.23	.05	.06
2. Childhood Withdrawal			-.15	-.23
3. Mothers' Current Risk				-.16
4. Bayley Mental Development Index				

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

Table 27

Correlations among Predictor Variables and Scores on Stanford Binet IV Total IQ (N=28)

	1	2	3	4
1. Childhood Aggression		.08	-.01	.12
2. Childhood Withdrawal			.08	.06
3. Mothers' Current Risk			.08	-.41*
4. Stanford Binet IV Total IQ				

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

Table 28

Correlations among Predictor Variables and CBCL Internalizing and Externalizing Scores (N = 45)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Childhood Aggression		-.01	-.53**	.17	.06	-.02	-.12	.35*	.05	.11
2. Childhood Withdrawal			-.05	.06	.26t	-.03	.10	-.12	.01	-.11
3. Mothers' Education				-.13	-.13	-.02	.17	-.14	.03	-.03
4. Child Age					-.06	-.19	.09	-.04	-.29*	-.27t
5. Child Sex						.28t	.09	.00	-.15	-.08
6. Mothers' Current Risk							-.17	.11	-.32*	.43**
7. Maternal Sensitivity								-.64***	-.12	-.01
8. Maternal Hostility									-.01	-.19
9. CBCL Internalizing										.62***
10. CBCL Externalizing										

$^{t} < .10$ * $p < .05$ ** $p < .01$ ***$p < .001$

demographic variable of child sex were only included in those analyses in which they were significantly related to the dependent variables. In cases in which the interaction term of aggression and social withdrawal was found to be significant, appropriate post-hoc analyses were conducted to isolate the source of the interaction.

A MANOVA was also conducted in order to compare the high-risk mothers from Study 1 and spouses of high-risk fathers from Study 2 on levels of emotional availability. A MANOVA was used as the statistical technique because this analysis takes into account the intercorrelations between the dependent variables and avoids Family-Wise Type I error (Tabachnick & Fidell, 1996).

Results from the regression analyses predicting levels of emotional availability will be discussed first, followed by the results of the MANOVA. Finally, the results from the regression analyses predicting child outcomes will be presented.

Fathers' childhood aggression and social withdrawal as predictors of levels of emotional availability

The first set of analyses was run in order to examine the relationship between fathers' childhood levels of aggression and social withdrawal and levels of emotional availability as measured by maternal sensitivity, maternal hostility and child responsiveness. Three separate hierarchical regression analyses were conducted. For each analysis fathers' aggression and social withdrawal were entered as a first step, maternal education and child age were entered in consecutive steps.

Maternal Sensitivity

In the regression examining fathers' childhood aggression and withdrawal as a predictor of spouses' sensitivity with their children, the results indicated that the

hierarchical regression accounted for 11% (1% adjusted) of the total variance. After all the independent variables were entered at Step 3 the multiple R did not reach significance (Appendix N, Table 1). The demographic variables of maternal education and child age did not emerge as significant predictors of maternal sensitivity. In addition, fathers' childhood aggression and social withdrawal did not appear to be related to their spouses' ability to be sensitive with their children.

Maternal Hostility

The hierarchical regression predicting maternal hostility is shown in Appendix N, Table 2. Overall, the multiple R did not reach significance accounting for 28% (0% adjusted) of the total variance. Given that the overall regression was not significant, the significance of individual steps was not interpreted. Thus, the results suggest that fathers' childhood aggression and social withdrawal, together with the demographic variables of mothers' years of education and child age were not significant predictors of maternal hostility.

Child Responsiveness

In the regression examining fathers' childhood aggression and withdrawal as predictors of child responsiveness, (Appendix N, Table 3) the results indicated that the total variance accounted for by the hierarchical regression was 30% (2% adjusted). However, after all the predictors were entered the multiple R failed to reach significance.

In summarizing the findings from the first set of regressions, the results indicate that fathers' childhood risk status was not related to mothers' ability to be emotionally available with their children, nor were they predictive of their children's levels of

responsiveness. With respect to demographic variables, maternal education and child age did not predict any of the measures of emotional availability.

Fathers' childhood aggression and social withdrawal, mothers' current risk status as predictors of emotional availability

A second set of analyses was run to consider the relative effects of fathers' childhood aggression and social withdrawal, and mothers' current risk status on levels of emotional availability. Predictors were entered in the same hierarchical sequence as in (1) above with the addition of mothers' current stress level entered in a final step. As in the above analyses, child sex and the interaction of fathers' childhood aggression and social withdrawal were only included when they were found to be significantly associated with the dependent variables.

Maternal Sensitivity

The regression predicting maternal sensitivity from fathers' childhood levels of aggression and/or social withdrawal and mothers' current stress levels accounted for 22% of the variance (4% adjusted), however, the multiple R failed to reach significance (Appendix O, Table 1). Neither fathers' childhood risk levels or mothers' current stress emerged as significant predictors of mothers' ability to be sensitive to their children.

Maternal Hostility

The results of the regression that examined maternal hostility as a function of fathers' childhood levels of aggression and/or social withdrawal and mothers' current stress levels accounted for 30% (9% adjusted) as shown in Appendix O, Table 2. The multiple R, however, did not produce a significant result and, thus, none of the variables emerged as significant predictors.

Child Responsiveness

In the regression examining level of child responsiveness as predicted by fathers' childhood aggression and/or social withdrawal and mothers' current stress levels, the multiple R failed to reach significance (Appendix O, Table 3) accounting for 33% (11% adjusted) of the variance. None of the variables entered appeared to contribute significantly to children's levels of responsiveness.

In summary, none of the regressions examining levels of emotional availability as predicted by fathers' childhood aggression and/or social withdrawal were significant. These results suggest that neither fathers' childhood risk status or mothers' current risk status were predictive of mothers' ability to be sensitive with their children, or their children's levels of responsiveness. Maternal levels of hostility were also not predicted by fathers' childhood risk status or mothers' current stress levels.

Comparison of levels of emotional availability between high-risk mothers and spouses of high-risk fathers.

A repeated measures MANOVA was conducted to compare levels of emotional availability as defined by maternal sensitivity, maternal hostility and child responsiveness demonstrated by high-risk mothers compared to spouses of high-risk fathers.

A MANOVA on levels of emotional availability revealed an overall multivariate significant effect of Pillais Exact F (3, 165) = 3.38, $p < .05$ (Table 29). Univariate follow-up analyses revealed significant results for maternal sensitivity, F (1, 167) = 6.49, $p < .01$ and maternal hostility, F (1, 166) = 9.13, $p < .01$. These analyses indicated that mothers with histories of childhood aggression and social withdrawal were less sensitive with their children in their play interactions (M = 6.6) compared to the spouses of fathers

Table 29
Mulltivariate Analysis of Variance and Univariate Follow-up Tests: Maternal Sensitivity, Maternal Hostility and Child Responsiveness

Source	Pillais	df	$df_{(error)}$	Multivariate F
MANOVA Mothers Fathers	.058	3	165	3.38*

Maternal Sensitivity

Source	SS	df	MS	F
ANOVA Mothers Fathers	11.00	1	1.69	6.49**

Maternal Hostility

Source	SS	df	MS	F
ANOVA Mothers Fathers	.37	1	.04	9.13**

Child Responsiveness

Source	SS	df	MS	F
ANOVA Mothers Fathers	3.29	1	2.08	1.58

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

with histories of childhood aggression and social withdrawal (M = 7.2). Similarly, the high-risk mothers were also likely to be more hostile with their children (M = 1.1) than spouses of the high-risk fathers (M =1.0). The univariate follow-up analysis for child responsiveness was not significant, however, suggesting that there were no differences on levels of child responsiveness between the two samples.

Fathers' childhood aggression and social withdrawal, mothers' current stress levels as predictors of child cognitive and behavioural outcomes

In the final set of analyses it was planned to examine the relative influence of fathers' childhood aggression and withdrawal, mothers' current risk status and levels of emotional availability in predicting child IQ as well as internalizing and externalizing behaviours. This would have been a similar set of analyses to those that were conducted in Study 1. However, due to the smaller sample size in Study 2 and the fact the levels of emotional availability were not found to be significantly correlated with the dependent measures, these predictors were dropped from the analyses. Similarly, mothers' education was not found to be a significant predictor in child outcomes and was also dropped from analyses to keep the ratio of predictors to sample size within an appropriate range, (i.e., a recommended minimum of five to eight subjects per predictor variable; Tabachnick & Fidell, 1989).

The remaining predictors were entered in the same hierarchical sequence as for the other analyses, (i.e., fathers' childhood risk status was entered first, child age was entered second). Mothers' current risk status was entered in a third step, followed by the interaction between levels of aggression and social withdrawal which was entered last. The same child outcome measures were used in Study 2 as in Study 1 to allow for direct

comparison across samples. Cognitive development in the infant and toddler group was evaluated by the Bayley Scales of Infant Development II. Cognitive functioning in preschool and school age children was measured by the average Stanford-Binet IV Total IQ. As in Study 1, the influences on child IQ were considered separately by age cohort.

In terms of children's behavioural outcomes, since the younger and older cohorts were both evaluated using the CBCL Internalizing and Externalizing scales, the regressions predicting the CBCL included the total number of children evaluated with these scales which in the case of Study 2 was a total of 45 children.

Scores on the Bayley Mental Develoment Index: Infants and Toddlers aged 12 - 42 months

In the regression examining the prediction of child Bayley scores, after all the predictors were entered into the equation the Multiple R did not reach significance. As indicated in Appendix P, Table 1, fathers' childhood aggression and social withdrawal and mothers' current risk status did not appear to be associated with children's performance on the Bayley Mental Development Scale.

Scores on the Stanford Binet Intelligence Scale IV: Preschoolers aged 42 - 72 months

As shown in Appendix P, Table 2, the predictors entered into the regression equation predicting children's cognitive functioning as measured by the Stanford Binet IV, did not produce a significant Multiple R. None of the variables emerged as significant predictors of preschoolers' cognitive functioning.

CBCL Internalizing Scores

In the regression examining the influence of fathers' childhood levels of aggression and/or social withdrawal and mothers' current risk status on children's internalizing

behaviours as measured by the CBCL, Table 30 indicates that the hierarchical regression accounted for 48% (13% adjusted) of the total variance. After all the predictors were entered into the equation, the multiple R approached significance, $F = 2.30$, $p < .06$. Fathers' childhood risk status entered in the first step did not produce a significant result. In the second step, the inclusion of child age accounted for 9% of the variance Beta = -.31, $p < .05$, indicating that younger children had higher internalizing scores on the CBCL than older children. At Step 3, the inclusion of mothers' current risk status approached significance and accounted for an additional 7% of the variance, Beta = .27, $p < .07$. Women with higher levels of current stress in their lives were also likely to have children who demonstrated higher levels of internalizing problems. At Step 4, the inclusion of the interaction term of fathers' childhood aggression and social withdrawal also approached significance contributing an additional 6% to the overall variance, Beta = .27 , $p < .08$. This result indicates that childrens' internalizing behaviours appear to be modulated by fathers' childhood levels of aggression and social withdrawal over and above the levels of stress mothers may have been be experiencing.

CBCL Externalizing Scores

Table 31 presents the results of the regression equation predicting children's externalizing scores on the CBCL. Overall, the predictors accounted for 48% (15% adjusted) of the total variance, and produced a significant multiple R, $F = 3.00$, $p < .01$. The inclusion of fathers' childhood aggression and social withdrawal and child age entered in the first and second steps failed to produce a significant result. At Step 3, however, mothers' current stress levels was significant, Beta = .39, $p < .01$, accounting for 15% of the variance. The results indicated that mothers with higher levels of current

Table 30

Fathers' Childhood levels of Aggression and/or Social Withdrawal, Current Risk and Child Internalizing Scores on the CBCL (N= 45)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.00	.05
Childhood Aggression	.05	.05	.31		
Childhood Withdrawal	-.01	-.01	-.05		
Step 2				.09	4.15*
Childhood Aggression	.10	.10	.66		
Childhood Withdrawal	.01	.01	.07		
Child Age	-.31	-.31	-2.03*		
Step 3				.07	3.37t
Childhood Aggression	.10	.10	.66		
Childhood Withdrawal	.01	.01	.10		
Child Age	-.25	-.25	-1.70t		
Mothers' Current Risk	.27	.27	1.84t		
Step 4				.06	3.19t
Childhood Aggression	.07	.07	.46		
Childhood Withdrawal	-.07	-.06	-.45		
Child Age	-.25	-.24	-1.72t		
Mothers' Current Risk	.29	.28	1.99*		
Childhood Aggression/ Withdrawal	.27	.25	1.77t		

R = .48 R^2 Adj = .13 F = 2.30t

t < .10 * p < .05 ** p < .01

Table 31

Fathers' Childhood levels of Aggression and/or Social Withdrawal, Current Risk and Child Externalizing Scores on the CBCL (N= 45)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.02	.54
Childhood Aggression	-.12	-.12	-.77		
Childhood Withdrawal	-.10	-.10	-.69		
Step 2				.06	2.69
Childhood Aggression	-.07	-.07	-.49		
Childhood Withdrawal	-.09	-.09	-.61		
Child Age	-.25	-.25	-1.64		
Step 3				.15	.7.57**
Childhood Aggression	-.08	-.08	-.56		
Childhood Withdrawal	-.09	-.08	-.61		
Child Age	-.17	-.17	-1.21		
Mothers' Current Risk	.39	.38	2.75**		

R = .48 R^2 Adj = .15 F = 3.00**

$^t < .10$ * p < .05 ** p < .01

stress are also likely to have children demonstrating higher levels of externalizing behaviours.

Summary

The results of the regressions examining the relative influence of fathers' childhood risk status and mothers' current stress levels on child outcomes, suggest that fathers' childhood aggression and social withdrawal is not a main predictor in children's cognitive and behavioural functioning. The exception to these results emerged in the case of child internalizing behaviours where fathers who in childhood had both high levels of aggression and withdrawal were also more likely to have children with internalizing problems. While, mothers' current stress levels did not appear to influence children's cognitive functioning either in the case of the younger or older age cohort, mothers' current stress levels did explain the variance in children's internalizing and externalizing problems regardless of age.

Fathers' childhood aggression and social withdrawal as predictors of mothers' current stress levels

A final analysis was conducted to consider the relationship between fathers' childhood risk characteristics and the current levels of stresses present in their spouses lives. The regression examining fathers' childhood aggression and social withdrawal as predictors or mothers' current stress levels did not reach significance. As indicated in Appendix, Q Table 1, the results indicated that mothers' stress levels did not appear to be influenced by their husbands' childhood aggression and social withdrawal. Children's age or maternal education also did not appear to influence the levels of stresses they were experiencing.

Discussion

A unique feature of the CLRP has been the inclusion of both women and men who in childhood were considered aggressive and socially withdrawn, allowing for the consideration of both genders in their parenting roles. The goal of Study 2 was to continue to examine the parenting and social environments provided to children born to parents with histories of aggression and social withdrawal, but this time the focus was on the fathers. This study offered a unique opportunity to consider paternal characteristics and their influence on child development while also considering the quality of parenting and social environment provided by their spouses.

Contrary to predictions, fathers' childhood aggression and social withdrawal was not associated with the quality of emotional availability observed between the spouses of the high-risk fathers and their children. Also contrary to expectations, mothers' stress levels did not contribute to the prediction of the quality of the mother-child relationship. In comparing the levels of emotional availability demonstrated by the high-risk mothers to spouses of high-risk fathers, as expected, the results revealed that the high-risk mothers were less sensitive and more hostile with their children than the spouses of the high-risk fathers. Contrary to expectations, children of high-risk mothers did not demonstrate lower levels of responsiveness in their interactions with their mothers as compared to children of high-risk fathers.

In considering the intergenerational transfer of risk for the children of the high-risk fathers, the results suggest that fathers' childhood aggression and social withdrawal were not influential in predicting child cognitive functioning in either the younger or older age cohorts. In addition, mothers' stress levels did not predict child IQ levels. With respect

to child internalizing and externalizing behaviours, the relationship between fathers' aggression and social withdrawal and child internalizing behaviours approached significance. The children of fathers who in childhood were identified as being both high on aggression and social withdrawal were more likely to demonstrate higher levels of internalizing behaviours. Contextual stresses faced by the spouses of the high-risk fathers were also found to predict internalizing problems in their children. Surprisingly, in the case of child externalizing behaviours, fathers' childhood levels of aggression and social withdrawal did not emerge as an important predictor. Similar to child internalizing behaviours, mothers who were experiencing higher levels of contextual stress also had children who had higher levels of externalizing behaviours.

In terms of demographic variables, maternal education was not found to be a useful predictor in levels of emotional availability. Nor did maternal education contribute to the prediction of mothers' current stress levels. Child age and child sex did not emerge as important variable in any of the analyses.

