MATERNAL WORKING MODEL OF THE CHILD AND EMOTIONAL AVAILABILITY IN A SAMPLE OF AGGRESSIVE PRESCHOOLERS

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
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Maternal Working Model of the Child and Emotional Availability in a Sample of Aggressive Preschoolers

Doctor of Philosophy, 1998
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Abstract

In this study, the Working Model of the Child Interview (WMCI) (Zeanah, Benoit, & Barton, 1993) along with the Emotional Availability Scales (EAS) (Biringen, Robinson, & Emde, 1988/93) were used to investigate the association between maternal representation of the child and mother-child interaction. The purpose of the study was to examine this association rather than to validate the two instruments. A pretreatment sample of 40 aggressive preschoolers between the ages of 3 and 6 and their mothers was randomly chosen from a larger sample who were recruited for the purpose of joining a parenting group designed to help parents of aggressive and/or noncompliant preschoolers. As predicted, there were fewer mothers with balanced and more with nonbalanced classifications on the WMCI in this sample of aggressive preschoolers (10% and 90%) than in previously published nonclinical samples with comparable demographic characteristics (38% and 62%, Benoit, Zeanah, Parker, Nicholson, & Coolbear, 1997). The results supported the hypothesis that sensitivity, as measured by the WMCI, would be positively correlated with the Maternal Sensitivity scale of the EAS. In contrast to the study's hypotheses, scores on the five EAS scales did not distinguish the balanced group from the distorted and disengaged groups on the WMCI. An exception was the finding that mothers with balanced representations scored higher on the Maternal Sensitivity scale than the disengaged group. The Child Responsiveness scale of the EAS was correlated with Maternal Sensitivity on the EAS, as predicted, but not with the sensitivity scale of the WMCI. In the discussion, suggestions for future research were made, and the clinical implications of the findings were outlined.
ACKNOWLEDGMENTS

I wish to acknowledge the three members of my thesis committee who supported me in my ambitious endeavour: Otto Weininger, my supervisor, who helped me especially to prepare for the oral examination; Sarah Landy, who suggested the initial research topic to me, who, together with Roseanne Menna, shared the data that had already been gathered as part of their research project for parents of aggressive preschoolers, and who helped me revise my literature review; and Carl Corter, who gave me invaluable suggestions regarding my results. I would also like to thank Susan Elgie who assisted me with the statistical analysis of my data. In addition, I would like to thank my mother who left her home in Saskatoon to spend months at a time with us caring for my two children so I could spend my time working on my thesis, and who gave me this piece of useful advice: “Stop reading and start writing!” Finally, I would like to thank my husband, Mike, who patiently spent countless hours working on my tables and figures, whose knowledge of computers proved invaluable to me right up until the eleventh hour, and who never once wavered in his support or in his confidence in me.
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INTRODUCTION

The problem of childhood aggression is central to the study of developmental psychopathology. The high prevalence rate of aggressive behaviour problems among preschoolers (10-15%) and among male referrals to children's mental health centres (50-75%) renders the study of the development and treatment of this disorder of primary importance (Campbell, 1995; Rosen, Bahn, & Kramer, 1964; Rutter, Tizard, & Whitmore, 1970). The apparent long-term stability of aggression in childhood is another aspect of the problem that has major psychological and social implications. Ratings of childhood behaviour problems at ages 3 and 5 appear to be among the most accurate predictors of later antisocial behaviour (White, Moffitt, Earls, Robins, & Silva, 1990).

The search for the etiology of behaviour problems has included a consideration of child characteristics such as biological and cognitive factors. There is some evidence to suggest that biological factors such as genetics and child temperament (Bates, Bayles, Bennett, Ridge, & Brown, 1991; Mednick, Gabrielli, & Hutchings, 1984), and cognitive factors such as a hostile attributional bias on the part of the child (Dodge & Frame, 1982) have some impact on the development of childhood aggression.

Other investigators have considered family characteristics such as adverse life circumstances, family violence or disharmony, and maternal depression in an attempt to understand the etiology of behaviour disorders in children (Cummings & Davies, 1994; Farrington, 1987; Parke & Slaby, 1983). These factors appear to have their greatest impact as mediators of the quality of caregiving and child management (Belsky, 1984; Bronfenbrenner & Crouter, 1983; Cowan, Cowan, Schulz, & Heming, 1993; Hetherington, 1989; Offord & Reitsam-Street, 1983; Patterson, DeBaryshe, & Ramsey, 1989; Snyder, 1991; Webster-Stratton, 1990).

A close association between parenting and child behaviour problems is assumed by many theorists (Baumrind, 1989; Campbell, 1990; Greenberg, Speltz, & DeKlyen, 1993; Hetherington & Martin, 1986; Maccoby & Martin, 1983; Patterson et al., 1989). They generally agree that a
combination of warmth and appropriate limit-setting are important for the internalization of emotional and behavioural control and the willingness to cooperate. On the other hand, a lack of monitoring (Farrington, 1983), harsh punitiveness (Eron & Huesmann, 1984; Patterson, 1980), and rejection (Bates & Bayles, 1988; Campbell, 1990) have all been associated with the occurrence of aggression in children. Patterson (1980; 1986) has suggested that coercive aggressive cycles are learned within the family environment as a result of an interaction between coercive behaviour on the part of the child and parenting deficiencies such as hostility, inconsistency, and permissiveness.

Attachment theorists also assume that parental behaviour and the parent-child relationship play an important role in the child's development in infancy (Bowlby, 1958, 1969, 1973, 1980; Ainsworth, Blehar, Waters, & Wall, 1978) and during the preschool years (Greenberg, Cicchetti, & Cummings, 1990). The prediction from attachment theory is that the quality of early care will influence the nature of the child's mental representation of the self and caregiver (the internal working model) as well as the security of the attachment relationship with that caregiver (Bowlby, 1969/1982). Sensitivity and responsiveness are considered to be important parental qualities that lead to the development of a secure attachment relationship which contributes to other child behaviours such as compliance, sociability with peers, and cooperation (Ainsworth et al., 1978; Bretherton, 1985; Greenberg & Speltz, 1988; Londerville & Main, 1981).

Attachment theory predicts that when parental behaviour towards infants is rejecting, inconsistent, insensitive, or unresponsive, their infants will develop an insecure attachment relationship (Ainsworth et al., 1978), and as toddlers and preschoolers they will be less compliant and will show more acting out behaviour (Erickson, Sroufe, & Egeland, 1985; Sroufe, 1983). Since not all studies support this prediction, Sroufe (1988) suggests that insecure attachment should be considered as a risk factor rather than a direct predictor of the development of behaviour problems in preschoolers.

The link between the child's working model of attachment and the development of behaviour problems has been addressed in the research literature, in particular, the association between
insecure attachment and behaviour problems, and will be reviewed in the section on attachment. The internal representation that parents have of their child has received much less attention, particularly as it relates to childhood aggression. This is despite the growing evidence linking parental representations to child behaviour (Benoit, Parker, & Zeanah, 1997; Bugental, 1992; Bugental & Shennum, 1984).

An understanding of parent-child relationships is enhanced when consideration is given not only to the interactive pattern, but also to what is communicated and experienced during interactions about the relationship, the self, and the other (Zeanah & Barton, 1989). In a discussion of disturbed relationship patterns between parents and their children, Fraiberg (1980) argued that these patterns can be changed only when the affective meaning of the parental experience is acknowledged and understood. Studying the subjectivity of relationships and the meaning of the relationship for the parent can help us understand the impact this has on the interaction between parent and child and ultimately the experience and development of the child, including the development of aggression.

Relationships can be thought of as existing externally as interactive behaviours, and internally as representations or internal working models (Zeanah & Anders, 1987). Several theorists have addressed the concept of relationship representations. In the three volumes of Attachment and Loss, Bowlby (1969/1982, 1973, 1980) outlined the concept of the internal working model and its role in guiding cognitive, emotional, and behavioural responses towards others. Bowlby’s notion of the internal working model will be summarized in the section on attachment. Mental representations are also central to the study of parental behaviour from the perspective of attribution theory. This theory emphasizes the importance of parents' attributions and expectations on parental behaviour and child development (Bugental & Shennum, 1984; Dix & Grusec, 1985). Attribution theorists state that differences in parental perception and interpretation of difficult child behaviours have an important impact on child affective development. According to Bugental (1992), relationship schemas act as perceptual filters in determining how various child behaviours affect parent behaviour. Similarly, Grusec, Hastings,
and Mammone (1994) outlined how mental representations of relationships affect cognitions which then influence parenting. These ideas will be elaborated in the section on attribution theory.

Several ways of measuring internal working models have been developed. The Strange Situation (Ainsworth et al., 1978) is a procedure used to measure the internal working models of infants' attachment relationships with specific caregivers. The Adult Attachment Interview (George, Kaplan, & Main, 1985) is an interview that assesses an adult's perceptions of past attachment relationships and current state of mind with respect to attachment. The Parent Attribution Test (Bugental & Shennum, 1984; Bugental, Blue, & Cruzcosa, 1989) measures attributions for the causes of interactional outcomes, but may be reinterpreted, according to Bugental (1992), as representing interpersonal schemas or scripts. This measure assesses the perceived contributions of both parent and child to their interaction.

A means for measuring parents' internal working model of their child and relationship with their child has recently been developed. The Working Model of the Child Interview (Zeanah, Benoit, & Barton, 1993) assesses parents' perceptions and subjective experience of their child. This measure includes a system for classifying specific attachment relationships using patterns of responses. The patterns on both the Working Model of the Child Interview and the Adult Attachment Interview can be used to predict an infant's attachment relationship to his or her parents (Benoit & Parker, 1994; Benoit, Parker, & Zeanah, 1994; Fonagy, Steele, & Steele, 1991; Main & Goldwyn, 1984; Ward & Carlson, 1995; Zeanah, Benoit, Barton, Regan, Hirshberg, & Lipsitt, 1993; Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994).

The influence of the mother's interactions with her child on her child's cognitive model of the self and others has been well documented in the research literature. Through continual interactions with the environment and the people in it, the child constructs internal working models of the world and the significant people in it, including the self (Bowlby, 1969/1982; 1973; 1980). Of these various interpersonal interactions, maternal sensitivity has been found to be a key characteristic of interactions that has been linked to security of attachment (Ainsworth et al.,
The impact of mother-child interaction has also been implicated in the development of aggression in young children (Bates, Bayles, Bennett, Ridge, & Brown, 1991; Campbell, Breaux, Ewing, & Szumowski, 1986; Gardner, 1989; Lee & Bates, 1985; Maccoby & Martin, 1983; Patterson, 1980; Richman, Stevenson, & Graham, 1982; Webster-Stratton, 1990). In addition, the internal representations of parents' relationship to their own parents have been suggested to influence their ability to be sensitive and responsive to their children (Crowell & Feldman, 1988; Grossman, Fremmer-Bombik, Rudolph, & Grossman, 1988; Haft & Slade, 1989; Main, Kaplan, & Cassidy, 1985; Oyen, 1996; van Ijendoorn, Kranenburg, Zwart-Woudstra, Van Busschbach, & Lambermon, 1991; Ward & Carlson, 1995). The internal representation of the parent's relationship to his or her own child is hypothesized to influence these qualities in parents as well. There have not been any studies investigating the association between a mother's representation of her child, as assessed by the Working Model of the Child Interview, and her sensitivity towards her child, as assessed by an interactional observation. The Working Model of the Child Interview together with the Emotional Availability Scales (Biringen, Robinson, & Emde, 1988/93), an interactional measure that includes both maternal and child variables, can be used to describe the internal (represented) and external (behavioural) aspects of the parent-child relationship.

The purpose of the present study is to investigate the association between a mother's representation of her child and her behaviour towards her child as observed through her interactions in a sample of aggressive preschoolers and their mothers. In addition, it examines how her representation and interaction are related to child responses. By increasing the understanding of the association between maternal representations and mother-child interactions, early treatment strategies can be developed to help troubled relationships between aggressive preschoolers and their mothers. Stern-Bruschweiler and Stern (1989) suggest that there is a continuing, dynamic relation between representations and interactional behaviour, and that change as a result of therapy in one area will be associated with change in the other area.
The review of the literature is divided into two sections and several subsections. These are:

1) The Problem of Childhood Aggression

2) The Etiology of Behaviour Problems
   2a) Child Biological Factors
   2b) Child Cognitive Factors
   2c) Family Milieu
   2d) Parenting Factors
   2e) Parents' Internal Representations, Attributions, and Perceptions of the Child

The task of dividing the review into selected topics was a challenging one since there is a great deal of overlap and interconnectedness among the topics. An attempt was made to review studies from several theoretical orientations, including biological, cognitive, behavioural, attachment, and attribution approaches. As much as possible, studies using preschool samples were reviewed, and explanations of aggression during the preschool years were offered since this study focuses on aggressive preschoolers and their mothers.
REVIEW OF LITERATURE

The Problem of Childhood Aggression

The importance of understanding the development of aggression in childhood cannot be overstated. Aggression can be defined as a set of primarily interpersonal actions that consist of verbal or physical behaviours that are destructive or injurious to others or to objects (Bandura, 1973). The term conduct problem applied to children is generally used to describe various antisocial behaviours, including aggression, chronic noncompliance, intense responses to limits (extreme temper tantrums), and early delinquency such as stealing and lying. While almost all children display some aggressive behaviour, it is only when this behaviour is exceptionally severe, frequent and/or chronic that it becomes indicative of psychopathology.

Hartup (1974) has identified two types of aggression in children based on the purpose of the act: instrumental aggression, consisting of grabbing or pushing in order to obtain a toy, and hostile aggression, where the goal is to hurt another person. Hartup has noted that non-social object possession is typical in infancy and early childhood, whereas person-directed aggression becomes more frequent as children become older.

Children with high levels of aggressive behaviour are most often diagnosed as having Conduct Disorder or Oppositional Defiant Disorder, but aggressive behaviour can be comorbid with other diagnostic categories as well (Barkley, 1990). The prevalence rate for children with Conduct Disorder has been reported to be between 2 and 10% in the general population, depending on the age and gender of the child (Offord, Boyle, & Racine, 1991; Rutter, Tizard, & Whitmore, 1970). The results of the Ontario Child Health Study reported by Offord and colleagues (1991) showed that the prevalence rate was 6.5% for boys aged 4 to 11, 10.4% for boys aged 12 to 16, 1.8% for girls 4 to 11, and 4.1% for girls 12 to 16 years of age. The overall prevalence of Conduct Disorder (5.5%) was similar to the rate found in the Isle of Wight study
of 10 to 11 year olds (4.2%) (Rutter et al., 1970). Of male referrals to children's mental health centres, roughly 50 to 75% have a diagnosis of Conduct Disorder (Rosen, Bahn, & Kramer, 1964; Rutter et al., 1970). Among preschool children, it is estimated that between 10 and 15% have mild to moderate behaviour problems, including excessive noncompliance and aggression (Campbell, 1995).

Although young children often display behaviour that concerns adults, researchers have only recently begun to look at the clinical significance of problematic behaviour in children less than six years of age, and to realize that these problems may indicate future difficulties (Campbell, 1990). The ways in which children (and their parents) negotiate the developmental challenges that are inherent during the toddler and preschool period may either set them on a course of positive and adaptive development or problematic adjustment that may be short term or longer lasting. During this period, many behaviours that may be aggravating to adults are in fact age-appropriate and reflect conflict and frustration typical of this period of development (Campbell, 1990). Defiance is an example of an age-related behaviour during toddlerhood that reflects a normal struggle for autonomy. However, Crockenberg and Litman (1990) have separated noncompliance reflecting self-assertion and noncompliance reflecting angry defiance. Campbell (1990) interprets the latter as possibly revealing a problematic mother-child relationship or difficulties coping with the reorganization of this stage. She states that it is important to distinguish between isolated behaviours that may be annoying to adults but rarely reflect psychopathology, and a constellation of problematic behaviours that may signify the presence of a clinical disorder.

Of all the problems in childhood, aggression seems to have the most extensive psychological and social implications. One of the most important of these implications is the apparent long-term stability of the phenomenon. Accumulating prospective evidence indicates that behaviour problems identified in the preschool years often persist to elementary school-age (Campbell & Ewing, 1990; Egeland, Kalkoske, Gottesman, & Erickson, 1990; McGee, Partridge, Williams, & Silva, 1991; Richman, Stevenson, & Graham, 1982). White and colleagues (1990) showed that
ratings of childhood behaviour problems at ages 3 and 5 were the most accurate predictors of later antisocial outcome compared to cognitive measures and parent reports. Children identified as hard-to-manage at ages 3 or 4 have a probability of around 50:50 of persisting difficulties throughout the elementary school period and early adolescence (Campbell, 1995). Retrospective studies show that young adolescents with disruptive behaviour have had a history of these problems that began during the preschool period (Loeber & Dishion, 1983; Moffitt, 1990).

The high stability of aggression is reported in several different countries, including North America (Moskowitz, Schwartzman, & Ledingham, 1985; Eron & Huesmann, 1990), Britain (Farrington, 1978; 1987), and Scandinavia (Olweus, 1979). Olweus (1979) concluded that there was evidence for considerable consistency in aggressive behaviour over time intervals varying from 6 months to 21 years. The average stability correlation computed for a total of 24 stability correlations was .55. Moskowitz and colleagues (1985) found stability correlations of around .50 for boys' aggressive behaviour over 3-year intervals in three samples: from grade 1 to grade 4, grade 4 to 7, and grade 7 to 11. Eron and Huesmann (1990) found moderately good predictability from early aggression to later aggression over 22 years, especially in the case of males, and found the relation to hold up across method, informant, and situation as well as time. Correlations between peer-nominated aggression at age 8 and various measures of aggression at age 30 for males ranged from .21 to .30. Farrington (1978) followed a sample of inner-city London boys from age 8 to 22. Almost half of the violent delinquents at age 21 had been rated aggressive at ages 8 to 10. A follow-up of these same individuals up to age 32 showed a continuity of aggression (Farrington, 1991). Farrington (1987) cited three studies showing significant relationships between teachers' ratings of aggression in grades 1 and 2 and adolescent delinquency. In those studies, the proportions of adolescent delinquents previously rated by teachers as aggressive ranged from 45% to 83%. Aggression also appears to be stable whether it is measured through teacher ratings, peer assessments, or behavioural observations (Rubin, Bream, & Rose-Krasnor, 1991).
After reviewing research on the stability of antisocial and delinquent behaviour, Loeber (1982) identified four factors that were associated with the stability of antisocial behaviour:

1) extremely high rates of antisocial behaviour
2) antisocial behaviour displayed in more than one setting
3) a variety of antisocial behaviour
4) early onset of antisocial behaviour

Based on the results of their 22 year longitudinal study, Eron and Huesmann (1990) concluded that an individual's aggressiveness remains reasonably constant relative to the population. Those near the top of the distribution for 8-year-old children are likely to be near the top of the distribution for 30-year-olds as well. According to these authors, aggressive individuals are characterized by a propensity to respond in an aggressive manner to a variety of interpersonal situations. This propensity of disposition becomes apparent early in their development and continues to be characteristic of their behaviour as they become adults. They believe that the impressive stability of aggression across time and generation is a product of the continuity of both temperamental and environmental factors.

According to Eron and Huesmann (1990), the primary reason that both the criminal justice system and the psychological establishment have not had much influence on criminal behaviour is that aggression, which underlies most delinquent and criminal behaviour, emerges very early in life and appears to be a stable behaviour that is resistant to change by the time it comes to the attention of authorities. For this reason, they urge researchers to examine the foundations of delinquent and criminal behaviour in young children, and not just in adolescents or young adults.

Perhaps as important as the stability of aggression are its negative concurrent and predictive correlates. For example, from very early in childhood, aggression is associated causally with the development and maintenance of negative peer reputations and peer rejection (Dodge, 1983; Rubin & Daniels-Beirness, 1983). In addition, aggressive children are not only at risk for continued aggression, but they appear to be at high risk for the development of antisocial and other adjustment problems in adolescence and adulthood (Parker & Asher, 1987). While
predictions are not diagnosis specific, early behaviour problems are associated with a number of negative outcomes that include continuing externalizing problems that may be accompanied by internalizing problems and/or academic difficulties (Campbell, 1995).

Patterson, Capaldi, and Bank (1991) described an early starter model for predicting delinquency. As a result of a series of coercive family exchanges, the early starter process is set in motion. According to Patterson et al., once the process begins, it seems to move through a sequence of stages:
a) the child shows clearly identifiable antisocial behaviours (e.g., fighting, temper tantrums, disobedience, stealing)
b) the child is rejected by the normal peer group
c) the child fails in school
d) the child becomes committed to a deviant peer group and subsequent delinquency in late childhood and adolescence

The results of Patterson and colleagues' (1991) prospective longitudinal study of delinquency of 104 boys from grades 4 to 7 only partially confirm their model. The results of their analysis suggest that low parental monitoring and poor academic achievement were both associated with concurrent antisocial behaviour in grade 4, but the only construct that was predictive of delinquency in grade 7 was antisocial behaviour in grade 4.

The Etiology of Behaviour Problems

Child Characteristics

Biological Factors

Some researchers conclude that factors residing within the child, including genetic factors, have the most powerful influence in determining aggressive behaviour. A review of twin studies (Mednick & Volavka, 1980) revealed that identical twins had a higher concordance rate for
criminal behaviour than did fraternal twins. For example, in the largest of these studies, Christiansen (1977) found a 35.2% pair-wise concordance rate for male identical twins and a 12.5% concordance rate for male fraternal twins.

Twin data may be questionable evidence of genetic influences because identical twins are not only more similar genetically but also are treated more similarly by their family and friends. According to Brennan, Mednick, and Kandel (1991), adoption studies are better able to separate hereditary and environmental influences on criminal behaviour. Mednick, Gabrielli, and Hutchings (1984) studied the entire cohort of all 14,427 nonfamilial adoptions in Denmark from 1924 to 1947. They found a 13.5% conviction rate for male adoptees with noncriminal biological and noncriminal adoptive fathers, roughly the same for those with noncriminal biological fathers and criminal adoptive fathers (14.7%), slightly higher for male adoptees whose biological father was convicted and whose adoptive father was not (20%), and the highest rate of criminal convictions (24.5%) for adoptees with criminal biological and criminal adoptive fathers. These figures do not suggest a strong genetic component to criminality. Furthermore, the authors found a significant relationship between parents' convictions and adoptee property offending, but no significant relationship with adoptee violent offending. Therefore, the genetic link contributing to the etiology of aggression was not supported in this large study.

Plomin, Nitz, and Rowe (1990) reported that no chromosomal anomalies have been suggested to relate specifically to aggressive behaviour or associated disorders. In addition, no major effects of single genes have been found for behavioural disorders of childhood. In a review of 5 twin studies of aggressive behaviour involving 1,170 identical and 850 fraternal twin pairs, Plomin et al. (1990) reported average weighted correlations for aggression of .32 for identical twins and .14 for fraternal twins. The authors deduce that no clear conclusions emerge from twin studies of self-reported aggression in adolescents and adults, except that aggression shows no consistent pattern of genetic influence. Studies of aggression in childhood are even more diverse, both in terms of measures and results, some studies showing heritability and others showing no heritability. Although one of the most well-documented facts about aggression is
that it runs in families (Parke & Slaby, 1983), Plomin et al. (1990) concluded that results of the studies they reviewed suggest that aggression runs in families for environmental rather than genetic reasons.

The behaviour genetic literature reviewed by Rutter and colleagues (Rutter, Bolton, Harrington, Le Couteur, MacDonald, & Simonoff, 1990; Rutter, MacDonald, Le Couteur, Harrington, Bolton, & Bailey, 1990) suggests that in older children, conduct disorder may be more a function of childrearing practices and family climate, whereas activity level and inattention may show more evidence of heritability (Goodman & Stevenson, 1989). There is some evidence indicating moderate heritability for affect dysregulation, inhibition and shyness, difficulty with attention, task orientation, and other behaviours in early childhood that may evolve into symptoms later on (Emde, Plomin, Robinson, Corley, DeFries, Fulker, Reznick, Campos, Kagan, & Zahn-Waxler, 1992; Goldsmith, 1983; Plomin, DeFries, & Fulker, 1988).

Some researchers have considered the role hormones may play in the development of aggression. According to a review by Parke and Slaby (1983), hormones appear to operate in two ways. They may have an organizing function (during critical developmental periods, the presence or absence of certain hormones affects the structure of the biological system), and they activate behaviour (hormonal levels may modify current behaviour). These two functions can be more clearly shown in lower animals. In humans, the relationship between hormones and behaviour is bidirectional; aggression can cause an increase in the level of testosterone, and testosterone can cause increases in aggression. Ehrhardt and Baker (1974) studied the effects of fetal androgens (progestin) on both boys and girls. Girls were rated as more physically boisterous and showing a preference for male playmates, but there was no difference between the progestin group and normal control females in aggressive behaviour. Both boys and girls exposed to high levels of androgens showed increased activity level, but no differences in aggression. According to Parke and Slaby (1983), the link between hormones and aggression is inconclusive. Hormones do not appear to be involved in organizing the central nervous system to predispose humans towards aggressive behaviour, and the evidence for the activating function
of hormones (such as testosterone) has been conflicting. Some studies report a relationship between testosterone and antisocial behaviour and others do not (Parke & Slaby, 1983). The strongest relationship between testosterone and aggressive behaviour appears to be aggressive reactions to provocation.

Researchers have also considered obstetrical factors as possible contributors to behaviour problems in children. Brennan, Mednick, and Kandel (1991) reviewed the literature on the relationship between perinatal factors and aggression, and concluded that birth factors do seem to relate to later behavioural deviance. In a Danish perinatal project studying the long-term consequences of pregnancy, delivery, and neonatal difficulties, Mednick, Pollack, Volavka, and Gabrielli (1982) found that violent delinquents in this sample had significantly poorer one-year physical and neurological status than nondelinquents. Although the delinquent group had poorer social conditions during delivery than the nondelinquent group, the most severe neurological problems were found in those recidivist violent offenders whose social conditions were most stable. Brennan and colleagues (1991) studied the effects of delivery complications on adolescent and adult criminal behaviour. They found that 46.9% of the nonoffenders, 29.1% of the property offenders, 55.6% of the one-time violent offenders, and 80% of the multiple violent offenders had high numbers of delivery complications. Although this latter figure is reported by the authors to be a significantly higher percentage, the high proportion (almost half) of nonoffenders with delivery complications suggests that we need to look beyond the delivery room to understand the etiology of behaviour disorders.

Other studies from infancy have also examined biological risk factors such as prematurity, low birth weight, and other birth complications as predictors of later problems. However, several studies have failed to find a direct association between severity of neonatal cerebral involvement and later behaviour problems (Goldberg, Corter, Lojkasek, & Minde, 1990; Weisglas-Kuperus, Koot, Baerts, Fetter, & Sauer, 1993). Instead, complications were likely to lead to negative outcomes only in combination with environmental factors. For example, in the Goldberg et al. (1990) study, maternal ratings of infant temperament, maternal responsiveness at 1 and 4 years of
age, and maternal well-being predicted teacher reports of behaviour problems among a sample of very low birth weight premature infants; neonatal measures were not predictive. These results confirm earlier findings by Werner and Smith (1977; 1982) from the Island of Kauai longitudinal study. This study showed that perinatal stress was associated with more cognitive and behaviour problems at age two, but long-term consequences were a function of both child characteristics, the caregiving environment, and a number of risk factors. Other studies, however, have linked prenatal alcohol and drug use with impaired IQ, attentional difficulties, learning problems, impulsivity, erratic sleeping patterns, and problems with self-regulation suggestive of brain damage (Black, 1993; Nanson & Hiscock, 1990; Schenck et al., 1994). In addition, pharmacological studies have implicated neurobiological factors in aggression (see Cairns, 1979, for a review of relevant information in humans and nonhuman mammals).

