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**THE DEVELOPMENTAL EFFECTS OF CHILD MALTREATMENT:
VARIABLES CONTRIBUTING TO VULNERABILITY AND RESILIENCE**

by

CYNTHIA S. SHAFFER, M.S.

A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfilment of the
requirements for the degree of

Doctor of Philosophy

Department of Psychology

CARLETON UNIVERSITY

Ottawa, Ontario

October 11, 1994

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**THE DEVELOPMENTAL EFFECTS OF CHILD MALTREATMENT:
VARIABLES CONTRIBUTING TO VULNERABILITY AND RESILIENCE**

submitted by

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in partial fulfilment of the requirements
for the degree of Doctor of Philosophy

Chair, Department of Psychology

Thesis Supervisor

External Examiner

Carleton University

November 21, 1994

Abstract

This study investigated the relationships among six maltreatment variables (physical abuse, sexual abuse, psychological maltreatment, physical neglect, social/ cognitive neglect, family violence), two additional risk variables (parental substance abuse and - dysfunction), four mediating variables thought to influence outcome (IQ, resilience, stability in care, social support), and six measures of developmental outcome and adjustment (language, visual-motor, academic, social/emotional, behavioural, personality), with age at assessment and gender as covariates. Using global measures of maltreatment and outcome in one case and maltreatment and outcome principal components in the other, two structural equation models were used to examine direct, indirect, and total effects of maltreatment on outcome, as mediated by internal and external resources, with age and gender considered. Best and worst global outcome cases were used to explore the concept of resilience and variables discriminating outcome groups. Finally, the study incorporated a qualitative drawing analysis measure of personality outcome, examining its usefulness in assessment and research with maltreated children.

Findings support the contentions that a milieu of psychological maltreatment and neglect are most detrimental to development, co-existing with and exacerbating the effects of other forms of abuse; that effects of maltreatment on development are mediated by IQ, resilience, stability, and social support and are affected by age and gender; that young females are generally more resilient than males in the face of maltreatment; and that there are significant differences in gender patterns of maltreatment and outcome. Resilience was found to operate as part of a complex interaction rather than a static trait: resilience is more prevalent in younger children, girls, and those who have short-term acute forms of risk rather than chronic and pervasive forms of maltreatment; maintenance of resilience is highly dependent upon IQ, stability, and support. Clinical analysis of projective drawings was found to have high reliability and validity and to be a valuable aid to understanding functioning in maltreated children. These findings were discussed in the context of developmental theories of attachment, trauma, and psychopathology and were linked with practical implications for child protection and treatment.

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Finally, this work is dedicated to the children whose life experiences provided the raw material for study and whose ability to survive despite such adversity was my inspiration and driving force; in the hope that what we can learn from them will help others like them.

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THE DEVELOPMENTAL EFFECTS OF CHILD MALTREATMENT: VARIABLES CONTRIBUTING TO VULNERABILITY AND RESILIENCE

The issue of child maltreatment is now recognized as a major societal concern, with public awareness, government policy, research efforts, and clinical interventions increasing greatly since the late 1970s. Rates of abuse reports have more than doubled in that period of time; even with the factor of underreporting, it is estimated that 14 percent of all children in North America are subjected to abusive treatment each year (Wolfe, 1987). While extensive research has been conducted on the consequences of specific forms of maltreatment, much remains to be done to understand its complex impact on children's development and the ways in which combined forms of maltreatment, individual differences and environmental factors alter outcomes. Such understanding could inform future policy makers, researchers, and those who work professionally with maltreated children in various capacities. As a relatively new and growing field of research, the study of child maltreatment has been fraught with methodological problems and inconsistent, conflicting results. New conceptual models and designs are needed in order to address the complexity of the problem.

This study will investigate the relationships among the multiple variables which predict level of functioning, adjustment and development in children who have experienced various forms of maltreatment, either singly or in combination. Specific subtopics which will be addressed are (a) the ways in which the various risk variables of maltreatment and associated circumstances contribute to traumatization and poor developmental outcome in some children and the ways in which various buffering or ameliorative variables contribute to resilience in others and (b) identification of the most salient risk and buffering variables for predicting developmental outcome in maltreated children.

In order to lay the groundwork for the study of these two topics, a review of the recent relevant literature will summarize and critique what is known to date about the short- and long-term sequelae of child maltreatment, the relationship of maltreatment to problems in attachment and the nature of traumatic reactions in children in relation to maltreatment. These three areas of research and clinical knowledge converge to predict what might generally be expected in children's development following early maltreatment. A fourth area of research, of particular importance to this study, includes the study of risk (vulnerability) research and its outgrowth, the study of invulnerability or resilience in the face of negative circumstances. Why do some children who are severely maltreated manage to survive and go on to live normal or even remarkable lives, while others who experience supposedly less severe forms of abuse fail to develop properly or to adapt successfully in life? What individual or environmental differences contribute to these differential outcomes, and are the salient factors ones which can be provided somehow to buffer more vulnerable children?

Rating measures to operationalize variables were developed specifically for use in the present study, with a drawing checklist measure incorporating work recently completed at this university (Bristow, 1993), and the results of pilot and inter-rater reliability data on these instruments will be addressed. Finally, the rationale, research hypotheses, design, and methodology of this study will be presented.

The problem of child maltreatment in North America has become an issue of major concern in recent years. Although no systematic method has been implemented so far to compile accurate statistics on the rates and types of abuse, there are numerous indicators of the extent of the problem. The Canadian Institute of Child Health (1989) reports that in divorces granted between 1981 and 1985, 32% were on grounds of mental cruelty and 22% on grounds of physical cruelty, with family violence (including assault, neglect, and mental, emotional, or sexual abuse) constituting more than half of the cases when families were

dissolved. The Ontario Children's Aid Society (CAS) statistics for 1986 (Gill & Miller, 1986) indicated that there were 5,824 child physical abuse investigations in that year. In Canada as a whole, 1980 data showed that there were 67,853 children in care (nearly one percent of children under 19 years) with Ontario showing the lowest proportion of 0.5% (12,928 children) and the NWT/Yukon highest at 1.7% of children. With increased reporting and mandates for intervention over the past decade, it is likely that this proportion is even higher in 1994, but figures are not available. Ontario CAS statistics indicated 21,600 children in care in 1983 and 19,230 children in care in 1989, following severe budget cuts. Statistics from the United States indicate a rate of 2.5% of children being reported as abused or neglected each year, and this is thought to be a very conservative estimate due to problems of underreporting. A nation-wide confidential family survey in the United States obtained an estimated rate of 14% of children being subjected to abusive treatment each year (Straus, Gelles, & Steinmetz, 1980). Report rates doubled between 1980 and 1990 (U.S. Dept. of Health and Human Services, August 1990). As shocking as these figures are, surveys of professionals working with children suggest that large proportions of cases of suspected child maltreatment remain unreported by professionals, despite the requirements of law. This may occur, for example, if the professional fears that prompting an investigation without strong enough evidence to apprehend and protect the child may place the child in even greater danger from his/her abuser for revealing information to someone outside the family. Moreover, some cases that are reported but not substantiated do indeed involve maltreatment, but the evidence is insufficient to prove the cases in court.

Sexual abuse statistics, which are more readily available from adult retrospective reports, indicate that 25% of women and from 9 to 31% of men (Committee on Sexual Offences against Children and Youths, 1984; Finkelhor, 1984) are sexually abused before the age of 16, but it is quite difficult to compile these statistics with a child population, as many children are unable to disclose until many years after the abuse has occurred and the

perpetrator can no longer harm them. There has been progress in reporting and investigation of child cases, with the American Humane Association in 1989 (Besharov, 1990) indicating that substantiated sexual abuse cases in the United States rose from 13,000 in 1975 to over 130,000 in 1986.

An argument has developed against the trend in the last decade toward the "balkanization" of child abuse--i.e., dividing sexual abuse from physical abuse, incest from sexual abuse, et cetera (Finkelhor, cited in Briere, 1992). Increasing subdivision within the field of child abuse and neglect has dated from the late 1970s, when sexual abuse started to split off from physical abuse as a separate specialty due to practice considerations and generational and philosophical differences from the established medical leadership. For a time, the two fields had little connection and even in recent years, relations have remained distant. Publicity, funding and research have increasingly shifted to sexual abuse, with sexual abuse research and services now receiving a greater share of federal funding in the United States than other forms of maltreatment. Although sexual abuse constitutes only one-sixth of all child abuse reports, contrasted with physical abuse at one-third of all reports, journal articles on sexual abuse now easily outnumber all other maltreatment-related subjects in major journals. Finkelhor proposes that the field of child abuse is "developing in a lopsided, competitive way that may not be in the true interest of children," suggesting that although emotional abuse may be the cornerstone of all abuse, it receives little study. Neglect often constitutes the greatest proportion of child protective services caseloads, yet it has seldom generated much interest among researchers, clinicians, or those involved in public education and policy.

Instead of this balkanization of the field of child maltreatment, researcher/clinicians such as Finkelhor and Briere are now advocating a return to a broader and more unified perspective, including comprehensive assessments of maltreated children and the realization that forms of maltreatment can co-exist and that one form can be a risk factor for another. In

this view, most types of childhood maltreatment occur in the presence of other types, especially among those who later request clinical services. For example, it is difficult to conceive of child sexual abuse without considering the presence of psychological abuse (in the form of betrayal, threats, stigmatization) and the likelihood of physical abuse (tissue damage, violent contact, or beatings to ensure compliance). This change of focus has important implications, calling for more complex research designs and statistical analyses which can take into account the multiple forms of maltreatment and the overlapping nature of abuse effects and traumagenic dynamics.

For many years, research and clinical practice were plagued by inconsistent or overly-vague definitions which made it difficult to compare research results across studies, to set and implement public policy to protect maltreated children, and to communicate accurate and precise information among providers of services to maltreated children and to perpetrators. Social policy efforts in recent years in the United States and Canada have produced definitions which may be summarized as follows:

Child abuse and neglect¹ : refers to the physical or mental injury, sexual abuse or exploitation, negligent treatment, or maltreatment of a child under the age of 18 (or age specified by the state or province in question), by a person who is responsible for the child's welfare under circumstances which indicate that the child's health or welfare is harmed or threatened thereby.

Neglect (physical): refers to deprivation of necessities by the caregiver, such as neglecting to provide nourishment and nutrition, clothing, shelter, health care, education, supervision, or causing failure to thrive. In many severely neglecting families, deterioration and poor functioning is evident in all these areas and is seen in intergenerational patterns

¹ Definitions compiled from Besharov, 1990; Brassard, Germain, & Hart, 1987; Health & Welfare Canada, 1990; National Committee for Prevention of Child Abuse, 1983, 1986; and U.S. Dept. of Health & Human Services, 1990.

leading to high percentages of mental retardation and developmental delay, mental illness, alcoholism, and drug abuse, accompanied by pervasive poverty and alienation from society.

More moderate degrees of neglect can occur affecting only a few of these areas and may occur even in the presence of good economic and intellectual resources on the part of the parent; such instances are thought to be even more numerous than cases of severe neglect. Neglect related to lack of adequate supervision may result in severe physical injury or death to a child.

Other neglect (cognitive, social): as defined by some researchers (Claussen & Crittenden, 1991) involves depriving a child of intellectual stimulation, necessary resource services, and opportunity for exploration and learning necessary for development or depriving him/her of the chance for social and interpersonal interactions, through isolation.

Physical abuse: involves a caregiver exceeding the bounds of "reasonable corporal punishment" and causing physical injuries to the child which may be major (brain damage/skull fracture or subdural haematoma, bone fracture, dislocation/sprains, internal injuries, poisonings, burns/scalds, severe cuts/lacerations/bruises/ welts, or related injuries) and minor physical injuries (including twisting/shaking, minor cuts/bruises/welts, or similar injuries) which do not constitute a substantial risk to the life and physical well-being of the child. Mechanisms involve such acts as hitting with fists or objects, throwing the child, kicking, use of implements, slapping, shaking or pushing.

Sexual abuse: includes the involvement of a child in any sexual act or situation such as incest, exploitation, intercourse, or molestation. Definitions usually define sexual abuse as involving a child 16 or younger with a perpetrator who is at least 5 years older. More specific medical and legal definitions and descriptions of acts are available, but are not necessary for the purposes of this discussion.