Fathers' childhood aggression and social withdrawal and mothers' current risk status as a predictor of the quality of the mother-child relationship

A main focus of Study 2 concerned the quality of the mother-child relationship experienced by children born to men with histories of childhood aggression and social withdrawal. At the outset of the study, two possibilities were considered. First, through assortive mating, men with elevated levels of aggression and social withdrawal would also choose partners with similar characteristics (Buss, 1985). In support of this hypothesis, Peters (1999) found evidence for assortive mating among men and women identified in childhood with aggression. Peters considered that a conflictual interpersonal

style might develop among similar partners who have shared an aggressive nature. While support for assortive mating was not found among partners with socially withdrawn behaviours, Peters did find that withdrawn couples resembled each other in internalizing symptoms. In this scenario, it was considered that spousal selection among the high-risk fathers in this study might have an impact on the quality of care provided to their children.

An alternative scenario presented was the notion that men with histories of aggression and social withdrawal would select partners opposite to them on these dimensions (Berscheid & Walster, 1978; Peters, 1999). In this case, marriage would become a mechanism by which children would be protected from the long term consequences of their fathers' childhood history through the relationship they have with their mothers. The results of the present study suggest some support for the second scenario, although caution should be taken in interpreting the findings since this study represented only an initial inquiry into the role of fathers in this sample. There is still much to discover concerning the pathways through which fathers' childhood risk status may impact the next generation and some of the other ways that the influence of fathers can be studied will be explored later on in the discussion.

Fathers' childhood aggression and social withdrawal did not predict any of the dimensions of emotional availability observed within the mother-child relationship. Moreover, when compared to high-risk mothers, the spouses of high-risk fathers were generally more sensitive and less hostile than their counterparts. This finding is important since it may indicate that the quality of rearing environment for children born to high-risk fathers is generally more nurturing than those for children born to high-risk mothers.

Even in our modern society, mothers are still the primary caregivers (Phares, 1996). Important developmental processes such as quality of attachment and emotional regulation take place within the mother-child relationship and the quality of maternal behaviours is associated with healthy behavioural outcomes (Capaldi & Clark, 1998; Cowan et al., 1990; Werner & Smith, (1992; Masten & Coatsworth, 1998). If indeed children of high-risk fathers are exposed to higher levels of emotional availability, it might be expected, therefore, that these children would have less developmental problems than those born to high-risk mothers. It was possible to examine this hypothesis since within the larger research project each child was evaluated by the examiner and other research psychologists and given a clinical rating. Each child was coded as being at "high risk", "moderate risk" or "low risk" according to a systematic rating scheme comprised of many variables. In fact further investigation revealed that children born to high-risk fathers were considered to be at "moderate" and "high" risk at about the same rate as children of high-risk mothers (67% compared to 61% for fathers and mothers respectively). It is important to bear in mind that while there was a statistical difference between high-risk mothers and spouses of high-risk fathers on the dimensions of maternal sensitivity and hostility, the actual mean scores were close in value. It may be that the difference is not clinically significant to impact the children's behaviours at this time. Alternatively, it is possible that the ways in which the children might benefit from this potentially more nurturing environment may best be seen at later stages of development as the mother-child relationship develops and the demands of parenting become more challenging (Beckwith, 1990). It would be interesting to consider the developmental progress of children born to high-risk fathers during their school-age years to examine if

there is a protective quality of maternal parenting behaviours. There may also be limits as to what can be interpreted by the findings from Study 2 due to the relatively small sample size of high-risk fathers. In Study 2, only 21 out of the 60 participants came from risk groups. With a larger sample size, it is possible that more variability would be found among spouses to high-risk fathers with regard to the quality of parenting they provide for their children. Further studies are required with a larger sample size to verify the validity of the findings of the current study.

Another possible explanation as to why the expected relationship between fathers' childhood risk status and levels of emotional availability was not found, is that the focus of the present investigation was on the mother-child relationship and not on the father-child relationship. One of the limitations of the present research was that naturalistic observations of fathers interacting with their children were not obtained. It is not, therefore, possible from the present study to make any assumptions regarding the quality of emotional availability and parental involvement that children of high-risk fathers are experiencing with their fathers. The importance of fathers in children's development is well established (Cabrera et al., 2000; Deklyen et al., 1988; Lamb, 1997; Serbin & Stack, 1998). While the present study is a first step in examining factors influencing developmental outcomes for children born to high-risk fathers, clearly future research should include father-child interactions to consider whether continuities for aggression and social withdrawal exist through this relationship. In a prospective study of aggressive young men, Capaldi and Clark (1998) found evidence for the continuity of a conflictual interpersonal style in their romantic relationships across two generations. Moreover, poor parenting skills observed in aggressive men were found to predict boys'

antisocial behaviours in the next generation. It is possible, therefore, that while the mother-child relationship appears relatively healthy within the current investigation that the children are still at-risk because of their fathers' parenting behaviours.

A related issue concerns the representativeness of the sample of high-risk fathers. The fathers in Study 2 were a relatively small group of fathers with histories of childhood aggression and social withdrawal. Comparative analyses found no differences on the dimension of aggression between the fathers included in this study and other men which form part of the CLRP. On the dimension of social withdrawal, however, there was a significant difference. Fathers in Study 2 were generally less socially withdrawn than other men who were identified as socially withdrawn in childhood and have been included in other studies within the CLRP. This fact may impact the extent to which these fathers can be considered "high-risk", thus, influencing their spousal selection and the quality of the family environment provided to their children. It would have been valuable to obtain a measure of fathers' current emotional and psychological functioning to evaluate whether a continuity of risk through aggression and social withdrawal exists for the fathers under investigation.

Another unexpected finding was the fact that mother's contextual stresses were not predictive of levels of emotional availability. In Study 1 mothers' current risk status proved to be an important predictor in both maternal sensitivity and hostility. These findings are consistent with an accumulating body of literature which highlights the importance of proximal contextual variables in child development (Deklyen et al., 1998; Felner et al., 1995; Rutter, 2000). There are several explanations as to why the expected relationship between contextual variables and parenting behaviours were not found in

Study 2. First, sample size may have been a factor. Within the CLRP, locating the men in the sample has been a much more difficult task than for the women. Therefore, the number of high-risk fathers available for study was extremely limited compared to the high-risk mothers. Although the ratio of variables to sample size was sufficient for the analyses undertaken, there may not have been sufficient power to reveal minimal meaningful differences (Tabachnick & Fidell, 1996). Another possibility is that there was not enough variability in levels of emotional availability to observe the expected relationship. In support of this hypothesis, the standard deviations for both maternal sensitivity and hostility were larger in the case of high-risk mothers. In general, the spouses of high-risk fathers scored higher on maternal parenting behaviours than the high-risk mothers. There was also very little negative parenting behaviours observed from the mothers in Study 2 during their play interactions with their children. Taken together, these factors may have resulted in mothers' contextual stresses having a reduced influence on the quality of interactions.

Fathers' childhood aggression and social withdrawal, mothers' current stress levels as predictors of child outcomes

In considering the intergenerational transfer of risk for the children of the high-risk fathers, the results suggested that fathers' childhood aggression and social withdrawal were not influential in predicting child cognitive functioning in either the younger or older age cohorts. It is premature to conclude at this stage that there is no relationship between fathers' childhood histories and children's cognitive functioning. Given the small sample size and the fact that the fathers studied may not be fully representative of other men with childhood histories of aggressive and withdrawn behaviours, replication

would be required to further consider whether intergenerational continuities exist through the fathers' childhood histories. Another possibility is that fathers' direct parenting behaviours may be a better predictor of child cognitive functioning. Many researchers argue that the more proximal variables such as parenting behaviours are stronger predictors of child functioning than distal variables such as parental childhood characteristics (Felner et al., 1997; Rutter, 1999). In the case of fathers, there is evidence to suggest that father's parenting behaviours affect child IQ levels. For example, some studies that have included direct observations of fathers, found that fathers who are more nurturing (e.g., offer praise and help) had children who scored higher on tests of intelligence (Capaldi & Clark, 1998; Patterson & Dishion, 1998). On the other hand, authoritarian behaviours are associated with lower intellectual functioning (Phares, 1996). As discussed later, fathers' parenting behaviour was not the focus of the present study. Further research with a larger sample size and inclusion of other paternal parenting variables is required to fully consider the transfer of risk to children born to high-risk fathers through their social environments.

In considering developmental outcomes for children born to high-risk fathers, the results suggested a continuity of risk from father to child was indicated in the case of child internalizing problems but not with child externalizing problems. In particular, fathers who in childhood were identified as aggressive and socially withdrawn were more likely to have children who demonstrated internalizing behaviours. Given the small number of fathers included in the present study with both childhood aggressive and socially withdrawn behaviours, and the fact that this result only approached significance, caution should be taken in interpreting the relationship between fathers' childhood risk

and their children's internalizing scores. Nevertheless, it is particularly salient that this result is in line with previous findings from the CLRP that indicate more problematic outcomes for individuals with aggression and withdrawal than with aggression or social withdrawal alone (Bentley, 1997; Moskowitz & Schwartzman, 1989; Schwartzman et al., 1990; Serbin et al., 1991). In this study of high-risk fathers, the only influence of childhood aggression and social withdrawal on child outcomes was in the case of men who in childhood demonstrated both of these behaviours. Peters (1999) examined the continuity of aggressive and withdrawn behaviour in adulthood among men and women from the CLRP project and found evidence for the stability of both behaviours. Participants from the aggressive and socially withdrawn groups rated themselves higher on those measures in adulthood. The participants who were identified in childhood as demonstrating both aggressive and socially withdrawn behaviours also reported more symptoms of psychological distress, largely of an internalizing nature. It is particularly salient, therefore, that these internalizing problems now appear to manifest themselves in the next generation.

Historically, few studies have investigated the role of father's characteristics in early child development. However, there is a growing awareness that with the expansion of the paternal role both in the home and in child rearing there is a need to better understand the impact fathers have on childrens' social and emotional well being (Cabrera et al., 2000; Capaldi & Clark, 1998; Fagot et al., 1998; Lamb, 1997; Parkes & Tinsley, 1981). The majority of studies that include fathers have generally researched older children, school-age or above (Capaldi & Clark, 1998; DeKlyen et al., 1998; Phares, 1996). In addition, most of the studies undertaken include fathers who have been clinically referred. In a

recent review of the literature, Phares (1996) concluded that there appeared to be a strong link between fathers' psychopathology, such as antisocial behaviour or substance abuse, and their children's behaviour problems. While the participants for the present study came from a community based population, the results confirm the significance of including the father's characteristics in determining young children's developmental outcomes. In this study, there was some evidence that there may be a direct link between fathers' childhood behaviours and their children's behaviours suggesting continuity of maladaptive behaviours from one generation to another. In this case, the continuity of risk from parent to offspring is now seen through the father's characteristics.

What is not clear from the present study, are the mechanisms by which fathers' characteristics confer risk to their children. Many researchers have argued that the role of proximal predictors such as parenting or discipline may be more direct (Belsky et al., 1984; Patterson et al., 1992; Rutter, 2000). Within the current study, maternal parenting was not found to be influential in child outcomes, however, there still remains the question of father's parenting behaviours. It would be interesting to consider whether fathers, who in childhood were identified as aggressive and socially withdrawn, are able to be emotionally expressive and responsive with their children. As previously mentioned, Peters (1999) found that the men and women with childhood aggressive and withdrawn behaviours reported increased psychological distress and internalizing symptoms. If these kinds of emotional problems are typical of adults with childhood internalizing and externalizing difficulties, their ability to be emotionally available with their children could be severely impaired.

Other parenting roles that are of particular interest when discussing fathers, are discipline strategies and paternal involvement. Fathers' discipline style has been found to be important in predicting child developmental outcomes (DeKlyen et al., 1998; Robinson & Barrett, 1986). While mothers still tend to spend more time with their children than men, there is strong support for the assertion that the quality of paternal involvement greatly impacts children's well being (Phares, 1996). Lack of paternal involvement has been found to predict behaviour problems in children (Baker & Heller, 1996). Cabrera et al. (2000), have also highlighted the need to differentiate between different aspects of fathers' involvement. It is possible that fathers' presence and level of responsibility may be as important as their emotional availability. Future research is required to tease apart the dimensions of fathers' parenting behaviours and how they impact children's development. Within the present study, an indication of the quality and quantity of the father-child relationship might shed light as to whether paternal involvement mediates the association between father's childhood characteristics and child developmental outcomes.

Consistent with models of child development, mothers' stress levels were found to play an important role in explaining children's behavioural outcomes (Felner et al., 1995). In the case of child internalizing tendencies, mothers' stress levels contributed over and above their spouses' childhood characteristics. This is an important finding given that few studies include fathers' characteristics in their analyses. These results indicate that the consideration of both mother and father variables helps to further delineate important processes involved in child development providing more information than maternal variables alone. In the case of children's externalizing difficulties, contextual stresses

emerged as the sole contributer in explaining this outcome. A surprising finding was the lack of significant effects of mothers' contextual stresses on children's intelligence scores regardless of age. These results should be interpreted with caution, however, given the relatively small sample size available for analysis once the participants were divided into two age cohorts. Further investigation into the role of maternal stresses in child IQ should be undertaken with a larger sample size before firm conclusions are drawn.

Once again, the findings from the present study underscore the importance of contextual factors in predicting children's behavioural outcomes. In studies 1 and 2, contextual stress was defined by lack of social support, parenting stress, financial stability and depressive symptoms, stressors that are typically faced by families living in at-risk environments (Cichetti et al., 1998; Masten & Coatsworth, 1998; McCloyd, 1998). Given that many children's behaviour problems increase and continue with age, it is important to identify early conditions that may exacerbate developmental problems (Denham et al., 2000). It has been two decades since Bronfenbrenner (1977) adopted an ecological approach to child development emphasizing the influences of multiple dimensions that are likely to interact in important ways to contribute to child developmental outcomes. The findings from Study 2 support the validity of this approach and highlight the need for interventions that serve to ameliorate the environments within which children grow. While many researchers argue that the relationship between family stresses and child outcomes is mediated by parenting behaviours, findings from the current study appear to indicate a direct relationship.

Notwithstanding the importance of family stresses in children's development, it is also possible that other parenting behaviours, not accounted for in the present study, mediate

the relationship between contextual stresses and child behaviour problems. The quality of the mother-child relationship in the present study was observed in a 15 minute free play interaction. While, in many studies this relatively small window into the quality of mother-child interactions has been found to be useful in predicting child development, observing mothers and their children in other contexts and at different time points would provide a more complete picture of the quality and style of parenting that these children are exposed to.

Chapter 3

General Discussion

In the last two decades, there have been important shifts in the way researchers have conceptualized and studied the processes that either encourage or limit healthy child development (Masten & Coatsworth, 1998; Rutter, 1999; Lewis, 2000). Recent models of developmental psychopathology consider that a comprehensive understanding of a child's social environment within which the experience of early interpersonal relationships takes place is crucial to disentangle the multiple influences that lead to the development of adaptive or maladaptive behaviours (Sameroff, 2000; Sroufe, Duggal, Weinfield & Carlson, 2000). Bowlby (1969) was one of the first to highlight the importance of the mother-child relationship. He considered that within these early social interactions children develop a belief of what they can expect from significant others in their lives, and these expectations are carried forward into their adult relationships. Current theorists take these ideas a step further in considering that "relationship disturbances may be the precursors of individual psychopathology, through their role in establishing fundamental patterns of emotional regulation" (Sroufe et al., 2000, page 83). The need for self-regulation starts in infancy but continues throughout the childhood years requiring sensitive and flexible parenting on the part of caregivers to respond to the emerging skills of their toddlers and preschoolers (Sroufe et al., 2000).

Despite the centrality of social relationships in child development, there is still much we need to know about the conditions under which parent-child relationships are at-risk and also the processes by which parenting affects child outcomes (Hart, Olsen, Robinson, & Mandelco, 1997; Rutter, 1999). Elder et al., in proposing an intergenerational transfer

of risk consider that childhood problem behaviours established in one generation may ultimately affect the behaviour of the next generation through their parenting practices. Within the current phase of the CLRP, a major research goal has been in the identification of environmental influences, such as parenting and environmental stresses that could perpetuate risks for the next generation. Given the long term risks associated with aggression and socially withdrawn behaviours, there is reason to believe that parents with these childhood risks may be challenged in their parenting roles (Cairns et al., 1998; Rutter, 1998; Serbin & Stack, 1998). In addition, risk factors rarely occur in isolation (McCloyd, 1998; Sameroff & Seifer, 1992). Other environmental stresses, (e.g., such as poverty or depressive symptomatology), can place further burdens on parents, ultimately affecting the quality of their caregiving, and children's wellbeing. There are tremendous costs associated with the continuation of antisocial behaviour patterns which affect both the individual and society (Denham, 2000). As Campbell, Pierce, March, Ewing and Szumowski (1994) have stated "Understanding the early manifestations as well as factors influencing the onset and developmental course of behaviour problems in young children is among the major challenges in the growing field of developmental psychopathology" (p. 836).