The studies that have examined gender differences in the prevalence of behaviour problems of young children have had conflicting results. Some of these studies report higher rates of problem behaviours for boys such as overactivity, temper tantrums, fighting, and disobedience (Crowther, Bond, & Rolf, 1981; Luk, Leung, Bacon-Shone, & Lieh-Mak, 1991; Prior, Smart, Sanson, & Oberklaid, 1993), whereas others have not shown sizeable gender differences (Achenbach, Edelbrock, & Howell, 1987; Campbell & Breaux, 1983; Cornely & Bromet, 1986; Newth & Corbett, 1993; Richman, Stevenson, & Graham, 1982; Stallard, 1993). After reviewing these studies, Campbell (1995) concluded that most of the evidence points to a lack of pronounced gender differences in preschool children. Data on school-age children, however, suggests higher rates of behaviour problems for boys (Achenbach, Howell, Quay, & Conners, 1991).

Child temperament has been studied in order to assess whether difficult temperament is a likely precursor to the development of problem behaviours. Studies by Bates and colleagues (Bates, Maslin, & Frankel, 1985; Bates, Bayles, Bennett, Ridge, & Brown, 1991; Lee & Bates, 1985) found support for the hypothesis that difficult temperaments in infants and toddlers increase the risk for behavioural problems as preschoolers. Mothers' reports of difficult
temperament in infancy predicted maternal ratings of both externalizing (acting out) and internalizing (anxious) behavioural problems on a questionnaire assessing preschool behaviour. However, both measures used maternal ratings and therefore could be influenced by maternal perceptual bias. Bates (1987) found correlations between infant temperament and later behaviour problems to be small, suggesting instead that characteristics of the parent may affect the perception of the child's temperament, especially in the case of negative emotionality.

In a more recent article, Bates and colleagues (Bates et al., 1991) stated that many identify them with the position that temperament questionnaires need to be regarded as social perceptions. What they mean is that social perceptions have both objective and subjective meanings, and that the subjective elements in mother reports do not overshadow the objective elements. In the Bloomington longitudinal study of externalizing behaviour problems of children up to the age of eight (Bates et al., 1991), they replicated findings of external validity for maternal temperament ratings, despite having a subjective element. In their study, however, they found temperament to have grown very weak as a predictor of behaviour problems by eight years of age.

In a study of premature infants, Goldberg and colleagues (1990) found that maternal ratings of child temperament at ages one and four were the best predictor of maternal ratings of behaviour problems at 4 years of age. However, in an Australian study of the relationship between temperament and behaviour problems, Sanson, Oberklaid, Pedlow, and Prior (1991) found that maternal ratings of difficult temperament were only weakly associated with ratings of behaviour problems by the mother on the Behar Preschool Behavior Questionnaire. In this study, the chance of perceptions of temperament predicting later problems, especially hyperactivity-distractibility, were increased in the presence of risk factors such as perinatal stress, prematurity, developmental problems, and being male. It was thus biological risk factors in combination with maternal ratings of difficult temperament that best predicted behaviour problems in this sample. Kagan (1984) has asserted that behavioural inhibition and disinhibition are temperamental qualities, and that both aggression and shyness are traits that are stable across the life span.
Other studies examining the relations between parent and teacher ratings of behaviour problems and observations of children's behaviour have, for the most part, supported the validity of adult ratings (Alessandri, 1992; Campbell & Cluss, 1982; Campbell, Pierce, March, Ewing, & Szumowski, 1994; Olson, 1992; Schaughey & Fagot, 1993). Those children rated higher by adults on externalizing behaviour have been observed as more difficult to handle when interacting with peers, teachers, and parents. In studies by Campbell and colleagues (Campbell, Szumowski, Ewing, Gluck, & Breaux, 1982; Campbell et al., 1994; Campbell & Cluss, 1982), a variety of behaviours were examined in children identified as hard-to-manage by parents and/or teachers. These children were observed to be more disorganized, unfocused, impulsive, fidgety, moved around more frequently, were less cooperative, and displayed less control on tasks of self-regulatory abilities. Children referred to a psychiatric clinic and meeting the diagnosis for Attention Deficit Disorder (ADD) have also been studied (Alessandri, 1992). Compared to nondiagnosed controls, ADD children engaged in less play. In addition, more noncompliance and negative affect were observed when they interacted with their teachers. These studies support the view that adult ratings do reflect the self-regulatory capacities of preschool children.

After reviewing prospective studies from infancy to the preschool period, Campbell (1995) has concluded that problematic early behaviour and perinatal problems are linked with the development of behaviour problems in young children when environmental adversity is also present. Others have argued that child characteristics, such as difficult temperament, interact with parenting quality to produce favourable or poor outcomes (Thomas, Chess, & Birch, 1968; Werner & Smith, 1977).

**Cognitive Factors and Child Attributions**

Learning problems such as language impairments have also been linked with aggression and delinquency (Cohen & Lipsett, 1991). Other cognitive deficits have been found in children who have problems controlling their aggression, such as lower intelligence, a compromised ability to use language to aid in the delay of gratification, difficulties moving from egocentric thinking to perspective taking, problems integrating good and bad images into a single representation, and an
inability to distinguish appearance from reality (Cicchetti, Ganiban, & Barnett, 1990; Greenspan, 1985; Olson & Hoza, 1993; Rutter & Garnezy, 1983). Studies investigating cognitive functioning and behaviour problems in preschool children show that language development and overall cognitive functioning are often delayed (Cantwell, Baker, & Mattison, 1979; Cohen, Davine, & Meloche-Kelly, 1989; McGee, Partridge, Williams, & Silva, 1991).

Other researchers have considered deficits in social cognitive processing as instrumental in the development of aggression in children. In this type of processing model, Kendall (1985; 1991) differentiated cognitive deficiencies, which involve an insufficient amount of cognitive activity, from cognitive distortions, which involve misperceptions. According to him, both types of cognitive dysfunctions can be seen in aggressive children's social-cognitive dysfunction.

In the social-cognitive model, the child encounters a potentially anger-arousing stimulus event, but the emotional and physiological reaction is due to the child's perception and appraisal of the event, rather than to the event itself. These perceptions and appraisals can be accurate or inaccurate, and are derived from prior expectations that filter the event, and from the child's selective attention to specific aspects, or cues, in the event. If the child has interpreted the event to be threatening, provocative, or frustrating, he or she then experiences physiological arousal, and also will become engaged in another set of cognitive activities directed at deciding upon an appropriate behavioural response to the event. The internal arousal has a reciprocal interaction with the individual's appraisal processes, since children have to interpret and label the emotional connotations of the arousal, whether they feel angry or afraid, for example.

According to Kendall (1991), the process becomes self-perpetuating. These three sets of internal activities (perception and appraisal, arousal, and social problem solving) contribute to the child's response and thus to consequences from adults and peers in the environment. These reactions from others then become subsequent stimulus events that spur the process to repeat itself.

Aggressive children have been found to perceive and encode cues in the environment around them in a different manner than do nonaggressive children. Dodge and his colleagues have had
children listen to a series of audiotaped and videotaped segments in which child actors describe and portray hostile, benevolent, and neutral situations. Aggressive children have been found to encode and retrieve significantly more cues that convey hostile connotations that do nonaggressive children (Milich & Dodge, 1984). These findings indicate that aggressive children are hypervigilant in scanning their social environment, attending to more hostile cues than do their nonaggressive peers. Aggressive children appear to form inferences about others' intentions that have been found to be significantly influenced by their higher rate of detection of hostile cues and by their expectations that others would be hostile toward them (Dodge & Frame, 1982). As a result, aggressive boys have been found to be 50% more likely than nonaggressive boys to infer that antagonists in hypothetical provocations acted with hostile rather than neutral or benign intent (Dodge, 1980). This attributional bias about others' intentions has been replicated in a series of studies with both aggressive children and adolescents (Dodge, Pettit, McClaskey, & Brown, 1986; Milich & Dodge, 1984; Steinberg & Dodge, 1983).

Dodge (1986) has suggested several possible explanations for the hostile attributional bias of aggressive boys. One such explanation is that many aggressive children have had histories of actual victimization and aversive treatment at the hands of their parents and peers. When confronted with an ambiguous stimulus, the aggressive child may attribute a meaning to it that is consistent with a preexisting expectation of hostility. Aggressive children have also been found to have distortions in their affect-labeling process, and are more likely to label affect-arousing situations as producing anger, rather than other emotions such as sadness (Garrison & Stolberg, 1983).

While cognitive distortions are evident in aggressive children's appraisal processes, cognitive deficiencies are more apparent in their social problem-solving difficulties (Kendall, 1991). Findings have been equivocal in terms of the quantity of solutions generated by aggressive children (Deluty, 1981; Dodge et al., 1986; Kendall & Fischler, 1984; Lochman & Lampron, 1986; Richard & Dodge, 1982), but they have been more consistent regarding the characteristic deficiencies in the quality of solutions. Aggressive children have been found to generate fewer
verbal assertion solutions and more nonverbal, direct action solutions than their nonaggressive counterparts (Asarnow & Callan, 1985; Deluty, 1981; Lochman & Lampron, 1986; Walters & Peters, 1980). In a preschool study of hypothetical goals involving the acquisition of objects or access to desired activities, Rubin and Clark (1983) found that aggressive preschoolers suggested as many relevant solutions as nonaggressive children, but the aggressive children were more likely to offer agonistic or bribe strategies rather than benign solutions to the problems. In a study of children in grades one and two, Rubin, Bream, and Rose-Krasnor (1991) reported that peer nominated aggressive children are less likely to offer prosocial solutions and more likely to suggest bribery as solutions to object acquisition dilemmas, and abnormal and bizarre solutions to friendship initiation dilemmas. In a study of aggression and social problem solving as assessed in a naturalistic setting, Rubin and colleagues (1991) found that physically aggressive strategies and bargaining were positively associated with peer assessed aggression.

The cycle of violence in which aggressive children are embroiled can be intensified by the ways in which their peers interpret their intentions in ambiguous situations. Dodge (1986) found that when aversive situations of ambiguous intent are experienced by nonaggressive children and the perpetrator is an aggressive child, negative, hostile intentions are attributed to the provocateur. The chances of this negative attribution occurring are much smaller when the provocateur is a nonaggressive child. Thus the biased perceptions of their nonaggressive peers can stimulate negative interactions as well.

Dodge (1991) distinguished between reactive and proactive aggression, suggesting that they differ in structure, function, and etiology. He makes the distinction between angry-reactive behaviours and non-angry, provocative behaviours. In children, reactive aggression is displayed as anger or temper tantrums, and proactive aggression normally occurs as object acquisition, bullying, or dominance of a peer. Problems at early stages of processing, such as hypervigilance to hostile cues and hostile attributions regarding minor provocations, are hypothesized to lead to overreactive, defensive aggressive responses. In contrast, a child who accurately perceives others' intentions but has a limited and biased response repertoire, and who evaluates the
outcomes of aggression positively may be more likely to use proactive aggression. In a study by Dodge and Coie (1987), the hypothesis that errors in intention/cue detection and hostile attributional biases are related to reactive aggression but not proactive aggression was confirmed.

Rather than viewing the hostile attributional style of aggressive children as a cognitive deficit, Renken, Egeland, Marvinney, Mangelsdorf, and Sroufe (1989) noted that it is children with histories of insecure attachment who show this attributional style. These children have experienced rejection and this leads them to expect similar behaviour from others, thus their interpretation is reasonable, however inappropriate it may be in a given instance. According to them, the behaviour of aggressive children is therefore due not so much to the presence of an inherent trait in the child (a cognitive deficit) as to a working model formed as a result of early experiences that guides transactions with the social environment. This explanation is consistent with the one given by Dodge (1986), albeit from a different theoretical orientation, who has suggested that children develop a hostile attributional bias because they learn to expect hostility in social interactions as a result of experiencing hostility in the home.

Some researchers have found that the social goals and expectations of aggressive children differentiate them from their nonaggressive peers. In a study documenting aggressive children's goals for dominance, Boldizár, Perry, and Perry (1989) found that aggressive children placed more value on achieving control of the victim, and less value on the suffering of the victim, retaliation from the victim, peer rejection, or negative self-evaluation. Perry, Perry, and Rasmussen (1986) found aggressive children to be more confident that aggressive behaviour would produce tangible rewards and would reduce aversive treatment from others, when compared to nonaggressive children. Slaby and Guerra (1988) conducted a study of the beliefs of antisocial aggressive youth and found that they believed their aggressive behaviour would increase self-esteem, avoid a negative image, not cause suffering to their victims, and was a legitimate response.
Family Characteristics and Social Milieu

Family Milieu

Many researchers have looked to the child's family and social milieu in an attempt at understanding the etiology of behaviour disorders. Such factors as low socioeconomic status, single parent status, a large number of children in the family, a lack of social support, family violence or disharmony, and adverse life circumstances are all considered to be risk factors in the development of behaviour problems (Farrington, 1987; Offord, Alder, & Boyle, 1986; Parke & Slaby, 1983; Prior, Smart, Sanson, Pedlow, & Oberklaid, 1992; Seifer & Sameroff, 1987). Mothers of problem children also are more likely to report conflicted family relationships, including disagreements over childrearing (Dadds & Powell, 1991). Parental disagreement over childrearing was found to be an especially strong predictor of externalizing problems in boys, and higher levels of family adversity assessed in infancy and toddlerhood predicted higher ratings of both internalizing and externalizing symptoms (Shaw, Vondra, Dowdell-Hommerding, Keenan, & Dunn, 1994). Mothers of children with behaviour problems reported more symptoms of depression, family stress, and general dissatisfaction (Cummings & Davies, 1994; Webster-Stratton, 1990; Zahn-Waxler, Iannotti, Cummings, & Denham, 1990) as well as more family history of psychopathology (Campbell, March, Pierce, Ewing, & Szumowski, 1991).

These factors appear to have their largest impact as mediators for caregiving and child management (Belsky, 1984; Bronfenbrenner & Crouter, 1983; Cowan, Cowan, Schulz, & Heming, 1993; Hetherington, 1989; Offord & Reitsma-Street, 1983; Patterson, DeBaryshe, & Ramsey, 1989; Snyder, 1991; Webster-Stratton, 1990). In the case of divorce, post separation behaviour problems occur with diminished parental responsiveness, affection, and involvement, and increased parental punitiveness and irritability (Hetherington, Cox, & Cox, 1982; Wallerstein & Kelley, 1981). Richman and colleagues (1982) concluded from the basis of their longitudinal study of behaviour problems up to age eight that earlier family adversity did not predict
continuing problems; rather, problems persisted in the context of ongoing and concurrent family adversity.

Maternal reports of stressful life events and marital distress have been found to be associated with higher levels of negative maternal control after controlling for child behaviour (Campbell, Pierce, March, & Ewing, 1991). An interaction was also found between stressful life events and child noncompliance. Those women with noncompliant preschool boys and experiencing stressful life events were more negative in their control tactics than either women with compliant preschoolers experiencing life stress or women with noncompliant children not experiencing these types of life events. According to Campbell (1995), family stress has the effect of undermining parenting by leaving these parents with fewer emotional resources to deal with the needs and demands of their preschoolers. Preoccupied and overwhelmed parents are less likely to engage in the most optimal parenting.

When characteristics of primary caregivers included psychiatric disorder (especially depression), violence, alcoholism, and having a previous history of abuse, an association was found with behaviour problems in children (Zahn-Waxler, Cummings, McKnew, & Radke-Yarrow, 1984). Parents with criminal backgrounds have been found to have difficulty managing their own and their child's negative affects and often repeat intergenerational patterns of abuse or harsh discipline with their children (Crittenden, 1988; Main & Goldwyn, 1984).

**Parenting Factors**

A close association between parental caregiving and child externalizing problems is assumed by many theorists (Campbell, 1990; Greenberg, Speltz, & DeKlyen, 1993; Hetherington & Martin, 1986; Maccoby & Martin, 1983; Patterson et al., 1989). Although these theorists may differ in their emphases, from a focus on the affective bond between parent and child (Greenberg et al., 1993) to specific parental management strategies (Patterson et al., 1989), they generally agree that parental warmth and responsiveness as well as consistent and effective limit-setting are
important to the quality of mother-child relationships. When both warmth and appropriate limit-setting are present, internalization of control and the willingness to cooperate with parents are assumed to be more likely (Maccoby & Martin, 1983).

Many theorists have suggested that the manner in which parents interact with their children is one of the most powerful determinants of children's social competencies (Maccoby & Martin, 1983). Their analysis of "reflection-enhancing" communication encompasses much of what Baumrind (1989) described as the contrast between authoritarian and authoritative parents, and Hoffman (1977) identified as power-assertive and inductive parenting. Power assertion/authoritarian parenting refers to the use of physical punishment or the threat of loss of privileges, and inductive/authoritative parenting is exercised when reasons for changes in conduct are offered to the child, particularly reasons concerning the consequences of action. Several studies indicated that the frequent use of power assertion is associated with increased child aggression, whereas frequent use of induction is associated with the internalization of control and manifestation of altruistic behaviour (Brody & Schaffer, 1982; Maccoby & Martin, 1983).

Campbell (1995) asserted that authoritative parenting, characterized by warmth and involvement in the context of clear, consistent, and reasonable limit-setting and control, should be associated with lower rates of problematic child behaviours than either authoritarian and overcontrolling parenting or uninvolved and permissive parenting.

In spite of this agreement among theorists, two major reviews of the research show inconsistency, and an association between parenting and externalizing behaviour of fairly low magnitude (Maccoby & Martin, 1983; Parke & Slaby, 1983). In an attempt to increase understanding of these inconsistencies, Rothbaum and Weisz (1994) conducted a meta-analysis of 47 studies on the association between parental caregiving and behaviour problems in children. They looked at six parent variables: approval, guidance, motivational strategies, synchrony (a concept similar to availability or sensitivity), coercive control, and restrictiveness. They found associations between each of the caregiving variables and externalizing behaviour to be significantly greater than zero except restrictiveness. They also found patterns of caregiving
variables even better predictors of child behaviour than individual variables. By factor analyzing the variables, they discovered an acceptance-responsiveness factor on which approval, guidance, motivational strategies, and synchrony loaded positively, and coercive control loaded negatively. They also found an increase in effect size and percentage of significant effects as the number of variables loading on the acceptance-responsiveness factor increased to all five variables. On the basis of their analysis, the researchers concluded that influences between parents' rejection/unresponsiveness and child externalizing are reciprocal, with the child contributing at least as much to the relationship as the parent (Bell & Chapman, 1986).

Comparisons of the child-rearing environment of aggressive and nonaggressive children reveal several differences in parental attitudes and practices.

**Monitoring**

Compared to parents of nonaggressive children, parents of aggressive and delinquent children are less aware of their children's whereabouts, activities, and social contacts (Farrington, 1983; Loeber & Dishion, 1983; McCord, 1979; Patterson & Stouthamer-Loeber, 1984). This parental indifference and lack of supervision mean that aggressive children receive less parental pressure for appropriate behaviour.

**Parental Aggression and Harsh Control**

Many aggressive children come from homes in which at least one parent is exceptionally violent, either toward the spouse, the child, the siblings, or others outside the home (McCord, 1979). George and Main (1979) found that toddlers who were physically abused by their parents at home were assaultive toward their peers and hostile toward their caregivers in the day care centre they were attending. McCord (1979) also found that adult men convicted of crimes frequently had parents who were short tempered, used abusive discipline, and were deviant (either alcoholic or criminal).

Other studies also found that parents who use erratic, harsh, physical punishment have a greater likelihood of having aggressive children (Downey & Walker, 1989; Eron & Huesmann, 1984; Lee & Bates, 1985; Lytton, 1990; Olweus, 1980; Patterson, 1980; Webster-Stratton,
Baumrind (1967) has suggested that authoritarian approaches to childrearing, characterized by arbitrary and harsh limit-setting, especially in the context of low warmth, were likely to be associated with lower levels of social competence, manifested by either social withdrawal and anxiety or aggressive and explosive behaviour. Lochman and Dodge (1990) have found that, in comparison with nonaggressive boys' parents, the parents of aggressive boys report that they and other adult caregivers provide high levels of verbally aggressive and physically aggressive behaviour towards their children. In a 22 year longitudinal study, Eron, Huesmann, and Zelli (1991) found that the more harshly girls were punished for aggression at age 8, the more harshly they punished their own children, the more abusive they were toward their spouses, and the more highly they rated themselves as aggressive as adults. The behaviour of abused children during parent-child interactions has been characterized as more aggressive, less compliant, and angrier than that of nonabused children (Bousha & Twentyman, 1984; Oldershaw, Walter, & Hall, 1986; Trickett & Susman, 1988). The use of reasoning as an alternate disciplinary strategy appears to be low among parents of aggressive children (Becker, 1964; Martin, 1975; Perry & Bussey, 1984).

Since these findings are correlational, they can be interpreted as support for the hypothesis that harsh discipline leads to childhood aggression, or that aggressive, defiant children elicit harsher control tactics from their parents (Bell, 1968; Trickett & Kuczynski, 1986). In an attempt to examine the direction of effects, Snyder (1991) looked at a sample of aggressive preschool boys and their mothers. Maternal aversive responses to initiations made by the child and ineffective limit-setting seemed to start the cycle, but either member of the dyad could initiate or escalate the conflict; thus the relationship appears to be reciprocal.

In a study of maltreated children, Erickson, Egeland, and Pianta (1989) observed that maltreated children behaved in ways that maintain their maltreatment; the angry, disruptive behaviour they display has the potential to provoke further abuse. They noted that the behaviour of these children was similar to the maltreating mothers and concluded that children seem to incorporate both roles of the infant-caregiver relationship, an interpretation similar to the concept
of identification with the aggressor suggested by Fraiberg, Adelson, and Shapiro (1987), or the social learning theory concept of modeling (Bandura & Walters, 1959).

**Permissiveness**

Parents of aggressive children often fail to set limits on their children's behaviour and are ineffective in their attempts to intervene in their children's deviant behaviour (Baumrind, 1973; Loeber & Dishion, 1983; Olweus, 1980; Patterson & Stouthamer-Loeber, 1984). Although these parents may threaten, nag, and scold, they fail to follow through when making requests (Patterson, 1986). As their children's deviant behaviour escalates, these parents become exasperated and may suddenly explode with anger and become assaultive with the child.

Sometimes this permissiveness extends to permissiveness for aggression. Olweus (1980) conducted a study where he looked at relating maternal negativism during her son's first 4 to 5 years of life, early temperament, her permissiveness for aggression, and use of power assertion (punishment) as a disciplinary strategy. The outcome variable was aggression in grade 6. Based on the results of the study, he concluded that maternal negativism and permissiveness for aggression had the greatest causal effects on aggression for these boys.

**Rejection**

Aggressive children often have a history of parental rejection (Bates & Bayles, 1988; Campbell, 1990; Eron, Huesmann, & Zelli, 1991; McCord, 1979; Olweus, 1980; Walsh & Beyer, 1987). Earlier rejection appears to correlate with increased aggression (Kornadt, 1984). The hostility and negativism of rejecting parents may contribute to aggressive development, but this rejection may be a response to an aggressive child (Patterson, 1986). Eron, Huesmann, and Zelli (1991) examined this question in their research using several international samples. Analyses of their three year study suggested that parental rejection seems to be more a response to aggression in children than a cause in their American and Finnish samples; data from the Australian sample, however, appear to indicate that rejection is a significant predictor of later aggression even when early aggression is controlled.
In her review of research pertaining to behaviour problems in preschool children, Campbell (1995) found negative, inconsistent parental behaviour to be associated with problematic behaviour in early childhood and predicted their persistence into the school period. Unresponsive parenting in the form of indiscriminate and non-contingent caretaking has also been associated with the development of behaviour problems in children (Dumas & Wahler, 1985; Patterson, DeBaryshe, & Ramsey, 1989).

Lack of parental acknowledgement seems to have similar correlates as parental rejection. In a study by Crowell, Feldman, and Ginsberg (1988), mothers of behaviour disordered preschoolers showed less enthusiasm for and acknowledgement of their children's successes.

**Patterson's Theory of Aggressive Development**

Patterson (1980; 1986) has proposed a theory of how child aggression develops in the family. According to him, several deficiencies in parenting, such as hostility, inconsistency, permissiveness, and lack of monitoring can create a home setting where aggressive cycles are learned within the family environment. Patterson suggested that many of children's aggressive behaviours are attempts at stopping irritating behaviour on the part of family members. Although these irritating behaviours may be mild, such as teasing, criticising, or being ignored, when present in an atmosphere where warmth and positive attention are rare, they are experienced as provocative and aversive. These children's aggressive behaviours may be used to stop the irritating behaviour, gain attention, or even to avert boredom. Patterson considers this behaviour coercive because implicit in the behaviour is the message that the attack will continue until the child accomplishes his or her goal. These aggressive behaviours develop, according to Patterson, because family members do, at least some of the time, stop their annoying behaviour in response to the child or give in to the child. In addition, since aggressive children soon learn that aggression pays off, they may escalate their behaviour when confronted with obstacles or threats of punishment. For these children, aversive controls, such as punishment or threats of punishment, can increase the child's aggression.
Both parents can influence the development of child aggression, but mothers' childrearing practices, such as power assertion, negativism, or yielding to the child's coercion, correlated more highly with aggression in the child than parenting practices of the father (Olweus, 1984; Patterson, 1980).

Greenberg and Speltz's view

According to Greenberg and Speltz (1988), some parents have difficulty negotiating goals and plans with their children and sharing and tolerating affective states both in themselves and their children. These problems in planning can account for the effects of both overcontrolling and permissive parenting. Greenberg and Speltz (1988) interpret the aggressive and highly controlling behaviour of some preschoolers as a desperate attempt to gain control of proximity and contact with the parent, a negative emotional reaction to the fact that the child is unable to regulate the availability of the parent, and an urgent desire to affect the parent's plans and events in the child's future. The undercontrolling or permissive parent, on the other hand, does not require the child to consider the parent's plan, and thus deprives the child of the opportunity to develop an awareness of the perspectives, needs, and feelings of others. An absence of limit setting in the early years and the lack of joint planning and sharing of internal states renders the acceptance of limit setting very difficult, thus leading to a pattern of aggression in those instances when the child is thwarted by the parent.

Children who have developed behaviour problems often express negative affect but this is often found intolerable by parents who then resort to coercive behaviour in an attempt to control it. More optimal parental behaviour is to accept these expressions of negative emotions while also modelling more appropriate ways of expressing them. The maladaptive patterns of emotional control and interpersonal communication displayed by children with behaviour problems are viewed as the reflection of insecure models of attachment formed as a result of insensitive and unresponsive parenting (Greenberg & Speltz, 1988). Such patterns of care interfere with and distort the child's natural inclination to seek emotional closeness with the
mother during times of stress and arousal, and instead activate an angry response to maternal unavailability (Bowlby, 1973).