Psychologic^al maltreatment (emotional abuse/neglect): includes actively rejecting the child and refusing to help; degrading and humiliating; terrorizing and

intimidation; isolating and confining; corrupting through teaching, forcing, and reinforcing antisocial or depraved acts; exploiting and using the child for the adult's own advantage; and denying emotional responsiveness so that natural and healthy emotional and social development is compromised. The concept of psychological maltreatment has been delineated further to include such factors as scapegoating, having unreasonable expectations, parent-child role reversal, withholding of affection, failure to provide stability and security, overcontrol and prevention of normal autonomy, promoting confusion in child's sexual identity, undermining the child's attachment to the other parent, sabotaging and undermining, premature or bizarre punishment, and forcing the child to witness violence toward another member of the family (P. M. Crittenden, personal communication, January, 1993). This category of maltreatment is only beginning to be recognized and acknowledged for the traumatizing abuse that it is, with many experts in the field now considering this to be a most damaging and insidious form of abuse that underlies and co-exists with the other types of maltreatment.

With child maltreatment being such a serious problem in our society, it is important for developmental psychologists to investigate the ramifications of maltreatment on children's development and functioning and to gain insights into ways to help such children survive and transcend their experiences, enable them to live more satisfying lives, and prevent the re-enactment of maltreatment into the next generation. The trend until now has been to remove children from abusive environments whenever possible and place them in protective care, to treat the abusers and try to improve their parenting and life skills, but not to provide remedial treatment for the victims of abuse themselves (Graziano & Mills, 1992). In clinical practice, therefore, one often sees child victims who are the offspring of parents who were abused or neglected themselves, with far-ranging intergenerational patterns of maltreatment and dysfunctional environments encompassing substance abuse, depression, character disordered parents, general family violence, instability and chaos, lack

of adequate education and economic resources, and repeated selection of abusive or poorly-functioning partners to whom children are subjected in addition to the direct abuse or neglect (J. R. Groves, personal communication, 1986-1993). Research on intergenerational patterns of child maltreatment has shown similar findings to these clinical observations (Ammerman & Hersen, 1990; Leifer, Shapiro, & Kassem, 1993; Melnick & Hurley, 1969; Spinetta & Rigler, 1972; Steele, 1986; Steele & Pollack, 1968; Wolfe, 1987), although this does not imply that all abused children will become abusive parents and most do not. By the time children are removed from such environments, a great deal of damage has already occurred, yet this damage may not be detected immediately unless the child presents problems to others and comes to the attention of mental health professionals for assessment or treatment. Children may continue on through their lives functioning at a marginal level, then deteriorate in adolescence or when the pressures of parenting overtax their fragile coping mechanisms (Kolko, 1992). The correlation between early maltreatment and subsequent abusive parenting is not as clear-cut as once thought, but may be mediated by other factors such as poverty, maternal depression, single-parent status, social support and resilience (Mash & Johnston, 1990; Straus & Smith, 1990; Webster-Stratton, 1985; Webster-Stratton, 1991), however there is no question that being maltreated in childhood puts one at greater risk for later difficulties in parenting. Although a full exploration of the topic of intergenerational transmission of abusive patterns is beyond the scope of this study, the subject bears mentioning in support of the notion that researchers must strive for a fuller understanding of maltreatment effects and mediating variables in order to inform social policy and treatment services so that the needs of children and families can be met.

The effects of maltreatment on child development can be derived from three different research areas which have independently arrived at similar conclusions: child maltreatment literature, attachment theory, and trauma research.

Effects of Child Maltreatment

Whereas earlier research on child maltreatment focused on causes of abuse and the parental characteristics of abusers, recent research is focusing on the effects on the child of physical child abuse, sexual abuse, and neglect. In the late 1980s, there was a shift away from research on physical abuse and neglect and towards child sexual abuse (Kaufman & Rudy, 1991; Milner, 1991), so much of the long-term outcome research pertains to sexual abuse. Study of the extended impacts of emotional neglect, psychological maltreatment, parental substance abuse, and physical abuse is in its infancy (Briere, 1992).

The research on effects of specific subtypes of maltreatment will now be addressed, with the caution that there are actually many overlapping features among forms of maltreatment that make these categories less distinct than they may seem.

Physical abuse

Much of the early research on child maltreatment focused on physical abuse, the most observable and verifiable form of maltreatment. Since the early work of Kempe and his associates (1962; Kempe & Helfer, 1968, 1974, 1980) on the battered child syndrome, typical findings have suggested that abused children present a wide range of social and emotional problems (aggressiveness, hostility, apathy, passivity, and withdrawn behaviour); they tend more than non-abused children to perform below the average range on IQ tests and to do poorly in school. A significant number of physically abused children show growth retardation and failure to thrive, often associated with delayed intellectual development, both at time of abuse and in follow-up studies (Elmer, 1967, 1977; Elmer & Gregg, 1967; Martin & Beezley, 1977). There is evidence to suggest that a high proportion of abused children are handicapped to some degree, whether by the direct physical effect on brain development or by more indirect interference in intellectual development, even when no neurological impairment exists (Lynch & Roberts, 1982). Abused children lack trust in

an environment they have experienced as hostile and may be afraid to risk expressing themselves, so that they get insufficient practice in higher verbal skills.

Many studies have found high rates of emotional and behavioural problems in physically abused children even when abuse did not involve the severe battering typical of the subjects of the earliest studies in child abuse. One such study involved 50 children at a mean of four and one-half years after physical abuse had been identified (Martin & Beezley, 1977). The study looked at nine characteristics, derived from clinical experience and several previous studies by the authors, which included: (a) impaired ability for enjoyment, (b) behavioural symptoms (enuresis, poor peer relationships with aggression and avoidance, temper tantrums, potentially delinquent behaviour, sleep disturbance, hyperactivity, and socially inappropriate behaviour), (c) low self-esteem, (d) withdrawal, (e) opposition, (f) hypervigilance, (g) compulsivity, (h) precocious behaviour, and (i) school learning problems. Highest correlations with abuse were found with the first three characteristics, but all features were present in the subject group at rates higher than the general population. It was interesting to note that the features of hypervigilance, compulsivity, and pseudo-adult behaviour were found more frequently among the subjects with higher IQ levels, while the oppositional and behavioural adjustment symptoms were found more frequently in children with below-average IQ. This finding of a correlation with IQ has emerged later in studies of resilient maltreated children who were seen to use coping strategies of hypervigilance, compulsivity, and pseudo-adult behaviour as survival mechanisms (Mrazek & Mrazek, 1987). School learning problems, in Martin's study, were found in children whose median IQ was average, with the learning problems often linked with destructive behaviour or withdrawal. This study did not confirm any relationship between the type of injury, nor the age at which it was inflicted, and subsequent emotional development. The authors found, instead, that more severe symptoms were strongly correlated with factors such as the impermanence of the home following the abuse, instability of the family with whom the

child was living, the acceptance or rejection the child was experiencing, and the emotional state of the parents (or parent surrogates). As in many other studies, clear causative statements could not be made about abuse and subsequent traits in the child, as subject groups usually contain abused children who are also neglected and deprived. However, the study is important in that it presaged the current trends in maltreatment research to consider individual differences in responses to abuse and the mediating variables which affect outcome following abuse.

More recent studies in the area of physical child abuse are in agreement with earlier findings of neurological impairment, intellectual and learning problems, difficulties in affective and socioemotional functioning and behaviour, and problems in social behaviour and cognition (e.g., Salzinger, Feldman, Hammer, & Rosario, 1991). However, much more attention is now being paid to other variables which may compound the effects of physical abuse, such as being in family environments typified by violence, even when it is not directed at the particular child (Carlson, 1991; Fantuzzo, DePaola, Lambert, Martino, Anderson, & Sutton, 1991; Jaffe, Wolfe, & Wilson, 1990; Kashani, Daniel, Dandoy, & Holcomb, 1992; Stagg, Wills, & Howell, 1989). A research project in Toronto found that children were present in 68% of 2,910 wife assault cases (Leighton, 1989), and many authors have noted a significant overlap between wife abuse and child abuse (Jaffe et al, 1990), with links between spousal abuse and decreased maternal effectiveness in terms of being able to provide nurturance, support, structure, or supervision for children. An additional factor is being in a home in which substance abuse heightens the potential of violence and other forms of abuse (Butler, Radia, & Magnatta, 1994; Famularo, Kinscherff, & Fenton, 1990, 1991; Leifer et al, 1993; Murphy, Jellinek, Quinn, Smith, Poittrast, & Goshko, 1991). There tends to be a continuum of abuse, with discordant household often correlated with alcohol and drug abuse, partner abuse, and eventually child abuse (Salzinger et al, 1991).

Many researchers in the child abuse field now acknowledge that there is no simple relation between childhood physical abuse and adult outcome and functioning and are advocating more comprehensive models which address multiple maltreatment factors, individual differences, and intervening events which may modify long term outcome (e.g., Augoustinos, 1987; Graziano & Mills, 1992; Kolko, 1992; Martin & Elmer, 1992; Salzinger et al, 1991).

Neglect

A small body of research on neglected children indicates lasting psychological effects; they are passive and helpless and tend to interact less frequently with peers, tend to seek attention from any adult available, and have a great deal of difficulty settling or concentrating in preschool settings (Young, 1981). Victims of severe emotional neglect (psychologically unavailable caregivers) may fail to thrive at all, and even after intervention remain hostile and defiant and have a wide variety of academic and behaviour problems (Brassard, Germain, & Hart, 1987) and long-term problems with depression or marginal functioning (Young, 1981). Neglected children lack trust in their environment and may be afraid to risk expressing themselves, so that they get insufficient practice in verbal skills and may also receive inadequate stimulation, modelling, and practice to learn communication patterns (Christopoulos, Bonvillian, & Crittenden, 1988). One consistent finding with neglected children is the extent to which they are delayed in both expressive and receptive language skills, which has a bearing on all of personality development (e.g., Culp, Watkins, Lawrence, Letts, Kelly, & Rice, 1991) and is also associated with severe academic delays (e.g., Wodarski, Kurtz, Gaudin, & Howing, 1990). The development of communication skills also has an important impact on the child's ability to build social relationships with peers and to gain acceptance in the world outside the home (Burleson, Delia, & Applegate, 1992), so language delays can have increasingly broader impacts on the child's functioning in society.

The few studies of neglect are often confounded by definitional problems and by relative standards of what constitutes neglect in different communities, different socioeconomic levels, and different geographical regions (Craft & Staudt, 1991). Various forms of neglect - physical, cognitive, social, and emotional - are generally not well specified in studies and have garnered little research interest in comparison to the other forms of maltreatment. An exception is a recent study of 350 children which used specific graduated rating lists to evaluate the presence and severity of physical neglect, social/emotional neglect and cognitive neglect, as well as physical abuse and emotional abuse (Claussen & Crittenden, 1991). Ratings levels were expressed in terms of both parental maltreating behaviours and child outcomes so that there would be little difficulty with observer judgement. Items on the scales were submitted to 200 child protection and research personnel who were asked to evaluate definitions of parental maltreating behaviours and to rate the severity each represented. (These scales were adapted and used for the present study.) Results of the study indicated the co-occurrence of multiple forms of maltreatment: Physical abuse rarely occurred in the absence of psychological maltreatment, and children who experienced neglect in one domain were very likely to be neglected in other domains as well and also to be psychologically maltreated. Ney, Fung, and Wickett (1994), in their recent study of various combined forms of abuse and neglect, concluded that the combination of physical neglect, physical abuse, and verbal abuse had the greatest impact on children's enjoyment of living and hopes for the future; they noted that early neglect seemed to be a precursor of more severe and frequent subsequent abuse. Manley, Cicchetti, and Barnett (1994) also noted the significant unique contribution of physical neglect in predicting child outcome, and Eckenrode, Laird, and Doris (1993) found that physical neglect alone or in combination with other subtypes of maltreatment was associated with the most maladaptive school achievement. These recent studies suggest an

explanation for the more detrimental long term effects of neglect as compared to abuse alone.