The present studies set within a large intergenerational project allowed for a multi-level analysis of factors that could disrupt the quality of the mother-child relationship, thus placing the next generation at-risk. A model of intergenerational transfer of risk was proposed which highlighted possible pathways for the continuity and discontinuity of risk through the mother-child relationship (Figure 1, page 28) The first pathway for the transmission of risk suggests that childhood aggression and social withdrawal may affect

the quality of emotional communication between mothers and children, ultimately placing their children at-risk. A second alternative pathway was proposed and suggested that the mother-child relationship may be compromised as a result of the multiple stresses that mothers experience. Two studies were designed to consider how both parental and contextual factors influence the quality of the mother-child relationship and developmental outcomes, thus providing the opportunity to examine specific risks to the next generation through the parents' childhood characteristics, while differentiating from those perpetuated through the social experiences provided for the offspring (Hardy, Astone, Brooks-Gunn, Shapiro & Miller, 1998; Rutter, 1998; Serbin & Stack, 1998). The first study focused on the high-risk mothers in the sample. The second study focused on the high-risk fathers and their spouses providing an opportunity to consider both paternal and maternal variables and their relationship to child outcomes. Few investigations of intergenerational continuity have included both parents in their research, despite the awareness that partner selection and assortive mating can have a tremendous impact on child development (Capaldi & Clark, 1998; Phares, 1996; Rutter, 1998).

The two sets of studies are important in adding to our knowledge of environmental influences which may impede the development of nurturing parent-child relationships associated with child competence. By including a naturalistic observation that captured the quality of multiple aspects of mothers' behaviours, the present studies sought to fill a gap in the literature by examining more closely specific mechanisms by which mothers' abilities to be emotionally available influence important developmental outcomes in their children. The results of Study 1 suggest that different mechanisms may be affecting various aspects of mothers' behaviours. For example, in the case of maternal hostility,

the results suggest a direct continuity for aggressive and socially withdrawn behaviour as a function of maternal childhood risk status. In the present study, maternal sensitivity, appeared to be influenced only by the mothers' current risk environment. These findings appear to support the notion that patterns for hostile behaviour which are established early in childhood are difficult to erase forming the basis for negative social behaviours in adulthood (Caspi et al., 1987). Mothers' ability to be sensitive to their children, however, may be more influenced by the multiple stresses that arise when living in impoverished environments. Interventions that seek to ameliorate stressful living conditions for at-risk families may also be successful in increasing the quality of maternal sensitivity. Mothers' hostile behaviours may require a different kind of intervention which targets specifically mothers' socioemotional functioning. While, further investigations are required to support these hypotheses the findings underscore the benefit of examining different aspects of maternal behaviours and factors that influence them.

Another important aspect of the present studies was the inclusion of an observation of the child's behaviour which provided an objective measure of child functioning from another informant other than a parent. Finally, a unique feature of these set of studies was the inclusion of paternal variables. In Study 2, the influence of paternal childhood risk on the next generation of children was investigated adding to the slowly accumulating knowledge concerning the impact of fathers on children's development. In so doing, the present research also provided the possibility of comparing the quality of the mother-child relationship provided by high-risk mothers to spouses of high-risk fathers.

At the outset of the research, specific hypotheses were developed in predicting the continuity of risk through childhood aggression and social withdrawal to the offspring. However, consideration was also given to the perspective of developmental psychopathology which views outcomes as a range of developmental paths (Cicchetti & Sroufe, 2000; Sroufe & Rutter, 1984; Rutter & Stroufe, 2000; Sameroff, 2000). The results of the present studies reflect the conclusions drawn from other intergenerational research that while continuities of behaviour from one generation to another exist, explanations for discontinuities are also required (Cairns, Cairns, Xie, Leung & Hearne, 1998; Rutter, 1998; Serbin & Stack, 1998). In Study 1, the intergenerational transfer of risk between parental childhood risk factors and outcome variables depended on the outcome variable under investigation and the age of the child studied. For example, it was predicted that the quality of the mother-child relationship might be compromised by mothers' childhood risk status. This finding was only observed, however, in mothers who showed the comorbid pattern of aggressive and withdrawn behaviours in childhood indicating that the transmission of risk may be more salient for this risk group. In other cases, the effects of childhood aggression and social withdrawal exerted their influence indirectly through the contextual stresses encountered by the mothers. The inclusion of both individual and contextual variables in a longitudinal design allowed for a more fine-tuned analysis of mechanisms of risk.

While many important relationships between mothers' aggression and social withdrawal, mothers' parenting and child outcome were found in the case of the mothers, the findings were weaker, and in most cases non-existent in the case of the high-risk fathers. In Study 2, only one link between fathers' childhood risk status and child

outcomes was found, (i.e., fathers who in childhood demonstrated both aggressive and socially withdrawn behaviours had children with higher levels of internalizing symptoms). In addition, in Study 2, none of the predictors, (i.e., fathers' childhood characteristics and maternal current stresses), was influential in explaining child cognitive outcomes. The difference in findings between the two studies is particularly significant since the rates of referral for children were similar for children born to high-risk mothers compared to fathers. These results could suggest that different mechanisms may be at play for children born to high-risk fathers compared to mothers and that the intergenerational continuities from high-risk fathers to offspring is weaker than for the mothers. Alternatively, there may be other mechanisms by which fathers affect child outcomes not included in Study 2, (i.e. paternal discipline or involvement which may have greater predictive validity). It is also possible that some intergenerational continuities may not emerge until the next generation of children are at the same age as their parents were when they were assessed for aggression and social withdrawal (Cairns et al., 1998). Given some of the limitations of Study 2 which have already been mentioned, such as relatively small sample size and absence of father-child play interactions, it is premature to draw too many conclusions at this point until further research on the influence of fathers is undertaken. The findings, however, peak the curiosity and confirm that in including only mothers in research, an important component of a child's social environment is being ignored.

The importance of considering both distal and proximal influences when evaluating the transmission of risk from one generation to another was also highlighted by the present findings (Rutter, 1998). It has been argued by some researchers (Felner et al.,

1995; Loeber & Dishion, 1983; McCloyd, 1998; Patterson et al., 1992; Shaw et al., 1996) that the effect of distal environmental factors such as poverty or stress no longer relate significantly to child outcomes once proximal processes such as the parent-child relationship are controlled. The results from the present studies suggest that both parenting and contextual factors influence child development. For example, in the case of the high-risk mothers, mothers' sensitivity and responsiveness played an important role in younger children's IQ scores. In the case of older children, the mother-child relationship did not appear to influence child cognitive functioning, however the distal variables of mothers' childhood characteristics and current stresses were more significantly related. What is not known, however, is whether there are other parenting behaviours or practices not investigated within the present research that mediate the relationship between maternal stresses and child outcomes.

In interpreting the findings there is also the need to take into account individual variability in response to stress and adversity (Rutter & Sroufe, 2000). The present research investigated possible mechanisms of risk through the mother-child relationship and other important contextual variables known to be associated with child health. There remains, however, the question of resiliency. It is well known that some children develop into competent human beings despite living in difficult circumstances (Werner & Smith, 1992; Rutter, 1999). Mechanisms by which children are protected are important to consider in high-risk research. Many of the mothers in the present studies appeared to reflect sensitive and responsive caregiving in their interactions with their children. Other mothers showed some forms of hostility with their children. Given the protective quality of the mother-child relationship, it would be interesting to continue to follow the mothers

and children to consider whether there are significantly different trajectories for children exposed to hostility compared to those that received more sensitive parenting.

The results of the present set of studies underscore the importance of multi-level analysis in risk research. Leading researchers in the field of developmental psychopathology emphasize the need for more complex models of development based on general systems theory which reflect the dynamic processes involving both individual and contextual variables (Cicchetti et al., 1998; Rutter & Sroufe, 2000, Sameroff, 2000). In further delineating pathways to risk or success, it is necessary to continue to consider both the direct and interactive effects of parental, social and child characteristics in child development. Large intergenerational studies with measures taken at multiple time points will facilitate this endeavor.

Limitations of the Present Studies

Several important methodological issues concerning sample size and measurement need to be considered when evaluating the results of the present set of studies. The first, which has already been mentioned briefly, concerns the relatively small sample size used in Study 2. It is very likely that the sample size limited the statistical power of the analyses conducted which could explain why many of the hypothesized effects did not reach statistical significance. Since this is one of the first studies of high-risk fathers conducted within the CRLP it is not possible to compare the results of previous studies. Therefore, caution should be taken in drawing conclusions about the findings until replication with a larger sample size can be undertaken.

In the case of Study 1, sample size was certainly large enough to support the number of predictors selected and analyses run (Tabachnick & Fidell, 1989). By conducting

hierarchical regressions it was possible to consider the relative influences of both parental childhood characteristics and contextual factors on the mother-child relationship and child outcomes. An alternate method of examining the potential relationships between one or more predictors, and one or more dependent measures is with use of Structural Equation Modeling (Tabachnick & Fidell, 1996). This type of analysis allows for the simultaneous estimation of variables, rather than sequential analyses, thereby controlling for latent effects between direct and indirect paths (Baron & Kenny, 1986). However, very large sample sizes are required.

A related concern is the fact that several of the dependent measures under investigation (e.g. emotional availability ratings, maternal stress ratings and child cognitive and behavioural functioning) were measured concurrently. In order to infer causality it would be necessary for these measures to be taken at different time points. Therefore, inference regarding the direction of the observed effects cannot be drawn conclusively until such a time further research is undertaken which considers the relationship among these variables within a longitudinal design. It is also possible that the role of parenting, for example, would emerge as a more powerful predictor of child outcomes when evaluated in a longitudinal design. Ideally, multiple time points of assessment of child outcomes and parenting behaviours would provide the most comprehensive and valid results.

Another concern involves the manner in which child behavioural functioning was evaluated. Internalizing and Externalizing problems in the children were obtained by the CBCL. While many studies include this measure to evaluate child outcomes, the risks associated with using the same informant for predictors and child outcomes is well

documented (Rothbart & Bates, 1998; Seifer, 2000). Since the present studies were concerned with continuities in aggression and social withdrawn behaviours from parents to offspring it is important to include behavioural indices of the children which reflect these behaviours. A more objective measure would be through direct observation that focused solely on the children's behaviour either in the home or school setting at a later time point. One possibility of obtaining a measure of children's aggressive and withdrawn behaviours, for example, would be through the use of teacher ratings. Ladd and Profilet (1996) developed The Child Behaviour Scale to identify children with aggressive and/or withdrawn behaviour patterns. This instrument taps different aspects of children's classroom behaviours specifically focused on aggressive and anti-social behaviours that may be displayed in relationship with peers and provides information concerning children's behaviours in another setting other than the home. In the next phase of the CRLP, there is the opportunity to gather information concerning these children's behaviours in school settings. This would provide a more objective measure of child's behaviour from another informant other than the mother, while also incorporating a longitudinal design increasing the validity of the current findings. Such information would also provide vital information concerning the sequalae of aggressive and withdrawn behaviours in childhood to determine to what extent they are likely to be also observed in the next generation of children.

Directions for Future Research

A main focus of the present investigation was in the examination of the quality of parenting provided by mothers with histories of childhood aggression and withdrawal. The quality of emotional availability provided by the mothers through their sensitivity,

scaffolding and hostility was studied since these aspects of parenting are thought to be vital in laying down a healthy mother-child relationship during which many important processes take place (Biringen & Robinson, 1991). In addition, by selecting a measure that captures the emotional tone of parenting, it was possible to gain some insight into the quality of emotional communication and the level of negative emotion, (e.g., hostility), that children within this high-risk sample were experiencing. However, caution should be taken in considering that we know all there is to know about parenting within these high- risk samples. The assessment of emotional availability was taken from one play observation. While displays of high negative affect and low positive affect in families have been found to be risk factors for positive emotional development in children (Denham et al., 2000), it is not possible to capture the range of emotions children experience in their family from one social interaction. Future research which examines parenting behaviours would benefit from obtaining multiple observations of parental expression of emotions across different contexts and, in the presence of other family members. Such an endeavor would provide a more complete picture of the quality of emotional communication present in the family. Another consideration concerns the wide range of ages of the children in this study, (i.e., 12 - 72 months). As these children develop it is possible other aspects of the parent-child relationship, such as parental involvement or discipline strategies may provide greater predictive validity to cognitive and behavioural outcomes. This may be especially true in the case of fathers since their parenting role may exert a different influence than that of mothers (Cabrera et al., 2000). Therefore there is a need to continue to research many aspects of parenting before we

arrive at firm conclusions regarding the mechanisms by which parenting affects competence in children.

An important direction for future research within the CLRP would be to investigate the impact of marital functioning both on the quality of parenting and child outcomes. Since the present studies formed part of a larger research project, it was possible to gather important information concerning many aspects of the social environments within which these at-risk parents and their children live. As a result, it was possible to consider the impact of multiple stressors such as socioeconomic status, depressive symptoms, social support and parenting stress on mother's parenting and child outcomes which have been found to predict children's maladjustment (Ladd & Burgess, 1999; Rutter, 1992; Sameroff & Seifer, 1983). However, one important aspect of the social context within which children develop is the quality of the marital relationship (Shaw, Winslow & Flanagan, 1999). There is some evidence to suggest that parental conflict is the most salient influence on children's adjustment (Amato & Keith, 1991; Cabrera et al., 2000; Deklyn et al., 1998). Children's exposure to parental conflict has been found to predict conflict in their relationship with their parents in adolescence and with their own marriage partners in adulthood (Buchanan & Hudson, 2000). Marital conflict has also been found to covary with other parental stressors such as depressive symptoms and social support (Pianta et al., 1992). There is evidence to suggest that mothers who experience a harmonious relationship with their husbands are better able to meet the challenges of parenting. Within the present research, mothers' current stresses held powerful predictive validity in Study 1. However, in Study 2 this risk factor did not appear as influential in affecting mothers' parenting or child outcomes. An area of further

inquiry would be to consider whether marital satisfaction might explain some of the differences obtained between the two studies and may prove to be important in the prediction of parental and child functioning in the case of high-risk fathers.

Another important consideration for future research concerns the impact of child characteristics in development. There has been increased awareness in recent years of the importance of including child temperament in models of developmental psychopathology (Seifer, 2000; Rutter, 1998; Serbin & Stack, 1998). Of particular interest is the goodness of fit between the child and parental characteristics that can affect relationship processes. While historically child temperament has been presumed to have strong biological roots, the dynamic interplay between child temperament and his/her environment is now underscored (Seifer, 2000). Preliminary analyses of the effects of temperament and psychopathology have found a relationship between child temperament and externalizing behaviours in children (Caspi, Henry, McGee, Moffitt, & Silva, 1995). However researchers such as Seifer (2000) and Rutter (1999), caution against accepting the presumption of linear effects between child temperament and developmental outcomes. Moreover, an awareness and examination of how child characteristics impact the child's social environment and early relationships is required to contribute to our understanding of individual variation in development, and pathways that lead to risk or success (Serbin & Stack, 1998).

Finally, a vital direction for future research should be in the development of intervention programs aimed at breaking the intergenerational cycle of risk. Three decades of research within the CLRP have provided a unique opportunity to consider the lives of children identified with aggression and social withdrawal and the consequences

for themselves and their families. The potential negative effects of childhood aggression and social withdrawal are quite apparent. As identified within the CLRP there are negative consequences of childhood aggression and social withdrawal. These consequences play themselves out in many ways both on a personal level in terms of poor academic achievement, delinquency, impaired social relationships, health issues, early sexual activity and parenthood (Serbin et al., 1998) but as can be seen within the present research these childhood behaviours can also affect their abilities to parent and provide nurturing family environments for their children. The evidence points to the high risks associated with childhood aggression and social withdrawal and demands that programs be developed which target the reduction of these maladaptive behaviours in children. In so doing it would be important to better understand why these behaviours develop in the first place. Children who grow up in abusive homes have been found to show deficits in emotional competencies and often demonstrate aggressive and withdrawn behaviours (Cole & Putman, 1992; Erickson, Egeland & Pianta, 1989). The importance of emotional competence and self-regulation in childhood is now widely discussed (Saarni, 1997). For children to develop into contented, prosocial successful human beings they need to have a healthy emotional foundation.

Some researchers call for intervention programs that are integrative in their approach and target concrete services such as enhanced social support, financial assistance and also components that target child and family functioning (McLoyd, 1998; Masten and Coatsworth, 1998). Certainly these kind of programs are essential for children and families already living in disadvantaged conditions and who are at high-risk. However, there is a need for interventions that start earlier in an attempt to prevent the negative

sequalae of early childhood problems before they begin. There is evidence, for example, that educationally oriented preschool interventions that target specific early childhood behaviours and emotional issues may be most effective (Masten & Coatsworth, 1998; Ramey, Ramey, Gaines & Blair, 1995). Typically, these type of programs aim at reducing problematic behaviours and also include core services to parents that could help alleviate some of the other risk factors associated with these outcomes (McCloyd, 1998). An example of this kind of progam is the Second Step: A Violence Prevention Curriculum (Zins , Travis & Freppon, 1997) which is curriculum based and designed to reduce aggressive behaviour and build social competence. This program is targeted to youths aged 9 - 11 and is widely adopted. Unfortunately, no formal evaluation has been conducted on the program and empirical validity is required to consider the success of this type of intervention. Within the CLRP an important future step would be to consider a prevention program designed specifically to target aggressive and withdrawn behaviour. Programs such as these can be used to test whether early interventions can change the trajectories of children with behaviour problems.