**Parent-child interaction**

Campbell (1995) has reviewed various studies that have looked at the interaction between parents and their preschoolers in order to shed light on the development of aggression. Observation studies have shown that the internalization of control and child compliance are associated with practices termed authoritative parenting (Baumrind, 1967; Maccoby & Martin, 1983), where parents are warm, use firm but fair control, and make use of reasoning strategies (Crockenberg & Lytton, 1990; Kuczynski, Radke-Yarrow, Kochansak, & Girnius-Brown, 1987). Negative, inconsistent, or uninvolved behaviour on the part of the mother has been associated with defiance, noncompliance, and low internalization of control (Kuczynski et al., 1987; Patterson, 1980; Webster-Stratton, 1990). It is not only disciplinary strategies but also the emotional tie between mother-child dyads that are considered important in order for the child to develop self-regulation, internalize parental standards of behaviour, and develop prosocial behaviour, such as empathy (Hartup, 1989; Sroufe & Fleeson, 1986).

Several studies have compared mother-child interaction patterns in samples of aggressive and nonaggressive children. Results with school-aged populations suggest that mothers of aggressive, noncompliant, or hyperactive children use more power assertive control methods, are more impatient, and less consistent (Patterson, 1980; Patterson, Baryshe, & Ramsey, 1989). This inconsistency can extend to actually ignoring or punishing prosocial behaviour and attending to and rewarding aversive responses (Dumas & Wahler, 1985). Similar studies using preschool problem and control samples showed that mothers with problem preschoolers have more interactions characterized by conflict. Studies based on maternal interviews have revealed that those mothers reporting difficult behaviour in their 3 and 4 year old children also had disciplinary problems and more negative interactions (Barron & Earls, 1984; Richman et al., 1982). Observational studies using preschool samples have shown that difficult infants remained so as toddlers, and mothers resorted to more power assertive methods to try to control them, leading
to coercive cycles (Lee & Bates, 1985). In another observational study of unstructured play interactions using aggressive and nonaggressive preschoolers and their mothers, Campbell, Breaux, Ewing, & Szumowski (1986) found that mothers of aggressive children were more controlling and negative, and their children were more active and aggressive in their play than nonaggressive preschoolers.

Two studies by Gardner (1987; 1989) examined mother-child interaction in a sample of aggressive and defiant preschoolers. The results of home observations revealed that these mothers, compared to nonaggressive controls, engaged in more conflictful interactions with their children. They were also found to be more inconsistent in following through with requests when faced with child noncompliance or demands. Control mother-child pairs, on the other hand, tended to resolve their conflicts more frequently. Aggressive children and their mothers were also found to engage in fewer mutually enjoyable joint play activities and conversations. A study by Bates, Bayles, Bennett, Ridge, and Brown (1991) also found higher conflict sequences in the interactions of mothers and their more difficult children when compared to average or easy child dyads. More positive involvement and less negative control were also found to predict fewer behaviour problems as well as greater competence at school.

In order for a child to develop compliance and internal controls, Maccoby and Martin (1983) have suggested that maternal responsiveness and a history of positive interaction is necessary. The results of Gardner's studies (1987; 1989) confirm this view, showing that aggressive children have more negative, conflictful interactions and fewer positive, harmonious interchanges with their mothers, lessening the chances of developing the types of controls suggested by Maccoby and Martin (1983) and for the development of prosocial behaviour in the peer group (Greenberg & Speltz, 1988; Sroufe & Fleeson, 1986; Tronick, 1989). Campbell (1990) added that although not all mothers of difficult children are involved in high rates of negative interaction and few enjoyable activities with their children, the quality of the relationship between mother and child may affect the persistence of these problems.
Rather than emphasizing the personality characteristics of parents in shaping the behaviour of children in early childhood, more recent theories have stressed the development of parent-child reciprocity and "linked streams of behaviour" (Maccoby, 1992). According to reciprocity or transactional theorists, the quality of parents' responsiveness to children's needs, more than specific behaviours or characteristics of parents, helps to develop children's responsiveness to the expectations and desires of their parents. In addition, children are socialized through participation in close relationships that are constructed over time (Maccoby, 1992; Sameroff & Chandler, 1975). According to Bates and associates (1991), in these more complex models, parental behaviours, important as they may be, are seen as themselves subject to many influences. Qualities of parenting are partly determined by the parents' own characteristics, child behavioural dispositions, and external, environmental stresses on the family.

**Attachment**

A central assumption within attachment theory is that parental behaviour and the parent-child relationship play a vital role in the child's development in infancy (Bowlby, 1958, 1969, 1973, 1980; Ainsworth et al., 1978) and during the preschool period (Greenberg et al., 1990). According to attachment theorists (Bowlby, 1969; Bretherton, 1985), infants who have had sensitive, responsive, and warm caregivers develop a sense of trust and security in the availability of significant others. These infants display their security by becoming distressed when separated from their caregivers, seeking them out when upset, being easily comforted, and exploring readily in their presence when feeling calm (Ainsworth et al., 1978). Caregiver availability seems to extend beyond mere physical presence. Sorce and Emde (1981) found that infants became more apprehensive in a laboratory room when the mother was reading a newspaper than when the infants were being watched.

On the other hand, infants who have experienced unresponsive, inconsistent, or rejecting care begin to view themselves as unworthy and their caregivers as untrustworthy. This insecurity in their attachment relationship can be seen in their behaviour, which may be aloof, angry, or disorganized (Erickson, Sroufe, & Egeland, 1985; Main & Solomon, 1987; Sroufe, 1983).
Following separation experiences, they may either ignore or reject their caregiver, cling to her without becoming soothed, or show inconsistent approach/avoidant behaviour.

According to Bowlby (1969/1982), through continual interactions with the environment, the child constructs internal working models of the world and the significant people in it, including the self. He viewed internal working models as dynamic mental representations that influence an individual's affect, behaviour, perceptions of self and others, social relations, and selection and interpretation of experience. Bowlby (1973) suggested that within the individual's working model of the world, working models of the self and the attachment figure (the primary caregiver) are especially important. These working models, which are acquired through interactions, are complementary, so that the caregiver's responsiveness or unresponsiveness is reflected in the child's internal working model of the self as either worthy of care and self reliant, or unworthy and incompetent, respectively.

Since old patterns of behaviour and thought do, to some extent, guide attention and interpretation of experience in new situations, some distortion of these new experiences are unavoidable. If exaggerated, this could be the start of the pathway towards psychopathology, since defensive exclusion of information from awareness can interfere with the revision of internal working models in response to environmental or developmental change. Although not an attachment theorist himself, this process can be compared to Dodge's concept of the hostile attributional bias found among aggressive children. Their experiences at home have led them to expect hostility from their environment, and during interactions with peers, they exclude information from awareness that would enable them to accurately interpret social cues as benign.

The prediction from attachment theory is that the quality of early care will influence the internal working model of the child and the security of the attachment relationship that develops with the caregiver. These will then influence the child's feelings of trust and relationships with others as well as a sense of mastery. These feelings of mastery are thought to influence the child's relationships with caregivers and others as well as his or her overall adjustment (Bretherton, 1985; Sroufe, 1983; Sroufe & Fleeson, 1986).
The constructs of maternal sensitivity and responsiveness are central to attachment theory but there has been little attention paid to what constitutes these characteristics after infancy. Important goals of the parent-child relationship during this period are the promotion of autonomy and the regulation of the relationship (Greenberg & Speltz, 1988). Children's autonomy is supported by helping them gain awareness of themselves and others, and by increasing the communication strategies that develop joint goals and plans. According to Greenberg and Speltz (1988), if parents adjust their goals and plans to include the child's desires and feelings, the child will be aided in developing security and trust during the preschool years.

As the child matures, optimal parental behaviour should change from a mainly protective function to one where the emphasis is on the teaching of skills and the encouragement of self-regulation (Solomon, George, & Ivins, 1987). One aspect of maternal sensitivity to the developing child is the ability to make this gradual shift in behaviour. In a study investigating the relation between child security of attachment at age six and mother-child interaction, Solomon and colleagues (1987) found that mothers of secure children were accepting and supporting but also emphasized self-regulation and the learning of skills. Insecure patterns of attachment, on the other hand, were associated with maternal rejection, infantilization, or role reversal. George and Solomon (1989) suggest that parental support of competence is important to the development of security in middle childhood because autonomy is based on feeling confident about one's own competence as well as having an internalized secure base.

The mother's physical and psychological availability, responsiveness, and sensitivity to infant signals have been linked to other child effects besides security of attachment. Early compliance has been related to the sensitivity of maternal responsiveness to the child, but not to the frequency of commands or forcible interactions (Stayton, Hogan, & Ainsworth, 1971). Londerville and Main (1981) found that children of mothers who were more affectionate and had gentler physical interventions were not only more secure but also more compliant and cooperative. Parpal and Maccoby (1985) found that mothers who had been trained to play responsively with their child produced higher levels of child compliance than mothers in a free
play condition who had not been trained. Secure toddlers also showed more harmonious interactions during problem solving with their mothers (Frankel & Bates, 1990; Matas, Arend, & Sroufe, 1978).

Maternal responsiveness and sensitivity have been related to more positive outcomes among children at risk (Gribble, Cowen, Wyman, Work, Wannon, & Raoof, 1993; Rutter, 1990). Enhanced social competence, cognitive functioning, language skills, empathy, and increased infant exploration have all been associated with these maternal characteristics (Ainsworth et al., 1978; Beckwith & Cohen, 1989; Bornstein & Tamis-LeMonda, 1989; Bradley, 1989; Crittenden & Bonvillian, 1984; Egeland & Erickson, 1987; Matas, Arend, & Sroufe, 1978; Osofsky & Eberhart-Wright, 1988; Sorce & Emde, 1981; Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1984). Maternal sensitivity has been found to be associated with more cooperation and higher frustration tolerance (Robinson & Little, 1994). Bornstein and Tamis-LeMonda (1989) stated that besides providing the security to explore and learn about their environment (the secure base concept), maternal responsiveness enhances a child's self-regulation which then contributes to his or her sense of control and competence. Maternal sensitivity has also been related to more frequent maternal positive emotions in mother-child interactions, with maternal matching of affects, and with fewer negative affects of sons at age 18 months (Robinson, Little, & Biringen, 1993).

Sensitivity is generally viewed as a maternal characteristic. A broader concept that includes the influence of the child on parental behaviours is emotional availability (Biringen & Robinson, 1991; Emde, 1980; Robinson & Biringen, 1993). Emotional availability refers to the willingness of partners to share activities and affective states (Biringen & Robinson, 1991). It was originally used to describe the sensitive engagement of the therapist to the patient's emotional expressions in the hope that this experience will lead to an increased ability to be emotionally available to others (Emde, 1980). In the context of mother-child relationships, it has been used by Mahler, Pine, and Bergman (1975) to refer to the mother's supportive presence during the practising of autonomy by the child. In addition to maternal acceptance of exploration, Emde (1980) views
emotional availability as the willingness on the part of the mother to accept both positive and negative affective states in the child. Biringen and Robinson (1991) state that an emotionally available mother is perceived by the child to be sensitive, warm, supportive, and nonintrusive.

The mother, however, is not the only one involved in establishing and maintaining emotional communication, according to Biringen and Robinson (1991). The child's physical, social, and emotional responsiveness is a crucial aspect of the mother-child relationship. In addition, the child's willingness and ability to involve the mother in play and initiate social interaction contributes to his or her representation of the relationship and is considered to be another aspect of emotional availability. Tronick, Als, Adamson, Wise, and Brazleton (1978) investigated infants' ability to resume interaction on their own initiative using the Still Face procedure in which the mother stops interacting naturally and assumes a neutral expression. The child's ability to play an active role under these conditions reflects his or her capacity to regulate social interactions (Mayes & Carter, 1990).

A method of measuring emotional availability has been developed using videotaped mother-child interactions. The Emotional Availability Scales (Biringen, Robinson, & Emde, 1988/1993) are based on concepts within attachment theory and expands on the scales used by Ainsworth and her colleagues (1978). The EA scales are designed for use with mother-child dyads in a laboratory or home setting and are used to score ten to fifteen minutes of a videotaped interactional episode. There are two versions, an early childhood version generally used for children between the ages of nine and a half months to four years of age, and the middle childhood version used for older children. There are three maternal scales: Maternal Sensitivity, Maternal Structuring/Intrusiveness, and Maternal Hostility, and two child scales: Child Responsiveness and Child Involvement.

Studies using these scales have revealed interesting findings. When investigating mother-toddler pairs at home during semi-structured play, Robinson, Little, and Biringen (1993) found that higher scores on maternal sensitivity were associated with more positive and more frequently matched affect with their sons. In addition, the sons were more positive and less negative in their
emotional expression when the mother was less intrusive. Robinson and Little (1994) examined the hypothesis that Maternal Sensitivity and Nonintrusiveness and Child Responsiveness and Involvement would be associated with prosocial behaviours with a sibling twin and an unfamiliar adult examiner. Positive social behaviours towards the examiner were related to both maternal and child dimensions of the scales, and prosocial behaviours towards the twin were associated with Maternal Sensitivity and Nonintrusiveness.

Both maternal sensitivity and emotional availability have been found to be important correlates to child security, compliance, and prosocial behaviour. On the other hand, when parental behaviour towards infants is rejecting, inconsistent, insensitive, or unresponsive, their infants will develop an insecure attachment relationship (Ainsworth et al., 1978), and as toddlers, they will be less compliant and cooperative. During interactions, they are likely to be more suspicious, angry, or both, and consequently have trouble establishing positive relationships with important people in their environment. These preschoolers have been observed to show acting out, withdrawn, and dependent behaviour (Erickson, Sroufe, & Egeland, 1985; Sroufe, 1983). In a sample of maltreated children, Erickson, Egeland, and Pianta (1989) found the incidence of insecure attachment to be high, and neglected children appeared the most unhappy, angry, and noncompliant. Thus insecure attachment in infancy is predicted to lead to behaviour problems in early childhood.

According to Speltz (1990), there are many ways in which the affective and cognitive consequences of early insensitive care and subsequent insecure attachment can increase the risk of behaviour problems in the young child. Chronic anxiety about the availability of the parent has a deregulating effect. Anxiety can lead to excessive monitoring of the parent's activities which then curtails the child's exploration of the environment. Chronic uncertainty may elicit feelings of anger and frustration that result in aggressiveness and noncompliance. Based on early experiences of the unavailability of the parent, the child may form similar expectations about the availability of others. The child may develop a self concept of unworthiness that reflects the parent's unresponsive care. The child may resort to provocative or oppositional behaviour as a
means of regulating caregiver accessibility and form a self concept in which such behaviour becomes a central aspect. In order to remedy this situation, Speltz (1990) suggested that there is a need to change the parent-child emotional bond, the child's working model of the attachment relationship, and the parent's working model of relationships, as it relates to the caretaking role.

Nevertheless, despite attachment theory's prediction of an association between insecure attachment and behaviour problems, research investigating this link has had conflicting results. Some studies examining the behaviour of toddlers with their mothers found insecurely attached children to have higher levels of conflictual interaction, to be more whiny, negativistic, easily frustrated, angry, less compliant and less cooperative (Erickson & Farber, 1983; Maslin & Bates, 1982; Matas, Arend, & Sroufe, 1978). Correlations have also been found between insecure attachment patterns and adjustment and behaviour problems during the preschool years (Egeland & Erickson, 1987; Speltz, 1990; Sroufe, 1988; Sroufe, Egeland, & Kreutzzer, 1990; Sroufe, Fox, & Pancake, 1983; Troy & Sroufe, 1987) and with school aged children (Lewis, Feiring, McGuffog, & Jaskir, 1984; Renken, Egeland, Marvinney, Mangelsdorf, & Sroufe, 1989). However, other studies have failed to find an association between insecure attachment and behaviour problems in young children (Bates, Maslin, & Frankel, 1985; Bates & Bayles, 1988; Fagot & Kavanaugh, 1990; Goldberg, 1993; Goldberg et al., 1989; Goldberg et al., 1990). In addition, 'secure' children with parents who are also 'secure' can be found in clinical populations (Erikson, Sroufe, & Egeland, 1985; Van IJzendoorn, Goldberg, Kroonenberg, & Frenkel, 1992). Sroufe (1988) suggests that insecure attachment should be considered a risk factor in the development of behaviour problems in preschool children, but Lewis and colleagues (1984) adds that this risk may only be manifested in the context of ongoing family stress. In a study using a high risk, multiproblem sample, Lyons-Ruth, Alpern, and Repacholi (1993) found that it was the combination of maternal psychosocial problems with disorganized attachment that predicted higher ratings of aggression in preschool. Disorganized attachment is a category of insecure attachment used to classify infants who show strong approach-avoidance behaviours where no strategy is evident in how the infant responds to the parent. Disorganized infant attachment has
been linked to AAI interviews classified as unresolved. An unresolved classification is given if reasoning processes are disrupted when discussing loss or trauma (Main & Hesse, 1990).

According to Campbell (1995), the conflicting nature of the results of the studies linking insecure attachment to behaviour problems in children suggest that intervening events such as changes in maternal sensitivity, the quality of the child's attachment relationships with other caregivers, and any number of other child or environmental factors may lessen the impact of an insecure attachment relationship with the mother in infancy and early toddlerhood (e.g., Cicchetti, Cummings, Greenberg, & Marvin, 1990; Greenberg et al., 1993; Lamb, 1987; Werner & Smith, 1982). Perhaps attention should be focused on current mother-child relationships and their association with child behaviour rather than on attachment measured in infancy that may not necessarily be stable (Lamb, 1987). According to attachment theory, just as in infancy, rejecting and insensitive care during the preschool period should also be linked to insecurity and subsequent problematic behaviour. Turner (1991) found insecure preschool boys to be more aggressive, noncompliant, and attention-seeking with their peers than secure preschoolers. Cohn's (1990) study confirmed these results, which showed insecure 6-year olds to be more aggressive with peers and less socially competent, using teacher and peer ratings. In two studies of preschool boys, Greenberg and colleagues (Greenberg, Speltz, DeKlyen, & Endriga, 1991; Speltz, Greenberg, & DeKlyen, 1990) found higher rates of insecure attachment (80%) in the clinical samples (a mix of oppositional defiant and overactive children) than in matched controls (28%).

Even though research findings on the relation between attachment quality and behaviour problems are not entirely consistent, the theoretical links are compelling (Campbell, 1995). Attachment security may change as a result of modifications in the mother-child relationship or other aspects of the environment, thus affecting the association between insecure attachment in infancy and later adjustment problems, but this does not mean that the type of parenting deemed important by attachment theorists (sensitive, responsive, accepting) is not crucial for optimal child development. There is agreement among researchers from various theoretical orientations
that these parenting behaviours are the ones leading to the most harmonious parent-child relationships. Furthermore, the research suggests that infants who enjoy trusting, mutually satisfying relations with their caregivers are more likely to develop prosocial, cooperative styles of interpersonal behaviour that eliminate the need for aggression.

Parents' Internal Representation, Attributions, and Perceptions of their Child

The role of the child's working model of attachment in the development of behaviour disorders has been given some attention in the research literature. The internal representation that parents have of their child has received much less attention, particularly in its relation to the occurrence of behaviour problems. This is despite the growing evidence linking parental representations to child behaviour (Benoit, Parker, & Zeanah, 1997; Bugental, 1992; Bugental & Shennan, 1984). Although the concept of mental representation is associated with attachment theory, it is intrinsic to other theories as well, such as psychoanalytic theory (Diamond & Blatt, 1994). Bowlby's view differs from psychoanalytic drive theory in that he stresses the role of real experience over fantasy in the formation of representations. Mental representations are also fundamental to the study of parental behaviour from the perspective of parental belief systems. This approach represents the cognitive perspective of attribution theory, and emphasizes that the parent's beliefs, cognitions, or attributions about the child's temperament, motivations, and behaviour are better predictors of child behaviour than are specific patterns of childrearing (Applegate, Burleson, & Delia, 1992; Bugental, 1992; Dix & Grusec, 1985). Bowlby, on the other hand, views mental models as important to a broader range of development, such as behavioural systems and individual survival functions.

Attribution Theory

All parents seek explanations for their child's behaviour to guide them in their parenting. These explanations, or attributions, arouse affects that are then linked to behavioural responses. Attribution theory emphasizes the importance of parents' attributions and expectations on
parental behaviour and child development (Bugental & Shennum, 1984; Dix & Grusec, 1985). Attribution theorists state that differences in the caregiver's perception and interpretation of difficult child behaviours determine the course for subsequent affective development of the child. According to Bugental and Shennum (1984), parental beliefs act in a moderator role within caregiving systems. These beliefs regarding the causes of caregiving outcomes act as selective filters in determining the impact of different types of child behaviour on adult behaviour. For example, if the parent believes that successful interaction with her child is possibly due to her caregiving ability, she is likely to display stable, confident behaviour not easily influenced by difficult child behaviour. On the other hand, the impact of specific types of child behaviour is increased for those parents whose attributions sensitize them to those particular behaviours, and the responses of these parents elicit and maintain child behaviour supportive of their belief system (Bugental, 1985). If the parent believes she has little power or competence as a caregiver and the child is hard to control, the adult will behave in a way as to maintain the child's difficult behaviour and therefore support the adult's beliefs. Research results have supported these speculations (Bugental & Shennum, 1984).

The attributional approach to clinical problems is recent, and interest in distressed parent-child relations and child clinical problems has only begun in the early 1980's (Breton, Smolla, & LaFreniere, 1995). According to attribution theorists, attribution processes are subject to errors or biases, and these biases are important for understanding dysfunctional parent-child relations (Hewstone, 1989). The fundamental attribution error, or 'overattribution', is the tendency to attribute the causes of other people's behaviour to their traits or dispositions and to minimize the importance of situational constraints (Jones, 1979). In a parental context, this attribution bias means that parents do not take into account situational or developmental constraints and therefore make inappropriate dispositional inferences (Dix & Grusec, 1985). This bias is most apparent when the behaviour in question is seen as directed against the self, especially when the behaviour is negative. This consists of inferring malicious intention on the child's part, based on
behaviour perceived as negative and directed against the parent. Such inferences encourage negative affective states and may lead to extreme punitiveness (Dix & Grusec, 1985).

The self-serving bias (Heider, 1958) states that individuals tend to interpret events involving them and their own behaviour in a manner designed to protect and raise their self-esteem and validate their belief system. In particular, people attribute their successes to internal factors, such as ability, and their failures to external or situational factors (Jarowski & Huber, 1994). In a parental context, the child's desirable behaviours are attributed to internal causes (personality traits), and undesirable behaviours to external causes. These attributions serve to increase feelings of personal worth and competence as parents, and to reinforce a positive view of the child, thus strengthening the parent-child relationship (Dix & Grusec, 1985).

In conflictual parent-child relationships, however, parents' attributions appear to reverse, and the child's misbehaviours are attributed to internal, stable, and controllable causes. The child is then blamed for negative behaviour, and no credit is given for positive behaviour. Such biased attributions also function as a means of preserving parents' self-esteem by removing the need to consider their own contributions to the development and maintenance of child misbehaviour (Dix & Grusec, 1985). Although these attributions may protect the parents, they become accusatory and denigrating to the child. A study by Compas, Friedland-Bandes, Bastien, and Adelman (1981) with parents of two groups of children, one group with a variety of clinical problems and the other with learning disorders, showed that parents in both groups explained the problems as due to dispositional factors. Studies of parental attribution in delinquency also show that parents of highly disturbed children use dispositional factors to explain their children's negative behaviours (Alexander, Waldron, Barton, & Mas, 1989; Sagatum, 1991). Although this may maintain parental self-esteem, their attributions of disposition are particularly pathogenic since the child may internalize these attributions and develop problems of self-esteem.

Maternal cognitions and beliefs have been shown to be negatively affected by depression. Just as cognitions can produce particular affects, affective states can modify cognitions. Research studies have linked maternal depression and a more negative perception of the child
(Bendell, Field, Yando, Lange, Martinez, & Pickens, 1994; Cummings & Davies, 1994; Dix, 1993; Field, 1992; Webster-Stratton & Hammond, 1988). Support for this can be seen in studies where children who are brought to a clinic and present with no particularly deviant behaviour are found to have mothers who are more depressed than mothers of children with behaviour problems or control mothers (Rickard, Forehand, Wells, Griest, & McMahon, 1981). Depressed mothers have also been found to report more behaviour problems in their preschoolers than non-depressed mothers (Lothstein, 1990). Studies of postpartum depression and the perception of more difficult infant temperament have also been published (Cutrona & Troutman, 1986; Mebert, 1991). Others are less convinced that depression results in perceptual distortion, and believe that if depressed mothers report more child behaviour problems it is because these children are actually more difficult (Richters, 1992; Richters & Pelligrini, 1989). This distinction is important because the diagnosis and treatment plan will differ if the child's pathology is mainly due to maternal perceptual distortion.

Attribution research regarding parental perceptions, expectations, and attributions of their children has also been conducted with abusive parents. These parents report more behaviour problems in their child, reports that do not correspond with independent observations (Bradley & De V. Peters, 1991; Crittenden, 1985; Lahey, Conger, Atkinson, & Treiber, 1984; Mash, Johnston, & Kovitz, 1983; Reid, Kavanagh, & Baldwin, 1987; Susman, Trickett, Iannotti, Hollenberg, & Zahn-Waxler, 1985). Child abuse itself does eventually lead to increased rates of behaviour problems (Lorber, Felton, & Reid, 1984; Reid, Patterson, & Lorber, 1982).

Research conducted by Twentyman, Rohrbeck, and Amish (1984) has outlined the attributional style associated with abusive mothers that may play an important role in maintaining the tense climate in this family system. In the first stage of their four-stage model of child abuse, the parent sets unrealistic expectations of the child. The child acts to disconfirm these expectations (second stage), the parent misattributes the child's actions to spiteful behaviour designed to annoy the parent (third stage), and then overreacts and excessively punishes the child (final stage). This model of child abuse as excessive punishment based on misattributions of
hostile intent has received support from several empirical studies (Twentyman & Plotkin, 1982; Bauer & Twentyman, 1985; Larrance & Twentyman, 1983; Bradely & Dev. Peters, 1991).

Another line of research on the role of parental attributions in the etiology of child abuse was conducted by Bugental and her colleagues who have proposed a different model. Bugental (1992) views perceived parental control as a moderating variable that operates in situations involving difficult child behaviour. Those mothers who attribute low control to self and high control to the child over caregiving failure have been found to exhibit more caregiving problems, including physical child abuse (Bugental, Blue, & Cruzcosa, 1989).

Rubin and Mills have studied the beliefs and attributions of parents of preschoolers presenting with behaviour problems (Mills & Rubin, 1990; Rubin & Mills, 1990). Mothers of young aggressive or withdrawn children believed more in the need for direction to teach social skills than did mothers of problem-free children. In a study using mothers of aggressive and non-aggressive school-aged boys aged 9-15, Dix and Lochman (1990) found that mothers of the clinical group viewing videotaped hypothetical interaction scenarios considered the videotaped misbehaviours due more to dispositions and intentions than the control mothers. These misbehaviours also produced more negative emotions in the clinical group of mothers.