Sexual abuse

Sexually-abused children and adult survivors of childhood sexual abuse have been found to show a wide range of effects including: Post-Traumatic Stress Disorder (PTSD), poor self-esteem, depression, helplessness and hopelessness, distrust of others, anxiety, disturbances in relations with others, acting out and self-injurious behaviours, substance abuse, suicidal behaviour, vulnerability to further victimization, eating and sleep disorders, borderline personality and multiple personality disorders, and dissociative states (e.g., Briere, 1992; Hindman, 1989; Stewart, 1988), with dissociative states being strongly associated with alleged satanic ritual abuse and/or very early sexual abuse (Leavitt, 1994). Sexually abused children have been found to show significantly more behaviour problems than nonabused children on the Achenbach Child Behavior Checklist, with profiles elevated on depression, aggression, sleep and somatic complaints, hyperactivity, and sexual problems (Dubowitz, Black, Harrington, & Verschoore, 1993). Children who experience sexual abuse without receiving interventions may go on to abuse and neglect their own children or may be incapable of protecting them from victimization by others. This is by no means an inevitable relationship, however. A recent study of 68 sexually abused girls found that 53% of their mothers had been sexually abused as children; maternal substance abuse and social isolation were found to be important mediating variables between a woman's childhood sexual abuse and both the subsequent severity of abuse experienced by her child and the mother's ability to be supportive and protective in response to her child's abuse (Leifer et al, 1993).

In a comprehensive review of the literature on effects of sexual abuse, Asher (1988) delineated immediate effects at different age levels and emergent effects at later ages and into adulthood. Preschool children may show physical signs and complaints including

sudden weight loss or gain, abdominal pain, vomiting and urinary tract infections as well as other more specific physical indications of abuse. Behavioural symptoms may include sleep disturbances, nightmares, compulsive masturbation, precocious sex play, loss of toilet training, frequent bathing, crying with no provocation, staying indoors, and regressive behaviour such as finger sucking or clinging. These behaviours are generally considered to represent fear and anxiety, symptoms most frequently reported in clinically based studies. In a study reviewed by Asher which used standardized measures with sexually abused preschoolers (Gomes-Schwartz, Horowitz, & Sauzier, 1985), 17% were found to be significantly disturbed; 20% had clinical levels of fear, anxiety, or depression; 20% showed serious deficits in intellectual, physical and social development and 23% were rated as immature. However, only 13% presented with somatic complaints. School-aged children may show some of the same symptoms as younger children, but also show additional symptoms including depression, insomnia, sudden school failure, truancy or running away from home (e.g., Kempe & Kempe, 1978). In the study by Gomes-Schwartz and associates (1985), the school-aged (7-13) sample showed even higher proportions with fear and anxiety (45%) and immaturity (40%); in addition they began to exhibit some aggressive, impulsive and antisocial behaviours (45%). With sexually abused adolescents, more antisocial behaviours are seen, including petty crimes, drug use, promiscuity, truancy, running away, and prostitution (e.g., Romney, 1982). Depression is more commonly noted with adolescent victims than with younger age groups, with high rates of suicide attempts either during or within two years after sexual abuse (e.g., deYoung, 1982). Teenaged pregnancy is another common feature, with incest victims often using the pregnancy as a way to exit the abusive relationship (Herman, 1981). Previously-abused pregnant adolescents tend to obtain less prenatal care, gain less weight, engage in more substance abuse, and give birth to lower birth-weight babies than do nonabused adolescents (Stevens-Simon & McAnarney, 1994), thus putting the development of their own children at risk.

Risk of revictimization is a feature documented at all age levels. Long-term effects of sexual abuse as studied with adult survivors indicate sexual dysfunction, risk of repeated victimization, suicide attempts, and depression (Briere & Runtz, 1988, 1990; Herman, 1981). Repeated victimization can take the form of being involved in an abusive relationship with a spouse or partner, resulting in children of the relationship being exposed to maltreatment as well (Briere et al, 1990).

Although sexual abuse has been shown to have severe detrimental effects for many victims in comparison to nonabused children, some studies indicate that there are a number of children who do not show the same degree of impairment. Several recent studies indicate that in comparison with other maltreated and with nonabused children, sexually abused children are not impaired in social competence (Manly et al, 1994); that there are between 21 and 49% of children in sexually abused samples who are asymptomatic (Kendall-Tackett, Williams, & Finkelhor, 1993); that sexual abuse is not associated with poor academic grades (Eckenrode et al, 1993; Trickett, McBride-Chang, & Putnam, 1994); and that sexual abuse does not have significant effects on a number of measures of the child's outlook on life, except when accompanied by physical neglect and emotional maltreatment (Ney et al, 1994).

Although it is likely that any form of sexual victimization in childhood, if left unacknowledged and untreated, increases the risk of later mental health problems (Berliner, 1991), worse long-term psychological impacts are associated with certain aspects of sexual abuse. Although research in this area is far from conclusive due to small sample size in studies and very different populations from which subjects are drawn (college students versus psychotherapy clients, for example), a recent review of the literature (Briere, 1992) indicates that sexual abuse with one or more of the following characteristics is frequently associated with greater trauma: (a) greater duration and frequency of the abuse; (b) multiple perpetrators; (c) presence of penetration or intercourse; (d) physically forced sexual contact;

(e) abuse at an earlier age; (f) molestation by a perpetrator substantially older than the victim; (g) concurrent physical abuse; (h) abuse involving more bizarre features; (i) the victim's immediate sense of personal responsibility for the abuse, and (j) victim feelings of powerlessness, betrayal and/or stigma at the time of the abuse. Not all researchers agree that these characteristics explain the severity of abuse effects. Hindman (1989) for example has found in her research with clinical groups that factors most closely associated with severely traumatic outcome are the following: (a) sexual responsiveness of the victim, (b) being terrorized in anticipation of abuse occurrences, (c) difficulty in seeing the offender as the guilty party due to positive attributions made by others about him/her, (d) child taking on the guilt for the abuse and not realizing he/she was the victim, (e) abuse beginning under the age of 12, (f) coping skills of dissociation / amnesia or self-abusive behaviours were used in response to the abuse, (g) the victim did not report the abuse, (h) the child reported but was further traumatized by a negative response to the report and (i) the child was required to remain in a relationship with the offender. As can be seen from both of these sets of factors contributing to traumatic outcome of sexual abuse, it is likely that there are synergistic effects of the sexual abuse, physical abuse, and /or psychological maltreatment aspects of the abusive situation.

The most recent trend in studies of the effects of sexual abuse on development is to use multivariate and path analysis models to examine differential outcomes in terms of various mediating variables including coping strategies at time of abuse, attributions about the abuse, characteristics and severity of the molestation, presence or absence of maternal support at the time of reporting, closeness of relationship to the perpetrator, and nondisclosure (Johnson & Kenkel, 1991; Wyatt & Newcomb, 1990). Preliminary findings suggest that such mediating variables play a major role in affecting the eventual adjustment and outcome of sexual abuse victims. Worst outcomes have been found in adolescents who take the stance of coping with their abuse by emotional detachment, distancing, and

excessive help-seeking; whose mothers are not supportive following disclosure; and who were abused by someone in close relationship to them. This type of study seems to hold much promise for uncovering the more complex relationships among abuse characteristics, mediating variables and outcome in all areas of maltreatment research.

Psychological maltreatment

Evolving theory and empirical findings since the mid-1980s have begun to support the notion that psychological maltreatment is the core issue in all forms of child abuse and neglect and that "psychological unavailability" and a dysfunctional emotional milieu have the most damaging long-term effects (Brassard & Gelardo, 1987; Brassard, Hart, & Hardy, 1993; Briere & Runtz, 1990; Claussen & Crittenden, 1991; Egeland & Erickson, 1987; Erickson & Egeland, 1987; Garrison, 1987; Hart & Brassard, 1987). A pervasive insensitivity to the child's needs and generalized failures in the parent-child relationship, rather than specific incidents of abuse *per se*, are seen as the operative mechanisms leading to poor developmental outcomes and psychological consequences seen in abused and neglected children. Hart, Germain, and Brassard (1987) reviewed characteristics commonly found in cases of psychological maltreatment (even without any other form of abuse) which include: (a) physical symptoms--poor appetite, encopresis and enuresis, sleep disorders (e.g., McCarthy, 1979); (b) developmental failures--failure-to-thrive (FTT), incompetence at daily life tasks, academic underachievement and learning problems, inability to become independent (e.g., Azar, Barnes, & Twentyman, 1988; Egeland, Sroufe, & Erickson, 1983); (c) emotional problems--low self-esteem or negative self-concept, depression, withdrawal, reduced emotional responsiveness, emotional instability or maladjustment, inability to trust others, suicide (e.g., Ammerman & Hersen, 1990; Krugman & Krugman, 1984); and (d) antisocial acting out--lying, stealing, prostitution, aggression and violence, homicide (e.g., Main & Goldwyn, 1984). It should be noted that these features overlap significantly with characteristics found by Bristow (1993) in her study of the drawings of physically abused

and sexually abused children. She proposed that the underlying emotional milieu in abusive environments is the common variable which can explain effects in both groups.

As noted in earlier discussion of the study by Claussen and Crittenden (1991), psychological maltreatment is found consistently present along with other forms of maltreatment when clear and specific criteria are provided to measure its presence. Any study of maltreated children must take this form of maltreatment into account, as the major negative impact factors of child maltreatment are generally psychological in nature, affecting a broad range of strategies for living (e.g., aggression, withdrawal, depression, emotional maladjustment, antisocial behaviour, and anxiety). Since so few studies have adequately differentiated all types of maltreatment affecting a particular child, the relative impact of the experiences of physical and/or psychological forms of maltreatment are not yet known. There are difficulties in studying psychological maltreatment including the usual definitional problems, ways to assess severity, ways to obtain reliable information about occurrence, consideration of development level in determining what is harmful treatment, and determinations about whether to evaluate parent behaviours or child reactions in determining whether harm has occurred.

Although psychological maltreatment has not garnered the public interest and concern accorded to sexual and physical abuse, recent research indicates increasing sensitivity among child protection social workers and the general public to the seriousness of this form of abuse and the need for intervention to protect children (Burnett, 1993), with female respondents tending to show more concern on these dimensions.

Combined Forms of Maltreatment

As is evident in the most current studies cited above, the most recent body of literature is moving toward addressing general characteristics of maltreated children, with the realizations that children may experience multiple forms of maltreatment and that there are many commonalities in outcome among all maltreated children. Differences in outcome

need to be assessed on the basis of mediating situational and individual characteristics rather than abuse type, and individual evaluations are needed to assess the relative damage in each individual case.

Compared with normal peers, maltreated children exhibit greater difficulty with self-control and impulsivity (Erickson, Egeland, & Pianta, 1989), aggression (Bousha & Twentyman, 1984; Egeland & Sroufe, 1981, and others), poor cognitive skills and academic performance (Crittenden, 1989; Egeland & Erickson, 1987; Morgan, 1979, Salzinger, Kaplan, Pelcovitz, Samit, & Krieger, 1984) less social sensitivity and empathy (Main & George, 1985), poor social relationships (Dean, Malik, Richards, & Stringer, 1986) and limited affective expression and moral development (Conaway & Hansen, 1989; Crittenden, 1989; Emery, 1989; Gelardo & Sanford, 1987; Lamphear, 1985; Toro, 1982; Wolfe, 1987). A large array of child psychopathology and behavioural problems is linked with child maltreatment in general, although specific types of maltreatment cannot usually be linked to specific problems (Ammerman, Cassisi, Hersen, & Van Hasselt, 1986; Graziano & Mills, 1992). A high proportion of maltreated children show clinical levels of depression (Allen & Tarnowski, 1989) and poor self-esteem (Kaufman & Cicchetti, 1989; Lynch & Roberts, 1982). A review of the literature of major types of psychological disturbance found in adolescents and adults who were abused in childhood indicates frequent findings of post-traumatic stress disorder (PTSD), cognitive distortions, altered emotionality, dissociation, impaired self-reference, disturbed relatedness, and avoidance, with some mention of borderline personality disorder (Briere, 1992). More controversial positions have been taken associating severe childhood abuse trauma with multiple personality disorder and other dissociative conditions being diagnosed in adulthood (e.g., Putnam, 1985).