Concluding Remarks

The present set of studies provide evidence for the continuity of risk across generations for parents with histories of childhood aggression and social withdrawal. Evidence of transfer of risk through the mother-child relationship was observed especially with mothers with a history of childhood aggression and social withdrawal. It is particularly alarming, that over 25 years later, the negative impact of childhood maladaptive behaviour patterns can emerge in the form of hostility in interactions with their children. However, these findings confirm what some researchers have suspected

that it is the combination of aggressive and socially withdrawn behaviours in childhood that poses significant long-term consequences (Ladd & Burgess, 1999). It appears that the negative sequalae of these two behaviours continues into the next generation. It is particularly important to continue to study the developmental outcomes of children born to parents with aggression and social withdrawal in order to evaluate whether they are at-risk in areas not studied within the present investigation, e.g. emotional regulation and social interaction patterns.

Also highlighted by the present research is the importance of the quality of the home environments provided by these parents. The indirect effects of childhood aggression and social withdrawal are also felt through the financially disadvantaged and stressful environments many of these families find themselves in. These stressful environments, in turn, negatively impact children's cognitive and behavioural functioning. While some researchers have argued that parenting may represent the most important mechanism of risk from mother to offspring, the results from the present research confirm that both parenting and environment influences are key aspects in child development and can confer risk through different mechanisms. The challenge for the future is to continue to consider the interrelationships among different risk factors to further delineate how they impact child development. In the next phase of the CLRP, the children born to parents with histories of aggression and social withdrawal are of school age, a time when interactions with others such as peers and teachers become important. The social competencies of these children will be especially challenged at this time. Consideration of how key parenting practices and family environments contribute to their success in academic and social domains will further elucidate how interventions can best be

developed to support these children at critical points of development. In the meantime, intervention programs should be designed specifically to assist children who demonstrate aggressive and/or withdrawn behaviours. Research from the CLRP and other longitudinal investigations highlight the problematic outcomes associated with such childhood emotional problems. Targeting childhood aggression and social withdrawal at its source may disrupt the potential negative trajectories that could unfold for these children.

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Appendix A

English Translation of the Pupil Evaluation Inventory

Aggression Items

3. Those who can't sit still.
4. Those who try to get other people in trouble.
7. Those who act stuck-up and think they are better than everyone else.
8. Those who play the clown and get others to laugh.
9. Those who start a fight over nothing.
12. Those who tell other children what to do.
15. Those who always mess around and get into trouble.
16. Those who make fun of people.
18. Those who do strange things.
20. Those who bother people when they're trying to work.
21. Those who get mad when they don't get their way.
22. Those who don't pay attention to the teacher.
23. Those who are rude to the teacher.
26. Those who act like a baby.
27. Those who are mean and cruel to other children.
29. Those who give dirty looks.
30. Those who want to show off in front of the class.
31. Those who say they can beat everyone up.
33. Those who exaggerate and make up stories.
34. Those who complain nothing seems to make them happy.

Withdrawal Items

5. Those who are too shy to make friends easily.

6. Those whose feelings are too easily hurt.

10. Those who never seem to be having a good time.

11. Those who are upset when called on to answer questions in class.

13. Those who are usually chosen last to join in group activities.

17. Those who have very few friends.

24. Those who are unhappy or sad.

28. Those who often don't want to play.

32. Those who aren't noticed much.

Appendix B

Screening Method of the Concordia Longitudinal Risk Project

The children in the original Concordia Longitudinal Risk Project were screened for aggression and social withdrawal using a french translation of the Pupil Evaluation Inventory (PEI). The PEI is a peer nomination instrument (Pekarik, Prinz, Lievert, Weintraub & Neale, 1976) which has been used in several other research projects. The PEI contains 35 items which load on three different factors. Examples of the items include a) aggression items such as "those who are mean and cruel to other children"; b) withdrawal items such as "those who are too shy to make friends"; and c) likeability items such as "those who help others". In the identification of behaviour problems in children, peer nominations have been found to be more reliable than teacher or parent evaluations (Lyons et al, 1991). Peer nominated groups have found to represent children at risk for a variety of psychosocial problems (Milich, Landau & Whitten, 1984).

The PEI was administered to 4,109 children in 152 classrooms. Children were asked to select four boys and four girls who were best described by each item of the peer inventory. The total number of nominations for the aggression and withdrawal dimensions was calculated. A square root transformation was then performed on the total nominated scores for the two dimensions in order to reduce skew. The transformed aggression and withdrawal scores were then converted to Z scores for each sex and within each class. This procedure allows that each child be scored according to relevant norms for his or her own sex and age. Approximately equal samples of girls and boys was obtained.

Children were assigned to the aggressive group (N = 198) if they obtained z-scores on

scores on the aggression factor equal to or exceeding the 95th percentile cutoff (Z = 1.65), and z-scores on the withdrawal factor equal to or below the 75th percentile (Z = 0.68). Similarly, children were assigned to the withdrawn group (N = 220) if they had z-scores equal to or above the 95th percentile on the withdrawal factor, and z-scores below the 75th percentile on the aggression factor. Children were assigned to the aggressive-withdrawn group (N = 239) if they obtained z-scores equal to or above the 75th percentile on both the aggression and withdrawal dimensions. Since the probability of a score above the 75th percentile on both dimensions is very low, a lower criteria were used to select this group. Those children who obtained z-scores between the 25th and 75th percentiles on both the aggression and withdrawal dimensions were assigned to a normative control group (N = 1,117).

Appendix C

Informed Consent Form

"L'INDIVIDU DANS SON MILIEU: Les parents et leurs enfants"

Directeurs du projet: - Lisa A. Serbin, Ph.D.
- Dale M. Stack, Ph.D.
- Alex E. Schwartzman, Ph.D.

FORMULAIRE DE CONSENTEMENT

Je,_____, m'engage volontairement avec mon enfant, _____, à participer à l'étude "L'individu dans son milieu: Les parents et leur enfant" de l'Université Concordia. Les buts du projet m'ont été expliqués. L'étude comprend une série de questionnaires, une évaluation du fonctionnement intellectuel de mon enfant, ainsi que trois périodes de jeux lors desquelles nous serons observés et filmés. L'étude comporte deux sessions d'une durée maximale de 3 heures chacune et une rémunération totale de $50.00 me sera allouée aussitôt que les questionnaires seront remis. En signe de courtoisie, les résultats sommaires de l'évaluation de mon enfant me seront communiqués par téléphone. De plus, les chercheurs seront prêts à effectuer une ou deux visites additionnelles, au besoin, pour terminer l'évaluation, discuter de résultats problématiques, ou m'offrir un service de référence.

Je comprends que toutes les informations que nous fournissons, qu'elles soient écrites ou filmées, sont strictement confidentielles et qu'elles ne serviront qu'à des fins de recherche. Dans toutes les circonstances, je suis assuré(e) que l'anonymat sera conservé. Cependant, selon la loi sur la protection de la jeunesse, toute information indiquant de l'abus physique ou sexuel devra être divulguée à l'Office de la Protection de la Jeunesse.

Je comprends aussi que je suis libre de cesser notre participation à n'importe quel moment. Comme le projet "L'individu dans son milieu" est à long terme, je comprends que je pourrais être appelé(e) dans l'avenir pour participer à d'autres étapes de ce projet. Je me réserve le droit de décider, à ce moment, de donner suite ou non à la demande de participation.

Signature:_____

Nom:_____ Date:_____

Assistant(e) de recherche:_____

Appendix D

Detailed Instructions to Mothers

Maintenant, on aimerait vous voir jouer ensemble. Comme tu sais, on va enregistrer ça sur vidéo. Donc, pour être sure que vous restiez tous(tes) les deux bien en vue pendant qu`on filme, c`est très important que vous restiez assis(es) tous(tes) les deux sur le tapis qu'on a mis par terre. Moi, je vais quitter la pièce et je vais revenir vérifier la caméra une ou deux fois pour être bien sûr qu`elle fonctionne bien. Alors, la première chose qu'on aimerait que tu fasses est simplement de jouer aver (ENFANT) comme vous faites d'habitude pendant environ 15 minutes et essayez d'être le plus naturels possible. Vous pouvez prendre les jouets qu'on a mis sur le tapis si vous voulez, mais vous n'êtes pas obligés. Puis, quand tu entendras l'alarme sonner, tu pourras arrêter de jouer. As tu des questions? C'est tres important aussi que tu attendes mon signal avant de commencer a jouer, OK?

Appendix E

Demographic Questionnaire (DIQ)

Mai 1996 N° d'identification _____

L'INDIVIDU DANS SON MILIEU

Renseignements sociodémographiques additionnels

Tous ces renseignements sont traités de façon totalement confidentielle

1. **Informations sur la famille de la mère de l'enfant:**

a. Nombre de frères : _____; de soeurs : _____; rang dans la famille _____

Frères ou soeurs décédé(e)s? NON _____ OUI _____ --> préciser : _____

b. Mère : Âge _____. Si décédée, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

c. Père : Âge _____. Si décédé, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

d. Les parents se sont séparés/divorcés en _____:

2. **Informations sur la famille du père de l'enfant**:

a. Nombre de frères : _____; de soeurs : _____; rang dans la famille _____

Frères ou soeurs décédé(e)s? NON _____ OUI _____ --> préciser : _____

b. Mère : Âge _____. Si décédée, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

c. Père : Âge _____. Si décédé, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

d. Les parents se sont séparés/divorcés en _____:

3. **Informations sur la famille du conjoint**: si n'est pas le père

a. Nombre de frères : _____; de soeurs : _____; rang dans la famille _____

Frères ou soeurs décédé(e)s? NON _____ OUI _____ --> préciser : _____

b. Mère : Âge _____. Si décédée, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

c. Père : Âge _____. Si décédé, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

d. Les parents se sont séparés/divorcés en _____:

4. **Historique personnel: mère de l'enfant.**

A été élevée principalement par :

____ père et ma mère
____ père
____ oncle / tante
____ mère
____ grands-parents
____ foyer d'accueil

Âge : _____ premier mariage - première fois conjointe de fait
Âge : _____ premier enfant
Âge : _____ séparation - divorce

5. **Historique personnel: père de l'enfant.**

A été élevé principalement par :

____ père et ma mère
____ père
____ oncle / tante
____ mère
____ grands-parents
____ foyer d'accueil

Âge : _____ premier mariage - première fois conjoint de fait
Âge : _____ premier enfant
Âge : _____ séparation - divorce

6. **Historique personnel: conjoint** (si n'est pas le père)

A été élevé principalement par :

____ père et ma mère
____ père
____ oncle / tante
____ mère
____ grands-parents
____ foyer d'accueil

Âge : _____ premier mariage - première fois conjoint de fait
Âge : _____ premier enfant
Âge : _____ séparation - divorce

4. **Père de l'enfant.** Si la mère vit seule ou si le conjoint n'est pas le père de l'enfant ...

a) Nom : _____ Date de naissance: _____ _____ _____
AN MO JR

b) Niveau de scolarité _____ ; en quoi _____

c) Occupation : _____

Son salaire : _____ $/ heure Nombre d'heures : _____ / semaine

AN MO
Travaille là depuis : date _____ _____

d) Cause de séparation/divorce : _____

e) Verse-t-il une pension alimentaire? NON _____ OUI _____ --> _____ $ / mois
Devrait mais ne le fait pas _____

f) Fréquence et durée des visites : _____

Appendix F

Emotional Availability Scales

Biringen, Robinson, & Emde, (1988)

MANUAL FOR SCORING THE

EMOTIONAL AVAILABILITY SCALES

INFANCY TO EARLY CHILDHOOD VERSION

Zeynep Biringen, JoAnn L. Robinson

Robert N. Emde
University of Colorado

These scales were first developed in 1988, and 8/93 represents the last revision. This version can be used for infants and young children. A separate version has been created for the school-age child. We would welcome your comments, criticisms, or additions. Please let us know if you are planning to use these scales; do not cite without permission. We thank the following people for help and advice in the construction of the scales: Jennifer Ablow, Mariette Losasso, and Donna McNulty in the early phase of the process, and later Scott Brown, Alice Carter, Julie Evans, Lynn Kaersvaan, Christina Little, Linda Mantz-Simmons, David Oppenheim, Louise Silvern, Sandra Pipp, and Gil Reyes. Additionally, because this work is unfunded at the present time, we may ask you to contribute to the cost of xeroxing and correspondence. Address correspondence to: Zeynep Biringen, Ph.D. 2486 Powderhorn Lane, Boulder, CO 80303.

Background

Ainsworth (Ainsworth, Blehar, Waters, & Wall, 1978) developed the original sensitivity scale for home observations and inspired our work in this area. In reviewing her scale, we felt that it assumed much more information about the quality of the mother-child relationship than would be possible during the shorter observations that most investigators use today. More behavioral descriptions are needed even for observations that are one hour, a length of time that is considered long for many developmental research endeavors today. Our scale is similar to the Ainsworth sensitivity scale in that it is highly global and emphasizes behavioral style rather than discrete behaviors. For example, if the researcher wanted to count the instances of responsiveness across episodes, he or she would obtain a markedly different view of maternal sensitivity than what we or Ainsworth would get from our instruments. Although maternal accuracy in reading infant signals and appropriate responsiveness to such signals and communications characterized the earlier view of sensitivity, our view is much more inclusive and not based predominantly on the mother's ability to be responsive. In contrast to Ainsworth, we have focused on children well beyond the first year, and therefore, view other facets of maternal sensitivity as important as the nature and quality of maternal responsiveness. In line with the spirit of having a more inclusive approach to rating sensitivity, we take into account qualities such as maternal acceptance and accessibility, scales that were separate in the Ainsworth rating system. Components of sensitivity are described below.

Components of the construct

A characteristic that is very important to the judgment of sensitivity, at all ages, is affect. A sensitive mother is predominantly affectively positive, both in terms of facial and vocalic expressiveness, rather than bored, discontent, or vocally harsh and disruptive. The appropriateness of the mother's affect is also taken into account in this rating. In a play context, appropriate affect refers to positive and spontaneous affect. A mother showing positive affect (that is highly appropriate) does not laugh or smile every time that the child does something positive, but she is generally positive. In fact, it may be inappropriate to be positive to all positive things that the child engages in. Such behavior could seem like a performance on stage, and would not be authentic and spontaneous. The child also enjoys interactions with his or her mother. In other words, a mother cannot "look" good without the child. Thus, positive shared meaning permeates these mother-child interactions. Another characteristic of genuine and authentic affect is congruence of verbal and nonverbal channels of emotion expression. A sensitive mother shows congruence, while an insensitive mother, by showing incongruence, may be displaying pseudo-sensitivity. Affect--its genuine, authentic, and congruent qualities--is particularly important in the judgment of sensitivity.

Clarity of perceptions and appropriate maternal responsiveness are also important. If a child begins to show boredom during mother-child play, it is important for the mother to recognize such signals and adjust her own behavior accordingly. Some mothers, however, tend to be unaware of subtle

fluctuations in their children's style, and some are even unaware of blatant communications. Thus, clarity in perception and the ability and willingness to respond appropriately to such signals and communications is a vitally important aspect of sensitivity. If her perceptions are grossly distorted, the mother may not be able to soothe effectively when her child is in distress and may even label her child's as well as her own expressions and emotional states inaccurately, mimick sarcastically, and behavior in other markedly mismatched ways toward the child.

Awareness of timing during mother-child interactions is another key component of sensitivity. During the course of a day or any unit of of interaction that is being rated, there can be mother-child play, jointly involved household activities, diaper changing, etc. The progression of these activities, that is, how they unfold during observation is even more important than the content of the activities. A mother who is sensitive to timing and rhythmicity in the life of a child would be careful about introducing abrupt transitions between activities, putting down the baby before he or she was soothed, initiating play or other type of interaction "out of the blue", and interacting at constant high intensity to the point of overstimulation. Thus, awareness of natural timing rather than doing things on cue is an important feature of maternal sensitivity.

Also an important variable is flexibility, both in terms of maternal attention and behavior. The mother whose attention is flexible can do household tasks and still be aware and respond to her baby. The mother whose attention is less flexible "tunes out" when she is absorbed in other tasks or thoughts and then "tunes in" when she is ready. That is, she is not fully perceptually aware/alert and responsive at such times. Flexibility in behavior (in contrast to rigidity) suggests that the mother is willing to attempt/attain a difficult goal (e.g., getting the child to eat vegetables) in a variety of ways rather than through a set agenda. Mother-child play also involves continual flexibility on the part of the mother as she adjusts her play attempts to her child.

Variety and creativity in modes of play between mother and child are particularly revealing of sensitivity. How creative a play partner the mother is, how well she elicits a positive response from her child, and how willing she is to join in her child's activities (in a playful way as opposed to a didactic way) are important. To judge creativity in play, of course, one needs to observe mother-child engagement and play activities. Thus, if mother and child do not play very much, her ability to be creative in play cannot be judged.