Parental attribution studies in juvenile delinquency have also demonstrated that parents explain their child's antisocial behaviour by their disposition (Alexander, Waldron, Barton, & Mas, 1989; Sagatum, 1991). Parents of adolescents with a conduct disorder have been shown to make significantly more attributions of intentionality, globality, stability, and loss of control than parents in a control group (Davidson-Baden & Howe, 1992). Similarly, oppositional-defiant behaviours in children aged 4-11 were seen as more controllable and elicited more negative reactions (Johnston & Patenaude, 1994). Studies on aggressive behaviours in mother-son dyads (MacKinnon-Lewis, Lamb, Arbuckle, Baradaran, & Volling, 1992) confirm the importance of perceived intentionality for the maintenance of coercive cycles in parent-child interaction.

Studies of the attributions of parents of children with behaviour problems have shown these attributions to be rigid, stereotypical, and closed to information leading to an understanding of
the child's behaviours that are based on observations rather than preconceptions (Breton, Smolla, & Lafreniere, 1995). Grusec, Hastings, and Mammone (1994) suggested three possible sources for cognitions about self-efficacy and attributions for children's behaviour or misbehaviour: the culture in which individuals find themselves, experiences parents have with their own children, and experiences parents have had interacting with their own parents. They argued that although culture and experiences with children can foster various parenting cognitions, those having to do with self-efficacy and attributions for children's behaviour may be particularly likely to originate in childhood experiences. Negative attitudes and attributions about children that exist in parents before their children are born are predictive of problematic relationships postnatally (Moss & Jones, 1977), a finding that suggests such attributions predate experience with children. Grusec and colleagues (1994) suggested that parenting cognitions or belief systems are part of the internal representation of relationships that individuals bring with them to any interaction with others, including, but not limited to, their own children.

Grusec and associates (1994) argued that perceptions of social relationships can be learned during disciplinary exchanges. They suggested that authoritarian parents, who demand obedience and are unresponsive to the child's wishes (Baumrind, 1991), teach their child that during conflicts, the self has little control whereas the other has considerable control over the outcome. Models of relationships, therefore, continue to be modified as a result of child rearing experiences having to do with control issues as well as attachment.

The mother's way of viewing relationships is an important determinant of how she reacts to her own child and her developing relationship with that child, even when her representation of relationships, assessed using the Adult Attachment Interview (George, Kaplan, & Main, 1985), is measured prenatally (Fonagy, Steele, & Steele, 1991). The Adult Attachment Interview is an instrument used to measure the adult's present state of mind with respect to attachment experiences. Three major patterns of organization have been identified that conceptually parallel infant patterns of attachment: secure-autonomous, insecure-dismissive, and insecure-preoccupied. Maternal attachment categories have also been reported to be related to mothers'
interactions with their preschoolers in teaching situations and in situations that involve separation and reunion (Crowell & Feldman, 1988; 1991).

Grusec, Hastings, and Mammone (1994) described how mental representations of relationships might determine cognitions which then influence parenting. Secure individuals are less inclined toward biased interpretations of ambiguous events, and in their interactions with children, they are sensitive, responsive, confident, clear, consistent, and emotionally supportive. Dismissive adults, on the other hand, who frequently report the experience of childhood rejection, dismiss the importance of attachment relationships and stress their own independence and strength. Their interactions with their children are characterized by coolness and remoteness, and they are not very emotionally supportive or helpful. In contrast, preoccupied adults are inconsistent and consequently confusing to their children. At times, they are warm and gentle; on other occasions, they become coercive and angry.

In their study of the association between attachment style and parental attributions, they found that dismissive parents rated their children's control over failure higher than secure parents, who rated it higher than preoccupied parents (Grusec, Adam, & Mammone, 1993). On the other hand, preoccupied parents saw themselves as having the most control and dismissive parents saw themselves as having the least control in a difficult child rearing situation. In addition, it was the preoccupied parents who had the most negative thoughts, presumably a reflection of their high degree of rumination over difficulties they experienced as a child. Dismissive individuals, on the other hand, were found to express few negative thoughts when they found their interactions with their children were not going well, a finding, the authors hypothesized, which was in keeping with their desire to present themselves as confident and assured. The authors concluded that an understanding of how parenting cognitions develop necessitates an understanding of how relationship schemas develop. Their findings also suggested that children of dismissive and preoccupied parents may be at some risk for maltreatment, given their large representation in the group of maltreating parents they assessed.
Bugental (1992) stated that relationship schemas may be initially acquired through repeated experiences, but once acquired, they operate with little or no use of cognitive resources. She compared them to a perceptual filter through which incoming stimuli are screened (Bugental & Shennum, 1984). She argued that caregiver cognitions exist at two levels; an initial preconscious level, and an aware or controlled level of cognitive appraisal. The precognitions, which operate at an automatic, unaware level, lead the individual to a "perceptual readiness" to attend to particular aspects of the environment (Bugental, 1992). In the caregiving schema, the behaviour of the child, filtered through precognitive schema, will influence both affective reactions and conscious levels of cognitive processing. Difficult child behaviour will thus have different consequences based on differences in these caregiving schemas. According to Bugental (1992), reactions will be more adverse for those parents whose caregiving schema places them at a power disadvantage (threat-oriented schema). These parents tend to focus on the child as a problem source and themselves as helpless victim of that child. A two-way feedback between affect and cognition is proposed. For example, thoughts of failure may lead to depressed affect, and increases in negative affect may lead to negatively focused thoughts. Furthermore, expressive behaviours may occur at different levels of controllability. Some behaviours may occur with little conscious awareness or control, a phenomenon Bugental terms affect leakage.

The message shown by threat-oriented adults towards the child is primarily negative and possibly confusing, which acts to arouse negative affect or anxiety in the child. In an attempt to cope with their negative affect, these children may become avoidant or difficult to control, thus confirming the parent's relationship schema. The system, according to Bugental (1992), is not only self-maintaining, but potentially escalating as well. As levels of arousal and negative affect increase, expressions of anger and even rage may ensue, leading to a greater likelihood of abuse. On the other hand, adults whose relationship schemas do not place them at a power disadvantage are less likely to be sensitized to a difficult child. They may respond instead with increased attention, interest, and attempts at problem solving. Children are more likely to respond to adult
interest with increased attention or responsiveness. Evidence for this model was provided by research by Bugental and her colleagues (Bugental & Shennum, 1984; Bugental, 1992).

**Maternal Perception of the Child**

The suggestion by some that difficult temperament should, in part, be considered a result of parental perception has led investigators to study the effects of parental characteristics in the perception of infant temperament, including parents' sex, socioeconomic status, mental health, extroversion, and prenatal attitudes (Bates, 1987; Bates & Bayles, 1984; Mebert & Kalinowski, 1986; Sameroff, Seifer, & Elias, 1982; Vaughn, Bradley, Joffe, Seifer, & Barglow, 1987; Zeanah, Keener, & Anders, 1986). Parents who report lower self-esteem and higher levels of anxiety and depressed mood tend to rate their infants' temperament more negatively (Vaughn, Bradley, Joffe, Seifer, & Barglow, 1987; Ventura & Stevenson, 1986; Zeanah, Keener, & Anders, 1986; Zeanah, Keener, Anders, & Viera-Baker, 1987). Maternal sensitivity and responsiveness have also been shown to affect perception of temperament. Pederson and associates (1990) reported a significant correlation between maternal sensitivity and the Child Domain Scale of the Parenting Stress Index (Abidin, 1983). Those mothers who had been rated as sensitive perceived their children as less difficult than those rated insensitive on the basis of a Q-sort. Bretherton, Biringen, and Ridgeway (1991) found a negative correlation between maternal sensitivity and maternal reports of emotionality (emotional overreactiveness) on a child temperament scale. Field, Widmayer, Stringer, and Ignatoff (1980) reported that interventions aimed at improving mother-infant interactions in mothers at risk produced both better interactions and more positive maternal perceptions of infant temperament. Stevenson-Hinde (1988) noted that a mother's perception of child temperament past the first year reflects patterns of mother-child interaction rather than inherent child characteristics.

In a study examining the effects of parental characteristics and infant behaviour on parents' perceptions, Wolk, Zeanah, Garcia-Coll, and Carr (1992) found that both these factors made significant and independent contributions to perceptions of infant temperament at age three.
months. They concluded that parents' perceptions of temperament were both subjectively and objectively determined. Others have stated that it is not so much the child's temperament that determines the relationship between parent and child but rather the "goodness of fit" between the two partners (Thomas, Chess, & Birch, 1968).

Some researchers have demonstrated a continuity in parental ratings of temperament prior to and following the birth of their infants (Mebert, 1989; Mebert & Kalinowski, 1986; Zeanah, Keener & Anders, 1986; Zeanah, Keener, Stewart, & Anders, 1985; Zeanah, Zeanah, & Stewart, 1990). These findings have been interpreted as the tendency of parents to develop internal representations of their infants prior to birth that appears, to some extent, to remain stable after birth (Zeanah & Anders, 1987).

The association between maternal perception of the child and mother-child interaction has also been examined. Biringen (1990) related maternal perception of four infant characteristics (sociability, infant responsiveness to mother, language competence, and psychomotor competence) with observations of mother-child interaction in the home and found a moderate correlation with the factors, especially the sociability and responsiveness to mother factors. Biringen (1990) considers sociability to be an aspect of temperament, and responsiveness to mother an aspect of the mother-child relationship.

Parents' Internal Representation of their Child

The subjective element in the mother's perception of her child need not be regarded in a negative light. What is important is to understand the mother's subjective experience of her child (Zeanah & Barton, 1989). In order to do so, researchers are beginning to develop ways to investigate subjectivity more systematically. Bowlby (1958) thought that rather than viewing the attachment figure in a purely responsive role, it can be assumed that the parent has already constructed a generalized model of infants, even a model of the infant prior to birth. Evidence for this has since been found by several researchers (Mebert, 1989; Mebert & Kalinowsky, 1986; Zeanah et al., 1985; Zeanah et al., 1986). The two partners have two relationships and the relationships are mentally represented by each partner.
George and Solomon (1989) examined the association between internal working models of caregiving, child attachment, and maternal behaviour in the home using a sample of 32 mothers and their six year old children. Aspects of maternal behaviour included sensitivity, acceptance of the child, emotion regulation, granting the child autonomy, involvement in the child's learning and achievement, discipline, and socialization. Following home observation, the mothers were interviewed regarding experiential and affective dimensions of parenting in order to assess their view of two aspects of caregiving (secure base and competence). The results revealed a strong association between working models of caregiving and child attachment representations. However, representations of caregiving showed little relation to maternal behaviour because, suggested the authors, there were few observed stressful situations. They supported this explanation by citing the study by Crowell and Feldman (1988) who found that mothers' representations of attachment corresponded to differences in interactive behaviour in a stressful problem-solving procedure.

Bretherton and colleagues (1989) used the Parent Attachment Interview (Bretherton & Ridgeway, 1986) to assess parents' attachment experiences with their child and related this to parent-child attachment. They applied the sensitivity/insight scale (Biringen & Bretherton, 1988) to the interview and found that scores were significantly correlated with child attachment measures. In addition, maternal perception of their child's sociability and attention span were positively, and emotionality was negatively, correlated with scores on the sensitivity/insight scale.

In a study examining the relation between parental attitude towards their infant and parent-child interaction, Cox and associates (1992) observed mothers and fathers playing with their three month old infant and subsequently interviewed the parents. Parental attitude included ratings of sensitivity, acceptance, delight, and investment in parenting (combined using a standard score), and the play interaction included sensitivity, positive affect, animation, attitude toward play, activity, encouragement of achievement, amount of vocalizing to the child, and amount of reciprocal play (combined into a composite positive interaction variable). The authors reported
that for both mothers and fathers, the parent's attitudes about the infant was significantly correlated with this positive interaction variable.

The Parent Attribution Test (PAT) was originally formulated within an attributional framework (Bugental & Shennum, 1984; Bugental, Blue, & Cruzcosa, 1989), but Bugental (1992) stated that attributions for the causes of interactional outcomes may be reinterpreted as representing interpersonal schemas or scripts. The PAT assesses the perceived contributions of both adult and child to their interaction. In their research with abusive and nonabusive parents, they compared PAT responses of three groups: abusive parents, nonabusive but at risk parents, and a control group of nonabusive parents. They found that abusive mothers were more likely to show threat-oriented caregiving schemas, that is, they were more likely to attribute relatively low control to caregivers but relatively high control to children as causes of negative events.

An interview was developed by Stern that was used to study the effects of psychotherapy on maternal representations of their infants (Cramer, Robert-Tissot, Stern, Serpa-Rusconi, De Muralt, Besson, Palacio-Espasa, Bachmann, Knauer, Berney, & D'Arcis, 1990). Others have also focused on mothers' internal representations of their infants within the context of psychotherapy (Espasa & Manzano, 1987; Cramer & Stern, 1988; Stern-Bruschweiler & Stern, 1989).

Influenced by the research in the 1980's on the subjective element of parents' perceptions of their infants and the development of the Adult Attachment Interview, Zeanah, Benoit, and Barton (1993) developed the Working Model of the Child Interview (WMCI). This is a structured interview designed to elicit and classify parents' perceptions of and thoughts and feelings about their child and relationship with their child. The interview is then classified into one of three categories: balanced, disengaged, or distorted. Balanced transcripts are found to have coherence as a major feature, with a description of both positive and negative child characteristics but a generally positive tone. Disengaged representations are characterized by emotional distance or indifference toward the child. Interviews classified as distorted have an
internal inconsistency, where distortions may appear as distractions, confusion, self-involvement, or role-reversal in relation to the child.

The content and scoring system of the interview were influenced by the work of Main and colleagues as well as discussions with an international group of investigators regarding parents' representations of their infants (Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994). The association has been found between the AAI and infants' attachment classifications (Main, Kaplan, & Cassidy, 1985; Zeanah et al., 1993). Zeanah and colleagues (1994) wondered whether securely attached infants have characteristics that might elicit balanced descriptions from their mothers, or whether mothers who have balanced representations of their infants might interact with them in ways that result in secure attachment. In order to answer this question, they suggested examining parents' prenatal fantasies of their infants using the WMCI to determine whether they predict infant attachment classification at one year of age.

Most of the earlier studies assessing the stability of parental perceptions of infant characteristics from pregnancy to the first few months of life (Mebert, 1989; Mebert & Kalinowski, 1986; Zeanah et al., 1985; Zeanah et al., 1986; Zeanah et al., 1987; Zeanah et al., 1990) have used temperament questionnaires that were limited to the content of parents' representations rather than the formal (or organizational) aspects of parental descriptions. Benoit, Parker, and Zeanah (1997) used the WMCI to investigate, among other things, whether prenatal WMCI classifications would predict infant attachment classifications assessed one year later. The predicted WMCI-SS concordance was: balanced-secure, disengaged-avoidant, and distorted-resistant. Mothers' representations of their infants and infant attachment classifications assessed concurrently were concordant (predicted matches were made with 73% accuracy), replicating Zeanah and colleagues' (1994) study where the concordance was 69%. However, a strong concordance between mothers classified balanced and infants classified secure explained the overall concordance in the study by Benoit and colleagues (1997); concordances between disengaged-avoidant and distorted-resistant were not found. Similar results were obtained for maternal representations of infants assessed prenatally and infant attachment classifications.
(observed match was 74%). Overall stability for the representations assessed pre- and postnatally was 80%. These results, in addition to other studies demonstrating that prenatal AAI narratives predict attachment security for one year old infants (Benoit & Parker, 1994; Fonagy et al., 1991; Ward & Carlson, 1995), suggest that parents' representations of attachment influence infant security. This association may have clinical applications for identifying adaptive and maladaptive parental representations of their child and relationship with their child (Benoit et al., 1997).

Benoit, Zeanah, Parker, Nicholson, & Coolbear (1997) reported on the results of three studies assessing mothers' WMCI and AAI classifications with clinical samples of children aged two weeks to six and a half years (failure to thrive, sleep disorders, and general infant psychiatry referrals). In comparison with a non-clinical control group, mothers of children with clinical problems were more likely to have distorted or disengaged representations on the WMCI (91% compared to 62%). Mothers of children with clinical problems scored lower on the following scales of the WMCI: Richness of Perception, Openness to Change, Intensity of Involvement, Coherence, Sensitivity, Acceptance, Joy, and Pride. This finding was similar to that of Zeanah and colleagues (1994), where Richness of Perception, Openness to Change, Coherence, and Caregiving Sensitivity were found to be significantly greater for mothers of secure as opposed to insecure infants. The concordance between WMCI and AAI classifications (defined as balanced-autonomous, disengaged-dismissing, and distorted-preoccupied) was 63% for the failure to thrive sample and 76% for the sample of children with sleep disorders.

Although the question of whether mothers' representations of their children contribute to or result from their children's clinical problems was not asked, the results of several lines of research suggest that maternal representations may have an impact on child development. The stability of pre- and postnatal WMCI classifications (Benoit et al., 1997), the concordance between SS classifications assessed prenatally and WMCI classifications (Benoit et al., 1997), and support for the suggestion that maternal perceptions contribute to child behaviour problems (Bates & Bayles, 1988; Broussard, 1989; Sanson et al., 1991) support this hypothesis. Benoit and colleagues
(1997) suggested that having a balanced representation could be viewed as a protective factor, and having distorted or disengaged representations would be a risk factor for the development of clinical problems. They noted that since 33% of the mothers in the control group had disengaged and 29% had distorted classifications, other factors have an influence on the development of clinical problems in addition to having non-balanced maternal representations.

Concluding Remarks on the Literature Review

The evidence reviewed indicates that behaviour problems identified early usually persist into middle childhood and even later. In addition, child variables such as temperament and cognitive factors play roles in the development of aggressive behaviour. Important environmental factors such as hostile family environments, adverse life circumstances, and maternal depression are all implicated when considering childhood behaviour problems. Various aspects of parenting have also been shown to have an impact on the emotional development of the child. Sensitivity, responsiveness, and acceptance are emphasized by researchers from such diverse orientations as attachment theory (Ainsworth, Bell, & Stayton, 1974), social learning theory (Patterson, 1982), and other theories of parent-child relations (Baumrind, 1989; Maccoby & Martin, 1983). All of these investigators agree that parents who display these characteristics will have children who are more motivated to seek self control. On the other hand, parents who are rejecting, unresponsive, or hostile will increase the risk of their children's learning socially unacceptable behaviour, such as aggression.

There are some researchers who acknowledge that responsiveness, warmth, and appropriate limit-setting are associated with prosocial behaviour, and rejection and negative control with behaviour problems, but are unsure about the directions of these effects (Dodge, 1990; Lytton, 1990; Shaw & Bell, 1993; Wahler, 1990). For example, Lytton (1990) has proposed that aggressive child behaviour determines negative parenting, and consideration needs to be made of biological factors. On the other hand, attribution theorists have shown that specific child
characteristics, such as unresponsiveness, may elicit negative patterns of caretaking from some parents, but not others (Bugental & Shennum, 1984).

According to Zeanah and Barton (1989), parent-child relationships are understood better when attention is focused on what is communicated and experienced during interactions, not only on the interactive pattern itself. They state that it is important to study the subjectivity of relationships and the meaning of the relationship for the parent since this can help us understand its impact on parent-child interaction and ultimately the experience and development of the child. Fraiberg (1980) has argued that disturbed parent-child relationships can only be changed when the affective meaning of the parental experience is acknowledged and understood.

Attribution theory suggests that the parents' attributions about the child's temperament, motivations, and behaviour are better predictors of child behaviour than are specific patterns of childrearing (Applegate et al., 1992; Bugental, 1992; Dix & Grusec, 1985). These theorists and others (Bugental & Shennum, 1984; Dix & Grusec, 1985) state that differences in the caregiver's perception and interpretation of difficult child behaviours determine the course for subsequent affective development of the child. For example, maternal misattribution of hostile child intent has been implicated in child abuse (Twentyman, Rohrbeck, & Amish, 1984), and child abuse has been linked to the development of behaviour problems (Lorber, Felton, & Reid, 1984; Reid, Patterson, & Lorber, 1982).

Campbell (1995), after reviewing the literature on preschool behaviour problems, has concluded that child-environment effects are reciprocal and transactional, and that parent-child interaction is the result of the history of the relationship of the dyad. Nonetheless, with very young children, the parents' power and influence is greater in establishing the quality of the relationship, as well as how appropriately the child is cared for and protected. She adds that the nature and extent of parent-child interaction are important aspects of the social, emotional, and cognitive development of young children. She also notes that even though there is controversy in the literature about the direction of effects, improvement in the family environment is usually
associated with the amelioration of problems, and continuing problems in the family are connected to persisting behaviour problems.

Most research on the connection between parenting and the development of behaviour problems in young children has focused on child management (Baumrind, 1991; Patterson, 1980; Webster-Stratton, 1990), but additional dimensions of parenting are also crucial for development in young children. Interactions in non-disciplinary situations where the parent takes on the role of teacher or play partner, parent-child attachment where sensitivity and responsiveness are especially salient, and parental attributions and representations of the child are all important when considering adaptive as well as maladaptive development in children. Of course, these aspects of parenting are not unrelated to disciplinary approaches to problematic behaviour. Maccoby and Martin (1983) have suggested that limit-setting is most effective when a positive affective relationship has been established between the parent and child.

Research Proposal

Prior research has highlighted the importance to the child’s development of both the quality of parent-child interaction and the internal representation the parent has of the child. The present study investigates how a mother’s representation of her relationship to her child is linked to her interaction with her child, in particular, her behavioural expression of sensitivity, in an aggressive preschool sample. In addition, it examines how her representation and interaction are related to child responses. It is proposed that a mother whose representation of her child is distorted or disengaged (a mother who is not attuned to her child) will be less able to attune while interacting with him or her. The study will examine the pattern of association between the mother’s WMCI classification and her degree of sensitivity, structuring/intrusiveness, and hostility observed towards her preschooler in a free play interaction. These three behavioural variables will be assessed using the Emotional Availability Scales. In addition, the association between scores on the two child variables of the Emotional Availability Scales, Child Responsiveness and Child...
Involvement, and scores on the maternal variables of this scale as well as the WMCI will be examined.

The hypotheses of the study are:

1) the distribution of WMCI classifications will be different in this clinical sample than in previously published nonclinical samples, with fewer balanced and more nonbalanced (distorted and disengaged) representations in the clinical sample

2) sensitivity, as measured by the WMCI, will be associated with a behavioural measure of sensitivity, as measured by the EAS

3) mothers with distorted and disengaged representations on the WMCI will be less sensitive to their preschoolers, as measured by the EAS, than mothers with balanced representations

4) mothers with balanced representations will score more optimally on the Structuring/Intrusiveness scale of the EAS (neither overly intrusive nor under structuring) when compared to mothers with distorted and disengaged representations of their child

5) mothers with balanced representations will score lower on Maternal Hostility than mothers with distorted and disengaged representations

6) children will be more responsive to and involving of mothers with balanced representations than those with distorted and disengaged representations

7) children will be more responsive to and involving of mothers who are more sensitive (both in terms of their behaviour and representation) and who are more optimally structuring
METHOD

The Larger Study

The present study employed a sample of 40 mothers and their preschoolers (aged 3-6 years) randomly chosen from a larger sample of 90 mothers and their children who were recruited for the purpose of joining a parenting group designed to help parents of aggressive and/or noncompliant preschoolers. These subjects were recruited from agencies servicing Metro Toronto and from advertisements placed in magazines.

The objective of the larger study (Landy & Menna, unpublished) was to evaluate the effectiveness of a treatment program for parents of preschoolers with behaviour problems. This treatment program, Helping Encourage Affect Regulation (HEAR) was compared with Systematic Training for Effective Parenting (STEP), a more behavioural parent training program. The effectiveness of the two treatment programs was compared with respect to:

1) reducing the level of symptomology of the children
2) improving parental attributions of the child
3) improving parent-child interactions
4) increasing parental competence
5) increasing the social competence of the children

After receiving consent from the parents, three visits were scheduled to complete the pretreatment assessments that were all done at the C. M. Hincks Treatment Centre. During the initial visit, a developmental assessment was done with the child, and the parent was asked to fill out various forms, including the Child Behavior Checklist (Achenbach & Edelbrock, 1983). During the second visit, the parent-child interaction was videotaped. This interaction lasted approximately one hour, and included a ten minute teaching task, a ten minute feeding sequence, a ten minute free play interaction, a ten minute separation, a clean up task, a ten minute limit
setting task, and a few minutes at the end for asking the mother about her perceptions and feelings about the interaction. About one week later, the mother was interviewed using the Working Model of the Child Interview (Zeanah, Benoit, & Barton, 1993). The audiotaped interview lasted between one and two hours.

**Ethical Practices**

An ethical review was completed for the original study.

**The Present Study**

**Subjects**

Subjects in the sample included 40 aggressive and/or noncompliant preschoolers between the ages of three and six and their mothers. The criterion for sample inclusion was a score of 20 or higher on the subscale for Aggressive Behavior on the Child Behavior Checklist (Achenbach & Edelbrock, 1983).

**Procedure**

The data for the present study only included assessment results obtained from subjects prior to their participation in the parenting groups (pretreatment). The initial assessments of the 40 subjects selected for the present study had already been completed prior to being chosen for this study. Some of the subjects in the present study were assessed in early 1995, and the rest during the fall of 1995. Research assistants collected information on a variety of measures, including social and intellectual competence of the child, report of child behavioural difficulties, parent-child interaction, and the parents' internal working model of the child. For the current study, only three measures were used: the Child Behavior Checklist (Achenbach & Edelbrock, 1983), the Emotional Availability Scales (Biringen, Robinson, & Emde, 1988/93) used to score the ten
minute free play segment of the hour long parent-child interaction, and the Working Model of the Child Interview (Zeanah, Benoit, & Barton, 1993).

The parent-child play interactions were coded by the investigator of the present study who was blind to WMCI classifications. Of the 40 interaction sequences, 12 were coded by one of the authors of the EAS, and intraclass correlations were found to be at the following levels for the five scales: .98 for Maternal Sensitivity, .96 for Maternal Structuring/Intrusiveness, .85 for Maternal Hostility, .84 for Child Responsiveness, and .94 for Child Involvement.

The audiotaped Working Model of the Child Interviews were transcribed and scored by the investigator of the present study. Of the 40 transcripts, nine were scored by one of the authors of the WMCI. There was agreement on eight of the nine transcripts regarding categorization; interrater reliability was calculated as 88%. In order to measure interobserver reliability and correct for chance agreement, Kappa was also calculated and found to be .63.

Measures

Child Behavior Checklist

The presence of behaviour problems formed the basis for the original study, therefore the mothers were asked to complete the Child Behavior Checklist (Achenbach & Edelbrock, 1983). This measure was chosen by the authors of the original study (Landy & Menna, unpublished) because it is the most widely used standardized behavioural checklist identifying children with behaviour problems and aggression. Since the sample included children between the ages of 3 and 6, two forms of the Child Behavior Checklist were used, one for children aged 2 to 3, and the other for children aged 4 to 18.