A study by Bristow (1993) indicated that sexually abused children and children with other forms of maltreatment cannot be distinguished from one another on emotional

problem indicators in projective drawings, except for the feature of "impotence" or powerlessness which was present in the drawings of maltreated children. The combined abuse group, however, was clearly distinguishable from non-abused children by the characteristics of bodily anxiety, aggression, problems with emotional development, impulsiveness, expansiveness, and personality fragmentation (i.e., lack of an integrated self). These findings support the literature cited earlier, which consistently has found problems with impulsivity, aggression, limited affective expression and moral development, and a variety of social problems which are linked to the other features. Bristow's findings regarding problems in emotional development and poor boundaries and self control bear upon a number of the features commonly cited in the literature on maltreated children as a whole. Her finding in regard to bodily anxiety seems to be one which has not been delineated in previous research. Her use of children's drawings as a research tool perhaps was uniquely suited to the detection of bodily anxiety, a feature which is not normally tapped in most research measures. Research in the disparate fields of physical abuse, psychological abuse and sexual abuse, however, has often referred to a variety of somatic complaints and features such as sleeping and eating disorders and enuresis and encopresis, which are observable behavioural symptoms of an underlying bodily anxiety. Further, child development theory indicates that bodily integrity, physical competence and a sense of secure ownership of one's body are necessary prerequisites for further personality, emotional, and cognitive development (areas which are found to be impaired in maltreated children).

Several researchers recently have responded to the call to study combined effects of abuse subtypes. Ney and associates (1994) found that of 20 possible combinations of five maltreatment subtypes, the combinations of physical neglect, physical abuse, and verbal abuse /emotional neglect (i.e., psychological maltreatment) had the greatest negative impact on children's enjoyment of their lives and hopes for their future success and happiness in a

number of personal realms. The addition of sexual abuse to the combination of physical neglect and verbal abuse added only one feature to the general findings of lack of enjoyment in living and concerns about being a good parent - a more generalized cynicism about the future of the world - but was not associated with the same degree of pessimism about other personal prospects (purpose in life, own future, getting a good job, having a happy marriage, having children). Manley and associates (1994) took two approaches to studying the effects of maltreatment: the traditional approach of categorizing subjects into groups by type of abuse (even knowing that other types had been experienced as well); and a multiple regression approach in which all types of maltreatment were entered into the equation. They found a strong overlap between physical abuse and neglect, with the presence and severity of neglect being the stronger predictor of behavioural outcome and social competence.

Crittenden, Claussen, and Sugarman (1994) investigated the relations among types of physical and psychological maltreatment and their effects on development in school-aged children and adolescents. Physical and psychological maltreatment co-occurred in almost every case; severity of emotional abuse was related to severity of physical neglect in school-aged children; and severity of emotional abuse in adolescents was related to severity of physical abuse. Emotional abuse was related to behaviour problems and depression. The authors also noted that certain aspects of parental functioning beyond the actual abuse were seen as powerful predictors of child outcome due to impairment of parental competence to raise children: life stressors, mood disorders, anxiety disorders, poor interpersonal skills, lack of social support, family violence, limited coping strategies, and limited family cohesion and adaptation.

Wolfe and McGee (1994) devised a Record of Maltreatment Experiences which was used in research with 160 adolescents to examine the presence of multiple types of abuse and their effects on development and functioning. Factors formed from the scale were

studied separately for males and females, with the finding that for males the relationship between early maltreatment and adjustment was significantly enhanced when interactions between physical and psychological abuse and between family violence and neglect were entered into the equation. For females, adjustment was a function of maltreatment experiences described as poor nurturance, psychological forms of abuse, and inadequate care, particularly when it occurred at earlier developmental stages. Sexual abuse did not emerge as a significant factor in the study.

These most recent studies provide support for the contention that interactions among maltreatment experiences are powerful predictors of adjustment, can provide more comprehensive results than dichotomizing maltreatment or examining differences by subtype, and thus deserve further study. Several of the authors suggest consideration of additional risk variables such as parental pathology, mediating variables which might buffer the effects of maltreatment, or outcome measures which could offer a more detailed picture of child adjustment, but the research designs used precluded the simultaneous examination of all of these factors.

Empirical research on the cognitive, linguistic, socioemotional, and social-cognitive sequelae of child maltreatment is a very recent phenomenon. The influence of developmental theorizing in the field of child maltreatment has resulted in the formation of appropriately complex etiological models and a rich framework for conceptualizing the effects that maltreatment has upon adaptive and maladaptive developmental processes (Cicchetti & Carlson, 1989).

Relationship Between Maltreatment and Developmental Pathology

Although it may seem logical to assume that maltreated children's psychological and behavioural characteristics described above are direct results of abusive treatment, the causal links between abuse and psychopathology in children may be more complex (Augoustinos, 1987; Cicchetti, Toth, & Hennessy, 1989; Emery, 1989) or may be

correlational and not causal. Other co-existing problems such as poverty or family disruption rather than only the acts of physical abuse are thought by some to be powerful factors in the developmental problems of abused children (Elmer, 1978; Gil, 1974). A number of researchers and theoreticians (Cicchetti et al, 1989; Crittenden & Ainsworth, 1989; Erickson & Egeland, 1987; Erickson, Egeland, & Pianta, 1989; Wolfe, 1987) propose that maltreatment may interfere with normal development by disrupting critical processes such as attachment and the formation of moral judgement and may put maltreated children at high risk for psychopathology and adaptational failure (Sroufe & Rutter, 1984). Several important interactive variables may mediate the relationship between maltreatment and subsequent psychological functioning: the quality of the parent-child relationship; the type, duration, and severity of maltreatment and the child's developmental stage at the time of maltreatment; the general socioeconomic status of the family; the completeness of the child's earlier development; and the degree to which development is interrupted by maltreatment--especially the development of early attachment (Graziano & Mills, 1992). According to this developmental view, the child who suffers maltreatment earlier in life is at greater risk than one who is maltreated at a later age, even if that maltreatment does not continue in later childhood. Correspondingly, a child with a problematic developmental history will be more severely affected by maltreatment than another child with a stable and healthy early life. Although the developmental approach to understanding the effects of child maltreatment has not been fully articulated at this stage, it is important to consider in designing research on the complex effects of maltreatment on the development of children.

While research indicates that maltreated children suffer psychological and behavioural problems in nearly all areas of development, because of the interactive effects of the numerous factors involved the possible outcomes are many and varied. It is unlikely that a single profile of the maltreated child - or even of the physically abused child - can adequately describe all maltreated children (Emery, 1989). Research efforts in the past to

derive such a global profile have led to inconclusive and conflicting findings about the sequelae of maltreatment.

One model of child maltreatment effects stresses the commonalities as well as the differences in long-term impacts of various types of child abuse (Briere, 1992). Each form of maltreatment, according to this model, seems to share certain impacts with other types of maltreatment, but can also produce unique and specific psychic injuries as well. Maltreatment experiences, according to their severity and their interaction with other important variables such as social and familial support, external stressors, and developmental level at the time of maltreatment, are deemed to have significant impacts on later self-perception, behaviour and psychological symptomatology. This model describes seven groups of abuse-related problems (posttraumatic stress [PTSD], cognitive distortions, altered emotionality, dissociation, impaired self-reference, disturbed relatedness, and avoidance) in the context of their association with specific and combined forms of child maltreatment.

PTSD symptoms include re-experiencing the aversive event via nightmares, intrusive thoughts or flashbacks; a numbing of general responsiveness to events in the world; and persistent symptoms of increased arousal such as sleep disturbance, heightened startle response, poor concentration and physiologic reactivity upon exposure to events that symbolize or resemble the original event. The intrusive, avoidant and arousal symptoms of PTSD have been found most frequently in research on sexual abuse victims, but this may be due in part to the lack of research on the lasting effects of physical abuse, as clinical experience and some empirical evidence suggests that adolescents, abusive parents, and adults with physical abuse histories experience more autonomic arousal, intrusive thoughts of violence, violent nightmares, and flashbacks. PTSD symptoms are not reported frequently in psychologically abused children, but they have been linked to terrorization in children (Terr, 1990).

Cognitive distortions have been linked to all the major forms of child maltreatment, but it is likely that the underlying basis for such cognitive disturbance is psychological maltreatment which co-exists with physical and sexual abuse. Abuse-specific cognitive distortions include the child's assumptions of inherent badness and stigmatization, perceptions of helplessness and chronic danger even when external events no longer justify these perceptions, hypervigilance to real or imagined physical or psychological danger, learned helplessness and powerlessness which make the victim more easily victimized in the future, or overcontrol and overassertion and a false sense that one has complete control over life.

Altered emotionality includes pervasive features of depression or anxiety. While the majority of research literature has focused on the pervasiveness of depression as a long-term effect of sexual abuse, it is also a feature commonly found in physically abused and children of alcoholic and substance-abusing parents. Major depressive episodes and dysthymia (a milder form of depression characterized by chronic sadness and unhappiness, low self-esteem, self-blame and perceived helplessness) are found in adults with childhood histories of psychological abuse. Anxiety is found in all varieties of child maltreatment, with no evidence that obviously life-threatening abuse is associated with greater anxiety levels than sexual molestation or emotional neglect. The frightening characteristics of child maltreatment lie in the implications it has for the child, due to his/her general vulnerability, need for care and susceptibility to violation. Chronic neglect, with no other active abuse, may still lead to anxiety as a result of poor and anxious attachment which lays the groundwork for later development and distorted views of the world.

Dissociation involves behaviours that relate specifically to alterations in thoughts, feelings or awareness: (a) disengagement, which involves a cognitive separation - or spacing out - of the individual from his/her environment at times of stress or trauma; (b) detachment and numbing, when the person attenuates the intensity of negative feelings so that he/she can go on with necessary life activities without being immobilized or distracted

by them; (c) observation, which is the experience of standing back and watching oneself, sometimes to the point of depersonalization and out-of-body experiences and (d) more severe dissociative states such as amnesia and multiple personality disorder, which involve nearly complete banishment from awareness of painful memories to the point of creating separate personalities. Dissociative conditions have been found most frequently among victims of sexual abuse, extreme and sadistic forms of physical abuse, and in some studies of psychological maltreatment.

Impaired self-reference involves lack of development of a coherent and integrated self-concept, such that the person is prone to identity confusion, boundary issues and feelings of personal emptiness. There is lack of ability to soothe oneself adequately so that one overreacts to stress or painful events; there are difficulties in separating oneself from others and relating to others independent of one's own experiences or needs. Impaired self-reference problems are found in many abused and/or neglected children, with psychological maltreatment and problematic attachment strongly implicated as causative factors. Early dissociation due to traumatic events may compound disruptions to the developing sense of self by creating discontinuous memories of childhood and lack of stability in affective and cognitive aspects of experience.

Disturbed relatedness involves intimacy disturbances, altered sexuality, mistaken assumptions regarding the appropriateness of aggression in relationships, adversariality and manipulation, and aggression. Although most of these features have been associated in research with sexual abuse victims, all features except altered sexuality are also seen in other forms of maltreatment. Maltreated children in general may develop ambivalence about close human connections which predispose them to intimacy problems. Children who are physically abused or who witness family violence may come to consider aggression as a normal part of relating to others so that they either accept it or perpetrate it in their own relationships, and neglected and emotionally abused children may have difficulty

containing aggressive impulses or may learn that the only way to get needed attention is through aggressive behaviour or through manipulation. Aggression toward others is a frequent short-term sequelae of all types of maltreatment including living in family environments characterized by substance abuse and other family violence and dysfunction, as it represents a generic externalization of the child's maltreatment-related trauma and dysphoria as well as a modelling of parental behaviour. Long-term impacts of specific forms of maltreatment suggest that sexual abuse is associated with later sexually aggressive behaviour, while physical abuse is tied to physically aggressive behaviour.

Avoidance involves the use of psychoactive substances as self-medication to escape the experiencing of anxiety, depression or upsetting memories; suicidality as an ultimate avoidance strategy; tension-reducing behaviours such as acting-out (poor impulse control) or externalization of conflicts as seen in indiscriminate and addictive sexual activity, substance abuse, bingeing or chronic overeating, spending sprees, risk-taking activities and self-mutilation. Sexual abuse is strongly implicated in all of these avoidance strategies, and physical abuse in most of them. Substance abuse is seen across all maltreatment types and in those with dysfunctional and substance-abusing family environments, with the underlying psychological abuse and neglect being the common factor.