Maternal acceptance of the child is also a key feature of sensitivity. An important clue to discerning whether the mother has an accepting or rejecting attitude involves the way in which she addresses the child. More sensitive mothers typically speak to the child as if he or she were a separate, respectable person who has clear needs, wishes, and goals, whereas more insensitive mothers may make disparaging statements, sometimes in the form of jokes or off-hand comments. Some treat the child as if he were a possession, such as a doll, and derive pleasure in making infantalizing or condescending observations about the child's ongoing activities, perhaps to the observer.

Much of the above-mentioned behaviors are, to a large extent, dependent on amount of interaction or accessibility between mother and child. If there is a great deal of interaction, there is opportunity for us to observe negative as well as positive qualities. There may be little interaction for some dyads, however, and this characteristic, in and of itself, is important. Some mothers may ignore their children consciously or unconsciously, whereas, at the other extreme, some mothers may initiate continual interaction that is not particularly welcomed by the child. A moderate level of accessibility on the part of the mother, with breaks that seem comfortable for both partners seem most healthy.

Special mention is needed of how conflict situations are handled in the mother-child relationship. For interactions to be sensitive, mothers need not maintain an exquisite status quo in the relationship. Recent research and thinking suggests that normal mother-infant interactions are sometimes mis-matched; how dyads move from mis-matched to synchronous states is as important as the quality of synchronous states. Thus, adaptive mis-matches and resolution of conflict situations are important during more sensitive mother-child interactions. For example, if a mother suggests an activity, such as cleaning up a room, and the child protests, the more sensitive mother does not feel unusually threatened--she is basically secure in her role. Such an interaction on occasion might involve maternal insistence about her goal or child resistance to her goal. However, such a state of affairs usually moves to a more "well-resolved" phase in which they co-determine goals. In contrast, a similar scenario (which obviously is quite common for mothers and children) can provoke a more insensitive mother to heights of anger and frustration with little consideration of the child's goals. Thus, more sensitive mothers are comfortable with negotiation experiences, whereas insensitive mothers find it more difficult to relinquish control and /or give credence to the goals of others.

A mother can be highly sensitive or highly insensitive, regardless of her particular style of interaction. For example, the highly sensitive mother may be low-keyed, gentle, and soft-spoken. Alternatively, she may be animated and vivacious. Although observers may subjectively resonate with one or another of these distinct styles, or with other possible sensitive styles of mothering, we see no inherent reason for greater or lesser sensitivity based on stylistic differences.

Additionally, clinicians are likely to ponder about the relation between ratings and the therapeutic workability of a particular dyad. We view scores above 5 as not requiring therapeutic interventions; such individuals, however, may choose to enlist the support of mental health professionals during stressful life events or life transitions. They may also be mental health professionals and seek therapy as part of their learning and training process. Less competent dyads can be judged in terms of therapeutic workability, with the 3 to 5 range suggesting better therapeutic potential for change than lower scores.

Finally, we view maternal sensitivity as the appropriate degree of the above-described characteristics. For example, a mother who is too tense, anxious, or wary about doing all the right things does not qualify for the optimal score on this scale.

10. Hyper-sensitive. This refers to a style of interaction that is overly contingent, overly mindful of matching the child's affects and behaviors, overly praising, and may appear anxious. While warmth and kindness may be striking features of this interaction, the anxiety level of the mother does not promote an atmosphere of relaxed and comfortable interaction with the child. There may also be the quality of being overly sensitive concerning the self, e.g., interpreting the child's ignoring response or autonomous activity as a threat to the interaction. The more optimally sensitive mother tends to be more comfortable concerning such issues.

9. Highly sensitive. Emotional communication between mother and infant is for the most part positive, appropriate, and creative. The highly sensitive mother displays much genuine, authentic, and congruent interest, pleasure, and amusement with the infant (as opposed to performing these behaviors), as demonstrated by warm smiles and giggles, interested eye contact, and comforting and playful physical contact. Her facial expressions and tone of voice are pleasant and there are no sudden or marked shifts in emotional tone. In fact, both the mother and child show clear enjoyment and delight with each other. She reads the child's signals accurately, even subtle ones that may not be clear to an outsider, and reacts appropriately. She has a well-developed sense of timing and rhythmicity during interactions with transitions between activities appearing smooth rather than abrupt and enforced by her. Her behavior appears flexible and adaptable, according to the demands of particular situations. When they are physically separated, they are likely to maintain emotional connectedness at a distance, at the very least by mother occasionally calling the child's name or looking in on him or her. Thus, verbal and visual communication between mother and child are ongoing but not constant or overwhelming. Statements to and regarding her child are affirmative and accepting, rather than sarcastic, critical or highly prohibitive. The amount of interaction is fairly high. Play interactions are creative and joyful for both mother and child. She further responds with short latency to distress signals, attempting to soothe and to explore reasons for such communications. Mother's discipline is context-appropriate without upsetting the relationship, and conflict situations do not lead to long breakdowns in the relationship; they too are handled smoothly and effectively. Overall, the observer sees a very "special" quality in these interactions, and delights in the dancelike quality of this interaction. This is the most optimal rating.

7. Generally sensitive. This mother is very similar to a 9, except that there is a less spectacular quality to these mother-child exchanges. This rating refers to a "good enough" mother. Typically, interactions get rated down to 7 for some of the following reasons: e.g., mother did not interact in a creative manner, although she was affectively connected to the infant and interactions were harmonious and enjoyable; mother's affect and behavioral style were extremely well suited to this infant, creating a generally lively and engaging climate, but at brief moments, she displayed subtle preoccupation with her own thoughts, as if processing another agenda. However, the differences between a 9 and a 7 are small. If two of the qualities described above are not as optimal as is the case for a 9 (e.g., affect and the negotiation of conflict) or one quality is appreciably lower than most 7's (e.g., an overall blandness of mood, though clearly not depressed affect) then mother should be rated a 6).

5. Inconsistently sensitive. The mother is sensitive in some ways, but the observer finds it difficult to give this relationship a clean bill of health. Maternal variability in behavior may be one tell-tale sign. For example, she may fluctuate from being creative and joyful during play times to being hostile during prohibition situations. This characteristic is particularly significant, given that mothers usually want to look their best for a videotaped session. Thus, some mothers may "leak" inconsistencies of behavior; it may simply be too stressful for some to maintain well-modulated positivity for long. Such variability may be observed on different days or at different times in the same session. Her style of responsiveness may be another tell-tale sign. She may be responsive, but it might be more eventual rather than immediate. Further, her statements to and regarding her child may range from loving, tender, and accepting to sarcastic and rejecting. Such unpredictability in maternal behavior also might make her difficult in dealing with some conflict or negotiation situations. When watching a tape, a rating of 5 is typically given when the observer notes some signs of sensitivity (e.g., positive statements, smiling, and interest) but also notes some clear problems in these areas (e.g., positive statements said in a slightly bored tone, smiling that does not seem authentic and genuine, or interest that is occasional or feigned). In sum, she shows some signs of sensitivity, but is not clearly so.

3. Somewhat insensitive. Insensitivity is typically displayed in one of two general ways, one being an active/harsh style (overly active and overbearing) and the other being a passive/ depressed/ affectively flat (noninteractive and silent) style. Both styles suggest unresponsiveness to infant communications and lack many of the features of sensitive interactions described earlier. The active/harsh/volatile style involves facial expressions of disgust and anger and harsh/ abrasive/ condescending tones of voice. The passive/depressed/affectively flat style involves facial expressions that are depressed, disinterested, and a vocal tempo that is slow, lethargic or simply unenthusiastic. Also often seen is a business-like, matter-of-fact style that combines features of both abrasiveness and passivity. The observer may note situations where there are sudden shifts in mood without gestural or verbal indicators. In other words, the subtle gestural system is not well-used, resulting in affect regulation that is not well-modulated. Such shifts are likely to be more extreme or upsetting to the child or for the observer to watch than is the case for a 5. Visual, physical, and emotional contact may be at least semi-avoidant, cool, and unresponsive. Overall, these inflexible styles of interaction suggest that mother cannot take into account the child's changing signals to maintain interest and attention and to modulate distress, boredom, and disinterest. Despite the fact that this mother lacks many crucial features of a sensitive behavioral style, she is nonetheless a competent parent in some ways. For example, a very bland affect may be balanced by a desire to engage in playful interactions. Although such interactions may lack a clear fun-like, synchronous quality, they indicate that this mother has some notions about what is important for child-rearing. The observer feels somewhat uncomfortable or sad when watching this interaction, but still sees some positive experiences provided by such a mother. Thus, the therapeutic workability of such a mother is higher than that of a 1. (It is important to note that in this system, we do not address the "enmeshed" versus "disengaged" aspects of interaction. Both styles of interaction are nonoptimal, and we cannot state that one is more dysfunctional than the other). If the mother has

only a couple of clearly non-optimal qualities, such as bland affect and an unenthusiastic tone of voice, she should receive a slightly higher rating, e.g., 3.5, 4.0, or 4.5, as scores up to 4.5 are still considered insensitive.

1. Highly insensitive. This mother displays few areas of strength in interaction with her child. This rating, as well as a 2, are uncommonly used ratings in normal or unselected samples and denote extreme insensitivity to the child's communications and little apparent knowledge of crucial child-rearing techniques. In at-risk populations, however, such lower ratings may be more commonly used. The highly insensitive mother is low on almost all qualities discussed in the introduction. Affective negativity (in the form of either active harshness or passive disinterest/depression) is more extreme as are many of the other qualities. Basically, a 1 is a more extreme version of the sort of insensitivity described for a 3. For example, child signals for attention or reaction may need to be very blatant; only traumatic signals may elicit maternal attention. In contrast to a 3 who may provide some semblance of positive engagement, when this mother is responsive, her child may be unable to derive much comfort, security, or enjoyment; some may even reject the mother by turning away or crying even harder than before. The mother and child are like "ships in the night": They do not take each other into account when initiating, prolonging, or turning away from interactions. In fact, there may be little interaction for some of these dyads. A highly insensitive mother might appear to forget that her child is around for extended periods of time when the child is not obviously demanding her attention, perhaps compromising the child's safety. In addition, as compared to a 3, the mother rated a 1 may have the willful intention to hurt or be more emotionally and/or physically abusive, while the mother rated 3 may show more "empathic failures" as described by Kohut and errors of omission. In sum, this mother seems to have an even more inflexible and dysfunctional style. This relationship is very painful for an observer to observe. If the observer has an impression of at least minimal positive experience for this child, mother should receive a higher rating, 1.5 or 2, or 2.5.

Reminder: This scale is slightly different from other scales in that a categorical and dimensional approach are combined. One first makes a decision about the mother's sensitivity or insensitivity (i.e., < 5 or > 5) and then judges the degree of sensitivity or insensitivity afterward. If this categorical decision cannot be made, then a rating of 5 is assigned.

Maternal structuring/intrusiveness

It is in this scale, and not in the maternal sensitivity scale, that we assess the degree to which the mother appropriately structures the child's play, taking care to follow the child's lead, and sets limits for appropriate child behavior and/or misbehavior. In game-playing situations these qualities may be observed in mother's establishing rules and requesting/demanding compliance with rules or her investment in winning games. The highest point on the scale refers to the style of an overprotective mother who not only controls and sets limits, but is smothering in this role. The next highest point (a 6) refers to a mother who too frequently suggests, directs, teaches, and scaffolds at the expense of child autonomy and lead. Yet, this interaction still is quite appropriate and almost optimal; the mother seems to assume the role of the didactic elementary school teacher. The next highest point on the scale refers to a mother who provides a supportive frame (that is, provides emotional scaffolding) in the context of allowing the child maximal autonomy in leading the interaction and play. This is the optimal rating. Ratings below a 5 refer to lesser degrees of structuring/intrusiveness. A 1 refers to a passive mother who does not provide sufficient structuring for the child. As observers, we might not have the opportunity to observe limit-setting in play contexts. But, for investigators using prohibition situations or naturalistic contexts, this aspect of mother-child interaction is likely to be an aspect of structuring/intrusiveness.

7. Overly high. This mother, rather than enabling the child to play, leaves no space for the child to "return the serve"; it is highly over-stimulating. She simply controls and does too much for and to the child (perhaps including physical handling). Also, her bids tend not to be successful in structuring the interaction. This overprotective quality of the mother (and enmeshed quality of the dyad) involves too much structuring, in the form of doing (rather than asking questions, making suggestions) for the child what s/he at an age-appropriate level should be doing for himself/herself. Given this overcontrolling and overprotective stance, mother might enter the child's play without being "invited", thus creating a sense of intrusiveness or interruption of ongoing play. This overprotective quality might be seen as infantalizing rather than merely directive, and involves the mother's inability to tolerate autonomy in the child.

6. High. Mother too frequently sets the pace of this interaction, asking questions, directing the course of play, and making suggestions, in an over-stimulating manner. The mother uses her own initiative, changing themes frequently, rather than elaborating on the child's interests. Thus, the general atmosphere is one of too frequent leading rather than following. Her bids are not always successful in structuring interaction. Part of such a style might involve interruptions of child play, i.e, the quality of entering play without being welcome. While an adequate degree of physical manipulation of objects and breaking down of relevant steps is seen here, the interaction does not have enough of a spacious quality. Limit-setting for child behavior is also too frequent and rigid, rather than co-determined. The mother has the quality of a didactic school teacher, with an agenda about child performance in this context.

5. Optimal. Mother shows an appropriate degree of structuring/ intrusiveness. While she is an active member of the interaction and play, providing adequate information, breaking down the steps to complete the exercise, and physically helping in the manipulation of pieces, she does not overpower this interaction at all. Her bids are successful in structuring interaction. She clearly lets the child lead, as she provides a supportive frame. In games, she may ensure that the child wins or may diminish the importance of her winning. Mother also is not intrusive, entering the child's play smoothly and in a way that invites further exchange. This style offers the child a great deal of space to explore and lead, yet provides a frame on which he can further build. The interaction has a spacious quality. In terms of behaviors such as limit-setting and discipline, she shows firmness without harshness. That is, her discipline is context-appropriate without upsetting the relationship. During prohibition situations, for example, she might use diversions and indirect statements before moving onto direct prohibitions. Her general style concerning prohibitions involves mood-setting, gentle reminders, and preventative measures such as child-proofing of an area, rather than harsh limitations of the child's exploratory activities.

3. Inconsistent. This mother shows the qualities of a 5 or even 6 for a part of the session, but then backs off. The backing off may leave the child without support and sufficient scaffolding. Or, the session may progress such that the mother may seem insufficiently invested in the task at certain but not at other points. The mother who sets appropriate limits on child behavior but "caves in" under child pressure or acting up would be inconsistent in this respect. Thus, the overall quality of this exchange is one of inconsistent support, availability, attentiveness, and scaffolding. Or, there may be inconsistency in her ability to structure, her ability to set appropriate limits for the child, or her ability to enter the child's play in a smooth and non-interruptive manner. For example, her bids or attempts to scaffold may be unvarying and repetitive and/or unsuccessful even though they may be frequent.

1. None. Mother appears passive, perhaps indulgent. This mother sets no limits on child behavior and does not provide an adequate scaffold. She may engage in parallel play, manipulating pieces and seemingly involved in her own play alongside the child's play. Or, the child may be the member of the dyad structuring the interaction. There may be a the quality that mother and child are like peers. Further, limit-setting is likely to be absent, even when sorely called for.

Maternal overt and covert hostility

This scale assesses the degree of hostility, ranging from overt to covert forms. The most highly intrusive mother is overtly, facially, and vocally hostile toward the child; the nature of the interaction is threatening and/or frightening. As we move down on the scale, there are more covert or intermittent forms of hostility. The lowest point refers to no hostile behavior toward the child; this form could involve appropriate interaction as well as highly passive/depressed forms of behavior.

5. Markedly and overtly hostile. Mother is overtly harsh, abrasive, and demeaning--facially and/or vocally. She may even show signs of physical punishment or physical harshness toward the child, such as pounding on the table,. Her behavior is threatening and/or frightening. In addition, covert forms of hostility might be observed, such as cold stares.

4. Intermittently but overtly hostile. The mother is not consistently harsh and abrasive. Abrupt or intermittent hostile behavior might be observed, however. Such interactions typically take the form of uninvolvement with the child for a good portion of the session, followed by a startling statement or act. Such hostile statements or acts are particularly concerning, given that there may be low maternal accessibility/availability for interaction. Abrasive teasing or name-calling may be observed. In addition, covert forms of hostility might be observed, such as cold stares.

3. Markedly but covertly hostile. This mother shows very covert forms of impatience, resentment, and anger with the child. Cold stares or sarcasm toward the child predominate as expressions of discontent and hostility. Teasing may be seen and may have a slight edge to it. No overt forms of hostility are observed.

2. Slightly hostile. This mother shows a diffuse level of discontent, discomfort, or boredom that may not be directed toward the child. Some impatience with the child may be observed, as in a long-suffering attitude, in the form of "huffing and puffing" or rolling her eyes. Mother may tease the child, where there is negative content but much humor or warmth accompanying it. The above-described forms of covert and overt hostility are not seen.