The Child Behavior Checklist/2-3 consists of 100 items designed to be completed by parents. It is an empirically based measure derived from research, consultation with professionals and parents, and revisions on the basis of findings in several pilot editions (Achenbach, 1992). Each item is scored either 0, 1, or 2, depending on whether the item is not true, sometimes true, or
very true. Six syndromes were derived from principal component analysis, including aggressive behaviour. The standardization sample consisted of 368 2 and 3 year old children. The test-retest reliability was supported by a mean test-retest $r = .85$ for the problem scales over a period averaging 7.7 days, and all scales were significant at $p < .001$. The internal consistency, or split-half reliability, was measured using alpha, a mean of correlations between all possible sets of half the items comprising a scale. The correlations ranged from $.65$ to $.93$ (aggression was $.92$).

Interparent agreement was indicated by the correlations for all scales being significant at $p < .01$ for ages 2 and 3 (mean $r = .63$ and $.60$, respectively). Over a one year period, stability correlations of the scale scores were all significant at the $p < .01$ level, with a mean $r = .64$. The content validity was reflected by the ability of most CBCL items to discriminate significantly between referred and nonreferred children. The construct validity was measured by correlating the CBCL with another test measuring similar constructs, the Richman Behaviour Checklist (Richman, Stevenson, & Graham, 1982). Correlations in three studies were all found to be significant at $p < .001$ level. Clinical referral was used as the criterion for measuring criterion related validity. All problem scores were lower for nonreferred than referred children at $p < .0001$ level for all scale scores. The proportion of referred children scoring in the clinical range (20 or above) was more than nonreferred at $p < .01$ level (Achenbach, 1992).

The CBCL/4-18 is designed to record in a standardized format children's competencies and problems as reported by their parents. The problems portion consists of 113 items divided into 9 syndromes, including aggressive behaviour (Achenbach, 1991). An original sample of 2,734 children was used in 1986 to derive norms for the test. For inter-interviewer and test-retest reliability of the CBCL item scores, intra-class correlations in the .90s for mean item scores were obtained by different interviewers and for reports by parents on two occasions one week apart ($p < .001$). All correlations over one and two year periods for the scales were significant at $p < .01$ level, as were all correlations for interparent agreement. Content validity was reflected by the ability of nearly all CBCL items to discriminate significantly between demographically matched referred and nonreferred children. Construct validity was measured by correlations of the CBCL
scales with analogous scales on the Conners (1973) Parent Questionnaire (p< .0001) and the Quay-Peterson (1983) Revised Behavior Problems Checklist (p< .0001). The author stated that criterion-related validity was displayed by the ability of the CBCL's quantitative scale scores to discriminate between referred and nonreferred children after demographic effects were partialled out. Clinical cutpoints on the scale scores were also shown to discriminate significantly between demographically matched referred and nonreferred children. The proportion of referred children scoring in the clinical range was significantly greater than the proportion of nonreferred at the p< .01 level (Achenbach, 1991).

**Working Model of the Child Interview**

The WMCI was used in this study to assess parents' representations of their children and relationship to their children. During the interview, the parent was asked to describe feelings during the pregnancy, the child's development and personality, the parent's relationship with the child, parental reactions to child distress, and perceived and anticipated difficulties with the child. Transcripts of audiorecorded responses were rated using seven 5-point rating scales: Richness of Perceptions, Openness to Change, Intensity of Involvement, Coherence, Caregiving Sensitivity, Acceptance (these are considered qualitative or organizational features), and Infant Difficulty (this is considered a content feature). In response to the controversy about infant difficulty being subjective perception or objective reality, Zeanah and Benoit (1995) note that parental perceptions are constructed from both subjective and objective characteristics of the child. The purpose of administering the WMCI, according to the authors, is to understand how the parent experiences and responds to behaviour that he or she perceives as difficult.

In addition to these seven primary scales, eight secondary 5-point rating scales are used to score the affective tones of the representation, namely, the amount of joy, anxiety, pride, anger, guilt, indifference, disappointment, and other emotion expressed by the parent (Zeanah et al., 1994).

On the basis of the scores on these scales, the parent's representation is classified into one of three major categories: balanced, disengaged, or distorted. Balanced transcripts are
characterized by a coherent description of the child with an account of both positive and negative child characteristics and relationship with the child (moderate to high scores on the Coherence scale). These parents also communicate an engrossment in their relationship with their child (high scores on the Intensity of Involvement scale), an acceptance and respect for the child's individuality (high scores on the Acceptance scale), and empathy for the child's experience (high scores on Caregiving Sensitivity). In order to be considered balanced, interviews need to receive moderate to high scores on both the Openness to Change and Richness of Perception scales, low to moderate scores on the Infant Difficulty scale, moderate to high scores on Joy and Pride, and low scores on Anxiety, Anger, Disappointment, and Indifference.

Disengaged representations typically convey a sense of coolness, emotional distance, or indifference towards the child. Parents with this type of representation do not appear to know the child and seem unaware of or lack curiosity about his or her subjective experience. When the experience is recognized, parents with disengaged representations may not fully accept or value it, and ridicule or dismiss it instead. Actual aversion may be present in extreme cases. The impact of parenting on the child may be unintegrated or dismissed as lacking in importance and influence. Disengaged classifications are usually characterized by low scores on the Richness of Perception, Openness to Change, Acceptance, Caregiving Sensitivity, and Intensity of involvement scales, and high scores on the Indifference scale.

Distorted representations reveal an internal inconsistency within the representation or relationship with the child. Distortions may exist as distractions caused by other concerns, confusion about the child, being self-involved and insensitive to the child, having unrealistic expectations regarding child compliance or reasonableness, or attributing malevolent intentions to the child. These narratives often communicate an unsuccessful struggle to feel close to the child. Although the interviews are often saturated with emotion (both positive and negative), these emotional expressions may be unmodulated or seem out of context. Distorted representations are often characterized by low scores on the Coherence, Openness to Change, and Caregiving Sensitivity scales, and high scores on the Intensity of Involvement, Anxiety, and/or Anger scales.
Sometimes there are high scores on the Infant Difficulty and Disappointment scales (Zeanah et al., 1994).

Zeanah and colleagues (1994) reported on the interrater reliability of the WMCI for each scale to be between 75% to 100%, with a mean agreement of 85% using a middle-class, non-clinical sample of 45 mothers. For interrater reliability of overall classification, Benoit and colleagues (1997) reported the results of five different studies using three clinical and two nonclinical samples: agreement ranged between 83% and 100% using experienced raters, and 54% using an inexperienced rater. The interrater reliability of the three clinical studies combined (N= 99) was reported to be 76% (p<.001). Benoit and colleagues (1997) reported stability ratings on WMCI classifications from the third trimester of pregnancy to 11 months postpartum to be 80% (p< .001).

Validation of the WMCI has been attempted by relating mothers' representations of their children to infant attachment classifications, infant clinical status, and the AAI categories. In one study (Zeanah et al., 1994), selected features of the mothers' narrative (Richness of Perception, Openness to Change, Coherence, and Caregiving Sensitivity) were found to be systematically related to the infants' attachment classifications (F= 2.32, p< .01). In this study, the concordance between WMCI and infant attachment classifications was found to be 69%. Concordance was defined as pairing secure with balanced, avoidant with disengaged, and resistant with distorted. In a second study (Benoit et al., 1997), the concordance was 73% (p< .001). This study also examined the concordance between WMCI classifications assessed prenatally and infant attachment classifications, and found it to be 74% (p< .001). Mothers' WMCI classifications have also been found to distinguish clinical from nonclinical groups (p< .001, N= 99) (Benoit et al., 1997). In this same paper, Benoit and colleagues reported the concordance between AAI and WMCI classifications (defined as pairing autonomous with balanced, dismissing with disengaged, and preoccupied with distorted) to be 63% (p< .001) and 76% (p< .001) using two samples.
Emotional Availability Scales

The EAS consists of five measures of reciprocal mother-child emotional availability, three maternal scales and two child scales. The scales were influenced by and extend Ainsworth's coding of maternal sensitivity (Ainsworth et al., 1978). They differ from the Ainsworth scale in that they include behavioural descriptions helpful for coding shorter observational segments (ten to fifteen minutes). Rather than counting discrete behaviours, it is a global measure of sensitivity, as is the Ainsworth scale. The middle childhood version of the scales (intended for children aged four and up) was used in this study since most of the subjects fell into this age range.

The mother's emotional availability is measured using three scales, Maternal Sensitivity, Maternal Structuring/Intrusiveness, and Maternal Hostility. Maternal Sensitivity refers to the mother's attempts to communicate to her child in a way that results in shared pleasurable states and facilitates exploration of the environment (Robinson & Biringen, 1995). Components of the sensitivity construct include positive affect, clarity of perceptions, maturity demands (the latter only on the middle childhood version), awareness of timing, flexibility, variety and creativity in modes of play, maternal acceptance, moderate accessibility, negotiations of conflict situations, and discussion of emotional states and perspective-taking (the latter only on the middle childhood version) (Biringen, Robinson, & Emde, 1988/1993). The scale ranges from Highly Insensitive (a score of 1) to Hyper-sensitive (10), with the optimal rating being Highly Sensitive (9). Detailed descriptions are provided for ratings given a score of 1, 3, 5, 7, 9, and 10.

The Maternal Structuring/Intrusiveness scale measures the extent to which the mother intervenes with the child to create shared activities (Robinson & Biringen, 1995). It assesses how appropriately the mother structures the child's play while at the same time taking his or her lead and limiting intrusions of her own goals into the child's play, and how she sets limits on the child's behaviour. Scores on this scale range from 1, which would be given to a very passive mother who sets no limits on her child's behaviour, to a score of 9, given to highly over-stimulating mothers who allow no room for child autonomy. A score of 5 is the optimal rating and is given when the mother shows appropriate structuring, that is, lets the child lead and
provides a supportive frame that "scaffolds" the child's play and allows for elaboration. Scaffolding is what parents do when they expand on their child's abilities (Clark, Paulson, & Conlin, 1993).

Maternal sensitivity to infant cues has been a cornerstone of attachment theory and research (Ainsworth et al., 1978), whereas the structuring/intrusive element is thought to pertain to parental control (Baumrind, 1971). Moderate levels of parental control in combination with warmth (as opposed to low or high levels of control) has been found by Baumrind (1971) to be most optimal in aiding child development. Biringen, Robinson and Emde (1994) found no correlation between these two scales for a sample of mother-child pairs.

The Maternal Hostility scale measures maternal overt and covert hostility, ranging from no discernible expression of hostility toward the child (a rating of 1) to markedly and overtly hostile behaviour (a score of 5). In addition to expressing appropriate interaction, a score of 1 is also given to highly passive/depressed forms of behaviour.

Child emotional availability is measured using two scales. The Child Responsiveness to mother scale is used to assess the degree to which the child is eager or willing to engage with the mother following her suggestions, and how much he or she appears to enjoy the interaction. This scale is considered to be the counterpart to the Maternal Sensitivity scale (Biringen et al., 1988/1993). A child who does not show pleasure while interacting with his or her mother and rarely responds to her would be considered unresponsive and would receive a score of 1. A child who always responds to the mother conveying a sense of diminished autonomy would be considered overly responsive and rated as 9. The highly responsive child receives a score of 7 which is considered the optimal rating. Although responding often (but not always) to the mother's bids, this child does so without a sense of urgency.

The Child Involvement scale measures how much the child attends to and engages the mother in play. The authors consider this scale to be the child's counterpart to the Maternal Structuring/Intrusiveness scale, suggesting that higher maternal structuring/intrusiveness may be associated with lower levels of child involvement of the mother (Biringen et al., 1988/1993). The
uninvolving child (a score of 1) does not involve the mother in play at all or elaborate any exchanges with her during the interaction. On the other hand, the over-involving child (9) attempts to maintain contact with the mother very frequently, sometimes with a sense of urgency, neediness, or negative attention seeking. The highly involving child is given the optimal rating of 7 where a balance between autonomous play and involvement of the mother can be observed.

In a study of mother-infant affective communication and infant walking, stability of maternal sensitivity measured three times before and after the onset of walking was found to approach .80 (Biringen, Emde, Campos, & Applebaum, 1995). In a study of emotional communication in mother-toddler relationships, stability of maternal sensitivity from 18 to 24 months was found to be .66, and stability of maternal nonintrusiveness was .60 (Robinson, Little, & Biringen, 1993). Inter-rater reliability for various samples ranged from Cohen's Kappas beginning at .75 for relatively short interactional segments to over .90 for interactions that were longer than 15 minutes (Biringen & Robinson, 1991; Biringen, Emde, Campos, & Appelbaum, 1995; Biringen, Robinson, & Emde, 1994; Robinson & Little, 1994; Zimmerman & McDonald, 1995). Correlations between the Maternal Sensitivity scale of the EAS and the Ainsworth et al. (1978) scale was found to be over .90 in two samples (reported in Biringen, Robinson, & Emde, 1994).

The scales have been used to identify interactional patterns that have been related to both maternal and infant attachment. The behavioural styles of mothers with their toddlers, as measured by maternal attachment security and emotional availability, were found to vary (Oyen, 1996). Secure mothers were more sensitive and more optimally structuring, and their children were more responsive to maternal initiatives.

Patterns of emotional availability have also been related to child attachment (Ziv, Sagi, Gini, Karie-Koren, & Joels, 1996). Mothers of securely attached one-year-olds were found to be more sensitive and more structuring than mothers of insecure-ambivalent infants. They also found securely attached infants to be significantly more responsive and more involving than the insecure-ambivalent infants. Easterbrooks, Lyons-Ruth, Biesecker, and Carper (1996) investigated whether maternal depression and infant attachment quality assessed at 18 months
would predict variations in mother-child emotional availability when the children were 7 and 8 years old. They found that maternal depression in infancy predicted impaired emotional availability in mother-child pairs 7 years later. Both Maternal Sensitivity and Child Involvement were impaired when mothers had higher depressive symptoms during the child's infancy. Higher maternal depressive symptoms when the children were 7 were also associated with impaired Maternal Sensitivity, Maternal Structuring/Intrusiveness, and Maternal Hostility. The authors also found that securely attached infants and their mothers exhibited greater emotional availability in interaction 7 years later; mothers were more sensitive, more suitably structuring of the interaction, and the children were more appropriately responsive and involving of their mothers.

Emotional availability has also been investigated with variables tapping aspects of the balance of control in interactions. Results showed that maternal sensitivity toward 18- and 24-month old toddlers was related to maternal initiation and maintenance of interaction with daughters, but to a more balanced share of interaction with sons (Biringen, Robinson, & Emde, 1994).

Further validation of the EAS has been attempted by linking these scores to social interactions with others. One study examined the relationship between emotional availability and peer social interactions in 18 month old toddlers (reported in Biringen & Robinson, 1991). The results showed that children of sensitive mothers and children who were more responsive and involving of their mother attracted more visual gaze from peers and were more visually responsive in dyadic interactions. In a study using 3 year old twins, the relationship between emotional availability and social interaction with a twin sibling and an unfamiliar adult was investigated (Robinson & Little, 1994). In this study, the EA scales were related to 8 rating scales of the Colorado Adoption Project's adaptation of Bayley's Infant Behavior Record (IBR - Plomin, Defries, & Fuller, 1988). Results indicated that Maternal Sensitivity was associated with more cooperation, less resistance, and more frustration tolerance. Maternal Nonintrusiveness was related to more sociability and a happier mood during testing. Child Responsiveness was correlated with more cooperation, less resistance, a happier mood, and more frustration tolerance. Child Involvement of mother was associated with more sociability, frustration
tolerance, a happier mood, and more cooperation. In addition, emotional availability was related to the mother's report of the children's prosocial behaviours to their twin sibling. Maternal Sensitivity was related to more helping and affection, and more sharing behaviour, and Maternal Nonintrusiveness was correlated with more affectionate behaviour toward the cotwin.

Analysis of Hypotheses

Various statistical analyses were undertaken in order to test the 7 hypotheses pertaining to the WMCI narratives and the mother-child interactions. In addition, the association between the WMCI and interactions were examined in detail for two cases. These more qualitative data contributed to an understanding of the statistical comparisons between the mother's working model of the child and mother-child emotional availability.

1) The first hypothesis stated that the distribution of WMCI classifications would be different in this clinical sample than in previously published nonclinical samples. This was tested by doing a chi-square analysis comparing the distribution of WMCI classifications for the study sample to the distribution of a combined nonclinical sample from a previously published study (Benoit et al., 1997).

2) The predicted association between the two measures of sensitivity was tested by a correlational analysis.

3) Analysis of variance and post hoc pair-wise comparisons (since the analysis of variance was significant) were used to test hypothesis 3, which stated that mothers with distorted and disengaged representations on the WMCI would be less sensitive to their preschoolers, as measured by the EAS, than mothers with balanced representations.

4) An analysis of variance was used to test hypothesis 4 (mothers with balanced representations will score more optimally on the Structuring/Intrusiveness scale of the EAS when compared to mothers with distorted and disengaged representations of their child).
5) An analysis of variance was used to test hypothesis 5 (mothers with balanced representations will score lower on Maternal Hostility than mothers with distorted and disengaged representations).

6) An analysis of variance was used to test hypothesis 6 (children will be more responsive to and involving of mothers with balanced representations than those with distorted and disengaged representations).

7) Correlations were used to test hypothesis 7 (children will be more responsive to and involving of mothers who are more sensitive, both in terms of their behaviour and representation, and who are more optimally structuring).
RESULTS

Overview of the Study

The present study investigated the link between a mother's representation of her child and mother-child interaction in an aggressive preschool sample. The Working Model of the Child Interview, a measure containing 14 scales used to measure parents’ representations of their child, and the Emotional Availability Scales, an interactional measure containing five scales, were used to explore this association. It was proposed that in this clinical sample of aggressive preschoolers, there would be fewer mothers classified as having balanced representations, as assessed by the WMCI, than in previously published nonclinical samples. Furthermore, it was predicted that mothers who showed less caregiving sensitivity in their representation of their child would show less sensitivity while interacting with him or her. The study also examined the pattern of association between the mother's WMCI classification and her degree of sensitivity, structuring/intrusiveness, and hostility (measured using the EAS) observed towards her preschooler in a free play interaction. In addition, the association between scores on the two child variables of the EAS, Child Responsiveness and Child Involvement, and scores on the maternal variables of this scale as well as scores on the WMCI was examined.

This chapter includes ten sections. The first section reports on the sociodemographic characteristics of the sample of mothers and their aggressive preschool children. The second section consists of descriptive statistics pertaining to the Child Behavior Checklist. This measure was used to select the sample for the larger study. The criterion for sample inclusion was a score of 20 or higher on the subscale for Aggressive Behavior on the CBCL. In section 3, the intercorrelations of the fourteen WMCI rating scales, a factor analysis of these scales, and the distribution of classifications for this measure can be found. Section 4 reports on the descriptive statistics of the EAS. The fifth section consists of the description of the relation between
sociodemographic variables and the WMCI and EAS Scales. Section 6 describes the association between the variables of these two scales. Section 7 reports on the results relating the three WMCI classifications (balanced, distorted, and disengaged) to the EAS. In section 8, the results relating the maternal and child scores on the EAS can be found. The ninth section of the chapter summarizes the results of the analyses. The final section consists of the case examinations.

Sociodemographic Characteristics

Children

The children ranged in age from two years, eleven months, to seven years, one month, with the mean age being four years, five months. Ten of the children were girls and 30 were boys. All of the children lived with their mother; 45% lived with their mother only, 47.5% lived with both parents, and 7.5% lived with their mother and stepfather. Based on the results of maternal reports as well as developmental assessments done with the children, none were developmentally delayed or had any major health problems.

Mothers

The mothers ranged in age from 23 years to 45 years, with the mean age being 35 years. English was the first language of 95% of the mothers, and all were fluent English speakers. The majority of the mothers (73%) were born in Canada. Of the remaining mothers, one was born in the Philippines, one in the Ukraine, and the rest were born in various English speaking countries, such as the United States, the United Kingdom, Jamaica, and South Africa. The number of years of education for the mothers ranged from 8 years to university graduation. Table 1 summarizes the sociodemographic characteristics of the sample. The effect of the sociodemographic characteristics on the scales of the two instruments will be examined in a later section.
Table 1

Sociodemographic Characteristics of the 40 Mothers and their Children

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mean</th>
<th>Range</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Age</td>
<td>4-5</td>
<td>2-11 to 7</td>
<td>25</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>One Parent Family</td>
<td></td>
<td></td>
<td>55</td>
</tr>
<tr>
<td>Two Parent Family</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Age</td>
<td>35</td>
<td>23 to 45</td>
<td>95</td>
</tr>
<tr>
<td>English First Language</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Born in Canada</td>
<td>13</td>
<td>8 to 18</td>
<td>73</td>
</tr>
<tr>
<td>Maternal Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(in years)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Child Behavior Checklist

As mentioned previously, the subjects for the larger study were chosen based on the children's scores on the subscale for Aggressive Behavior of the Child Behavior Checklist. Only those children whose score was 20 or above (on a scale from 0-40) were included in the sample. This score represents the 96th percentile for boys and girls aged 2-3 and for boys aged 4-18, and the 98th percentile for girls aged 4-18. Scores at the 98th percentile represent the clinical cutoff for the subscale, and scores falling between the 95th and 98th percentile are in the borderline clinical range. The mean for the study sample on the subscale for Aggressive Behavior was 25.24 and the standard deviation was 4.27. The mean T score was 77.74, and the T scores ranged from 68-95.

Most of the children (85%) also scored in the clinical range on at least one of the other seven subscales of the CBCL; 31% scored in this range on three or more subscales. Of the children in the sample, 41% scored in the clinical range for Withdrawn, 36% for Somatic Complaints, 26% for Anxious/Depressed, 28% for Social Problems, 13% for Thought Problems,
21% for Attention Problems, and 31% for Delinquent Behavior (a subscale only for children aged 4-18). Only one child scored in the clinical range for Destructive Behavior, a subscale for children aged 2-3.

**Working Model of the Child Interview**

Intercorrelations of the fourteen WMCI rating scales are presented in Table 2. As can be seen, many of the scales are moderately to highly intercorrelated.

A factor analysis of the WMCI was also undertaken in order to discover possible factors. This was done for the purpose of exploratory analysis rather than to use these factors in further statistics. Using a principal axis factor analysis with an oblique rotation, four distinct factors became evident. Table 3 lists the factor loadings of the WMCI variables with these factors. The factor analysis of the WMCI variables for this sample of mothers of aggressive preschoolers revealed four factors. The variables that loaded positively on Factor 1 looked like the pattern of scores of a balanced representation. (See Benoit et al., 1997, for a description of the patterns of scores typical of the three classifications). Several of the qualitative or organizational features of an interview typical of balanced classifications (Richness of Perception, Openness to Change, Coherence, Caregiving Sensitivity, and Acceptance), and the two affect scales considered important for this category (Joy and Pride) loaded positively to this factor. The variables that loaded on Factor 2 (some positively, others negatively) correspond to a large extent to those signifying a distorted representation. Anger and Infant Difficulty loaded positively, and Caregiving Sensitivity and Acceptance loaded negatively on this factor. Factor 4 had many of the same variables loading on it (mostly negatively, one positively) that are typical of a disengaged representation. Intensity of Involvement, Caregiving Sensitivity, and Joy were found to load negatively on this factor, and Indifference loaded positively on it. Three affect variables (Disappointment, Anxiety, and Guilt) all loaded positively on Factor 3. Since Factors 1, 2, and 4
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Richness of Perception</td>
<td>.53***</td>
<td>.56***</td>
<td>.80***</td>
<td>.63***</td>
<td>.60***</td>
<td>-00</td>
<td>.81***</td>
<td>.60***</td>
<td>.06</td>
<td>.19</td>
<td>.23</td>
<td>.35*</td>
<td>-.52**</td>
</tr>
<tr>
<td>Openness to Change</td>
<td>.35*</td>
<td>.47**</td>
<td>.59***</td>
<td>.59***</td>
<td>-.24</td>
<td>.68***</td>
<td>.49**</td>
<td>-.24</td>
<td>-.24</td>
<td>-.17</td>
<td>.12</td>
<td>-.28</td>
<td></td>
</tr>
<tr>
<td>Intensity of Involvement</td>
<td>.33*</td>
<td>.44**</td>
<td>.35*</td>
<td>.13</td>
<td>.57***</td>
<td>.28</td>
<td>.11</td>
<td>-.02</td>
<td>.11</td>
<td>.10</td>
<td>-.59***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coherence</td>
<td>.43**</td>
<td>.35*</td>
<td>.14</td>
<td>.69***</td>
<td>.48**</td>
<td>.15</td>
<td>.17</td>
<td>-.05</td>
<td>.19</td>
<td>-.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caregiving Sensitivity</td>
<td>.66***</td>
<td>-.27</td>
<td>.66***</td>
<td>.52**</td>
<td>-.29</td>
<td>-.04</td>
<td>.18</td>
<td>.32*</td>
<td>-.50**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>-.60***</td>
<td>.70***</td>
<td>.57***</td>
<td>-.44**</td>
<td>-.06</td>
<td>.13</td>
<td>.29</td>
<td>-.44**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant Difficulty</td>
<td>-.18</td>
<td>-.36*</td>
<td>.68***</td>
<td>.26</td>
<td>-.03</td>
<td>-.16</td>
<td>-.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joy</td>
<td>.64***</td>
<td>-.14</td>
<td>-.01</td>
<td>.07</td>
<td>.28</td>
<td>-.57***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pride</td>
<td>-.14</td>
<td>.14</td>
<td>.19</td>
<td>.28</td>
<td>-.32*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger</td>
<td>.39*</td>
<td>.23</td>
<td>.11</td>
<td>-.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disappointment</td>
<td>.42**</td>
<td>.31</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.70***</td>
<td>-.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guilt</td>
<td>-.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p< .05  ** p< .01  *** p< .001
resembled the pattern of scores of the balanced, distorted, and disengaged classifications, the level of confidence in using the WMCI classification system for further analysis with this sample was increased.