Regardless of specific type of maltreatment, this model holds that child abuse impacts are likely to occur in at least three stages: (a) initial reactions to victimization, involving post-traumatic stress, alterations in normal childhood development, painful affect, and cognitive distortions; (b) accommodation to ongoing abuse, involving coping behaviours intended to increase safety and /or decrease pain during victimization and (c) long term elaboration and secondary accommodation, reflecting the impacts of initial reactions and abuse-related accommodations on the individual's later psychological development, and the survivor's ongoing coping responses to abuse-related dysphoria. While some of the initial reactions of victims may lessen over time, more often such

disturbances and abuse-specific coping behaviours tend to generalize and become elaborated over time, unless intervention and treatment is provided.

In outcome studies of maltreated children and their development, it is important to have a grasp of the psychological and behavioural features which may be present, as well as their relationship with subtypes of maltreatment and general maltreatment. Briere's model delineates this psychological dimension in a more detailed and comprehensive way than one typically finds in research on psychological effects of maltreatment. His framework - along with the writer's own clinical training and experience with maltreated children - has been instrumental in the development of a detailed checklist of personality features as identified in children's projective drawings which will be used as an outcome measure of global personality dysfunction in this study and in more detailed follow-up research with this sample.

Problems in the Maltreatment Literature

The literature related to child maltreatment is plagued by inconsistencies in philosophy, methodology, and definitions (Chandler, 1982; Haugaard & Emery, 1989) and thus has produced inconsistent, inconclusive, and controversial findings about the developmental sequelae of maltreatment in general and of each of the specific forms defined above. This is understandable given the difficulty in isolating research groups whose members would only have experienced one form of maltreatment and not any of the others. Although few people would deny that maltreatment has negative consequences on the physical, neurological, intellectual, and emotional development of children, much of the research on child maltreatment has been limited methodologically in ways which make it difficult to draw conclusions about the specific relationships between maltreatment and later outcomes (Erickson & Egeland, 1987). It has been said (Toro, 1982) that the research on developmental effects of child abuse fails to cohere meaningfully and that research conclusions are often conflicting or inconclusive.

Commonly-made criticisms have included: (a) a failure to use control groups, thus confounding the effects of maltreatment with effects of other environmental stressors (especially low SES or family disruption); (b) not separating subtypes of maltreatment which may have different consequences, possibly masking differences between maltreated and normal groups; (c) retrospective designs which limit assumptions that can be made about causality; (d) grouping subjects of different ages, obscuring the ways in which the consequences of maltreatment affect children at different developmental levels; (e) failure to use a uniform set of operational definitions or even to provide clear operational definitions, so that what is being studied may not be the same across studies and (7) lack of longitudinal studies to look at effects over time and life span.

Clearly, maltreatment is a phenomenon that is not subject to many of the normal sorts of experimental controls. One cannot ever be assured that the research and control groups in question are actually representative of the pure type that they purport to be. Because of the nature of maltreatment, there is a great deal of secrecy and pressure for the child not to disclose to anyone the abusive experiences. Even in cases of disclosure and reporting, the amount of clinical information available on children may vary widely in its detail and completeness. One form of maltreatment, such as physical abuse, may be documented and assumed to be the problem, when actually the child may also have experienced sexual abuse, prolonged periods of neglect between abusive episodes and very likely a subtheme of emotional and verbal abuse that had gone undetected.

Thus the research groups used and contrasted in much of the earlier research in this field may have been flawed to begin with so that the effects of sexual abuse, for example, have been confounded with pervasive emotional maltreatment which was not addressed. The factor of emotional milieu as a strong contributing factor to the effects seen in various forms of abuse has become more evident in recent research. Specific features of the maltreatment such as duration, intensity, relationship of perpetrator, coercion, and age at

abuse are now considered to add important information to the determination of negative consequences over time. In addition, there is increasing acknowledgement of the need to look at multiple forms of abuse and dysfunctional family environments with substance abuse, family violence and disruption, and the interactions among them in producing developmental problems in children, rather than trying to create artificial divisions between overlapping conditions. The statistical analyses used to make between-group comparisons are now giving way in the current research to more complex multivariate designs and models, with the use of path analysis and structural equation modelling to investigate the complex interactions and relationships among forms of maltreatment, mediating factors, and developmental outcomes.

Attachment Theory and Maltreatment

One theoretical model which can explain the mechanism by which development is impaired in maltreated children is attachment, a concept initiated by Bowlby (1958). Attachment theory, including an extensive body of empirical and theoretical literature, has shown the importance of emotional responsiveness and empathic caregiving in developing a secure attachment between mother and child (Egeland & Erickson, 1987). In humans, this close infant-caregiver relationship serves a physically protective function and also lays the groundwork for subsequent development. The importance of attachment is seen in its impact on intellectual, perceptual, emotional, physical, and social development. By six months of age, an infant usually is capable of recognizing his/her primary caregiver and of taking the initiative to seek contact, to protest when separated from the caregiver, and to show stranger anxiety. While almost every infant forms an attachment, the quality of attachment may vary significantly depending upon the caregiver's sensitivity, responsiveness, and predictability in meeting the infant's needs. The presence of attachment is observed through behaviours such as physical contact, eye contact, emotional sharing, seeking closeness, and being comforted by the caregiver when upset. Secure attachment is

also shown by the child's ability to use the caregiver as a secure base from which to venture and explore the environment, with the safety of knowing he/she can gain comfort and reassurance if frightened (Ainsworth, Blehar, Waters, & Wall, 1978; Egeland et al., 1987; Sroufe, 1979).

Through this primary relationship, the child forms internal representations of self and of others. According to Bowlby (1980), a person who has formed a secure, healthy attachment with a responsive caregiver "is likely to possess a representational model of attachment figures as being available, responsive, and helpful and a complementary model of himself as at least a potentially lovable and valuable person." Throughout life, such a person is more likely to be confident and capable of handling difficult situations effectively or to be able to seek and use help if necessary. A securely attached person is also more likely to enter into other loving, trusting relationships. On the other hand, poorly attached children come to anticipate that care is not available or dependable. As they mature, they come to view the world as comfortless and unpredictable, responding either by withdrawal and isolation or aggressive confrontation. Such individuals are less prepared to cope with later stresses and may even behave in ways which bring about more adverse experiences.

It has been found that secure attachment can predict later competent functioning such as more enthusiastic, persistent, actively positive, and compliant problem solving at age two (Matas, Arend, & Sroufe, 1978). Secure infants are later more socially competent with peers at age three and one-half (Waters, Wippman, & Sroufe, 1979) and more resilient at age five (Arend, Gove, & Sroufe, 1979). Secure infants were also found to be more compliant with mothers at age two and with pre-school teachers at age four and one-half (Erickson & Crichton, 1981), to have better self-control at pre-school and to be less dependent on pre-school teachers (Egeland, 1983). In general, the literature shows clear connections between insecure attachment and later social and behavioural difficulties which are correlated with poor self-esteem.

In a study of attachment and self concept in six-year-old children, securely attached children showed a warm and intimate relationship with the mother and also described themselves in a positive light yet had the capacity to admit normal imperfections (Cassidy, 1988). Such children felt accepted and valued despite flaws and they could tolerate stress. Children who were classified as insecure/avoidant according to the Ainsworth model (1978) tended to avoid contact with the mother and to portray themselves as perfect. The author suggested that for these children to admit that nurturing and responsive relationships are important might arouse painful emotions or prompt either anger or clinginess, which might increase the risk of alienating the mother. They were also reluctant to admit any weakness or imperfection that might lead to further rejection. Insecure/avoidant children were generally found to be more defensive and rigid.

Children who were classified as insecurely attached in nonavoidant ways (ambivalent or controlling) tended to make overt statements about their own lack of self-worth. These children viewed the world as a bizarre and unpredictable place and seemed to have no assurance that aggressive and hostile impulses of themselves or others would be controlled. They tended to feel burdened and resentful, showing more overt expression of anger and hostility, and lacked confidence that someone could be relied upon for comfort and protection. There are interesting implications of this study when looking at the long-term impact of disturbed attachment patterns and the way in which the relationship with the primary attachment figure can continue its influence throughout the life span, even into situations where that attachment figure is not present. It is generally held by theorists in this field that people carry early working models into new situations and relationships where they play a role in determining new experiences and perpetuating perceptions of the environment (e.g, Crittenden, 1992; Sroufe, 1979).

Further analysis of the different forms of insecure attachment, known as the avoidant pattern, the ambivalent or resistant pattern and the later-identified disorgan-

ized/disoriented pattern (Main & Solomon, 1990) indicate differing strategies for dealing with social interactions. Children classified as avoidant adopt a strategy of cutting off anger or distress-related displays. Although this behaviour has adaptive value by reducing conflict with caregivers who are insensitive or rejecting (Main, 1981), avoidant children eventually express anger inappropriately in social relationships and play (Main & Stadtman, 1981; Sroufe, 1983). The ambivalent pattern, in contrast, involves more overt expressions of distress, with fear and anger shown toward the attachment figure. This approach serves to maintain contact with the caregiver at the cost of the child's ability to explore and show self-confidence in new environments. Teachers in Sroufe's 1983 study tended to describe these ambivalent/ resistant children as impulsive and helpless. While securely attached children and insecurely attached children with either the avoidant or ambivalent/resistant pattern possess a coherent coping strategy to deal with the stress of separation and reunion, children in many studies were found to have no such coherent coping mechanism, although they were force-classified into one of the groups. Scrutiny of these children led to the delineation of another category of insecure attachment called disorganized/disoriented. These children blended contradictory features of several categories (e.g., strong proximity-seeking followed by strong avoidance) or appeared dazed, disorganized and disoriented upon reunion with caregivers; they showed psychomotor retardation, appeared frozen or depressed and showed direct indices of apprehension toward the parent.

Longer term impact of attachment style was addressed in a study of attachment patterns in late adolescents (Kobak & Sceery, 1988). Three working models of attachment were assessed by the Adult Attachment Interview: Dismissing of attachment, Secure, and Preoccupied with Attachment. In contrast to the Secure group, the Dismissing group was rated low on ego-resilience, higher on hostility and having more distant relationships in terms of loneliness and low levels of social support from friends and family, related to a pattern of denial of negative affect and a compulsive self-reliance. The Preoccupied group

was viewed as less ego-resilient and more anxious, having higher levels of personal distress, and viewing family as more supportive than the Dismissing group. The Secure group was significantly higher in ego-resiliency, flexible in ego-control, lower in hostility and anxiety, and less lonely than the other groups. The results of this study serve to illustrate how attachment patterns formed at the beginning of life carry over through later development and also suggest the need to examine the variables of resilience, family support, and other social supports in conducting research on the effects of maltreatment in children.

Attachment in Maltreated Children

Given the significance of attachment patterns in subsequent development, it is important to examine the ways in which attachment develops in children who experience abuse or neglect by caregivers as well as the developmental sequelae seen in maltreated children, who are likely to have troubled attachments. Confirming predictions from attachment theory, studies indicate that maltreated infants, toddlers, and school-age children - compared with those who are not maltreated - exhibit a higher proportion of insecure attachments to the primary caregiver (Egeland & Sroufe, 1981; Schneider-Rosen, Braunwald, Carlson, & Cicchetti, 1985), more avoidance and approach-avoidance behaviours with nonparental caretakers (Aber & Allen, 1987; George & Main, 1979), more frustration, aggression and negative affect in cognitive problem-solving situations, and lower developmental quotients (e.g., Aber & Allen, 1987; Egeland & Sroufe, 1981).

A longitudinal study of 267 high-risk mothers and their infants was conducted with four different maltreatment groups identified: physically abusive; hostile/verbally abusive; psychologically unavailable; and neglectful (Egeland & Sroufe, 1981). Non-maltreated children from the sample were used as a control group. The maltreatment group was characterized by predominantly anxious patterns of attachment, with the children demonstrating more anger, frustration, noncompliance and aggression and less enthusiasm and positive affect when followed up at 24 months of age. A majority of the children

subjected to hostile/verbal abuse were also anxiously attached at 18 months. Both these groups showed lower developmental quotients on the Bayley Scales of Infant Development. Children whose mothers were psychologically unavailable were also significantly more anxiously attached than control children. They demonstrated more anger, frustration, noncompliance, whining, negative affect and less positive affect than control children in a problem solving task. This group showed a dramatic decline in performance on developmental measures between the testing sessions at 9 and 24 months. Similarly, a high proportion of neglected children were anxiously attached at both 12 and 18 months and demonstrated more negative affect at 24 months than controls.