1. Not hostile. There are no expressions of overt or covert hostility toward the child, as can be discerned by the observer.

Child responsiveness to mother

The child's responsiveness to mother is reflected in two aspects of the child's behavior: (1) Eagerness or willingness to engage with mother following her suggestion or bid for exchange; and (2) Display of clear signs of pleasure in interaction. Thus, the coder waits for a maternal bid for interaction and then observes the child's response--its existence and its affective quality. If the child ignores the bid by playing autonomously or looking away, the child was not being responsive. If the child responds to the mother by looking up, talking to her but in a bland, unenthusiastic tone, he or she is only somewhat responsive. If the child responds to the mother by looking up, talking to her in an enthusiastic, engaged tone, then the child is being highly responsive. Affectively negative responses (e.g, whining, complaining, insulting, crying, etc.) to maternal bids are not considered responsive. That is, a negative cycle of connectedness between mother and child is not considered responsive in this system, and connotes a dysfunctional form of maintaining contact. Child behaviors such as smiling, laughing, or narration are considered responsive only if there is evidence that they are in some measure directed toward the mother. Such behaviors could potentially be directed only toward the inanimate world and are not necessarily responsive. This scale is the closest of the two child's scales to being the counterpart of the maternal sensitivity scale.

9. Overly responsive. The child is highly responsive to mother's bids and suggestions, seeming always ready to engage with her. In addition, the child enjoys these interactions. However, there is a sense of diminished autonomy on the child's part since the child is always responsive to mother. This pattern may be seen more often when mother has reversed roles with the child, and the child may take on the caretaker role, even at an early age.

7. Highly responsive. This child responds often to mother's bids, but without any sense of urgency or necessity. He or she generally shows pleasure and eagerness in attending to mother's comments, suggestions, questions, and demonstrations. Despite a general affective availability to the mother's bids for attention or interaction, this child may occasionally ignore her bid, e.g., when engrossed in play or when s/he would like to follow her own course. Thus, expressions of age-appropriate autonomous strivings or individuation should not be considered as expressions of unresponsiveness or rejection of the mother. This is the most optimal rating.

5. Moderately responsive This child shows pleasure or eagerness in response to mother less frequently than a 7. Although there are moments of clear enjoyment and responsiveness when the observer feels like "that was a good episode", this child seems either to need more encouragement to engage with mother or appears less affectively engaged than a 7. A child who shows slightly less responsiveness than the "ideal" depicted above should be given a 6 or 6.5.

3. Somewhat unresponsive. This child shows significantly less pleasure and engagement with mother than a 5. In fact, a rating hovering around 3 should be given whenever there are serious concerns about the child's responsiveness toward the mother. Blandness or negativity are characteristic

of this child, although there may be a rare "lighting up" to a maternal bid. The child who is off on his or her own and must be called into play repeatedly by mother (i.e., requires significant coaxing) would receive this score. However, a child would also receive this score if mother makes few demands on the child to interact and the child is on his or her own during much of this episode. Dyads which use negative affect (e.g., child whining, complaining, tantruming to any type of maternal initiation) for maintaining connection and responsiveness with one another would be coded no higher than a 3.

1.Unresponsive. This child never shows pleasure when engaged with mother and rarely responds to a maternal initiative. This child's reluctance to engage with mother involves clear avoidance behaviors, even obliviousness, including insistent visual, postural, and verbal unresponsiveness Maternal questions, suggestions, and requests may appear not to be processed by this child. This child may respond with strong protests that appear inappropriate, the nature and extent of which are greater than for a 3. However, a child would also receive this score if mother makes few demands on the child to interact and the child is on his own during much of this episode, the nature and extent of which are greater than for a 3.

Appendix G

Child Behavior Checklist - Parent Report Form (CBCL - PRF)

Achenbach, (1991)

CBCL-4/18 (Achenbach, 1993) No d'identification: _____

Date (A/M/J): _____

Rempli par: Mère Père

Voici une liste d'items décrivant les enfants. En vous basant sur le comportement de votre enfant au cours des 6 derniers mois, veuillez encercler:

2 --> si l'item est très vrai ou souvent vrai pour votre enfant
1 --> si l'item est quelquefois vrai pour votre enfant
0 --> si l'item n'est pas vrai pour votre enfant

Assurez-vous à tous les items, au meilleur de votre connaissance, même si certains ne semblent pas s'appliquer à votre enfant.

1. Agit trop jeune pour son âge 0 1 2
2. Allergie 0 1 2
   (décrire)_____
   _____
3. Argumente beaucoup 0 1 2
4. Asthme 0 1 2
5. Se comporte comme l'autre sexe .. 0 1 2
6. Fait caca en dehors des toilettes ... 0 1 2
7. Se vante 0 1 2
8. Ne peut se concentrer ou porter attention longtemps 0 1 2
9. Ne peut s'arrêter de penser à certaines choses, obsessions 0 1 2
   (décrire)_____
   _____
10. Ne peut s'asseoir tranquille, est agité(e) ou hyperactif(ve) 0 1 2
11. S'accroche aux adultes, ou est trop dépendant(e) 0 1 2
12. Se plaint de solitude 0 1 2
13. Est confus(e) ou semble être dans la brume 0 1 2
14. Pleure beaucoup 0 1 2
15. Est cruel(le) envers les animaux ... 0 1 2
16. Est cruel(le), brutal(e) ou mesquin(e) envers les autres 0 1 2
17. Rêvasse ou se perd dans ses pensées. 0 1 2
18. Se fait volontairement mal ou tentative de suicide 0 1 2
19. Demande beaucoup d'attention 0 1 2
20. Détruit ses propres objets 0 1 2
21. Détruit les objets appartenant à sa famille ou aux autres enfants 0 1 2
22. Est désobéissant(e) à la maison 0 1 2
23. Est désobéissant(e) à l'école 0 1 2
24. Ne mange pas bien 0 1 2
25. Ne s'entend pas avec les autres enfants 0 1 2
26. Ne semble pas se sentir coupable après une mauvaise action 0 1 2
27. Facilement jaloux(se) 0 1 2
28. Mange ou boit des choses qui ne sont pas comestibles 0 1 2
    (décrire)_____
    _____
29. Craint certains animaux, situations ou places autres que l'école 0 1 2
    (décrire)_____
    _____

30. Craint d'aller à l'école 0 1 2

31. Craint de penser ou faire quelque chose de mal 0 1 2

32. Sent qu'il/elle doit être parfait(e) .. 0 1 2

33. Sent ou se plaint que personne ne l'aime 0 1 2

34. Pense que les autres lui en veulent. 0 1 2

35. Se sent inférieur(e) ou bon(ne) à rien 0 1 2

36. Se blesse souvent, a souvent des accidents 0 1 2

37. Se bataille souvent 0 1 2

38. Est fréquemment taquiné(e) 0 1 2

39. Se tient avec des enfants qui attirent le trouble 0 1 2

40. Entend des choses imaginaires 0 1 2
(décrire)_____
_____

41. Est impulsif(ve) ou agit sans réfléchir 0 1 2
(décrire)_____
_____

42. Aime être seul(e) 0 1 2

43. Ment ou triche 0 1 2

44. Se ronge les ongles 0 1 2

45. Nerveux(se), tendu(e) 0 1 2

46. Mouvements nerveux ou tics 0 1 2
(décrire)_____
_____

47. Cauchemars 0 1 2

48. N'est pas aimé(e) des autres enfants 0 1 2

49. Constipé(e) 0 1 2

50. Très craintif(ve) ou anxieux(se) ... 0 1 2

51. A des étourdissements 0 1 2

52. Se sent trop coupable 0 1 2

53. Mange trop 0 1 2

54. Est toujours fatigué(e) 0 1 2

55. Est trop gros(se) 0 1 2

56. Problèmes physiques sans cause médicale apparente 0 1 2

a. fièvre ou douleurs 0 1 2
b. maux de tête 0 1 2
c. nausées, se sent malade 0 1 2
d. problèmes aux yeux 0 1 2
(décrire)_____
_____
e. éruption, rougeurs ou autres problèmes de peau 0 1 2
f. troubles d'estomac, crampes 0 1 2
g. vomissements 0 1 2
h. autres 0 1 2
(décrire)_____
_____

57. Attaque physiquement les gens 0 1 2

58. Se gratte le nez, la peau ou d'autres parties du corps 0 1 2

59. Joue avec ses organes sexuels en public 0 1 2

60. Joue trop avec ses organes sexuels .. 0 1 2

61. Fait mal ses travaux scolaires 0 1 2

62. Est maladroit(e) ou mal coordonné(e) 0 1 2

63. Préfère jouer avec des enfants plus vieux 0 1 2

64. Préfère jouer avec des enfants plus jeunes 0 1 2

65. Refuse de parler 0 1 2

66. Répète souvent certains gestes, compulsions 0 1 2
(décrire)_____
_____

67. Se sauve de la maison 0 1 2

68. Hurle ou crie beaucoup 0 1 2

69. Renfermé(e), garde les choses pour lui/elle 0 1 2

70. Voit des choses imaginaires 0 1 2
(décrire)_____
_____

71. Centré(e) sur lui/elle même ou facilement embarassé(e) 0 1 2

72. Déclenche des feux 0 1 2

73. A des problèmes sexuels 0 1 2
(décrire)_____
_____

74. Fait le "clown" ou se pavane 0 1 2

75. Timide 0 1 2

76. Dort moins que les autres enfants . 0 1 2

77. Dort moins que les autres enfants durant le jour et la nuit 0 1 2
(décrire)_____
_____

78. Joue avec ses excréments 0 1 2

79. Problème de langage 0 1 2
(décrire)_____
_____

80. Regard vague, dans le vide 0 1 2

81. Vole à la maison 0 1 2

82. Vole à l'extérieur de la maison 0 1 2

83. Entrepose des choses dont il/elle n'a pas besoin 0 1 2
(décrire)_____
_____

84. Comportements bizarres 0 1 2
(décrire)_____
_____

85. Idées étranges 0 1 2
(décrire)_____
_____

86. Irritable, entêté(e), maussade 0 1 2

87. Change soudainement d'humeur 0 1 2

88. Boude beaucoup 0 1 2

89. Soupçonneux(se), méfiant(e) 0 1 2

90. Grossier(e) 0 1 2

91. Parle de se tuer 0 1 2

92. Parle ou marche durant son sommeil. 0 1 2
(décrire)_____
_____

93. Parle trop 0 1 2

94. Agace beaucoup 0 1 2

95. Accès de colère, des crises, ou s'emporte facilement 0 1 2

96. Pense trop au sexe 0 1 2

97. Menace les gens 0 1 2

98. Suce son pouce 0 1 2

99. Trop préoccupé(e) par l'ordre et la propreté 0 1 2

100. Trouble lié au sommeil 0 1 2
(décrire)_____
_____

101. Fait l'école buissonnière, vagabonde 0 1 2

102. N'est pas actif(ve), a des mouvements lents, manque d'énergie. 0 1 2

103. Triste, malheureux(se) ou de-pressif(ve) 0 1 2

104. Extrêmement bruyant(e) 0 1 2

105. Boit de l'alcool ou utilise des drogues 0 1 2
(décrire)_____
_____

106. Vandalisme (tendance à détruire) .. 0 1 2

107. Se mouille durant le jour 0 1 2

108. Mouille son lit 0 1 2

109. Pleurniche, gémit 0 1 2

110. Souhaite être de l'autre sexe 0 1 2

111. Se retire, n'aime pas s'impliquer avec les autres 0 1 2

112. S'inquiète 0 1 2

113. S'il vous plaît, écrire les problèmes que votre enfant a et qui ne sont pas cités plus haut.

_____ 0 1 2
_____ 0 1 2
_____ 0 1 2

114. **Avez-vous des inquiétudes au sujet du développement de votre enfant, que ce soit sur le plan de l'école, de son comportement, de ses relations avec sa famille et ses amis, etc.?**

_____

_____

_____

_____

Assurez-vous d'avoir répondu à tous les items. Merci de votre collaboration.

Appendix H

Parenting Stress Index

Abidin, (1986)

Rempli par: Mère Père No d'identification: _____

ISP (version abrégée)
(Abidin, 1986)

Directives:

Pour ce questionnaire, nous vous demandons d'encercler la réponse qui décrit le mieux vos sentiments. Il se peut que le choix de réponse ne décrive par exactement comment vous vous sentez. À ce moment-là, encerclez la réponse qui s'y rapproche le plus. VOTRE PREMIÈRE RÉACTION À CHAQUE QUESTION DEVRAIT ÊTRE VOTRE RÉPONSE.

Veuillez écrire à quel point vous êtes en accord ou en désaccord avec chaque énoncé en encerclant le chiffre qui correspond à la meilleure réponse pour vous selon le choix suivant:

1	=	très d'accord
2	=	parfois d'accord
3	=	modérément d'accord
4	=	parfois en désaccord
5	=	très en désaccord

Exemple: 1 **2** 3 4 5 : J'aime aller au cinéma (Si vous aimer parfois aller au cinéma, vous devriez alors encercler le "2").

1.	J'ai souvent le sentiment que je ne peux pas très bien faire face aux choses.	1	2	3	4	5
2.	Je me trouve à donner une plus grande partie de ma vie à combler les besoins de mon enfant que je m'y attendais.	1	2	3	4	5
3.	Je me sens prisonnier(ère) de mes responsabilités de parent.	1	2	3	4	5
4.	Depuis que j'ai cet enfant, je n'arrive pas à faire des choses nouvelles et différentes.	1	2	3	4	5
5.	Depuis que j'ai cet enfant, je sens que je ne suis presque jamais capable de faire des choses que j'aime.	1	2	3	4	5
6.	Je ne suis pas content(e) du dernier article de vêtement que je me suis acheté.	1	2	3	4	5
7.	Il y a plusieurs choses qui me dérangent au niveau de la vie.	1	2	3	4	5
8.	Avoir un enfant m'a causé plus de problèmes que j'avais prévus au niveau de ma relation avec mon époux/épouse (ami/amie).	1	2	3	4	5
9.	Je me sens seul(e), sans ami(e)s.	1	2	3	4	5
10.	Lorsque je vais à un "party", je ne m'attends généralement pas à avoir du plaisir.	1	2	3	4	5
11.	Je ne suis pas aussi intéressé(e) aux autres personnes que je l'étais avant.	1	2	3	4	5
12.	Je n'aime pas les choses que j'aimais auparavant.	1	2	3	4	5

1	=	très d'accord
2	=	parfois d'accord
3	=	modérément d'accord
4	=	parfois en désaccord
5	=	très en désaccord

13. Mon enfant fait rarement des choses pour moi qui me font sentir bien. 1 2 3 4 5

14. Parfois, je sens que mon enfant ne m'aime pas et qu'il ne veut pas être près de moi. 1 2 3 4 5

15. Mon enfant me sourit beaucoup moins que je m'y attendais. 1 2 3 4 5

16. Lorsque je fais des choses pour mon enfant, j'ai le sentiment que mes efforts ne sont pas beaucoup appréciés. 1 2 3 4 5

17. Lorsqu'il joue, mon enfant ne rit pas. 1 2 3 4 5

18. Mon enfant ne semble pas apprendre aussi vite que la plupart des enfants. 1 2 3 4 5

19. Mon enfant ne semble pas sourire autant que la plupart des enfants. 1 2 3 4 5

20. Mon enfant est incapable d'en faire autant que je m'y attendais. 1 2 3 4 5

21. Il est très difficile pour mon enfant de s'habituer à de nouvelles choses et cela lui prend beaucoup de temps. 1 2 3 4 5

22. Je sens que:
1 = je ne suis pas un bon parent
2 = je suis une personne qui a de la difficulté à être parent
3 = je suis un parent qui se situe dans la moyenne
4 = je suis un meilleur parent que la moyenne
5 = je suis un très bon parent

23. Je m'attendais à avoir plus de sentiments chaleureux envers mon enfant que j'en ai présentement et cela me dérange. 1 2 3 4 5

24. Mon enfant fait parfois des choses qui me dérangent juste pour être méchant(e). 1 2 3 4 5

25. Mon enfant semble pleurer davantage ou être plus facilement irritable que la majorité des enfants. 1 2 3 4 5

26. Mon enfant se réveille généralement de mauvaise humeur. 1 2 3 4 5

27. J'ai le sentiment que mon enfant a beaucoup de sautes d'humeur. 1 2 3 4 5

28. Mon enfant fait certaines choses qui me dérangent beaucoup. 1 2 3 4 5

29. Mon enfant réagit fortement lorsque quelque chose qu'il n'aime pas se produit. 1 2 3 4 5

30. Mon enfant devient facilement perturbé(e) face à la moindre petite chose. 1 2 3 4 5

1	=	très d'accord
2	=	parfois d'accord
3	=	modérément d'accord
4	=	parfois en désaccord
5	=	très en désaccord

31. La routine de sommeil et des repas de mon enfant a été beaucoup plus difficile à établir que je m'y attendais. 1 2 3 4 5

32. Je trouve que faire en sorte que mon enfant fasse quelque chose ou arrête de faire quelque chose est:
    1 = beaucoup plus difficile que je m'y attendais
    2 = un peu plus difficile que je m'y attendais
    3 = à peu près aussi difficile que je m'y attendais
    4 = un peu plus facile que je m'y attendais
    5 = beaucoup plus facile que je m'y attendais

33. Pensez attentivement et comptez le nombre de choses que votre enfant fait qui vous dérangent. Pa exemple: il(elle) perd du temps, refuse d'écouter, est hyperactif(ve), pleure, interrompt, se bat, se plai etc.
    1 = 1-3 2 = 4-5 3 = 6-7 4 = 8-9 5 = 10 et +

34. Mon enfant fait des choses qui m'agacent beaucoup. 1 2 3 4 5

35. Mon enfant s'est avéré(e) être plus un problème que je m'y attendais. 1 2 3 4 5

36. Mon enfant fait plus de demandes que la plupart des autres enfants. 1 2 3 4 5

Appendix I

Parenting Social Support Index (PSSI)

Tellen, (1985)

Mai 1996 No matricule: _____

S.S.S.-II

Les gens ont divers besoins, comme celui de se confier à une autre personne, de recevoir de l'aide physique ou financière, d'avoir des conseils par rapport à diverses choses, ou le besoin de faire des activités avec d'autres, pour n'en nommer que quelques-uns.