Table 3

WMCI Scales Loading on Each Factor Using an Oblique Rotation

<table>
<thead>
<tr>
<th>WMCI Scales</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richness of Perception</td>
<td>.74</td>
<td>.05</td>
<td>.16</td>
<td>-.29</td>
</tr>
<tr>
<td>Openness to Change</td>
<td>.52</td>
<td>-.30</td>
<td>-.20</td>
<td>-.21</td>
</tr>
<tr>
<td>Intensity of Involvement</td>
<td>.16</td>
<td>.16</td>
<td>-.04</td>
<td>-.68</td>
</tr>
<tr>
<td>Coherence</td>
<td>.98</td>
<td>.21</td>
<td>-.07</td>
<td>.10</td>
</tr>
<tr>
<td>Caregiving Sensitivity</td>
<td>.35</td>
<td>-.33</td>
<td>.13</td>
<td>-.40</td>
</tr>
<tr>
<td>Acceptance</td>
<td>.34</td>
<td>-.61</td>
<td>.14</td>
<td>-.27</td>
</tr>
<tr>
<td>Infant Difficulty</td>
<td>.02</td>
<td>.97</td>
<td>-.15</td>
<td>-.22</td>
</tr>
<tr>
<td>Joy</td>
<td>.64</td>
<td>-.16</td>
<td>-.00</td>
<td>-.39</td>
</tr>
<tr>
<td>Pride</td>
<td>.53</td>
<td>-.29</td>
<td>.20</td>
<td>-.07</td>
</tr>
<tr>
<td>Anger</td>
<td>.07</td>
<td>.77</td>
<td>.19</td>
<td>-.06</td>
</tr>
<tr>
<td>Disappointment</td>
<td>.21</td>
<td>.31</td>
<td>.49</td>
<td>.22</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-.26</td>
<td>-.01</td>
<td>.99</td>
<td>-.18</td>
</tr>
<tr>
<td>Guilt</td>
<td>.10</td>
<td>-.13</td>
<td>.70</td>
<td>-.04</td>
</tr>
<tr>
<td>Indifference</td>
<td>.05</td>
<td>-.08</td>
<td>-.11</td>
<td>.85</td>
</tr>
</tbody>
</table>
Distribution of WMCI Classifications

The first hypothesis of the study stated that the distribution of WMCI classifications would be different in this clinical sample than in previously published nonclinical samples, with fewer balanced and more nonbalanced (distorted and disengaged) representations in the clinical sample. The distribution for the three classifications of the Working Model of the Child Interview is presented in Table 4.

Table 4  
Distribution of WMCI Classifications

<table>
<thead>
<tr>
<th>Classification</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Distorted</td>
<td>33</td>
<td>82.5</td>
</tr>
<tr>
<td>Disengaged</td>
<td>3</td>
<td>7.5</td>
</tr>
</tbody>
</table>

In order to test hypothesis 1, a chi-square analysis was done comparing the distribution of WMCI classifications for the study sample to the distribution of a combined nonclinical sample from a previously published study (Benoit et al., 1997). Table 5 shows the results of this comparison.

Table 5  
A Comparison of the WMCI Distributions of the Aggressive and Nonclinical Samples*

<table>
<thead>
<tr>
<th></th>
<th>Balanced</th>
<th>Distorted</th>
<th>Disengaged</th>
<th>Total</th>
<th>$\kappa^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive Sample</td>
<td>4 (10%)</td>
<td>33 (82.5%)</td>
<td>3 (7.5%)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Nonclinical Sample*</td>
<td>17 (38%)</td>
<td>13 (29%)</td>
<td>15 (33%)</td>
<td>45</td>
<td>24.53**</td>
</tr>
</tbody>
</table>

* Benoit et al., 1997  
** $p < .001$
As can be seen from an examination of Table 5, a comparison of the distributions of WMCI classifications between the aggressive sample and a previously published nonclinical sample is statistically significant. As predicted by hypothesis 1, the proportion of balanced representations is much lower in the aggressive preschooler sample than the nonclinical sample (10% versus 38%), and the proportion of nonbalanced representations (distorted and disengaged) is much higher in the aggressive sample than the nonclinical sample (90% versus 62%). In addition, the proportion of distorted representations was much higher in the aggressive preschool sample (82.5% versus 29%), and the percentage of disengaged representations was lower in the aggressive sample (7.5% versus 33%).

How does the distribution of WMCI classifications for this clinical sample compare to previously published clinical samples? Table 6 shows the distribution of WMCI classifications of three previously published clinical samples (Benoit et al., 1997).

**Table 6**

**Distribution of the WMCI Classifications of 3 Previously Published Clinical Samples***

<table>
<thead>
<tr>
<th>Classification</th>
<th>Study 1* Failure to Thrive (N=24)</th>
<th>Study 2* Sleep Disorder (N=17)</th>
<th>Study 3* Clinically Referred (N=13)</th>
<th>Total (N=54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced</td>
<td>3 (13%)</td>
<td>0 (0%)</td>
<td>2 (15%)</td>
<td>5 (9%)</td>
</tr>
<tr>
<td>Distorted</td>
<td>5 (21%)</td>
<td>10 (59%)</td>
<td>7 (54%)</td>
<td>22 (41%)</td>
</tr>
<tr>
<td>Disengaged</td>
<td>16 (67%)</td>
<td>7 (41%)</td>
<td>4 (31%)</td>
<td>27 (50%)</td>
</tr>
</tbody>
</table>

* Benoit et al., 1997

Although the proportion of balanced representations was similar (10% for the aggressive sample versus 9% for the combined clinical sample), the distribution of nonbalanced representations in the aggressive and previously published clinical samples was quite different, with a much larger percentage of distorted representations in the aggressive sample (82.5% versus...
41% for the combined clinical sample) and a much lower proportion of disengaged representations in the aggressive sample (7.5% versus 50%).

Figure 1 portrays the WMCI distributions into balanced and nonbalanced classifications for the aggressive sample, the combined nonclinical sample (Benoit et al., 1997), and the combined clinical sample (Benoit et al., 1997). As can be seen from Figure 1, the proportion of balanced representations is much lower in the aggressive sample (10%) and the percentage of nonbalanced representations is much higher in this sample (90%) when compared to the nonclinical samples (38% for balanced and 62% for nonbalanced). On the other hand, the proportion of balanced and nonbalanced representations in the aggressive sample is almost identical to that found in a combined group of three clinical samples (9% balanced and 91% nonbalanced). These results confirm the first hypothesis of the study, which stated that the distribution of WMCI classifications would be different in this clinical sample than in previously published nonclinical samples, with fewer balanced and more nonbalanced (distorted and disengaged) representations in the clinical sample of mothers of aggressive preschoolers.

Figure 1

Distribution of WMCI Classifications into Balanced and Nonbalanced for Combined Nonclinical Sample,* Combined Clinical Sample,* and the Aggressive Sample

![Bar chart showing the distribution of WMCI classifications into balanced and nonbalanced for three samples: Nonclinical Sample (N=45), Clinical Sample (N=54), and Aggressive Sample (N=40). The percentages are as follows: Nonclinical: 38% balanced, 62% nonbalanced; Clinical: 9% balanced, 91% nonbalanced; Aggressive: 10% balanced, 90% nonbalanced. * Benoit et al., 1997]
The Emotional Availability Scales

The EAS presents difficulties for statistical analysis because the Structuring/Intrusiveness scale (possible scores are 1-9) is U-shaped, with 5 being the optimal score. Scores greater than 5 are considered high, where the mother too frequently sets the pace of the interaction, and scores less than 5 are thought of as inconsistent or low, where the mother backs off from the interaction and leaves the child without support, or is inconsistent or lacking in limit setting.

Without adjustment of the scores for this scale, the mean for the Structuring/Intrusiveness scale would appear optimal when in fact the scores may be overly high and overly low. For this reason, the scores on the Structuring/Intrusiveness scale were collapsed into a linear scale from 1-5, where 5 is the optimal rating, 3 inconsistent, and 1 extremely non-optimal. A score of 9 becomes 1, 7 is changed to 3, and 6 to 4, with corresponding half points. There is no published precedent for these score adjustments, but they have been used in an unpublished doctoral dissertation (Oyen, 1996).

Table 7 lists the sample means and standard deviations for the five scales of the EAS.

<table>
<thead>
<tr>
<th>EAS Scales</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Sensitivity</td>
<td>5.85</td>
<td>1.05</td>
</tr>
<tr>
<td>Maternal Structuring/Intrusiveness</td>
<td>3.63</td>
<td>.86</td>
</tr>
<tr>
<td>Maternal Hostility</td>
<td>1.28</td>
<td>.41</td>
</tr>
<tr>
<td>Child Responsiveness</td>
<td>5.69</td>
<td>1.03</td>
</tr>
<tr>
<td>Child Involvement</td>
<td>5.78</td>
<td>1.36</td>
</tr>
</tbody>
</table>

The mean of 5.85 on Maternal Sensitivity for this group compares with previously published means that range from 6.48 to 7.24 using nonclinical samples (Biringen et al., 1995, Robinson, Little, and Biringen, 1993). A pretreatment mean score of 5.35 for Maternal Sensitivity was
obtained in a pilot study using aggressive preschoolers (Landy, Menna, & Sockett-Dimarco, 1997). This score appears closer to the one obtained for the aggressive sample than the nonclinical samples.

The Association between Sociodemographic Variables and the WMCI and EAS Scales

In order to assess the association of the various maternal and child demographic variables on the variables of the two scales, several analyses were undertaken. Since the EAS variables were not normally distributed, non-parametric statistics were employed. Table 8 lists the results of the Mann-Whitney test for all the WMCI and EAS variables by marital status.

As can be seen from Table 8, mothers of two parent families were able to structure their child's play significantly more optimally than single mothers. There were no other significant differences between the two groups of mothers.

Table 9 lists the Kendall correlation coefficients for maternal age, maternal education, and child age with all the WMCI and EAS variables. This table reveals that maternal age is significantly positively correlated with Richness of Perception, Openness to Change, Coherence, Caregiving Sensitivity, and Joy, and significantly negatively correlated to Maternal Hostility. Maternal education is significantly positively correlated to Caregiving Sensitivity, Acceptance, Joy, and Maternal Sensitivity. Child age is not correlated with any of the WMCI or EAS variables.

In order to determine whether marital status affected the distribution of the working models into the three classifications, a chi-square was calculated. Table 10 lists the distributions, chi-square, and significance level. The nonsignificant chi-square indicates that the distribution of scores into the three classifications was not different for mothers who were single parents compared to mothers of two parent families.
Table 8

Two-tailed Mann-Whitney Test for the WMCI and EAS Scales by Marital Status

<table>
<thead>
<tr>
<th>WMCI Scales</th>
<th>Mean</th>
<th>Mean Rank</th>
<th>U</th>
<th>Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 Parent</td>
<td>2 Parents</td>
<td>1 Parent</td>
<td>2 Parents</td>
<td></td>
</tr>
<tr>
<td>Richness of Perception</td>
<td>2.59</td>
<td>2.85</td>
<td>17.82</td>
<td>22.48</td>
<td>150.0</td>
</tr>
<tr>
<td>Openness to Change</td>
<td>2.65</td>
<td>2.59</td>
<td>20.79</td>
<td>20.28</td>
<td>190.5</td>
</tr>
<tr>
<td>Intensity of Involvement</td>
<td>2.85</td>
<td>3.04</td>
<td>18.41</td>
<td>22.04</td>
<td>160.0</td>
</tr>
<tr>
<td>Coherence</td>
<td>2.47</td>
<td>2.83</td>
<td>16.97</td>
<td>23.11</td>
<td>135.5</td>
</tr>
<tr>
<td>Caregiving Sensitivity</td>
<td>2.41</td>
<td>2.50</td>
<td>19.29</td>
<td>21.39</td>
<td>175.0</td>
</tr>
<tr>
<td>Acceptance</td>
<td>2.71</td>
<td>2.65</td>
<td>20.74</td>
<td>20.33</td>
<td>191.5</td>
</tr>
<tr>
<td>Infant Difficulty</td>
<td>3.47</td>
<td>3.80</td>
<td>17.53</td>
<td>22.70</td>
<td>145.0</td>
</tr>
<tr>
<td>Joy</td>
<td>1.94</td>
<td>2.24</td>
<td>17.53</td>
<td>22.70</td>
<td>145.0</td>
</tr>
<tr>
<td>Pride</td>
<td>1.94</td>
<td>2.24</td>
<td>18.26</td>
<td>22.15</td>
<td>157.5</td>
</tr>
<tr>
<td>Anger</td>
<td>2.53</td>
<td>3.00</td>
<td>17.44</td>
<td>22.76</td>
<td>143.5</td>
</tr>
<tr>
<td>Disappointment</td>
<td>1.82</td>
<td>1.85</td>
<td>19.71</td>
<td>21.09</td>
<td>182.0</td>
</tr>
<tr>
<td>Anxiety</td>
<td>2.79</td>
<td>2.78</td>
<td>20.12</td>
<td>20.78</td>
<td>189.0</td>
</tr>
<tr>
<td>Guilt</td>
<td>2.27</td>
<td>2.11</td>
<td>21.09</td>
<td>20.07</td>
<td>185.5</td>
</tr>
<tr>
<td>Indifference</td>
<td>1.65</td>
<td>1.41</td>
<td>21.88</td>
<td>19.48</td>
<td>172.0</td>
</tr>
<tr>
<td>EAS Scales</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Sensitivity</td>
<td>5.47</td>
<td>6.13</td>
<td>16.74</td>
<td>23.28</td>
<td>131.5</td>
</tr>
<tr>
<td>Maternal Structuring/</td>
<td>3.27</td>
<td>3.89</td>
<td>15.82</td>
<td>23.96</td>
<td>116.0</td>
</tr>
<tr>
<td>Intrusiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Hostility</td>
<td>1.27</td>
<td>1.28</td>
<td>20.24</td>
<td>20.70</td>
<td>191.0</td>
</tr>
<tr>
<td>Child Responsiveness</td>
<td>5.65</td>
<td>5.72</td>
<td>20.12</td>
<td>20.78</td>
<td>189.0</td>
</tr>
<tr>
<td>Child Involvement</td>
<td>5.88</td>
<td>5.70</td>
<td>19.97</td>
<td>20.89</td>
<td>186.5</td>
</tr>
</tbody>
</table>

* P<.05
Table 9
Kendall Correlation Coefficients for Maternal Age, Maternal Education, and Child Age with the
WMCI and EAS Scales

<table>
<thead>
<tr>
<th>WMCI Scales</th>
<th>Maternal Age</th>
<th>Maternal Education</th>
<th>Child Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richness of Perception</td>
<td>.34*</td>
<td>.26</td>
<td>-.03</td>
</tr>
<tr>
<td>Openness to Change</td>
<td>.31*</td>
<td>.23</td>
<td>-.17</td>
</tr>
<tr>
<td>Intensity of Involvement</td>
<td>.18</td>
<td>.19</td>
<td>-.14</td>
</tr>
<tr>
<td>Coherence</td>
<td>.29*</td>
<td>.24</td>
<td>-.05</td>
</tr>
<tr>
<td>Caregiving Sensitivity</td>
<td>.32*</td>
<td>.36*</td>
<td>-.08</td>
</tr>
<tr>
<td>Acceptance</td>
<td>.26</td>
<td>.34*</td>
<td>-.11</td>
</tr>
<tr>
<td>Infant Difficulty</td>
<td>-.18</td>
<td>-.11</td>
<td>-.03</td>
</tr>
<tr>
<td>Joy</td>
<td>.32*</td>
<td>.37*</td>
<td>-.08</td>
</tr>
<tr>
<td>Pride</td>
<td>-.02</td>
<td>.04</td>
<td>.03</td>
</tr>
<tr>
<td>Anger</td>
<td>.01</td>
<td>-.12</td>
<td>.08</td>
</tr>
<tr>
<td>Disappointment</td>
<td>-.01</td>
<td>-.08</td>
<td>.08</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.15</td>
<td>.09</td>
<td>.17</td>
</tr>
<tr>
<td>Guilt</td>
<td>.15</td>
<td>.09</td>
<td>.09</td>
</tr>
<tr>
<td>Indifference</td>
<td>-.14</td>
<td>-.22</td>
<td>.07</td>
</tr>
<tr>
<td>EAS Scales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Sensitivity</td>
<td>.22</td>
<td>.36*</td>
<td>-.03</td>
</tr>
<tr>
<td>Maternal Structuring/</td>
<td>.10</td>
<td>.02</td>
<td>.12</td>
</tr>
<tr>
<td>Intrusiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Hostility</td>
<td>-.34*</td>
<td>-.26</td>
<td>.18</td>
</tr>
<tr>
<td>Child Responsiveness</td>
<td>.00</td>
<td>.20</td>
<td>.08</td>
</tr>
<tr>
<td>Child Involvement</td>
<td>-.09</td>
<td>.20</td>
<td>.09</td>
</tr>
</tbody>
</table>

* p < .05
Table 10

A Comparison of the WMCI Distributions for Mothers of Single and 2-Parent Families

<table>
<thead>
<tr>
<th>WMCI Classification</th>
<th>Balanced</th>
<th>Distorted</th>
<th>Disengaged</th>
<th>Total</th>
<th>$\chi^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>2 (11.8%)</td>
<td>12 (70.6%)</td>
<td>3 (17.6%)</td>
<td>17 (42.5%)</td>
<td>4.66</td>
<td>.10</td>
</tr>
<tr>
<td>2-Parent</td>
<td>2 (8.7%)</td>
<td>21 (91.3%)</td>
<td>0 (0%)</td>
<td>23 (57.5%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An analysis of variance for maternal education and maternal age was done to ascertain any differences among the three WMCI categories. Table 11 lists the means, standard deviations, F scores, degrees of freedom, and levels of significance.

Table 11

Analysis of Variance for Maternal Education and Maternal Age by WMCI Classification

<table>
<thead>
<tr>
<th>WMCI Classification</th>
<th>Balanced</th>
<th>Distorted</th>
<th>Disengaged</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>F (2.27)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Education</td>
<td>14.0</td>
<td>2.65</td>
<td>13.7</td>
<td>2.97</td>
<td></td>
<td>11.0</td>
<td>1.41</td>
<td></td>
<td></td>
<td>.83</td>
<td>.45</td>
</tr>
<tr>
<td>Maternal Age</td>
<td>35.0</td>
<td>6.93</td>
<td>35.4</td>
<td>5.39</td>
<td></td>
<td>30.5</td>
<td>6.36</td>
<td></td>
<td></td>
<td>.72</td>
<td>.50</td>
</tr>
</tbody>
</table>

Table 11 indicates that there were no significant differences among the three groups for maternal education and maternal age.
The Association between the WMCI and EAS Scales

In order to test hypothesis 2, which stated that sensitivity, as measured by the WMCI, would be associated with a behavioural measure of sensitivity, as measured by the EAS, Kendall correlation coefficients for all the variables of the two measures were calculated. This analysis could also be used to test a part of hypothesis 7, which stated that children would be more responsive to and involving of mothers who are more sensitive in terms of their representation. The results are shown in Table 12.

As can be seen from Table 12, hypothesis 2 was confirmed by the results of this study. Caregiving Sensitivity, as measured by the WMCI, was significantly correlated with Maternal Sensitivity, as measured by the EAS (.59, p< .001). Caregiving Sensitivity was not correlated with Child Responsiveness or with Child Involvement, thus disconfirming one section of hypothesis 7.

A perusal of Table 12 reveals additional interesting relationships between some variables of the two measures that were not specifically predicted by the hypotheses of the study. For example, Maternal Sensitivity on the EAS was positively correlated with Richness of Perception, Acceptance, and Joy, and negatively correlated with Indifference on the WMCI. The Maternal Structuring/Intrusiveness scale was not significantly correlated with any variables on the WMCI. Maternal Hostility on the EAS was negatively correlated with Richness of Perception, Caregiving Sensitivity, and Acceptance on the WMCI. Child Responsiveness on the EAS was positively correlated with Anxiety, and negatively correlated with Indifference on the WMCI. The Child Involvement scale was not significantly correlated with any variables on the WMCI.

Since maternal education, maternal age, and marital status were found to be related to various variables on the WMCI and EAS scales, these three maternal variables were partialled out one at a time, and partial correlations were calculated for the variables of the two scales.
Partial correlations could not be done using non-parametric statistics, Pearson correlations, a parametric statistic, were used to compute these values. The tables listing these partial correlations can be found in Tables I, II, and III in Appendix A.

Table 12
Kendall Correlation Coefficients of the WMCI and EAS Scales

<table>
<thead>
<tr>
<th>WMCI Scales</th>
<th>Maternal Sensitivity</th>
<th>Maternal Structuring / Intrusiveness</th>
<th>Maternal Hostility</th>
<th>Child Responsiveness</th>
<th>Child Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richness of Perception</td>
<td>.33**</td>
<td>.01</td>
<td>-.32*</td>
<td>.14</td>
<td>.16</td>
</tr>
<tr>
<td>Openness to Change</td>
<td>.16</td>
<td>-.17</td>
<td>-.22</td>
<td>-.04</td>
<td>-.08</td>
</tr>
<tr>
<td>Intensity of Involvement</td>
<td>.24</td>
<td>-.11</td>
<td>-.13</td>
<td>.06</td>
<td>.01</td>
</tr>
<tr>
<td>Coherence</td>
<td>.17</td>
<td>-.12</td>
<td>-.17</td>
<td>-.02</td>
<td>.02</td>
</tr>
<tr>
<td>Caregiving Sensitivity</td>
<td>.59***</td>
<td>.19</td>
<td>-.46***</td>
<td>.23</td>
<td>.06</td>
</tr>
<tr>
<td>Acceptance</td>
<td>.34**</td>
<td>-.07</td>
<td>-.32*</td>
<td>.09</td>
<td>.05</td>
</tr>
<tr>
<td>Infant Difficulty</td>
<td>-.11</td>
<td>.15</td>
<td>.09</td>
<td>.06</td>
<td>.10</td>
</tr>
<tr>
<td>Joy</td>
<td>.33**</td>
<td>-.14</td>
<td>-.27</td>
<td>.06</td>
<td>.04</td>
</tr>
<tr>
<td>Pride</td>
<td>.22</td>
<td>-.10</td>
<td>-.09</td>
<td>.08</td>
<td>.06</td>
</tr>
<tr>
<td>Anger</td>
<td>-.06</td>
<td>.14</td>
<td>.07</td>
<td>.14</td>
<td>.09</td>
</tr>
<tr>
<td>Disappointment</td>
<td>.00</td>
<td>.00</td>
<td>-.16</td>
<td>.14</td>
<td>.09</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.15</td>
<td>.13</td>
<td>-.24</td>
<td>.29*</td>
<td>.16</td>
</tr>
<tr>
<td>Guilt</td>
<td>.17</td>
<td>.08</td>
<td>-.13</td>
<td>.15</td>
<td>.10</td>
</tr>
<tr>
<td>Indifference</td>
<td>-.46***</td>
<td>-.15</td>
<td>.18</td>
<td>-.28*</td>
<td>-.24</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01  ***p < .001
Many of these correlations remained the same. The following are the results of the partial correlations relating to the hypotheses of the study. Caregiving Sensitivity on the WMCI was still significantly positively correlated with Maternal Sensitivity on the EAS, controlling for each of the three maternal variables. Caregiving Sensitivity became correlated with Child Responsiveness once maternal age and marital status were partialled out. This association was predicted by one of the hypotheses of the study, but the Kendall correlation was not significant. This discrepancy could be due to the less powerful nature of the non-parametric statistic used, or because these demographic variables obscured the connection between these two scales.

Results Relating 3 WMCI Classifications (Balanced, Distorted, and Disengaged) to the EAS

In order to test several of the hypotheses of the study relating WMCI classifications to scores on the EAS, a Kruskal-Wallis 1-way analysis of variance was done for the EAS scales by the three groups to test for significant differences. Table 13 lists the means, mean ranks, chi-squares, degrees of freedom, and levels of significance.

As can be seen from Table 13, there was a significant difference among the three groups for the Maternal Sensitivity variable. In order to test hypothesis 3, which stated that mothers with distorted and disengaged representations on the WMCI would be less sensitive to their preschoolers, as measured by the EAS, than mothers with balanced representations, a Mann-Whitney test comparing each pair of groups was done. The test revealed that the mean rank for Maternal Sensitivity for the balanced group was significantly higher than for the disengaged but not for the distorted group. The mean rank for the distorted group was also significantly higher on Maternal Sensitivity than the disengaged group. These results partially confirm hypothesis 3. Figure 2 portrays the mean scores for Maternal Sensitivity for the three WMCI classifications.
Table 13

Kruskal-Wallis 1-Way Analysis of Variance for the EAS Scales by WMCI Classification

<table>
<thead>
<tr>
<th>EAS Scales</th>
<th>Balanced</th>
<th></th>
<th>Distorted</th>
<th></th>
<th>Disengaged</th>
<th></th>
<th>( \chi^2 )</th>
<th>DF</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Mean Rank</td>
<td>Mean</td>
<td>Mean Rank</td>
<td>Mean</td>
<td>Mean Rank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Sensitivity</td>
<td>6.63</td>
<td>30.63</td>
<td>5.92</td>
<td>20.76</td>
<td>4.00</td>
<td>4.17</td>
<td>9.33</td>
<td>2</td>
<td>01**</td>
</tr>
<tr>
<td>Maternal Structuring / Intrusiveness</td>
<td>3.25</td>
<td>13.88</td>
<td>3.76</td>
<td>22.32</td>
<td>2.67</td>
<td>9.33</td>
<td>5.16</td>
<td>2</td>
<td>08</td>
</tr>
<tr>
<td>Maternal Hostility</td>
<td>1.00</td>
<td>13.00</td>
<td>1.27</td>
<td>20.64</td>
<td>1.67</td>
<td>29.00</td>
<td>4.36</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Child Responsiveness</td>
<td>6.00</td>
<td>23.50</td>
<td>5.77</td>
<td>21.38</td>
<td>4.33</td>
<td>6.83</td>
<td>4.83</td>
<td>2</td>
<td>09</td>
</tr>
<tr>
<td>Child Involvement</td>
<td>6.25</td>
<td>22.88</td>
<td>5.83</td>
<td>21.36</td>
<td>4.50</td>
<td>7.83</td>
<td>4.10</td>
<td>2</td>
<td>13</td>
</tr>
</tbody>
</table>

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

Hypothesis 4 stated that mothers with balanced representations would score more optimally on the Maternal Structuring/Intrusiveness scale of the EAS (neither overly intrusive nor under structuring) when compared to mothers with distorted and disengaged representations of their child. The analysis of variance did not reveal a significant difference among the groups. Hypothesis 4 was thus not confirmed by the results of this study.

Hypothesis 5 stated that mothers with balanced representations would score lower on Maternal Hostility than mothers with distorted and disengaged representations. The analysis of variance did not reveal a significant difference among the groups. This hypothesis was therefore not confirmed by the study's results.
Hypothesis 6 stated that children would be more responsive to and involving of mothers with balanced representations than those with distorted and disengaged representations. The balanced group had the highest Child Responsiveness mean rank, the distorted group had the next highest rank, and mothers classified disengaged on the WMCI had children with the lowest mean rank on Child Responsiveness. The analysis of variance did not reveal a significant difference among the groups, however. The chi-square for Child Involvement also failed to reach significance. Hypothesis 6 was therefore not confirmed by the results of this study.

Results Relating Maternal and Child Scores on the EAS

In order to test hypothesis 7, which stated that children would be more responsive to and involving of mothers who are more sensitive and more optimally structuring, Kendall correlations were calculated for the five scales of the EAS. Table 14 lists these values.

As can be seen from Table 14, Maternal Sensitivity and Child Responsiveness were significantly positively correlated, confirming one of the predictions of hypothesis 7. Maternal Sensitivity was not correlated with Child Involvement, though, disconfirming another prediction.
### Table 14

**Kendall Correlation Coefficients of the EAS Scales**

<table>
<thead>
<tr>
<th>EAS Scales</th>
<th>Maternal Structuring / Intrusiveness</th>
<th>Maternal Hostility</th>
<th>Child Responsiveness</th>
<th>Child Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Sensitivity</td>
<td>.43***</td>
<td>-.44***</td>
<td>.47***</td>
<td>.14</td>
</tr>
<tr>
<td>Maternal Structuring / Intrusiveness</td>
<td>-.02</td>
<td>.22</td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>Maternal Hostility</td>
<td>.20</td>
<td></td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Child Responsiveness</td>
<td></td>
<td></td>
<td>.56***</td>
<td></td>
</tr>
</tbody>
</table>

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

made by hypothesis 7. Maternal Structuring/Intrusiveness was not correlated with Child Responsiveness or Child Involvement. These two predictions were therefore not supported by the results of the study.