Later follow-up of these same children was conducted at four and one-half to five years of age in their preschool or daycare setting (Egeland, Sroufe, & Erickson, 1983). All maltreatment groups demonstrated significantly greater difficulty in coping with frustrating situations, showed poorer quality of interactions with mothers during a joint task, were rated as worse on a measure of socio-emotional problems and obtained higher pathology scores on the Behaviour Problem Checklist. Differences which appeared among the maltreatment subgroups were summarized as follows: Physically abused children were most distractible, demonstrated least persistence and enthusiasm for learning, were the most noncompliant and showed many negative and disordered behaviours. The verbally abused children were the most avoidant of their mothers and expressed the most anger. Children of psychologically unavailable mothers, especially those who had also been physically abused, showed a marked prevalence of pathological behaviours at school. Neglected children were the least flexible and creative, and were rated the lowest on self-esteem with least positive and most negative affect of all the maltreated groups. They were the most dependent on teachers, had the lowest self-control, and showed lack of coping skills. The most striking finding of this study is the extent to which all maltreatment groups performed worse than controls during the first five years of life and showed many commonalities across abuse

types. Further follow-up of this longitudinal study will be helpful in revealing long-term sequelae of maltreatment as a function of insecure attachment.

The study of the disorganized/disoriented insecure attachment pattern (Type D) is still quite a new area, but this pattern has been strongly linked with maltreatment of children (Carlson, Cicchetti, Barnett, & Braunwald, 1989; Main & Solomon, 1990; Speiker & Booth, 1988). In addition to finding a preponderance (82%) of this type of attachment pattern in a maltreated research group, one study also noted gender effects with boys, who were significantly more likely to be Type D than girls, regardless of maltreatment status (Carlson et al., 1989).

A recent study comparing coping strategies of four groups of maltreated children (abused, abused and neglected, neglected, and marginally maltreated) with adequately reared children found variations in types of strategies employed by each group. Abused and abused-neglected children were either difficult or compliant in interactions with their mothers, avoidant under stress, and aggressive with siblings; neglected children were cooperative in play with mother, anxious under stress, and aggressive with siblings; and adequately reared children were cooperative with mother and siblings and secure under stress. Older abused children tended to be less difficult and more compulsively compliant with the mother. Marginally maltreated and adequately raised children generally were cooperative at all ages, except for the one-year olds who were more difficult. The coherencies in these children's coping patterns were interpreted in a framework of attachment theory, with coping skills derived from underlying internal representational models of relationships. Unfortunately, this study did not address the coping strategies of sexually abused children and did not delineate forms of psychological maltreatment present in the children's upbringing. The implications of these findings are important, however, in understanding that children adopt certain coping strategies to survive maltreatment situations. These strategies may enhance adaptive behaviour in the short term when they

facilitate behaviour that promotes the protection of the child, and in the long term when they are open to revision based upon new input and when they encourage behaviour which elicits supportive responses from others (features which are considered aspects of resilience in children). Strategies based upon inhibition, such as compulsive compliance and avoidance, may be adaptive in the short term, but may lead to long term patterns of maladaptation as children with these strategies may never experience compensating positive experiences and relationships which could mediate the effects of maltreatment (Crittenden, 1992).

The Effects of Trauma on Development

Another theoretical model which addresses the ways in which maltreated children may come to display problems in development is found in the literature on trauma. As presented by van der Kolk (1987), human response to overwhelming and uncontrollable life events is consistent enough to be considered an identifiable syndrome known as post-traumatic stress disorder (PTSD). The response to trauma has been described as bi-phasic, alternating between intrusive and numbing responses. The intrusive responses include hyper-reactivity, explosive aggressive outbursts, startle responses, and re-enactment of situations reminiscent of the trauma. As traumatized people have poor tolerance for psychological and physiological arousal, their usual response to stress consists either of motoric, usually aggressive, discharge against themselves or others, or social and emotional withdrawal. Intrusive re-experiencing may appear in abused children in behaviour in which they constantly expose themselves to danger.

The numbing response involves emotional constriction, social isolation, retreat from obligations, lack of pleasure in activities, and a sense of estrangement. Traumatized individuals may gain some sense of control by avoiding situations related to the trauma. Often they avoid intimate relationships, possibly out of fear of another violation of the attachment bond. They tend to exhibit all-or-nothing responses and lack tolerance for

feeling states so that they cannot grieve, work through conflicts, or cope with small problems of everyday life. This response sets limits their capacity to modify the impact of the original trauma by substitution of more normal and gratifying experiences. The alternate numbing and re-experiencing has been observed after a variety of traumatic events including combat trauma, rape, kidnapping, spouse abuse, natural disasters, incest, and child abuse (Green, 1983).

When traumatic life experiences remain unintegrated, blocked, or repressed, the victim tends to remain fixated on the trauma. Krystal (1978) looked at the ways in which trauma victims manage emotional expression and interpersonal communication. He presented a disaster syndrome including the following characteristics: (a) loss of capacity to use community supports, (b) chronic recurrent depression and despair, (c) psychosomatic symptoms, (d) emotional anaesthesia or blocked ability to react emotionally, and (e) inability to recognize and make use of emotional reactions. These symptoms lead to a robotlike existence, without fantasy or empathy for others, and may be accompanied by chronic physical illness, alcoholism, or drug dependence.

The concept of psychological integration is important in understanding the impact of trauma on the individual. When events are perceived as overwhelming and stressful, the psychological defense may be to repress the memory and wall off the experience from conscious awareness. This defense may take the more extreme form of dissociative reactions and multiple personalities when the individual can not permit the integration of all his/her life experiences into consciousness. Children who have been physically or sexually abused show indications of this dissociation and fragmentation in their projective drawings, suggesting the disorganizing effect of abuse trauma on personality integration (Bristow, 1993). The effect of repressive defenses is to lock the person into repetition of the trauma in unconscious ways. The traumatized person reacts to subsequent stress as if it were a recurrence of the trauma.

Traumatized individuals have difficulty controlling anxious and aggressive feelings, and they respond with hyperarousal to emotional and sensory stimuli. Oversensitivity to stimuli and difficulty modulating the intensity of their reactions may be associated with the use of alcohol and/or drugs to self-medicate. Victims become preoccupied with not losing control, fearing that the expression of the anger would be too explosive. One study found marked differences in the expression of aggression by male and female victims of child abuse and incest (Carmen, Reiker, & Mills, 1984). Thirty-three percent of males dealt with anger by becoming physically aggressive, compared with 16 percent of females; 66 percent of the females directed anger inward with self-destructive behaviour, compared with 20 percent of the males.

When the effects of trauma become ingrained, victims develop a chronic sense of helplessness and victimization, losing the feeling that they can influence their destinies. They are mentally and physiologically on the alert for further traumatic events. Seemingly minor stimulation may trigger traumatic memories or the feelings associated with earlier events. Physiological studies have postulated that the hyperarousal following trauma is due to chronic alterations in the central neurotransmitter systems, resulting in catecholamine and norepinephrine depletion and chronic noradrenergic hypersensitivity following such depletion (van der Kolk, Greenberg, & Boyd, 1985). When exposed to further stressors, traumatized individuals become flooded with the feelings associated with their earlier helplessness. This sense of helplessness and the fear that it may return unpredictably makes it difficult to modulate the degree of intimate involvement with others (when feeling states are evoked), resulting in a pattern of either idealizing or hating new acquaintances. Both extremes lead to disappointments that further confirm the sense of helplessness. This pattern of relating is a key feature of borderline personality disorder, which has been cited as a long-term outcome of early and severe abuse accompanied by failures in attachment (Briere, 1992; Briere & Zaidi, 1989; Fisher, 1991; Herman, Perry, & van der Kolk, 1989), a

concept which integrates trauma research with the fields of maltreatment research and attachment research. In these studies, the various groups of diagnosed borderline patients showed early histories of sexual abuse at frequency rates ranging from 67 to 93 percent and early histories of physical abuse in the 70 percent range. Ironically, this diagnosis is often given without consideration that the primary disturbance underlying the diagnosis involves chronic reactions and accommodations to early child abuse trauma.

Trauma in Maltreated Children

Van der Kolk (1987) outlined six factors which affect long-term adjustment to traumatization: (a) severity of the stressor, (b) genetic predisposition, (c) developmental phase, (d) person's social support system, (e) prior traumatization, and (f) pre-existing personality. For the purposes of this study and the consideration of the effects of traumatic events on children, these points are very important.

The severity of the stressor, in this case the severity and pervasiveness of a particular form of maltreatment or combination of types, is often overlooked in studies of the effects of maltreatment and must be taken into account in order to understand developmental outcome. The developmental phase is highly important, as children are extremely sensitive to the long-term effects of uncontrollable traumatic events, partially because of their level of cognitive development, skills, and resources. They cannot conceptualize the event, make sense of it through verbal reasoning, or use more sophisticated defenses to reduce the impact. They experience the effects at a global emotional/physiological level. If, in addition, children have been subjected to deprivation of basic needs for security, attachment and nurturing prior to abuse, they will be less able to withstand the effects than a child who received adequate parenting. The effects of early deprivation may remain latent until activated later in life by overwhelming stress. The factor of lack of support during traumatic experiences is significant as it affects both the abused child who has no protective person to turn to, and as it affects abusive parents who may become overwhelmed by stress

and feel they have nowhere to turn either. Pre-existing factors such as genetic predisposition and basic personality structure cannot be assessed adequately within the scope of this study, but must be borne in mind as possible influences on findings.

Abuse trauma or memory of trauma has been found to interrupt children's thought processes and cognitive development (Fish-Murray, Koby, & van der Kolk, 1987). In abused children, whose coping mechanisms often are not effective in protecting them from trauma, the autonomic nervous system is activated in a search through memory systems of different domains, primarily focused toward visual memory. Children become hyperalert to visual cues in the environment to help them find a way out of their dilemma. The system becomes overloaded with unassimilated pain and fear and the child loses the ability to shift mental set and consider a range of options. He/she loses the function of accommodation and the ability to plan, anticipate, and self-correct. Delays were found in development of logical verbal reasoning abilities, with the child being held back in a primarily visual level of reasoning and focus on the here-and-now. Tasks requiring time sequencing and cognitive flexibility often could not be managed by these children, seriously hampering the ability to learn and integrate new information. Mathematical reasoning was less affected than personal and social knowledge domains. It is possible that this split occurs because verbal materials are far more likely than numerical material to trigger personal associations and memories of incidents which bring on emotional arousal. Abused children are found to have problems in attention, concentration, and self-control. This attention deficit disorder is associated with learning delays; low self-esteem; and behaviour problems of disruption, aggression, and other anti-social acts. These findings from trauma research relate closely to the findings in the maltreatment literature of delayed development of academic and social skills, behavioural problems, and difficulties in attention and concentration. It is important to include measures of these outcome variables in a comprehensive study on the effects of maltreatment.

Terr (1991) notes that childhood trauma is often not recognized; she suggests categorizing childhood trauma into two basic types and identifies four personality characteristics related to trauma, which appear to last for long periods of life. Type I trauma is the result of a single event and is shown in full, detailed memories, "omens," and misperceptions. Type II trauma is the result of long-standing or repeated ordeals and is associated with denial and numbing, self-hypnotic "spacing out" and dissociation, and rage.

Crossover conditions may occur when there is a sudden shocking event followed by its unavoidable aftermath and longer-term effects; in these conditions characteristics can exist simultaneously or in alternation. The four characteristics Terr notes as present in traumatized children of any age or distance from the event include (a) strongly visualized or otherwise repeatedly perceived memories, (b) repetitive re-enactment behaviours, (c) trauma-specific fears and (d) changed, more hopeless attitudes about people, aspects of life, and the future. Other common features which distinguish childhood trauma include thought suppression, sleep problems, exaggerated startle responses, developmental regressions, fears of the mundane, deliberate avoidances, panic, irritability and hypervigilance.