1. a) Au cours des 30 derniers jours, à quel point avez-vous eu besoin de parler avec une autre personne de choses personnelles et intimes? Encercler le chiffre qui convient le mieux.

1. Aucun besoin (*Passez à la page suivante*)
2. Légèrement besoin
3. Moyennement besoin
4. Grandement besoin
5. Très grandement besoin

b) Avez-vous eu quelqu'un à qui vous avez pu parler de choses qui étaient personnelles et intimes? (*Encerclez OUI ou NON*)

NON: *passez à la page suivante.*

OUI: *encerclez les numéros correspondant à toutes les personnes qui s'appliquent. Si une personne concorde avec deux catégories: ex. femme et mère de l'enfant, n'encercler qu'une des réponses.*

1. Ma femme/conjointe
2. Mère de l'enfant
3. Ma mère
4. Mon père
5. Ma grand-mère
6. Ma soeur/mon frère
7. La famille de ma femme
8. Famille de la mère de l'enfant
9. Autre membre de la parenté
10. Professeur(e); ses assistant(e)s
11. Infirmière de l'école
12. (Psychothérapeute de l'école)
13. Travailleur(euse) social(e) de l'école
14. Prêtre ou pasteur
15. Membre de ma communauté religieuse
16. Ami(e) ou voisin(e)
17. Médecin de famille
18. Employé(e)s des cliniques
19. Autre (précisez) _____

c) À quel point avez-vous été satisfait des conversations que vous avez eues avec d'autres par rapport à vos sentiments personnels et intimes au cours des 30 derniers jours?

1. Très insatisfait
2. Moyennement insatisfait
3. Légèrement insatisfait
4. Légèrement satisfait
5. Moyennement satisfait
6. Très satisfait

2. a) Il est possible que les gens aient parfois besoin de soutien ou de dépannage financier. Au cours des 30 derniers jours, à quel point avez-vous eu besoin que quelqu'un vous prête ou vous donne de l'argent pour vous aider financièrement?

1. Aucun besoin (*Passez à la page suivante*)
2. Légèrement besoin
3. Moyennement besoin
4. Grandement besoin
5. Très grandement besoin

b) Au cours du mois passé, y a-t-il eu quelqu'un de vos connaissances qui vous a prêté ou donné un montant d'argent, 25 $ par exemple? (*Encerclez OUI ou NON*)

NON: *passez à la page suivante.*

OUI: *encerclez les numéros correspondant à toutes les personnes qui s'appliquent. Si une personne concorde avec deux catégories: ex. femme et mère de l'enfant, n'encercler qu'une des réponses.*

1. Ma femme/conjointe
2. Mère de l'enfant
3. Ma mère
4. Mon père
5. Ma grand-mère
6. Ma soeur/mon frère
7. La famille de ma femme
8. Famille de la mère de l'enfant
9. Autre membre de la parenté
10. Professeur(e); ses assistant(e)s
11. Infirmière de l'école
12. (Psychothérapeute de l'école)
13. Travailleur(euse) social(e) de l'école
14. Prêtre ou pasteur
15. Membre de ma communauté religieuse
16. Ami(e) ou voisin(e)
17. Médecin de famille
18. Employé(e)s des cliniques
19. Autre (précisez) _____

c) Au cours des 30 derniers jours, à quel point avez-vous été satisfait de la facilité à emprunter ou recevoir de l'argent de ces personnes?

1. Très insatisfait
2. Moyennement insatisfait
3. Légèrement insatisfait
4. Légèrement satisfait
5. Moyennement satisfait
6. Très satisfait

3. a) Les gens ont parfois besoin de conseils ou d'information au sujet de diverses choses. Au cours des 30 derniers jours, à quel point avez-vous eu besoin de recourir à d'autres pour des conseils ou de l'information?

1. Aucun besoin (*Passez à la page suivante*)
2. Légèrement besoin
3. Moyennement besoin
4. Grandement besoin
5. Très grandement besoin

b) Au cours du mois passé, y a-t-il eu quelqu'un qui a pu vous donner des conseils ou l'information dont vous aviez besoin? (*Encerclez OUI ou NON*)

NON: *passez à la page suivante.*

OUI: *encerclez les numéros correspondant à toutes les personnes qui s'appliquent. Si une personne concorde avec deux catégories: ex. femme et mère de l'enfant, n'encercler qu'une des réponses.*

1. Ma femme/conjointe
2. Mère de l'enfant
3. Ma mère
4. Mon père
5. Ma grand-mère
6. Ma soeur/mon frère
7. La famille de ma femme
8. Famille de la mère de l'enfant
9. Autre membre de la parenté
10. Professeur(e); ses assistant(e)s
11. Infirmière de l'école
12. (Psychothérapeute de l'école)
13. Travailleur(euse) social(e) de l'école
14. Prêtre ou pasteur
15. Membre de ma communauté religieuse
16. Ami(e) ou voisin(e)
17. Médecin de famille
18. Employé(e)s des cliniques
19. Autre (précisez) _____

c) Au cours des 30 derniers jours, à quel point avez-vous été satisfait de la qualité des conseils que vous avez reçus?

1. Très insatisfait
2. Moyennement insatisfait
3. Légèrement insatisfait
4. Légèrement satisfait
5. Moyennement satisfait
6. Très satisfait

4. a) Les gens ont parfois besoin qu'on leur dise qu'on aime leurs idées ou les choses qu'ils font. Au cours des 30 derniers jours, à quel point avez-vous eu besoin que l'on vous dise que l'on aimait vos idées ou les choses que vous faisiez?

1. Aucun besoin (*Passez à la page suivante*)
2. Légèrement besoin
3. Moyennement besoin
4. Grandement besoin
5. Très grandement besoin

b) Au cours du mois passé, y a-t-il eu quelqu'un qui vous a dit qu'il/elle aimait vos idées ou les choses que vous faisiez? (*Encerclez OUI ou NON*)

NON: *passez à la page suivante.*

OUI: *encerclez les numéros correspondant à toutes les personnes qui s'appliquent. Si une personne concorde avec deux catégories: ex. femme et mère de l'enfant, n'encercler qu'une des réponses.*

1. Ma femme/conjointe
2. Mère de l'enfant
3. Ma mère
4. Mon père
5. Ma grand-mère
6. Ma soeur/mon frère
7. La famille de ma femme
8. Famille de la mère de l'enfant
9. Autre membre de la parenté
10. Professeur(e); ses assistant(e)s
11. Infirmière de l'école
12. (Psychothérapeute de l'école)
13. Travailleur(euse) social(e) de l'école
14. Prêtre ou pasteur
15. Membre de ma communauté religieuse
16. Ami(e) ou voisin(e)
17. Médecin de famille
18. Employé(e)s des cliniques
19. Autre (précisez) _____

c) Au cours des 30 derniers jours, à quel point avez-vous été satisfait les fois ou quelqu'un vous a dit qu'il/elle aimait vos idées ou les choses que vous faisiez?

1. Très insatisfait
2. Moyennement insatisfait
3. Légèrement insatisfait
4. Légèrement satisfait
5. Moyennement satisfait
6. Très satisfait

5. a) Parfois les gens ont besoin de faire appel à quelqu'un qui puisse leur consacrer du temps et les aider à faire quelque chose (par. ex. s'occuper des enfants, les aider à faire divers travaux dans la maison, les conduire quelque part, aller au magasin à leur place, ou d'autres choses comme ça. Au cours des 30 derniers jours, à quel point avez-vous eu besoin qu'on vous aide à faire diverses choses ou qu'on fasse quelque chose pour vous?

1. Aucun besoin (*Passez à la page suivante*)
2. Légèrement besoin
3. Moyennement besoin
4. Grandement besoin
5. Très grandement besoin

b) Au cours du mois passé, y a-t-il eu quelqu'un qui vous a aidé et vous a consacré du temps? (*Encerclez OUI ou NON*)

NON: *passez à la page suivante.*

OUI: *encerclez les numéros correspondant à toutes les personnes qui s'appliquent. Si une personne concorde avec deux catégories: ex. femme et mère de l'enfant, n'encercler qu'une des réponses.*

1. Ma femme/conjointe
2. Mère de l'enfant
3. Ma mère
4. Mon père
5. Ma grand-mère
6. Ma soeur/mon frère
7. La famille de ma femme
8. Famille de la mère de l'enfant
9. Autre membre de la parenté
10. Professeur(e); ses assistant(e)s
11. Infirmière de l'école
12. (Psychothérapeute de l'école)
13. Travailleur(euse) social(e) de l'école
14. Prêtre ou pasteur
15. Membre de ma communauté religieuse
16. Ami(e) ou voisin(e)
17. Médecin de famille
18. Employé(e)s des cliniques
19. Autre (précisez) _____

c) Au cours des 30 derniers jours, à quel point avez-vous été satisfait de l'aide que vous avez reçue?

1. Très insatisfait
2. Moyennement insatisfait
3. Légèrement insatisfait
4. Légèrement satisfait
5. Moyennement satisfait
6. Très satisfait

6. a) Les gens ont parfois besoin de rencontrer des gens pour avoir du plaisir et relaxer. Au cours des 30 derniers jours, à quel point avez-vous eu besoin de rencontrer d'autres personnes pour avoir du plaisir et relaxer?

1. Aucun besoin (*Passez à la page suivante*)
2. Légèrement besoin
3. Moyennement besoin
4. Grandement besoin
5. Très grandement besoin

b) Au cours du mois passé, y a-t-il eu quelqu'un que vous avez pu rencontrer pour avoir du plaisir et relaxer? (*Encerclez OUI ou NON*)

NON: *passez à la page suivante.*

OUI: *encerclez les numéros correspondant à toutes les personnes qui s'appliquent. Si une personne concorde avec deux catégories: ex. femme et mère de l'enfant, n'encercler qu'une des réponses.*

1. Ma femme/conjointe
2. Mère de l'enfant
3. Ma mère
4. Mon père
5. Ma grand-mère
6. Ma soeur/mon frère
7. La famille de ma femme
8. Famille de la mère de l'enfant
9. Autre membre de la parenté
10. Professeur(e); ses assistant(e)s
11. Infirmière de l'école
12. (Psychothérapeute de l'école)
13. Travailleur(euse) social(e) de l'école
14. Prêtre ou pasteur
15. Membre de ma communauté religieuse
16. Ami(e) ou voisin(e)
17. Médecin de famille
18. Employé(e)s des cliniques
19. Autre (précisez) _____

c) Au cours des 30 derniers jours, à quel point avez-vous été satisfait du temps que vous avez passé avec ces personnes?

1. Très insatisfait
2. Moyennement insatisfait
3. Légèrement insatisfait
4. Légèrement satisfait
5. Moyennement satisfait
6. Très satisfait

7. Tout le monde peut avoir des désaccords avec d'autres. Parmi les personnes suivantes, quelles sont celles avec qui vous pourriez avoir des désaccords déplaisants ou encore qui pourraient vous fâcher ou vous contrarier?

Encerclez les numéros correspondant à toutes les personnes qui s'appliquent.
Si une personne concorde avec deux catégories: ex. femme et mère de l'enfant, n'encercler qu'une des réponses.

1. Ma femme/conjointe
2. Mère de l'enfant
3. Ma mère
4. Mon père
5. Ma grand-mère
6. Ma soeur/mon frère
7. La famille de ma femme
8. Famille de la mère de l'enfant
9. Autre membre de la parenté
10. Professeur(e); ses assistant(e)s
11. Infirmière de l'école
12. (Psychothérapeute de l'école)
13. Travailleur(euse) social(e) de l'école
14. Prêtre ou pasteur
15. Membre de ma communauté religieuse
16. Ami(e) ou voisin(e)
17. Médecin de famille
18. Employé(e)s des cliniques
19. Autre (précisez) _____

10. À quelle fréquence participez-vous, en moyenne, à des rencontres sociales (par ex. organismes religieux, comités de parents, comités de quartier, organisme de bénévolat, organisme politique, etc.)? Encerclez la réponse qui s'y rapproche le plus.

1. Une fois par semaine, en moyenne.
2. 2 - 3 trois fois par mois, en moyenne.
3. Une fois par mois, en moyenne.
4. 3 - 4 fois par année, en moyenne.
5. Moins d'une fois par année. en moyenne.

À quoi participez-vous? _____

_____

11. Pouvez-vous nommer d'autres domaines dans lesquels les personnes vous entourant peuvent vous procurer de l'aide; identifiez qui vous fournit cette aide, et indiquez à quel point vous êtes satisfait de l'aide reçue?

a) _____

_____

_____

****

b) _____

_____

_____

****

c) _____

_____

_____

****

d) _____

_____

_____

****

e) _____

_____

_____

Appendix J

SCL-90

Derogatis, L R. (1977)

Rempli par: Mère Père

No d'identification: _____

SCL-90

Voici une liste de problèmes et de plaintes que les gens formulent de temps à autres. Nous te demandons de lire chacune de ces plaintes attentivement et de nous indiquer, par le numéro approprié, la réponse qui décrit le mieux À QUEL POINT CE PROBLÈME T'A DÉRANGÉ OU AFFLIGÉ AU COURS DES SEPT (7) DERNIERS JOURS, AUJOURD'HUI INCLUS.

0	Pas du tout	2	Modérément	Passablement
1	Un peu			Énormément

EXEMPLE: À QUEL POINT AS-TU ÉTÉ DÉRANGÉ(E) PAR ...

des maux de dos 0 1 2 3 4

AU COURS DES 7 DERNIERS JOURS, À QUEL POINT AS-TU ÉTÉ DÉRANGÉ(E) PAR ...