Other significant correlations found that were not specifically predicted by any hypotheses of the study were a negative correlation between Maternal Sensitivity and Maternal Hostility, a positive correlation between Maternal Sensitivity and Maternal Structuring/Intrusiveness, and a positive correlation between Child Responsiveness and Child Involvement.

Since the three maternal demographic variables (maternal education, maternal age, and marital status) were found to be related to some of the EAS scales (Maternal Sensitivity was significantly positively correlated with maternal education, Maternal Hostility was significantly negatively correlated with maternal age, and there was a significant difference between one and two parent families on Maternal Structuring/Intrusiveness), Pearson partial correlations (a
parametric statistic) were calculated for the EAS variables controlling for these demographic variables. The tables listing these partial correlations can be found in Appendix A (Tables IV, V, and VI).

Many of the partial correlations were similar to those found without controlling for the maternal demographic variables. The following are the results that pertain to the hypotheses of the study. Maternal Sensitivity was still significantly positively correlated with Child Responsiveness, even with each of the three demographic variables partialed out. In addition, Maternal Sensitivity became correlated with Child Involvement controlling for maternal age and marital status, and Maternal Structuring/Intrusiveness became correlated with Child Responsiveness once maternal education, maternal age, and marital status were partialed out. These latter two correlations were predicted by the study’s hypotheses, but were not significant when Kendall correlations were calculated. The reasons for this discrepancy are probably similar to the ones given for previous differences found between parametric and non-parametric correlations, namely, that non-parametric statistics are less powerful, and that these demographic variables may be camouflaging these associations.

Summary of Results

As predicted by hypothesis 1, there were fewer mothers with balanced and more with nonbalanced representations of their children in this sample of aggressive preschoolers (10% and 90%) than in previously published nonclinical samples (38% and 62%, Benoit et al., 1997). The distribution of balanced versus nonbalanced representations in this sample was almost identical to previously published clinical samples (9% and 91%, Benoit et al., 1997).

The second hypothesis, which stated that sensitivity, as measured by the WMCI, would be associated with a behavioural measure of sensitivity, as measured by the EAS, was also confirmed by the results of this study. There was a highly significant positive correlation between these two variables (.59).
The third hypothesis, which stated that mothers with distorted and disengaged representations would be less sensitive to their preschoolers, as measured by the EAS, than mothers with balanced representations, was partially confirmed by the results. Mothers with balanced representations were more sensitive to their children than mothers with disengaged representations, but there was no significant difference on sensitivity scores between the balanced and distorted groups. Those classified as distorted also had significantly higher sensitivity scores than the disengaged group.

The fourth hypothesis of the study, which stated that mothers with balanced representations would score more optimally on the Maternal Structuring/Intrusiveness scale of the EAS (neither overly intrusive nor under structuring) when compared to mothers with distorted and disengaged representations of their child, was not confirmed by the results of this study.

Hypothesis 5 stated that mothers with balanced representations would score lower on Maternal Hostility than mothers with distorted and disengaged representations. The three groups were compared using an analysis of variance, and the difference was not found to be significant.

Hypothesis 6, which stated that children would be more responsive to and involving of mothers with balanced representations than those with distorted and disengaged representations, was not confirmed by the results of the study.

Hypothesis 7 stated that children would be more responsive to and involving of mothers who are more sensitive (both in terms of their behaviour and representation) and who are more optimally structuring. This hypothesis was partially confirmed by the results of the study. Caregiving Sensitivity on the WMCI was not correlated with Child Responsiveness or with Child Involvement. Maternal Sensitivity on the EAS was found to be significantly positively correlated with Child Responsiveness but not with Child Involvement. Maternal Structuring/Intrusiveness was not correlated with Child Responsiveness or with Child Involvement.
Case Examinations

In order to illustrate how a mother's working model of her child translates into specific interactional behaviour during a play episode, two mothers were selected, one classified disengaged (mother A) and the other classified distorted (mother B), for more detailed analysis.

Mother A was classified disengaged on the basis of the scores of her WMCI. For this mother, psychological detachment, emotional constriction, and aloofness pervaded the interview. Emotional distance and estrangement were unmistakable in the narrative; there was no sense that the mother was struggling to feel close to her child. Whenever emotional experience was described, she tried to minimize or normalize it. For example, each time she used an affect term, she would accompany it by saying, "of course". When describing her pregnancy, she said, "Well, it was exciting, of course....As time went on, I wanted to have him but of course I was afraid, scared." When discussing her frequent separations from him, she said, "Well, of course he'd cry....Well, of course it was hard for me...My parents were willing to take care of him so it didn't bother me that much, that part didn't bother me. I got lonely for him, of course..." She also tried to minimize and normalize difficulties she has with her child. For example, she was asked what she imagined would happen to his (difficult) behaviour as he grew older. She replied that when he gets to be really old, he'll just be gone, and go do whatever he wants. When she was asked why she thought this, she replied, "Well, that's how kids are these days." Another way she manifested aloofness was by referring to her son as "the kid" or "the baby" when he was younger. This mother received the following scores out of 5 on the WMCI (5 is the optimal score):

<table>
<thead>
<tr>
<th>This mother's scores</th>
<th>Nonclinical group mean scores (Benoit et al., 1997)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richness of Perceptions: 1.5</td>
<td>2.66</td>
</tr>
<tr>
<td>Openness to Change: 2</td>
<td>2.62</td>
</tr>
<tr>
<td>Intensity of involvement: 2</td>
<td>2.92</td>
</tr>
<tr>
<td>Coherence: 2.5</td>
<td>2.70</td>
</tr>
<tr>
<td>Caregiving Sensitivity: 2</td>
<td>2.66</td>
</tr>
</tbody>
</table>
This mother's detachment could also be observed during her interaction with her son. Her lack of enthusiasm and enjoyment showed in both her face and her voice. The absence of her involvement in her son's play could be seen by abrupt play transitions, suggestions for play activities that did not involve interaction between herself and her son, a lack of responsiveness to his comments and story line, and an expression of boredom on her face. Nevertheless, there were a few times when this mother-son pair appeared to "connect"; their conversation flowed naturally, they both seemed interested in the play theme, and enjoyment was clearly observable for both mother and child. For this reason, this mother was considered inconsistently sensitive. The score given for Maternal Sensitivity was 5. This can be compared to a mean Maternal Sensitivity score of 6.58 that was obtained for a nonclinical sample (Ziv et al., 1996).

How did this mother's disengaged representation of her son affect her ability to appropriately structure his play? There were times when she initiated play themes rather abruptly without taking care to follow her child's lead and elaborate on his interests. At other times, however, she appeared to withdraw from the interaction, leaving the child without further support for his play. There were other instances of unvarying and repetitive attempts to structure his play that did not help to elaborate or further the play theme. This mother was therefore considered to be inconsistent in structuring/intrusiveness and received a score of 3 (untransformed) on this scale.
An untransformed mean score of 4.78 was obtained on Maternal Structuring/Intrusiveness for a nonclinical sample (Ziv et al., 1996).

This mother's disengagement from her son was also manifested by a small amount of hostility that could be detected in her behaviour. She introduced and persisted in a violent play theme that was obliquely directed at the child. For this reason, a score of 2 was given on the Maternal Hostility scale. Ziv and colleagues (1996) obtained a mean score of 1.07 for their nonclinical sample.

The child's responsiveness to his mother was rated as moderate (a score of 5) since he showed less pleasure and eagerness in response to her than the optimal score (7) would warrant. Some of his responses to her appeared half-hearted with a marked lack of enthusiasm. In terms of his verbal narration of play themes, there were times when he revealed a conception of the world as malevolent. This score is similar to the mean score for Child Responsiveness (4.99) obtained by Ziv and associates (1996) for their nonclinical sample.

This child received a score of 5 on Child Involvement (on a scale of 1-9), which is considered moderately involving (nonclinical mean Child Involvement score: 4.60, Ziv et al., 1996). He displayed several clear attempts to involve his mother in his play themes, especially near the beginning of the play sequence, but was not always successful. At these times, although he took obvious interest and pleasure in the toys provided for them, his narration, gestures, and gaze indicated that he wanted to involve her in his play activities. Towards the middle and end of the interaction, however, he seemed to have given up on his attempts at engaging her, fighting off her "attacks" with the dinosaur with a lack of energy and enthusiasm, averting his gaze from his mother's face, and stopping his narrative flow. One could sense an air of sadness in this initially cheerful little boy.

Mother B was classified distorted on the basis of her WMCI scores. This mother was much more intensely involved with her child than was the case for mother A. As is common with this type of representation, the distortion does not result from a distortion of objective reality, but rather to an internal inconsistency within the representation. This mother's narrative was difficult
to follow at times, especially when she was describing her child. There were many contradictions in her perceptions of her son, revealing her difficulty in remaining clearly focused on him. This resulted in her inability to convey a coherent description of her child, and the reader was left with a confused, contradictory image of him. In her narrative, this mother also communicated several instances of unreasonable expectation of compliance. It was as though she were inwardly pleading with him, "Be reasonable!" Her son's needs for autonomy were frequently misinterpreted, and there were several instances when she attributed malevolent intentions to him. For example, she described him as being "mean" for taking his first steps with her husband rather than with her, since she was the primary caregiver. She interpreted her son's tantrums as deliberate attempts to provoke her. She received the following scores on the WMCI:

<table>
<thead>
<tr>
<th>This mother's scores</th>
<th>Nonclinical group mean scores (Benoit et al., 1997)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richness of Perceptions: 2.5</td>
<td>2.66</td>
</tr>
<tr>
<td>Openness to Change: 2</td>
<td>2.62</td>
</tr>
<tr>
<td>Intensity of Involvement: 4</td>
<td>2.92</td>
</tr>
<tr>
<td>Coherence: 1.5</td>
<td>2.70</td>
</tr>
<tr>
<td>Caregiving Sensitivity: 2</td>
<td>2.66</td>
</tr>
<tr>
<td>Acceptance: 2</td>
<td>2.72</td>
</tr>
<tr>
<td>Infant Difficulty: 4.5</td>
<td>2.24</td>
</tr>
<tr>
<td>Joy: 1</td>
<td>2.28</td>
</tr>
<tr>
<td>Pride: 1</td>
<td>1.50</td>
</tr>
<tr>
<td>Anger: 3</td>
<td>1.32</td>
</tr>
<tr>
<td>Disappointment: 1</td>
<td>1.38</td>
</tr>
<tr>
<td>Anxiety: 2.5</td>
<td>1.20</td>
</tr>
<tr>
<td>Guilt: 1</td>
<td>1.34</td>
</tr>
<tr>
<td>Indifference: 1</td>
<td>1.66</td>
</tr>
</tbody>
</table>

This mother's relatively low attunement and sensitivity conveyed in her narrative description of her child was manifested to some extent in her interactive behaviour, particularly in the latter
part of the play episode following an instance of noncompliance by her son. Her son had just drawn a picture of her and she wanted him to sign it but he ignored her request. She abruptly changed from being responsive and showing positive affect to not responding to his comments and questions, using a discontented tone of voice, and interrupting his flow of conversation. On the other hand, during the more harmonious portion of the sequence, when her child responded to her initiatives and suggestions, she was able to communicate her enjoyment of the interaction, focus on his conversation and activities, and respond contingently. For this reason, she was given a score of 6 on sensitivity, which falls midway between the rating of "generally sensitive" (7) and "inconsistently sensitive" (5) (Maternal Sensitivity mean score: 6.58, Ziv et al., 1996).

This mother was an active interactive partner in the play sequence. She contributed suggestions, manipulated pieces, elaborated the play themes, and provided information to her son. For the most part, her bids were successful in structuring the interaction. There were times when she followed the child's lead in determining the direction of the play. On the other hand, there were some instances of intrusiveness, when she entered his play in an abrupt rather than a smooth manner, giving the impression of interruption rather than elaboration. She was thus given an untransformed score of 6 on Structuring/Intrusiveness, halfway between "high" (7) and "optimal" (5) (Maternal Structuring/Intrusiveness untransformed mean score: 4.78, Ziv et al., 1996).

There was a very small amount of hostility discernible in the mother's behaviour. A few times during the interaction, she "attacked" her son or the toys he manipulated with various dinosaurs. These attacks were unconnected to the context of the play theme and were unprovoked by her child. At one point during the interaction, the child said, pointing to a dinosaur, "That's a nice T Rex." The mother replied, "There's no such thing as a nice T Rex." For these reasons, she was given a score of 1.5 on Maternal Hostility (Maternal Hostility mean score: 1.07, Ziv et al., 1996).

This child was responsive to his mother during most of the play episode. He displayed a willingness to follow her suggestions and showed clear signs of pleasure during his engagement with her. This level of responsiveness was especially apparent when she displayed an interest in
and enjoyment of her interaction with him, and when he was clearly in charge of the sequencing of the play. When her will was imposed on him, however, he failed to respond to her requests. He was therefore given a score of 6 on Child Responsiveness (Child Responsiveness mean score: 4.99, Ziv et al., 1996).

This child was highly involving of his mother during the play interaction. He showed a balance between playing autonomously and involving her in his play. He engaged her primarily through verbal narration, but also paused in his play to connect physically and visually with her. Even when she tried to convince him to sign his name to his drawing, he tried to engage with her by redirecting the topic of conversation to a play theme. In fact, this child was quite skillful in ignoring intrusions into his play and avoiding open conflict with his mother. He was given a score of 7 (highly involving) on the Child Involvement with mother scale (Child Involvement mean score: 4.60, Ziv et al., 1996).
DISCUSSION

The overall objective of the study was to investigate the relationship between maternal representation of the child and emotional availability of the mother-child dyad in a sample of mothers and their aggressive preschoolers. In addition, it was hypothesized that there would be a smaller proportion of balanced representations in this clinical sample compared to the distribution of classifications found in previously published nonclinical samples.

Hypothesized Results

Distribution

Hypothesis 1 stated that the distribution of WMCI classifications would be different in this clinical sample than in previously published nonclinical samples, with fewer balanced and more nonbalanced (distorted and disengaged) representations in the aggressive sample. This hypothesis was supported by the results of the study. As expected, balanced classifications were underrepresented in this sample, with only 10% of the mothers having this classification compared to 38% in a previously published combined nonclinical sample (Benoit et al., 1997). These results were similar to those found by Benoit and associates (1997) who observed that mothers of children with clinical problems were more likely to have distorted or disengaged representations on the WMCI than a nonclinical control group (91% compared to 62%).

The finding that 90% of the mothers of these aggressive preschoolers were classified as having distorted or disengaged representations, compared to 62% of a nonclinical sample, suggests that as a group, these mothers express less empathic appreciation for their child's experience and individuality when interviewed using the WMCI. This finding supports the suggestion offered by Benoit and colleagues (1997) that WMCI classifications could be one way
to help identify parent-child dyads at risk for clinical problems. They add that measures such as the WMCI might help to identify risk or protective factors leading to the development of clinical problems, with balanced classifications representing a protective factor for the child, and distorted and disengaged classifications representing a risk factor. They suggest that disengaged representations may be associated with children's clinical problems because of the emotional aloofness, indifference, and insensitivity of these parents which may lead to feelings of inadequacy or rejection on the part of the children. Distorted representations may be associated with clinical problems in children because of the negative emotional atmosphere of these mothers who also typically have unrealistic expectations of their children. On the other hand, having a parent with a balanced representation might enable the child to feel that his or her needs will be consistently responded to with sensitivity. Growing up in this type of environment might protect the child against the development of behavioural problems. However, Benoit and associates (1997) also added that since 33% of the mothers in the nonclinical control group had disengaged and 29% had distorted classifications, other factors have an influence on the development of clinical problems besides maternal representations. The results of this study suggest that having a nonbalanced maternal working model of the child may be a risk factor in the development of preschool behaviour problems.

Although the proportion of balanced versus nonbalanced classifications in this aggressive sample was similar to Benoit and associates' (1997) clinical sample (10% versus 9%, 90% versus 91%), the distribution of nonbalanced representations in the aggressive and clinical samples was quite different, with a much larger percentage of distorted representations in the aggressive sample (82.5% versus 41% for the clinical sample) and a much lower proportion of disengaged representations in the aggressive sample (7.5% versus 50%). The selection of the subjects for the aggressive sample may help to explain the disproportionately large number of distorted compared to disengaged classifications in the aggressive sample (82.5% versus 7.5%). The sample was composed of parents who volunteered to participate in the study in order to be eligible to attend a parenting group designed to help parents of aggressive and/or defiant preschoolers. Since parents
with a disengaged representation of their child are typically emotionally aloof and have a low level of personal involvement with their child, they may not be motivated to seek help or even acknowledge that there are difficulties with their child. Parents with distorted representations, on the other hand, are typically more involved with their child and hence may be more likely to seek professional help to solve parenting difficulties.

Although the skewed distribution (a very large proportion of distorted representations and very small balanced and disengaged representations) may be explained in terms of the clinical nature of the sample as well as sample selection, it is important to apply caution when drawing conclusions based on statistical analysis pertaining to the three groups of the sample. Nevertheless, several analyses were undertaken in order to test the remaining hypotheses.

The Association between Maternal Representation and Maternal Behaviour

Hypothesis 2 stated that sensitivity, as measured by the WMCI, would be associated with a behavioural measure of sensitivity, as measured by the Emotional Availability Scales. This hypothesis was strongly supported by the results of the study (r = .59, p < .001).

The association between parental representations and interactional behaviour has received previous support in the research literature. For example, Cox and associates (1992) examined the relationship between parental attitudes towards their infant (a combined standard score that included ratings of sensitivity, acceptance, delight, and investment in parenting) and parent-child interaction. They reported that for both mothers and fathers, the parents' attitude about the infant was significantly correlated with a positive interaction variable. In the present study, Richness of Perception, Acceptance, and Joy were also found to be significantly positively correlated to maternal interactional sensitivity, and Indifference significantly negatively correlated to this scale. In addition, Richness of Perception, Caregiving Sensitivity, and Acceptance on the WMCI were found to be significantly negatively correlated to Maternal Hostility on the EAS.
According to Grusec, Hastings, and Mammone (1994), parenting cognitions or belief systems are part of the internal representations of relationships that parents convey while interacting with their children. The idea that relationship schemas may be guiding parental behaviour has also been suggested by Bugental and colleagues (Bugental, 1992; Bugental et al., 1993). They proposed that these constructions of relationships determine an individual's affective, cognitive, and behavioural response during interactions. The behaviour of the child is "filtered" through precognitive schema, and influences both affective reactions and cognitions. It is for this reason, according to Bugental (1992), that difficult child behaviour will have different consequences for different parents, since their reactions will be guided by differences in their caregiving schemas.

Both attribution and attachment theorists propose that relationship schemas develop in childhood experiences with parents who are either primarily sensitive and accepting, rejecting, or inconsistent in their responses (Ainsworth et al., 1978; Bowlby, 1968; Bretherton, 1985; Grusec et al., 1994). Thus sensitivity, as displayed by the parent towards the child, leads to the development of relationship schemas which allows for the recognition of the needs and experiences of others. The parent who has been sensitively responded to as a child can thus be attentive, open, and attuned towards his or her own child, and express sensitivity during interactions. The results of this study support this interpretation of intergenerational transmission of sensitivity by capturing one portion of this cycle.

Hypothesis 3 stated that mothers with distorted and disengaged representations (nonbalanced) on the WMCI would be less sensitive to their preschoolers, as measured by the Emotional Availability Scales, than mothers with balanced representations. This hypothesis was only partially confirmed by the results. Mothers with balanced representations had the highest score for sensitivity, and scored significantly higher than mothers with disengaged but not distorted representations. Mothers with distorted representations also had significantly higher behavioural sensitivity scores than mothers with disengaged representations.

The play interaction did not trigger significantly less sensitive behaviour for the mothers classified as distorted when compared to the balanced group; the disengaged group, however,
revealed significantly less sensitivity when interacting with their preschooler than both the distorted and balanced classifications. It appears that mothers who are less intensely involved with their child remain aloof, withdrawn, and not attuned even during a stress-free interaction. Mothers classified as distorted, on the other hand, have a more intense involvement with their child, and appear to be more accessible to their preschooler when difficult child behaviour is less likely to occur. George and Solomon (1989) found maternal behaviour in the home to show little relation to ratings of caregiving representation. They explained their findings by stating that the stress-free situation may not have triggered the expected relationship. Using a stressful problem-solving laboratory procedure, Crowell and Feldman (1988), on the other hand, found mothers' internal working models of attachment (as measured by the AAI) to be significantly related to individual differences in interactive behaviour.

Grusec and colleagues (1993), in their study on the relationship between parental attributions and the AAI, found that parents classified preoccupied reported the most negative thoughts when confronted with difficult child behaviour, and attributed the misbehaviour to the child’s personality rather than to the situation. The authors state that preoccupied adults are inconsistent in their behaviour towards their children. At times, they are warm and gentle; on other occasions, they become coercive and angry. Benoit and associates (1997) found a concordance rate of 73% between adults classified preoccupied on the AAI and distorted on the Working Model. A post hoc comparison of a variable on the Working Model that measures perceived difficulty of the child revealed that parents with distorted representations had the highest score on this variable, and their score was significantly higher than for the mothers classified as balanced. For the mothers classified as distorted, it is predicted that the combination of negative affect, unrealistic expectations, and the tendency to attribute misbehaviour to negative child characteristics would result in less sensitive behaviour on the part of these mothers when faced with challenging child behaviour.

Hypothesis 4 stated that mothers with balanced representations would score more optimally on the Structuring/Intrusiveness scale of the EAS (neither overly intrusive nor under structuring)
when compared to mothers with nonbalanced representations of their child. This hypothesis was not supported by the results of the study.

As mentioned previously, the Structuring/Intrusiveness scale is U-shaped with low scores representing understructuring, mid range scores being optimal, and high scores considered as intrusive. For this reason, the scores on this scale were collapsed, with the highest score on the collapsed scale representing the most optimal rating and low scores on the collapsed scale (both high and low scores on the original scale) representing nonoptimal ratings. This procedure overcomes the problem of averaged high and low scores appearing optimal, but information is lost as to whether nonoptimal scores reflect understructuring or intrusiveness. One solution, offered by Robinson and Spieker (1996), is to have two nonoptimal categories (too low and too high) and one optimal category (mid range scores). The numbers in each category could then be related to WMCI classifications. Unfortunately, the very low numbers of mothers in the balanced and disengaged classifications rendered this method untenable for this sample. However, an examination of the distribution of the Structuring/Intrusiveness scores of mothers classified as distorted revealed that 67% of these mothers scored in the optimal range (between 3.5 and 6 on a scale of 1-9), 24% scored in the understructuring or inconsistent range (between 1 and 3), and 9% scored in the intrusive range (between 6.5 and 9).

What can we conclude from this distribution? It appears that mothers who have distorted representations of their child, that is, whose representations are emotionally charged (often negatively), are internally inconsistent, convey insensitivity towards the child's experience, and lack a clear focus on the child may be able to adequately structure their child's activities when engaged in a nonstressful play interaction.

As mentioned by the authors of the scale (Biringen et al., 1988/1993), play contexts may not afford observers an opportunity to observe limit-setting, an aspect of the structuring/intrusiveness concept. Perhaps differences between mothers with distorted representations of their child and those classified balanced on the WMCI would be more apparent in a disciplinary context. Mothers classified distorted typically have unrealistic expectations of their child, the child's needs
for dependency or autonomy are not recognized or are misunderstood, and negative affects in the child are not readily accepted. Mothers with balanced representations, on the other hand, generally recognize and accept negative affects in their child, attribute positive behaviour to the child's disposition and negative behaviour to the situation, and convey respect and empathic appreciation for their child's experience. Within a disciplinary context, it is predicted that parents with distorted representations would be less likely to take into account situational or developmental constraints and instead make inappropriate dispositional inferences.

According to Dix and Grusec (1985), inferring malicious intention on the part of the child encourages negative affective states and may lead to harsh efforts to control the child. Twentyman and colleagues (1984) have outlined a model of excessive child discipline where the first stage consists of unrealistic expectations being set by the parent and the last stage results in severe punishment based on misattributions of hostile intent. Bugental (1991) views excessive parental control as an attempt by parents who attribute low control to themselves to gain more control of caregiving. A future study using a disciplinary interaction could test the hypothesis that mothers with distorted representations of their child are overcontrolling in prohibition situations, measured by high scores on the Structuring/Intrusiveness scale.

Hypothesis 5 stated that mothers with balanced representations would score lower on Maternal Hostility than mothers with distorted and disengaged representations. Mothers with balanced representations had the lowest hostility score (mean: 1.00, mean rank: 13.00) followed by those with distorted representations (mean: 1.27, mean rank: 20.64). Mothers with disengaged representations of their child had the highest mean maternal hostility score (mean: 1.67, mean rank: 29.00). An analysis of variance did not reveal a significant difference for the three groups on this variable, however.

Since the Maternal Hostility scale ranges from 1 to 5, the scores for the two nonbalanced groups are not particularly high. It appears that a play interaction does not arouse much hostility for these two groups of mothers with nonbalanced representations. Even larger differences
between the balanced group and the other two groups would be predicted in a disciplinary context where negative child behaviour is more likely to occur.

It is predicted that parents with distorted representations will have higher scores on Maternal Hostility in this context since these parents tend to have unrealistic expectations of their child and minimize situational and developmental constraints. If the behaviour is negative and is seen as directed against the parent, then inferences of malicious intention on the child's part is more likely, and such inferences encourage negative affective states, such as anger or hostility (Dix & Grusec, 1985).

Parents with disengaged representations of their child are emotionally aloof, indifferent, may even feel aversion towards their child, and also lack empathic appreciation for their child's experience. They have difficulty accepting negative affects in their child and their own negative affects towards their child are not directly acknowledged. This combination of indifference, lack of empathy, and lack of awareness of negative affect is hypothesized to lead to increased hostility in the face of negative child behaviour.

In their study on the relationship between adult representation of attachment (using the AAI) and parental attributions, Grusec, Adam, & Mamzone (1993) found that dismissive parents saw themselves as having the least control in a difficult child rearing situation. According to Bugental (1992), reactions to difficult child behaviour will be more adverse for those parents whose caregiving schema places them at a power disadvantage (threat-oriented schema). She proposed that expressive behaviours may occur at different levels of controllability. Some behaviours may even occur with little conscious awareness or control, a phenomenon she calls affect leakage. This is the type of hostility hypothesized to occur with adults classified as disengaged on the WMCI. Dismissive adults generally dismiss the importance of attachment relationships, and their interactions with their children are characterized by coolness and remoteness (Grusec, Hastings, & Mammone, 1994). Benoit and associates (1997) have found concordance between adults classified as dismissive on the AAI and disengaged on the WMCI.
Although significant differences in Maternal Hostility were not found among the three groups, behavioural hostility was found to be related to various aspects of the mother's representation of her child. Richness of Perception, Caregiving Sensitivity, and Acceptance were all found to be significantly negatively correlated to Maternal Hostility.