The distinction of Type I and Type II trauma have been tested empirically with physically and sexually abused children and adolescents, with findings indicating that about 55% of this maltreatment group developed symptoms associated with post-traumatic stress disorder, with nonPTSD children exhibiting more anxiety, depression, externalizing behaviours and more problems overall. Differences were found between Type I and Type II trauma, with Type I victims displaying more behaviour disorders and victims of ongoing (Type II) maltreatment appearing significantly more disturbed, with symptoms ranging from depression to psychosis, with pervasive sadness and hopelessness as the keynote of this condition. (Kiser, Heston, Millsap, & Pruitt, 1991) Another study with children diagnosed with PTSD of either the acute or chronic variety indicated similar findings, with acute cases associated with spontaneously acting as if the abuse were recurring, difficulty

falling asleep, hypervigilance, nightmares, exaggerated startle response and generalized anxiety/agitation. Chronic cases had relative increases in symptoms of detachment, restricted range of affect, dissociative episodes, sadness and a belief that life will be too hard (Famularo, Kinscherff, & Fenton, 1990). Another investigation found highest rates of PTSD in sexually abused children (20%) as compared to either physically abused (6.9%) or nonabused psychiatrically hospitalized children (10.3%), although both the sexually abused and physically abused groups showed a tendency to exhibit more avoidant/ dissociative symptoms as compared to nonabused children (Deblinger, McLeer, Atkins, Ralphe, & Foa, 1989).

The relationship of dissociative symptoms and childhood trauma and maltreatment has been investigated in two recent studies (Chu & Dill, 1990; Sanders & Giolas, 1991), with findings of the first study showing high rates of occurrence of physical and/or sexual abuse in an adult psychiatric population (63%) of whom 83% had dissociative symptom scores above the adult norms and 24% had scores at or above the median scores for patients with PTSD. The second study obtained consistent findings, in that scores of hospitalized adolescents on a Dissociative Experiences Scale correlated significantly with self-reported physical abuse or harsh punishment, sexual abuse, psychological abuse, neglect and negative home atmosphere, but not with abuse ratings made from hospital records. The conflict in the latter findings could be interpreted as exaggerated reporting by the adolescents or underreporting to the hospital by parents who had paid to place their disturbed children in this private mental health facility.

Children are particularly vulnerable to the effects of trauma, as illustrated in the findings reviewed in this section. In the absence of a safe base, as in cases of child abuse and neglect, the child is placed in a position where all their psychological resources are directed toward survival through self-protection. They become extraordinarily reactive to internal and external stimulation, over-reacting to frustration and becoming easily

overwhelmed by anxiety. They are prone to fixations at early levels of development, as they do not have the cognitive flexibility to learn and retrieve information. These factors often lead to limitations in emotional, intellectual, and social development, which have life-long effects on the child.

The literature from the fields of child maltreatment, attachment, and trauma converge to indicate that the effects of maltreatment on children's development and functioning can be devastating.

Vulnerability and Resilience

While the convergence of research findings seem to indicate pervasive negative effects from each of the forms of child maltreatment, there have been enough inconclusive or negative findings and a certain proportion of apparently undamaged children in each study to suggest that there is not a clear, direct and unequivocal causal link between maltreatment and negative child outcome. Initial preconceptions of how maltreatment affects the developing child in both the short and long term may have been overly simplistic and fatalistic, as child abuse does not appear to affect each victim in a predictable or consistent fashion (Wolfe, 1987). It is the writer's contention that an additional factor which has confounded the research on developmental effects of maltreatment is the element of individual differences in response and coping with negative events. Some children are exposed to horrendous conditions, yet emerge relatively intact and apparently resilient; others are exposed to rather subtle forms of maltreatment, yet are severely traumatized. The consequences of abuse are mediated by caretaker characteristics, environmental circumstances, life stress, and support from family and friends, but also by a child's own temperament and past developmental history. Few studies in the field of child maltreatment have attempted to determine the factors that make the abused child more or less vulnerable to the effects of maltreatment. There is some literature to suggest that being a male child increases vulnerability to detrimental effects, such as difficulties in attachment, later

learning disabilities, school underachievement and behavioural problems as well as long-term emotional difficulties and re-enactment of aggressive patterns (e.g., Gamble & Zigler, 1986) or failure to develop constructive coping strategies (Wahlsten, 1994).

Models of Resilience

Wolfe (1987) outlined a developmental perspective of childhood victimization which acknowledged that child abuse does not affect each child in a predictable or consistent manner. While many children do show impairments in self-control, closeness and attachment to others, peer relations, and social competence (which lead into long-term, developmental handicaps which persist into adulthood), there are other children who emerge from abusive families with more limited damage. He proposed that these differences may be understood when positive mediators of adjustment, such as supportive relatives or the child's coping abilities, are taken into consideration.

In order to understand how abuse impacts on the child, it is useful to look at the developmental literature that has investigated how the child's early experiences and adaptation may be connected to later psychological disorders. Sroufe and Rutter (1984) showed the direct and indirect connections between early experience and later disorders. Direct connections occur in three ways: (a) the experience leads to a disorder at the time, which then persists through the child's development; (b) the experience leads to physiological changes that influence later functioning; or (c) there are altered patterns of behaviour at the time, which later solidify into a disorder. Indirect connections include (a) changing the family circumstances, which in time produce a disorder; (b) altering the child's sensitivities to stress or altering his or her coping style, which predispose the person to later disorders or which buffer the person against stress; (c) affecting the person's self-concept or attitudes, which in turn influence his or her response to new situations; and (d) influencing the individual's selection of environments, relationships, or opportunities. The authors proposed that the critical mechanism leading to later behavioural and emotional

disturbances is the child's adaptational failure. The developmental perspective of psychopathology maintains that a child forms a unique fit with the environment over time, which can both change that environment and be changed by later events. By this theory, a behaviour which is adopted for the purpose of surviving abuse or rejection may later compromise the child's ability to form relationships with others or to be flexible in meeting challenges in new situations.

Stimulus Bombardment

Figure 1. The buffering system of the human organism

Anthony (in Anthony & Cohler, 1987) presents a well-elaborated theory and model of a concept he calls invulnerability and explains the existence of resilience as resulting from concentric circles of buffering of the individual from the impinging environment, with developmental considerations from the day of birth throughout the individual's progression out into society (see Figure 1; source Anthony, 1987).

The buffering system operates in terms of constitutional, maternal, familial, ego-based and community-derived factors and summarizes the points at which vulnerability

develops or fails to develop into resilience. While this schema suggests some passivity on the part of the organism, Anthony's explication of the system involves both passive and active processes in learning to deal with stress, trauma and overwhelming change. Choice points occur in the development of defensive versus coping ego functioning; the enhancement of competence in scholastic, interpersonal, and representational areas; and the instigation of new creative, inventive, playful and imaginative activity.

This model outlines five tentative types of invulnerable persons which remain to be studied empirically: (a) the invulnerable person who has a sociopathic, uninvolved approach to the world and is estranged from it in response to early suffering at the hands of primary attachment objects; (b) the invulnerable person who has led a charmed life because of overprotectiveness of the mother or family and who has never been challenged by any difficulties in life; (c) another pseudo-invulnerable group who tend to be accident-prone from the endless risks they take in order to generate attention from others; (d) true invulnerable persons who perform better when challenged and tested and often have had early experiences which forced them to develop internal resources and external community skills; and (e) a special subgroup of invulnerables who have overcome high risks and vulnerability with a tremendous resolve not to be destroyed.

Some of the elements thought to increase resilience against later stressful events are internal locus of control expectancy, early experiences with certain types of events as inoculation, a strong support system in the social environment, ability to repress awareness of negative events, and strong ego development (more likely if early needs have been met adequately). Anthony offers the analogy of three dolls made of glass, plastic, and steel. All are hit with the same hammer, yet one shatters, one is permanently dented, and one repels the hammer. He acknowledges, however, that this is not a perfect analogy for maltreated children, as there are other factors that would impinge, such as the variability in the strength and frequency with which the "hammer" is wielded, for instance.

Mrazek & Mrazek (1987) elaborated twelve individual characteristics or features of children who were resilient in the face of traumatic circumstances, pointing out in concurrence with Sroufe and Rutter (1984) that these characteristics do not have to be pleasant or desirable in order to improve the child's chances of survival. They may indeed make the child seem odd, imbalanced, or inhibited and may interfere with normal interactions if they persist once the maltreatment has ended. They are listed here, with more complete definitions provided in Appendix D.

1. Rapid responsivity to danger (hypervigilance to danger).
2. Precocious maturity (role reversals, pseudo-adult behaviour).
3. Dissociation of affect (distancing from intense feelings).
4. Information seeking (gaining understanding of situations).
5. Formation and utilization of relationships for survival (being indiscriminately affectionate, attaching to strangers for attention).
6. Positive projective anticipation (fantasizing of better times).
7. Decisive risk taking (being responsible and decisive and accepting consequences, internal locus of control).
8. The conviction of being loved by someone or by God.
9. Idealization of aggressor's competence (identifying with the aggressor's more positive traits).
10. Cognitive restructuring of painful experiences (use of denial of reality as a protective mechanism).
11. Altruism (giving to others what one would like for oneself).
12. Optimism and hope (an overriding trait which can attract positive interactions and support and protect against negativism and depression).

Mrazek & Mrazek also address life circumstances that may foster resilience:

Generic protective factors may include: Being in the middle- to upper-class; having educated parents; having no family background of pathology; having a supportive family milieu; having access to good health, educational, and social welfare services; having additional caretakers besides the maltreating parent; having caring relatives (especially grandparents) and neighbours available for emotional support.

Abuse-specific factors may include: Rapid and full acknowledgement of offender's culpability; unambivalent support of nonabusive parent; therapeutic process that validates a child's positive as well as negative feelings about the perpetrator (the preceding are critical protective factors for sexual abuse victims); timeliness and permanence of legal actions regarding custody; foster parents who facilitate resilience by showing feelings and providing experiences that the biological family could not.

Support factors include: an adult acting as a mentor, substitute caregiver, or significant other who encourages the child, offers a goal that is healing and helps the child see a more positive future. Social workers, doctors, guardians, and teachers may be important but often are only transient influences. Having a longer-term relationship allows the protective mechanism to operate on a more permanent basis, which may be a safeguard against some of the personal survival characteristics becoming rigid, maladaptive traits.

Research Findings on Vulnerability or Resilience in Maltreated Children

Current research on invulnerability or resilience in children shows strong findings in regard to three categories of factors that protect against stress and damage: (a) dispositional attributes of the child; (b) family cohesion and warmth; and (c) the availability and use of external support systems by parents and children (Garmezy, 1985; Luthar & Zigler, 1991; Radke-Yarrow & Brown, 1993).

One dispositional attribute of the child found to enhance later resilience is temperament (Block & Block, 1980; Kyrios & Prior, 1990; Wertlieb, Weigel, Springer, & Feldstein, 1989), with distractibility, ability to be soothed, stimulation threshold, and nature

of approach to novel stimuli being typical features studied in infants. Genetics may also play a role in resilience, as illustrated by the finding that resilience against developing mental illness in high-risk families is purported to have some genetic basis (Rende & Plomin, 1993).

Recent literature is also examining the role of intelligence as a dispositional factor in either buffering a child from stressors or making him/her more vulnerable. While Garmezy, Masten, and Tellegen (1984) found that intelligent children, when faced with increasing levels of stress, did not show the declines in social competence that were shown by less intelligent children, others have failed to find significant interactions between intelligence and risk in predicting adjustment (White, Moffit, & Silva, 1989), and some have discovered the counterintuitive finding that high levels of intelligence may actually operate to increase vulnerability (Luthar, 1991), although it is protective at low levels of stress. Findings such as the latter have been explained via the argument that more intelligent children tend to have higher levels of sensitivity to their environments which may heighten their sensitivity to stressors (Zigler & Farber, 1985). Results are not conclusive at this time, but it appears that above-average intelligence may have a protective effect against stress (Herrenkohl & Egolf, 1994; Radke-Yarrow & Brown, 1993), while below-average intelligence or extremely high intelligence are considered to increase vulnerability in different ways (Luthar & Zigler, 1992).

Other dispositional factors include humour (Masten, 1982), internal locus of control (Cicchetti, Rogosch, Lynch, & Holt, 1993; Luthar, 1991), and self-esteem (Cicchetti et al, 1993; Radke-Yarrow et al, 1993).