1.	des maux de tête?	0 1 2 3 4
2.	de la nervosité ou du tremblement intérieur?	0 1 2 3 4
3.	des pensées désagréables qui revenaient sans cesse?	0 1 2 3 4
4.	des évanouissements ou des étourdissements?	0 1 2 3 4
5.	la perte de l'intérêt ou du plaisir sexuel?	0 1 2 3 4
6.	le fait d'être porté(e) à critiquer les autres?	0 1 2 3 4
7.	l'idée que quelqu'un d'autre contrôle tes pensées?	0 1 2 3 4
8.	le sentiment que les autres surtout sont à blâmer pour tes problèmes?	0 1 2 3 4
9.	des difficultés à te rappeler quelque chose?	0 1 2 3 4
10.	des inquiétudes à propos de la malpropreté ou de la négligence?	0 1 2 3 4
11.	le fait d'être facilement agacé(e) ou irrité(e)?	0 1 2 3 4
12.	des douleurs au coeur ou à la poitrine?	0 1 2 3 4
13.	la peur des espaces ouverts ou d'être sur la rue?	0 1 2 3 4
14.	la sentiment de manquer d'énergie ou d'être au ralenti?	0 1 2 3 4
15.	des pensées d'en finir avec la vie?	0 1 2 3 4
16.	le fait d'entendre des voix que les autres n'entendent pas?	0 1 2 3 4

0	Pas du tout	2	Modérément	3	Passablement
1	Un peu			4	Énormément

AU COURS DES 7 DERNIERS JOURS, À QUEL POINT AS-TU ÉTÉ DÉRANGÉ(E) PAR

17. des tremblements? 0 1 2 3 4

18. le sentiment que tu ne peux pas te fier à la plupart des gens? 0 1 2 3 4

19. le manque d'appétit? 0 1 2 3 4

20. le fait de pleurer facilement? 0 1 2 3 4

21. le fait d'être gêné(e) ou mal à l'aise avec des personnes du sexe opposé? 0 1 2 3 4

22. le sentiment d'être pris(e) au piège ou immobilisé(e)? 0 1 2 3 4

23. des peurs soudaines sans raison? 0 1 2 3 4

24. des accès de colère que tu ne pouvais pas contrôler? 0 1 2 3 4

25. la peur de sortir seul(e) de la maison? 0 1 2 3 4

26. le fait de te blâmer toi-même pour des choses? 0 1 2 3 4

27. des douleurs dans le bas du dos? 0 1 2 3 4

28. le sentiment de ne plus avancer dans ce que tu fais? 0 1 2 3 4

29. le sentiment d'être seul(e)? 0 1 2 3 4

30. le fait d'avoir le cafard, de te sentir triste? 0 1 2 3 4

31. le fait de trop t'inquiéter à propos de rien? 0 1 2 3 4

32. un manque total d'intérêt dans tout? 0 1 2 3 4

33. des sentiments de crainte, de peur? 0 1 2 3 4

34. le fait que tes sentiments sont trop facilement blessés? 0 1 2 3 4

35. le fait que les autres gens sont au courant de tes pensées intimes? 0 1 2 3 4

36. le sentiment que les autres ne te comprennent pas ou sont antipathiques? 0 1 2 3 4

37. le sentiment que les gens ne sont pas amicaux ou ne t'aiment pas? 0 1 2 3 4

0	Pas du tout	2	Modérément	3	Passablement
1	Un peu			4	Énormément

AU COURS DES 7 DERNIERS JOURS, À QUEL POINT AS-TU ÉTÉ DÉRANGÉ(E) PAR

38. le fait d'avoir à faire les choses très lentement pour t'assurer que tout est correct? 0 1 2 3 4

39. des palpitations ou des battements rapides du coeur? 0 1 2 3 4

40. des nausées ou l'estomac dérangé? 0 1 2 3 4

41. le fait de te sentir inférieur(e) aux autres? 0 1 2 3 4

42.	des muscles endoloris?	0 1 2 3 4
43.	le sentiment que tu es surveillé(e) ou que les autres parlent de toi?	0 1 2 3 4
44.	de la difficulté à t'endormir?	0 1 2 3 4
45.	le fait d'avoir à vérifier et revérifier ce que tu fais?	0 1 2 3 4
46.	de la difficulté à prendre des décisions?	0 1 2 3 4
47.	la peur de voyager par autobus, par métro ou par train?	0 1 2 3 4
48.	de la difficulté à reprendre ton souffle?	0 1 2 3 4
49.	des bouffées de froid ou de chaleur?	0 1 2 3 4
50.	le fait d'avoir à éviter certaines choses, certains endroits ou certaines activités parce que tu as peur?	0 1 2 3 4
51.	le fait de te sentir la tête vide?	0 1 2 3 4
52.	des engourdissements ou des démangeaisons dans différentes parties de ton corps?	0 1 2 3 4
53.	des serrements de gorge, l'impression d'avoir une boule dans la gorge?	0 1 2 3 4
54.	un sentiment de désespoir face à l'avenir?	0 1 2 3 4
55.	de la difficulté à te concentrer?	0 1 2 3 4
56.	le fait de te sentir que certaines parties de ton corps sont faibles?	0 1 2 3 4
57.	le fait de te sentir tendu(e) ou à bout de nerfs?	0 1 2 3 4

0	Pas du tout	2	Modérément	3	Passablement
1	Un peu			4	Énormément

AU COURS DES 7 DERNIERS JOURS, À QUEL POINT AS-TU ÉTÉ DÉRANGÉ(E) PAR

58.	des sentiments de lourdeur dans les bras ou dans les jambes?	0 1 2 3 4
59.	le fait de penser à la mort ou à mourir?	0 1 2 3 4
60.	le fait de trop manger?	0 1 2 3 4
61.	le fait de te sentir mal à l'aise quand les gens te regardent ou parlent de toi?	0 1 2 3 4
62.	le fait d'avoir des pensées qui ne sont pas les tiennes?	0 1 2 3 4
63.	des envies de battre quelqu'un, de le/la blesser ou de lui faire mal?	0 1 2 3 4
64.	le fait de te réveiller aux petites heures du matin?	0 1 2 3 4
65.	le sentiment de devoir répéter toujours les mêmes gestes comme toucher, compter, te laver?	0 1 2 3 4
66.	le fait de passer des nuits blanches ou d'avoir le sommeil troublé?	0 1 2 3 4

67. des envies de briser ou de casser des choses? 0 1 2 3 4

68. l'idée que personne ne veut partager? 0 1 2 3 4

69. le fait de te sentir très intimidé(e) par les autres? 0 1 2 3 4

70. le fait de te sentir mal à l'aise dans les foules, comme au cinéma ou dans les magasins? 0 1 2 3 4

71. le sentiment que tout te demande un effort? 0 1 2 3 4

72. des crises de frayeur ou de panique? 0 1 2 3 4

73. le fait de te sentir mal à l'aise de manger ou de boire en public? 0 1 2 3 4

74. des disputes fréquentes? 0 1 2 3 4

75. un sentiment de nervosité lorsque tu es seul(e)? 0 1 2 3 4

76. le fait que les autres ne te donnent pas le crédit souhaité pour tes accomplissements? 0 1 2 3 4

77. le sentiment d'être seul(e) même lorsque tu es avec d'autres? 0 1 2 3 4

0	Pas du tout	2	Modérément	3	Passablement
1	Un peu			4	Énormément

AU COURS DES 7 DERNIERS JOURS, À QUEL POINT AS-TU ÉTÉ DÉRANGÉ(E) PAR

78. le fait de te sentir si agité(e) que tu ne peux pas rester assis(e) tranquille? 0 1 2 3 4

79. le sentiment de n'être bon(ne) à rien? 0 1 2 3 4

80. le sentiment que quelque chose de mauvais va t'arriver? 0 1 2 3 4

81. le fait de crier, ou de lancer des objets? 0 1 2 3 4

82. la peur que tu vas t'évanouir en public? 0 1 2 3 4

83. le sentiment que les gens prendront avantage de toi si tu les laisses faire? 0 1 2 3 4

84. des pensées à propos du sexe qui te dérangent beaucoup? 0 1 2 3 4

85. l'idée que tu devrais être puni(e) pour tes péchés? 0 1 2 3 4

86. des pensées et des impressions de nature effrayante? 0 1 2 3 4

87. l'idée que quelque chose de sérieux ne va pas avec ton corps? 0 1 2 3 4

88. le fait de ne jamais te sentir proche d'une autre personne? 0 1 2 3 4

89. des sentiments de culpabilité? 0 1 2 3 4

90. l'idée que quelque chose ne va pas avec ton esprit? 0 1 2 3 4

Appendix K

Means, Standard Deviations and Ranges of Mother and Child Measures:

Study 1

Table 1

Means, Standard Deviations and Ranges of Mother and Child Measures: Study 1

	Mean	Standard Deviation	Range
Poverty (weekly income)	734.91	464.29	162.10 - 2940.10
Mother: Parental Stress Index (PSI)	71.32	16.51	40.00 - 120.00
Mother: Social Support Index (PSSI)	1.40	.59	0.00 - 2.24
Mother: SCL Global Index	55.11	9.45	37.00 - 79.00
Child: CBCL Externalizing Scale	53.09	8.59	37.00 - 73.00
Child: CBCL Internalizing Scale	52.20	8.41	34.00 - 72.00
Bayley Mental Developmental Index	89.04	13.91	58.00 - 124.00
Stanford Binet Intelligence Scale	98.93	12.72	73.00 - 132.00

Appendix L

Hierarchical Regressions Predicting Maternal Sensitivity, Maternal Hostility and Child Responsiveness from Paternal Childhood Levels of Aggression and Social Withdrawal

Table 1

Mothers' Childhood Levels of Aggression and/or Social Withdrawal and Maternal Sensitivity (N=109)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.01	.54
Childhood Aggression	-.05	-.05	-.49		
Childhood Withdrawal	-.09	-.09	-.97		
Step 2				.02	2.04
Childhood Aggression	-.01	-.01	-.09		
Childhood Withdrawal	-.07	-.06	-.67		
Mothers' Education	.14	.14	1.42		
Step 3				.02	2.49
Childhood Aggression	-.01	-.01	-.10		
Childhood Withdrawal	-.08	-.08	-.81		
Mothers' Education	.13	.12	1.27		
Child Age	-.15	-.15	-1.58		
	R = .23	R^2_{Adj} = .02		F = 1.42	

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

Appendix M

Means, Standard Deviations and Ranges of Mother and Child Measures:

Study 2

Table 1

Means, Standard Deviations and Ranges of Mother and Child Measures: Study 2

	Mean	Standard Deviation	Range
Poverty (weekly income)	856.35	486.78	62.00 - 2461.20
Mother: Parental Stress Index (PSI)	66.41	15.90	41.00 - 118.00
Mother: Social Support Index (PSSI)	1.31	.65	0.00 - 2.24
Mother: SCL Global Index	53.41	9.49	37.00 - 73.00
Child: CBCL Externalizing Scale	52.09	8.27	30.00 - 68.00
Child: CBCL Internalizing Scale	52.36	8.98	30.00 - 68.00
Bayley Mental Developmental Index	89.13	15.66	50.00 - 113.00
Stanford Binet Intelligence Scale	100.90	13.65	50.00 - 121.00

Appendix N

Hierarchical Regressions Predicting Maternal Sensitivity, Maternal Hostility and Child Responsiveness from Paternal Childhood Levels of Aggression and Social Withdrawal

Table 1

Fathers' Childhood Levels of Aggression and/or Social Withdrawal and Maternal Sensitivity (N=60)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.01	.37
Childhood Aggression	-.06	-.06	-.46		
Childhood Withdrawal	.08	.08	.64		
Step 2				.00	.00
Childhood Aggression	-.06	-.05	-.39		
Childhood Withdrawal	.09	.08	.63		
Mothers' Education	.01	.01	.96		
Step 3				.00	.00
Childhood Aggression	-.06	-.05	-.39		
Childhood Withdrawal	.09	.08	.62		
Mothers' Education	.01	.01	.05		
Child Age	.00	.00	.02		
	R = .11	R^2_{Adj} = -.06		F = .18	

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

Table 2

Fathers' Childhood Levels of Aggression and/or Social Withdrawal and Hostility (N=60)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.08	2.34^t
Childhood Aggression	.26	.26	2.05*		
Childhood Withdrawal	-.05	.05	-.34		
Step 2				.00	.00
Childhood Aggression	.26	.23	1.81^t		
Childhood Withdrawal	-.05	-.05	-.35		
Mothers' Education	-.00	-.00	-.03		
Step 3				.00	.10
Childhood Aggression	.26	.23	1.81^t		
Childhood Withdrawal	-.05	-.05	-.39		
Mothers' Education	.00	.00	.01		
Child Age	.04	.04	.32		
	$R = .28$	$R^2_{Adj} = .01$	$F = 1.15$		

$^t < .10$ * $p < .05$ ** $p < .01$

Table 3

Fathers' Childhood Levels of Aggression and/or Social Withdrawal and Child Responsiveness (N=60)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.00	.12
Childhood Aggression	-.06	-.06	-.44		
Childhood Withdrawal	-.04	-.04	-.31		
Step 2				.00	.14
Childhood Aggression	-.08	-.07	-.56		
Childhood Withdrawal	-.03	-.05	-.35		
Mothers' Education	-.06	-.05	-.38		
Step 3				.08	4.99*
Childhood Aggression	-.01	-.01	-.11		
Childhood Withdrawal	-.09	-.09	-.67		
Mothers' Education	-.02	-.02	-.11		
Child Age	.29	.29	2.23*		
	R = .30	R^2_{Adj} = .02	F = 1.35		

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

Appendix O

Hierarchical Regressions Predicting Maternal Sensitivity, Maternal Hostility and Child Responsiveness from Mothers' Current Risk and Paternal Childhood Levels of Aggression and Social Withdrawal

Table 1

Fathers' Childhood levels of Aggression and/or Social Withdrawal, Current Risk and Maternal Sensitivity (N= 60)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.01	.37
Childhood Aggression	-.06	-.06	-.46		
Childhood Withdrawal	.09	.08	.64		
Step 2				.00	.00
Childhood Aggression	-.06	-.05	-.39		
Childhood Withdrawal	.09	.08	.63		
Mothers' Education	.00	.01	.05		
Step 3				.00	.00
Childhood Aggression	-.06	-.05	-.39		
Childhood Withdrawal	.09	.08	.62		
Mothers' Education	.00	.01	.05		
Child Age	.00	.00	.02		
Step 4				.04	2.05
Childhood Aggression	-.05	-.05	-.35		
Childhood Withdrawal	.08	.08	.61		
Mothers' Education	.01	.01	.09		
Child Age	-.02	-.02	.14		
Mothers' Current Risk	-.19	-.19	-1.43		

R = .22 R^2 Adj = -.04 F = .56

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

Table 2

Fathers' Childhood levels of Aggression and/or Social Withdrawal, Current Risk and Hostility (N= 60)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.08	2.34t
Childhood Aggression	.26	.26	2.04*		
Childhood Withdrawal	-.05	-.04	-.36		
Step 2				.00	.00
Childhood Aggression	.26	.23	1.81t		
Childhood Withdrawal	-.04	-.04	.35		
Mothers' Education	-.00	-.00	-.03		
Step 3				.00	.10
Childhood Aggression	.26	.23	1.81t		
Childhood Withdrawal	-.05	-.05	-.39		
Mothers' Education	.00	.00	.01		
Child Age	.04	.04	.32		
Step 4				.01	.60
Childhood Aggression	.26	.23	1.77t		
Childhood Withdrawal	-.05	-.05	-.38		
Mothers' Education	-.00	-.00	-.01		
Child Age	.05	.05	.40		
Mothers' Current Risk	.10	.10	.78		

$R = .30$ R^2 Adj $= -.09$ $F = 1.01$

$^t < .10$ * $p < .05$ ** $p < .01$

Table 3

Fathers' Childhood levels of Aggression and/or Social Withdrawal, Current Risk and Child Responsiveness (N= 60)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.00	.13
Childhood Aggression	-.06	-.06	-.44		
Childhood Withdrawal	-.04	-.04	-.31		
Step 2				.00	.14
Childhood Aggression	-.08	-.07	-.56		
Childhood Withdrawal	-.04	-.05	-.35		
Mothers' Education	-.06	-.05	-.38		
Step 3				.08	4.99*
Childhood Aggression	-.08	-.07	-.53		
Childhood Withdrawal	-.09	-.09	-.67		
Mothers' Education	-.02	-.01	-.11		
Child Age	.29	.29	2.23*		
Step 4				.02	1.20
Childhood Aggression	-.07	-.06	.50		
Childhood Withdrawal	-.09	-.08	-.69		
Mothers' Education	-.01	-.01	-.08		
Child Age	.28	.27	2.10*		
Mothers' Current Risk	-.14	-.14	-1.09		

$R = .33$ R^2 Adj = -.11 $F = 1.33$

$^t < .10$ * $p < .05$ ** $p < .01$

Appendix P

Hierarchical Regressions Predicting Children's IQ Levels

from Paternal Childhood Levels of Aggression and Social Withdrawal

Table 1

Fathers' Childhood levels of Aggression and/or Social Withdrawal, Current Risk and Scores on Bayley Mental Scale (N= 32)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.05	.80
Childhood Aggression	-.02	-.02	-.10		
Childhood Withdrawal	-.24	-.23	-1.23		
Step 2				.04	1.13
Childhood Aggression	-.02	-.02	-.11		
Childhood Withdrawal	-.26	-.25	-1.37		
Mothers' Current Risk	-.19	-.19	-1.06		

R = .30 R^2 Adj = .00 F = .92

$^t < .10$ * $p < .05$ ** $p < .01$

Table 2

Fathers' Childhood levels of Aggression and/or Social Withdrawal, Current Risk and Scores on Stanford Binet (N= 28)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.02	.20
Childhood Aggression	.11	.11	.56		
Childhood Withdrawal	.05	.05	.25		
Step 2				.16	4.76*
Childhood Aggression	.10	.10	.56		
Childhood Withdrawal	.08	.08	.44		
Mothers' Current Risk	-.40	-.40	-2.18*		

R = .42 R^2 Adj = .08 F = 1.74

$^t < .10$ * $p < .05$ ** $p < .01$

Appendix Q

Hierarchical Regression Predicting Mothers' Current Risk

from Paternal Childhood Levels of Aggression and Social Withdrawal

Table 1

Fathers' Childhood Levels of Aggression and/or Social Withdrawal and Mothers' Current Risk Status (N=60)

Variables	Beta	sr^2	t	R^2ch	Fch
Step 1				.00	.05
Childhood Aggression	.02	.02	.15		
Childhood Withdrawal	-.03	-.03	-.24		
Step 2				.00	.09
Childhood Aggression	.04	.03	.26		
Childhood Withdrawal	-.03	-.03	-.21		
Mothers' Education	.04	.04	.30		
Step 3				.01	.68
Childhood Aggression	.03	.03	.23		
Childhood Withdrawal	-.01	-.01	.10		
Mothers' Education	.03	.02	.18		
Child Age	-.11	-.11	-.83		
	R = .12	R^2_{Adj} = .06		F = .22	

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