The Association between Maternal Representation and Child Behaviour

Hypothesis 6 stated that children would be more responsive to and involving of mothers with balanced representations than those with distorted and disengaged representations. This hypothesis was not confirmed by the results of the study. The children of the mothers with balanced representations had the highest Child Responsiveness scores (mean: 6.00, mean rank: 23.50), the children of the mothers classified distorted had the next highest scores on Child Responsiveness (mean: 5.77, mean rank: 21.38), and these scores were lowest for the children of mothers with disengaged representations (mean: 4.33, mean rank: 6.83). Children of mothers classified balanced also scored highest on Child Involvement (mean: 6.25, mean rank: 22.88), those with mothers in the distorted group scored second highest (mean: 5.83, mean rank: 21.36), and Child Involvement scores were lowest for the children of mothers classified disengaged (mean: 4.50, mean rank: 7.83). These differences were not significant, however, so this hypothesis was not confirmed by the results of this study.

Mothers' representations of their child have been found to affect other aspects of child behaviour. For example, Benoit, Parker, and Zeanah (1997) found that mothers' descriptions of their infants assessed prenatally can be used to predict security of attachment after birth. They concluded that these results emphasize the important consequences of parents' perceptions of their children, and that these perceptions can then be used for the early identification (even during pregnancy) of disturbed parent–child relationships.

Other researchers have also postulated an association between parental perceptions and child behaviour. For example, attribution theory emphasizes the importance of parents' attributions and
expectations on parental behaviour and child development (Bugental & Shennum, 1984; Dix & Grusec, 1985). Attribution theorists state that differences in the parent's perception and interpretation of difficult child behaviours determine the course for subsequent affective development of the child. According to Bugental and Shennum (1984), if the parent believes she has little power or competence as a caregiver and the child is hard to control, the adult will behave in a way as to maintain the child's difficult behaviour and therefore support the adult's beliefs. The message given by these threat-oriented adults towards the child is primarily negative and possibly confusing, acting to arouse negative affect or anxiety in the child. In an attempt to cope with their negative affect, these children may become avoidant, unresponsive, or difficult to control, thus confirming the parent's relationship schema. On the other hand, adults whose relationship schemas do not place them at a power disadvantage are less likely to be sensitized to a difficult child. They may respond instead with increased attention, interest, and attempts at problem solving. Children are more likely to respond to adult interest with increased attention or responsiveness.

Evidence for this model was provided by Bugental and her colleagues (Bugental & Shennum, 1984; Bugental, 1992). In their study on mothers with high and low self perceived power and responsive and unresponsive children, they found that responsive children responded quickly and unresponsive children responded slowly to mothers with low self perceived power, but there was little difference between the two groups of children in behavioural responsiveness to mothers with high self perceived power.

Although the present study did not specifically investigate the effects of maternal representation on child attachment, or maternal self-perceived power on child responsiveness, these studies support the notion that differences in maternal representation do affect child behaviour. In the present study, mothers with disengaged representations of their child have children who scored the lowest on Child Responsiveness and Child Involvement during a stress-free play interaction. Research by Grusec and colleagues (Grusec, Adam & Mammone, 1993) found that dismissive mothers (comparable to disengaged mothers in their representation of
relationships) perceived themselves as having the least control in a difficult child rearing situation, and Bugental and Shennum (1984) found that difficult children were the least responsive to this type of mother. Although differences among the groups did not reach significance, the trend of the scores suggests that children respond the least to mothers who are disengaged (aloof and distant) in their representation. This interpretation is supported by the finding that Child Responsiveness was negatively correlated with Indifference on the WMCI, a hallmark of disengaged representations. In addition, a significant positive correlation was found between Child Responsiveness and Anxiety on the WMCI. Although anxiety is often considered to be a negative emotion, it can be construed as an indication of caring, an attribute incompatible with the coolness typically found in disengaged representations.

One section of hypothesis 7 stated that children would be more responsive to and involving of mothers who are more sensitive in terms of their representation. This prediction was not confirmed by the results of the study. The correlation between Caregiving Sensitivity and Child Responsiveness was positive, but was not significant (.08). The trend of the data shows that when mothers convey, in their narrative descriptions, a recognition of and response to the child's needs and affective experiences, children are more eager or willing to follow their suggestions in interactions and show signs of pleasure during these exchanges (Child Responsiveness). The degree to which children attend to and engage their mother in play (Child Involvement) was not related to the above maternal characteristics in this sample.

The Association between Maternal Behaviour and Child Behaviour

Hypothesis 7 stated that children would be more responsive to and involving of mothers who are more sensitive and who are more optimally structuring. This hypothesis was partially confirmed in this study. Maternal Sensitivity was highly correlated to Child Responsiveness (.47, p< .001), but was not correlated with Child Involvement. Maternal Structuring/Intrusiveness was not correlated with Child Responsiveness or with Child Involvement. These results support a
statement made by the authors of the Emotional Availability Scales that the Child Responsiveness scale is the counterpart to the Maternal Sensitivity scale (Biringen et al., 1988/1993).

The fact that maternal behavioural sensitivity was significantly correlated with responsiveness of the child, but maternal sensitivity conveyed by describing the child was not is notable. It appears that the association between a representational form of maternal sensitivity and child responsiveness is an indirect one that is mediated through maternal behaviour. This finding is not surprising given previous research support for the notion that other factors influencing parents such as family adversity have their largest impact as mediators for caregiving (Cowan et al., 1993; Hetherington, 1989; Webster-Stratton, 1990).

The association found between Maternal Sensitivity and Child Responsiveness support previous conceptualizations of emotional availability (Biringen & Robinson, 1991). These authors view this construct as describing both maternal and child behaviour in a relational context. In order for the child to perceive the mother as emotionally available, she must be sensitive and warm, and be able to support her child's activities without being intrusive. In addition, the child's responsiveness to the mother as she initiates and supports the interactions, and the child's willingness to involve the mother in play and social interaction are important aspects of the emotional communication between the pair. According to the authors, there is a parallel between maternal sensitivity and child responsiveness, and between maternal nonintrusiveness and child involvement of the mother. In this sample, a correlation was found between the first two variables only.

The results of this study also support the considerable amount of research linking maternal interactional behaviour, particularly sensitivity and control, to child response, including aggressive behaviour. Research results clearly suggest that such aspects of parenting as warmth, responsiveness, and appropriate limit-setting are crucial to the development of socially competent behaviour in young children, and the absence of these dimensions, or outright rejection and harsh control, are linked to behaviour problems (Campbell, 1995). When both warmth and appropriate limit-setting are present, also termed authoritative parenting, internalization of control and the
willingness to cooperate with parents have been observed (Baumrind, 1967; Maccoby & Martin, 1983). A pattern of caregiving involving acceptance-responsiveness and absence of coercive control has been negatively associated with child externalizing behaviour (Rothbaum & Weisz, 1994). Using the Emotional Availability Scales, Maternal Sensitivity has been associated with more cooperation, less resistance, more frustration tolerance, and more helping, sharing, and affectionate behaviour to a sibling (Robinson & Little, 1994), a finding that underlines the importance of maternal sensitivity in the promotion of prosocial qualities in relationships. On the other hand, when the behaviour of parents towards their children is rejecting, inconsistent, insensitive, or unresponsive, preschoolers have been observed to show acting out, withdrawn, and dependent behaviour (Erickson, Sroufe, & Egeland, 1985; Sroufe, 1983). Others have also found arbitrary, negative, or uninvolved maternal behaviour to be associated with noncompliance, defiance, and low internalization of control (Kuczynski et al., 1987; Patterson, 1980; Wester-Stratton, 1990).

How do the results of the present study support these research findings? Maternal Sensitivity was found to be significantly positively correlated with Child Responsiveness. Although this latter scale does not directly measure defiance or internalization of control, it does measure an enthusiastic willingness to follow the mother’s suggestions which, it can be argued, is a form of compliance in a play rather than disciplinary context. This study, therefore, demonstrated a link between sensitive maternal behaviour and child compliance. These results suggest that it is possible to influence problematic child behaviour such as noncompliance by displaying those aspects of sensitivity that are central to this scale - authentic and positive affect, clarity of perceptions, responsiveness, flexibility, acceptance, and negotiation of conflict.

**Discussion of the Case Examinations**

The examination of the two cases partially confirmed some of the hypotheses, and illustrated that the statistical relationships were actually observable in two cases. The mother classified as disengaged (Mother A) received a rather low score on Caregiving Sensitivity on the WMCI (2),
and her score on Maternal Sensitivity in the behavioural interaction was 5, which is considered to be inconsistently sensitive. This case, therefore, illustrates the statistical relationship between the two measures of sensitivity. In addition, the score on the behavioural measure of sensitivity obtained by this mother represents a score below the balanced group's mean (6.63). This relatively low score on Maternal Sensitivity compared to the balanced group was representative of the disengaged group as a whole (the mean score for the disengaged group on EAS sensitivity was 4).

Mother A received a score of 3 (nonadjusted) on Structuring/Intrusiveness, which is considered inconsistently structuring. The hypothesis that mothers classified disengaged would score lower on this scale than those classified balanced was not confirmed in the study, and this case example illustrates the study's finding (the balanced group's mean score was 3.25 on this scale).

This mother scored higher on Maternal Hostility (2) than the balanced group's mean (1.00). Although the analysis of variance did not show a significant difference among the three groups for Maternal Hostility, the disengaged group did score the highest on this scale (1.67), and this particular mother scored even higher than her group's mean. For this individual, there was an association between slight maternal hostility and having a disengaged representation of her child.

This mother's child scored lower on both Child Responsiveness (5) and Child Involvement (5) than the balanced group's means for these scales (6.00 and 6.25, respectively), a finding consistent with the hypothesized but not obtained results for Child Responsiveness. In addition, these relatively low child scores are consistent with the rather low scores on Maternal Sensitivity and Maternal Structuring/Intrusiveness obtained by this child's mother. These relationships were hypothesized by the study, and were found to be statistically significant for Child Responsiveness and Maternal Sensitivity.

The hypothesized associations between maternal representations and maternal and child behaviour were not as apparent with the mother classified distorted (Mother B) as with Mother A, possibly for the reasons previously mentioned (the stress-free interaction resulted in fairly optimal
parenting), but were nevertheless representative of the associations found for the group as a whole. The rather low score on Caregiving Sensitivity on the WMCI (2), for example, did not really correspond to the score of 6 on Maternal Sensitivity on the EAS (a score falling between generally sensitive: 7, and inconsistently sensitive: 5). In addition, this case illustrated the finding that, contrary to what was predicted, mothers classified distorted did not score lower than the balanced group on the behavioural measure of sensitivity (the balanced group mean was 6.63).

This mother's score of 6 on the Structuring/Intrusiveness scale (adjusted score was 4) was not far from the balanced group's mean (3.25) and corresponded with the sample finding (but not hypothesis) that mothers classified distorted were not less optimal in their structuring/intrusiveness than the balanced group. Nevertheless, there were times during the play interaction when this particular mother displayed intrusiveness by entering her son's play abruptly rather than smoothly, and interrupting rather than elaborating his play.

This mother's Maternal Hostility score of 1.5 was typical of the marginally elevated scores of the distorted group (mean score of 1.27) compared to the balanced group, whose mean score was 1.0.

Although this mother's child's scores on Child Responsiveness and Child Involvement (6 and 7, respectively) were not lower than the balanced group's mean scores on these scales as was hypothesized (6.00 and 6.25, respectively), the findings for this case represent the results obtained for the distorted group. On the other hand, the child's scores on the two scales did correspond to the mother's scores on the Maternal Sensitivity and Structuring/Intrusiveness scales (6 and 6), relationships that were hypothesized by the study, but obtained for Child Responsiveness and Maternal Sensitivity only.

Clinical Implications

The finding that 90% of mothers' representations of their child were classified as nonbalanced in this sample of aggressive preschoolers and their mothers underlines the
importance of attending to parents' perceptions and experience of their child in clinical populations. This supports previous findings with other clinical populations where 91% of mothers were classified as having nonbalanced representations of their child (Benoit et al., 1997). For this reason, Benoit and her colleagues (Benoit et al., 1997) have suggested that the WMCI could be used to identify risk or protective factors linked to the development of clinical problems, even prenatally, since a concordance between WMCI classifications assessed prenatally and infant attachment classifications was demonstrated (Benoit et al., 1997). The findings from this study suggest that nonbalanced maternal representations may be a risk factor in preschool behaviour problems and disturbed parent-child relationships. In addition to the use of the WMCI in the assessment of risk, this instrument could also be used as an adjunct to psychotherapy in order to gain insight into a particular disordered parent-child relationship, develop a treatment strategy, and assess change in parental representation of the child (Zeanah & Benoit, 1995). Many mother-infant psychotherapies (Stern-Bruschweiler & Stern, 1989) and parenting groups (Landy & Menna, unpublished) involve maternal representation of the child. The goal of the clinician or group leader may be to increase sensitivity, acceptance, or intensity of involvement, for example, so these scales on the WMCI could be used to measure change in these areas by comparing pre- and post-treatment scores.

The EAS could be used in much the same way as the WMCI in psychotherapy with mothers and their children. Interventions targeting mother-child interactions could make use of the scales to measure therapeutic change in the maternal as well as the child variables. The scales could also be used to assess interactional problems, and to help determine the need for therapeutic intervention at the interactional level. For example, the authors suggest that scores above 5 on the Maternal Sensitivity scale indicate that therapy is not necessary. They add, however, that these mothers may need the support of professionals in the mental health field to help them during times of stress (Biringen, Robinson, & Emde, 1988/1993). An assessment of the child's emotional availability is also crucial, since research findings support the notion that children who are more responsive to and involving of their mothers during early childhood are also more receptive to
other adults, implying that these children may have greater success in engaging preschool and elementary school teachers to support them (Robinson & Little, 1994). In addition to the assessment of problems, the EAS could also be used to identify strengths in relationships.

Interactional videos could also be used for intervention by helping therapists coach parents to recognize difficult interactional sequences. Therapists can also help parents diffuse conflict by providing information about expected behaviour of young children and how they respond to stress or certain interactions. Parents can consequently become more realistic about behavioural expectations, and tolerant and understanding of their child.

**Limitations**

One of the major findings of the study, that only 10% of the mothers of this sample of aggressive preschoolers had balanced representations of their child, turned out to be one of its major limitations. Because of the skewed distribution of classifications, any conclusions from analyses based on the differences among the three classifications need to be made with great caution. In addition to conclusions pertaining to differences among the groups, the results relating emotional availability variables to the balanced and disengaged groups have limited generalizability due to the very low numbers of subjects in these two categories.

The participation of mothers only in the research sample also limits the generalizability of the results. The inclusion of fathers in a study investigating the relationship between parental working model of the child and interactional variables would permit the results to be applied to both parents.

Although the principal investigator of the present study was blind to the ratings of the EAS when coding the WMCI interviews, even more objectivity would be attained by having different raters score the two measures.

For the distorted group, the stress-free play interaction did not result in problematic emotional availability for the mother-child dyads. Mean scores for the five scales were all
"adequate" (see Robinson & Spieker, 1996, for score ranges considered adequate or impaired). It appears that mothers classified distorted may function well under optimal conditions. A more stressful interaction, such as one involving a limit-setting task, may have triggered less sensitive, more intrusive, and more hostile behaviour on the part of these mothers, and less responsive and involving behaviour on the part of the children. In addition to more varied interactional contexts, additional measures could be used besides maternal representation of the child that may have an impact on mother-child interaction, such as social support or maternal depression.

**Future Research**

Future research is necessary in order to enhance the understanding of the role of parental working models of the child within the population of aggressive children as well as other clinical and nonclinical populations. In order to explore more thoroughly the mechanism by which parents' internal working model of their child and relationship with their child influences the child's development, more detailed study of individual parent-child interaction is necessary. Longitudinal studies could also be designed to assess the impact of parents' internal working models on their children's long term social and emotional adjustment. A clearer association could then be drawn between parents' working models of their children and maladaptive outcomes, such as the development of behavioural problems.

Research using both the WMCI and the EAS could assess therapeutic change within clinical populations. These instruments could also be used in research to assess the impact of other variables, such as stressful life events, maternal depression, or child temperament on the quality of parenting. These variables could then be related to child outcome in order to assess them as risk factors in maladjusted development. Nonbalanced maternal representations do not appear to be enough to explain problems in development, and variables such as the ones noted above should be considered as well.
Another avenue of future research would be to investigate the relationships between parents' WMCI classifications and interactional behaviour in a variety of contexts, not just play, such as teaching, feeding, limit-setting, and attachment-related contexts. It would be interesting to explore which of these settings presented the most difficulty for the various classifications of the WMCI. In this study, the play context was explored, and mothers' working models of their child were found to influence parental behaviour and interactions in the context of play. Nevertheless, it was found that mothers with distorted representations of their child, as a group, had adequately sensitive interactions with their child. It appears that under optimal conditions, they are able to attune to their children. When additional stress is added to the interaction, future research may uncover the inconsistent nature of this sensitivity. For those with balanced representations of their child, sensitive interactions may be the norm even under stressful conditions.

Another area of future research would be to administer the Parent Attribution Test (Bugental, 1992) to mothers of aggressive children in order to examine the attributions of balanced, distorted, or disengaged groups on the WMCI. Which group of mothers would show threat-oriented caregiving schemas, that is, attribute relatively low control to parents but relatively high control to children as causes of negative events? It is predicted that the disengaged group would rate their children's control over failure the highest, and would see themselves as having the least control in a difficult child rearing situation. This prediction is based on the results of a study by Grusec and colleagues (Grusec et al., 1993) who found that dismissive parents showed this attributional pattern. Dismissive and disengaged parents show similarities in their attitudes towards relationships, and a concordance between the two has been found (Benoit et al., 1997).

Conclusions

Parents who come to mental health professionals for help with problems in their relationships with their children or with childhood aggression may be assisted by understanding how their
perception of their child can be linked to parent-child interactions, and ultimately to the child's development. The mother's perception and attributions of the child are significant since negative attributions have been associated with problems in development (Broussard, 1989; Bugental & Shennum, 1984; Dix & Grusec, 1985; Sanson et al., 1991). Insight into the association between maternal representation and interaction can be gained by studying clinical populations, such as aggressive preschoolers and their mothers, since nonbalanced representations predominated in this group. Interventions for these parents may need to focus on changing the mother's internal working model of her child and on parent-child interaction. One of the goals of parenting programs such as the HEAR program (Helping Encourage Affect Regulation, Landy & Menna, unpublished) is to encourage more positive attributions of their child on the part of parents in order to ease conflictful interactions and aggressive and/or noncompliant child behaviour. Having access to individual parent's WMCI could assist in tailoring the intervention to each mother.

The current study did not entirely support an association between having a nonbalanced representation of the child and sensitivity as measured during a play interaction. However, mothers classified as disengaged had a sensitivity score in the "impaired" range, and scored significantly lower than both the balanced and distorted groups. An investigation of the sensitivity of mothers classified distorted during a more stressful interaction would be a fruitful area for future research.

In this sample of aggressive preschoolers and their mothers, the low numbers of mothers with balanced representations of their child is significant. A similarly low proportion of balanced classifications found in their sample of infants with clinical problems led Benoit and colleagues (Benoit, Zeanah, Parker, & Nicholson, 1997) to conclude that parental balanced representations might represent a protective factor for the child, and distorted and disengaged representations might represent a risk factor for the development of clinical problems in children. The distribution of WMCI classifications found in this sample supports this interpretation. It is further hypothesized that the low numbers of disengaged representations found in this sample were not due to the under-representation of this classification among mothers of aggressive and/or
noncompliant preschoolers, but rather to the process of sample selection. Perhaps these mothers, who typically have limited involvement with their child and deny difficulties, failed to take advantage of the parenting groups that were available to parents experiencing these types of problems with their children.

Do mothers' representations of their children with aggressive problems contribute to, or result from the children's aggression? The question of the direction of effects was not addressed in this study. Although studies have linked negative maternal perceptions and attributions to maladaptive development, other studies have attested to additional factors implicated in the development of childhood aggression, such as child temperament (Bates et al., 1991; Lee & Bates, 1985) or family adversity (Barron & Earls, 1984; Campbell et al., 1991; McGee et al., 1991; Richman et al., 1982; Webster-Stratton, 1988; 1989; 1990). It is unlikely that an unfavourable maternal representation on its own could account for the development and perpetuation of a child's aggressive problems. Nevertheless, as has been noted by Benoit and colleagues (Benoit, Zeanah, Parker, & Nicholson, 1997), it is likely that maternal perceptions and subjective experience of the child are important adjuncts to problematic development, especially during the early childhood years. They cite the stability of pre- and postnatal WMCI classifications (Benoit et al., 1997), the concordance between WMCI and SS classifications demonstrated prenatally (Benoit et al., 1997), and studies suggesting that maternal perceptions contribute to child behaviour problems (Bates & Bayles, 1988; Broussard, 1989; Sanson et al., 1991) in order to lend support to this hypothesis.

This study provides an important contribution to the field of childhood aggression and mothers' working model of their child because it investigated parents' internal representation of their child and the behavioural expression of that representation in interactions with their aggressive preschoolers. It also looked at how these representations and maternal behaviours related to child behaviour. In addition, this study poses questions regarding maternal representations in a clinical sample of aggressive preschool children, and proposes directions for future research in this area. The study underlines the importance and value of research related to
maternal perception and child aggression because of the widespread problem of childhood aggression. Further research in this area will help elucidate the most appropriate interventions for families with aggressive children.
REFERENCES


Landy, S. & Menna, R. A study to evaluate the efficacy of a treatment model for parents with preschoolers with behavior problems. Unpublished research study.


### Table I

Pearson Partial Correlation Coefficients of the WMCI and EAS Scales Controlling for Maternal Education

<table>
<thead>
<tr>
<th>WMCI Scales</th>
<th>Maternal Sensitivity</th>
<th>Maternal Structuring / Intrusiveness</th>
<th>Maternal Hostility</th>
<th>Child Responsiveness</th>
<th>Child Involvement</th>
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</thead>
<tbody>
<tr>
<td>Richness of Perception</td>
<td>.37*</td>
<td>-.01</td>
<td>-.16</td>
<td>.15</td>
<td>.22</td>
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<tr>
<td>Openness to Change</td>
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<td>-.10</td>
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<td>-.02</td>
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<td>Intensity of Involvement</td>
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<td>-.19</td>
<td>.15</td>
<td>-.01</td>
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<td>-.03</td>
<td>-.12</td>
<td>.06</td>
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<td>.33</td>
<td>.09</td>
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<tr>
<td>Acceptance</td>
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<td>-.11</td>
<td>-.02</td>
<td>-.02</td>
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<td>Infant Difficulty</td>
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<td>.11</td>
<td>.20</td>
<td>.27</td>
</tr>
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<td>Joy</td>
<td>.26</td>
<td>-.21</td>
<td>-.10</td>
<td>.03</td>
<td>.06</td>
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<tr>
<td>Pride</td>
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<td>-.03</td>
<td>.03</td>
<td>.17</td>
</tr>
<tr>
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<td>-.04</td>
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<td>.17</td>
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<tr>
<td>Guilt</td>
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<td>.06</td>
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<tr>
<td>Indifference</td>
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<td>-.38*</td>
<td>.19</td>
<td>-.44*</td>
<td>-.37*</td>
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* p<.05  ** p<.01  *** p<.001

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## Table II

**Pearson Partial Correlation Coefficients of the WMCI and EAS Scales Controlling for Maternal Age**

<table>
<thead>
<tr>
<th>WMCI Scales</th>
<th>Maternal Sensitivity</th>
<th>Maternal Structuring / Intrusiveness</th>
<th>Maternal Hostility</th>
<th>Child Responsiveness</th>
<th>Child Involvement</th>
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<tr>
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<td>.17</td>
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<tr>
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<td>-.23</td>
<td>-.15</td>
<td>.13</td>
<td>.23</td>
</tr>
<tr>
<td>Pride</td>
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<td>-.17</td>
<td>-.01</td>
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<tr>
<td>Disappointment</td>
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<tr>
<td>Anxiety</td>
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<td>.20</td>
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<tr>
<td>Guilt</td>
<td>.19</td>
<td>.04</td>
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<td>-.38*</td>
<td>.25</td>
<td>-.47**</td>
<td>-.43*</td>
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* p<.05  ** p<.01  *** p<.001
### Table III

Pearson Partial Correlation Coefficients of the WMCI and EAS Scales Controlling for Marital Status

<table>
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<tr>
<th>WMCI Scales</th>
<th>Maternal Sensitivity</th>
<th>Maternal Structuring / Intrusiveness</th>
<th>Maternal Hostility</th>
<th>Child Responsiveness</th>
<th>Child Involvement</th>
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<tbody>
<tr>
<td>Richness of Perception</td>
<td>.37*</td>
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<tr>
<td>Openness to Change</td>
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<td>-.20</td>
<td>-.04</td>
<td>-.06</td>
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<td>-.18</td>
<td>-.21</td>
<td>.09</td>
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</tr>
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<td>-.11</td>
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<td>-.43**</td>
<td>.34*</td>
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<tr>
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<td>-.07</td>
<td>-.37*</td>
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<td>.13</td>
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<td>.11</td>
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<tr>
<td>Joy</td>
<td>.35*</td>
<td>-.22</td>
<td>-.28</td>
<td>.09</td>
<td>.10</td>
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<td>.25</td>
<td>-.33*</td>
<td>.37*</td>
<td>.26</td>
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<td>Guilt</td>
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<td>-.39*</td>
<td>-.36*</td>
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</table>

* p<.05  ** p<.01  *** p<.001
Table IV

Pearson Partial Intercorrelations of the EAS Controlling for Maternal Education

<table>
<thead>
<tr>
<th>EAS Scales</th>
<th>Maternal Structuring / Intrusiveness</th>
<th>Maternal Hostility</th>
<th>Child Responsiveness</th>
<th>Child Involvement</th>
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</thead>
<tbody>
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<td>.66***</td>
<td>.35</td>
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<td>Maternal Structuring / Intrusiveness</td>
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<td>.48**</td>
<td></td>
<td>.26</td>
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</table>

*p<.05  **p<.01  ***p<.001
Table V
Pearson Partial Intercorrelations of the EAS Controlling for Maternal Age

EAS Scales

<table>
<thead>
<tr>
<th>EAS Scales</th>
<th>Maternal Structuring / Intrusiveness</th>
<th>Maternal Hostility</th>
<th>Child Responsiveness</th>
<th>Child Involvement</th>
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<td>Child Responsiveness</td>
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*p < .05  **p < .01  ***p < .001
Table VI
Pearson Partial Intercorrelations of the EAS Controlling for Marital Status

<table>
<thead>
<tr>
<th>EAS Scales</th>
<th>Maternal Structuring / Intrusiveness</th>
<th>Maternal Hostility</th>
<th>Child Responsiveness</th>
<th>Child Involvement</th>
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</thead>
<tbody>
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<td>.32*</td>
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<tr>
<td>Maternal Hostility</td>
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<td>-.06</td>
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<tr>
<td>Child Responsiveness</td>
<td></td>
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*p < .05  **p < .01  ***p < .001