The importance of familial factors in resilience has been seen in several studies which suggest that ego-resilient children come from homes with parents who are competent, integrated, loving, patient and compatible and who have shared values (Block & Block, 1980). A good relationship with at least one parental figure can protect against the

risks associated with family discord and child abuse (Luthar & Zigler, 1991). For children in foster care, it is possible that having the necessary qualities of parenting within the foster home may be protective, but no studies were found to support this. Poor fostering, on the other hand, or multiple unstable placements, may actually increase vulnerability (Rosenthal, Motz, Edmonson, & Groze, 1991), particularly when placements are characterized by further maltreatment (Benedict, Zuravin, Brandt, & Abbey, 1994) or when children are unable to mourn the loss of their former caregiver in order to be able to form attachments in the new home (Eagle, 1994).

With maltreated children in care, the permitting of ongoing parental contact may serve a protective role or may lead to further vulnerability, depending upon what the child is exposed to during visits (Shepard, 1992); the present study will attempt to delineate this issue more conclusively.

The study of support systems seems to illustrate quite consistently that use of such systems is associated with positive outcomes in high-risk children and their families (e.g., Garmezy, 1985; Luthar & Zigler, 1991; Wahlsten, 1994). This element will be an important component of the present study as well. A related factor of stability and structure in children's lives (also addressed in the present study) following placement in protective care is also deemed to have an impact on resilience and positive outcomes (e.g., Hess & Folaron, 1991).

In a recent study, Herrenkohl and Egolf (1994) conducted a comprehensive longitudinal examination of resilient early school-aged children from maltreating homes. Data gathered in adolescence indicated that resilience can change over time, with the group generally showing low school continuation and completion. Traits found to be required or advantageous for continued resilience included: average to above-average intellectual capacity, absence of chronic physical abuse in the interim period, stable caretaking, positive parental expectations of the child, positive personal goals and a realistic view of the abusing

parent's limitations, with a desire to be different from them and to seek support and positive role models outside the abusive environment. In this study, males were found to be more vulnerable, and resilience was found to be specific to certain domains of development for each person. Even in those who were academically successful, problems such as aggressive behaviour, troubled relationships, and individuation failures were found. This study established support for the contention that resilience reflects a delicate balance between internal resources and external support and thus does not remain static, a view echoed by others who address the issue of resilience in maltreated children (Cicchetti & Garmezy, 1993; Luthar, Doernberger, & Zigler, 1993).

Recent research on resilience and the factors which enhance or detract from it suggest that it is very important to examine not only the maltreatment and its negative consequences, but to take a closer look at those factors which exacerbate the effects or which may buffer the child from the predicted developmental problems. Knowing this information can help us direct our interventions with maltreated children in ways that will help them most effectively and prevent the repetition of tragedy into the next generation.

A Multivariate Model of Maltreatment Effects

Proposed Mechanisms

It has been a prevalent theme of this review that such a multi-faceted problem can only be studied through multivariate methodology and complex, interactive models. Although between-group comparisons of outcome can be made (e.g., male versus female victims; maltreated versus nonmaltreated controls), to understand the complex effects of maltreatment on child development requires including other mediating variables which have been addressed briefly in this chapter. A recent trend is to use structural equation modelling or path-analysis to delineate the relationships among the risk, mediating and outcome variables (Anderson & Gerbing, 1988; Asher, 1983). Path models have been used recently in research similar to the present study, for example in studying how the circumstances and

later mediators of childhood sexual abuse relate to negative outcome (Wyatt & Newcomb, 1990), testing causal models of delinquency (Amdur, 1989), examining cognitive mediators of aggression (Welsh & Gordon, 1991) and in conducting clinical assessment research with children (Morris, Bergan, & Fulginiti, 1991).

For the purposes of this study, a nonrecursive structural equation model involves direct and indirect relationships among maltreatment and environmental risk variables (incorporating type, severity, and duration); co-existing conditions including age, gender, intelligence, and personal characteristics related to resilience; variables related to what happens to the child once maltreatment is detected and stopped (social support, stability of care after rescue, frequency and nature of contact with family); and a set of developmental outcome variables (language development, visual-motor development, academic skill development, emotional and social development; and measures of emotional/ behavioural/ and personality functioning). This model allows the examination of the way certain variables act in relation with others to produce higher or lower probabilities of developmental problems than would be the case for a particular variable alone. For example, the risk variables may lead directly to poor developmental outcome for a child, but in cases when they do not do so, the effects of the abuse may have been mediated by resilience factors in the child, by the availability of supportive family members, or by being placed quickly into a stable and nurturing foster home. The nonrecursive aspect of the system allows for reversed-direction effects in an equation and feedback loops in which certain conditions may contribute to a downward spiral of increasing developmental problems or improvement in functioning given ameliorating conditions.

Purpose and Rationale of this Study

This study examined the developmental effects of child maltreatment as mediated by various individual and environmental risk and buffering variables, and in doing so attempted to address some of the common concerns about research in this area.

1. The frequent criticism of lack of control groups is addressed by the use of structural equation modelling, which does not require a control group, as the nature of the analysis is to determine a causal ordering and explanatory model of variable relationships within a research group and not to determine which of several groups shows more or less of a specific characteristic.

2. Concerns about being able to draw causal conclusions from quasi-experimental data is also addressed by the use of structural equation modelling which is designed for such a purpose, rather than using only correlational or multiple regression analysis.

3. The artificial and unrealistic division of subjects into groups of abused, neglected, or psychologically maltreated is circumvented by use of a multivariate model which addresses the co-existing and combined effects of multiple forms of abuse so often found in this population. The complex interactions and relationships among forms and degrees of maltreatment, mediating factors, and developmental outcome are investigated, rather than assuming a direct relationship between abuse and outcome which may or may not exist. However, use of structural equation modelling also permits examination of certain individual forms of maltreatment or clusters of related types of maltreatment and their direct effects. In addition, attention is given to the concern that severity and duration of maltreatment may have an effect on outcome. Numerous studies in the past have classified subjects based upon presence or absence of a particular form of maltreatment, whereas the present study employs an indicator of severity and duration in the rating schema.

4. This study uses clear, specific, and measurable operational definitions of abuse categories compiled from current authorities, which are built into the rating schema, addressing a common complaint that maltreatment studies use vague definitions or none at all. Inter-rater reliability on these measures is reported.

5. The frequent lack of sensitivity to developmental aspects of child maltreatment effects noted in the field is addressed by gathering data regarding the developmental periods

in which maltreatment occurred, with the use of age as a variable in the analysis. Further, this study has a relatively more concurrent design in that measurement occurs in childhood closer to the time of maltreatment rather than the retrospective approach so often seen in the literature with adult abuse survivors. This feature allows the use of multi-modal assessment data tapping many areas of functioning at a time in closer proximity to the maltreatment.

6. The benefit of retrospective studies, i.e., the opportunity to examine longer-term effects of maltreatment, is retained in this study by the availability of a subsample ($n = 31$) with multiple (longitudinal) assessment data and information about intervening life events. While too small a sample to permit use of LISREL analysis for testing and confirmation of the preliminary model at this time, it lays the groundwork for follow-up research with this sample and offers greater depth of information for analysis of exemplary or extreme cases.

This study attempts to answer the following research questions:

Major research question: What are the relationships among the multiple variables which predict level of functioning, adjustment, and development in children who have experienced various forms of maltreatment, either singly or in combination?

Subquestions:

1. Are there gender differences in the relationships of these variables?
2. How do the various risk variables contribute to traumatization and poor developmental outcome, and how do various buffering or ameliorative variables contribute to resilience in some maltreated children?
3. What are the most salient risk and buffering variables for predicting developmental outcome in maltreated children?
4. Of what value are clinical ratings of children's projective drawings in assessment of maltreated children, and how reliable and valid are the data obtained?

METHOD

Subjects

This study examined archival clinical assessment records of children between the ages of 5 and 18 (school-aged) at time of assessment, with the research group having documented incidents of one or more of the six specified forms of maltreatment, as determined by Children's Aid Society (CAS) social worker records and interviews, complete notes of which are maintained in assessment files. This maltreated group ($n=109$) comprised approximately equal numbers of males and females (55 males, 54 females), subdivided by developmental period as follows: Middle Childhood (ages 5-6), $n = 19$ (12 males, 7 females); Latency/Late Childhood (ages 7-10), $n = 40$ (22 males, 18 females); Early Adolescence (ages 11-14), $n = 32$ (15 males, 17 females); and Middle Adolescence (ages 15-18), $n = 18$ (6 males, 12 females).² The mean age for the sample was 10.43 years ($SD = 3.61$), with females in the sample significantly older ($M = 11.3$ years) than males ($M = 9.6$ years), $t(107) = -2.60$, $p = .011$.

In the research group of 109, 78 cases involved some degree of sexual abuse, 98 involved some degree of physical abuse; 72 involved family violence and 73 had parental substance abuse, and all cases involved additional, overlapping maltreatment factors. All 109 cases had some degree of psychological maltreatment, the presence of some degree of parental dysfunction (ranging from immaturity and poor parenting or life skills to chronic mental illness, character disorder, or criminality), and some degree of social/cognitive neglect. Nearly all (105) had experienced some degree of physical neglect.

All subjects were drawn from assessments conducted by the same clinician over a seven-year period in order to control for the variability which might otherwise exist among

² Developmental ranges derived from Greenspan and Pollock (1989, 1991a, 1991b), *The Course of Life* series, volumes 2-4.

assessors in test administration, scoring, interpretation, and record-keeping. In order to obtain sufficient sample size and to control for selection and sampling bias, all of the maltreatment cases assessed by the clinician since 1986 were used. An additional 20 cases of nonabused children were used in obtaining ratings on projective drawings, to protect against tendencies of an expert rater to rate in a negative direction if all cases were known to be maltreated. Exclusions from the research sample pool were made for cases in which the child was under five years of age at testing (37 cases) and for five cases in which there were missing and unobtainable data in key research variables.

All assessments were previously completed for purposes other than the present study. Only archival records were used, and no experimental procedures took place with the children themselves. No identifying information will be released, in order to protect the confidentiality of subjects.

Instruments

Two original instruments were designed for use in this study, (a) a data-gathering instrument with detailed rating scales for Maltreatment, Mediating, and Outcome variables, and (b) a Drawing Checklist for both global and detailed analysis and rating of personality characteristics observed in the projective drawings of maltreated children. Both instruments were subjected to pilot studies and revisions prior to commencement of the full study.

Data-gathering Instrument

Recent literature indicates a pressing need for studies examining the developmental consequences of maltreatment in school-aged children, with the need to view the maltreated child as a whole by considering the broader range of developmental subsystems which may be impacted (Aber & Cicchetti, 1984; Wodarski, Kurtz, Gaudin, & Howing, 1990). Past research has focused largely on single areas of development, usually either cognitive or emotional, and has directed its efforts either toward maltreated infants, toddlers, or preschool children or toward adults survivors of maltreatment. The use of individual, multi-

modal and multi-source assessment of children is important in order to obtain a full picture of the developmental impact of maltreatment, with attention needed in the areas of cognitive and language development, perceptual and motor development, academic skill development, social and emotional development, behavioural adaptation, and emotional and personality functioning. Wodarski and associates in their 1990 study attempted to provide this broad-based coverage, but the assessment measures used involved mainly group test data and school records, rating scales by reporters, and self-report questionnaires. No individual intelligence testing or personality testing was done, which would limit the depth of the data obtainable. Children were grouped as abused, neglected, or nonmaltreated, a research strategy which is now recognized as flawed due to the overlap and coexistence of maltreatment categories (Claussen & Crittenden, 1991).

Other recent studies which take into account the relations among types of maltreatment in their assessment of developmental outcome (e.g., Claussen & Crittenden, 1991; Culp, Watkins, Lawrence, Letts, Kelly, & Rice, 1991) did not examine the full range of developmental outcome variables. An approach is needed which combines the recognition of interrelated maltreatment categories as well as the need for multidimensional assessment data on the functioning of maltreated children. An instrument was designed for this study in an attempt to address this need. Detailed data were gathered on a set of eight Risk variables which are forms of maltreatment and negative environment; demographic covariates and Mediating variables which include age, gender, intelligence, personal resilience characteristics, social support, stability following cessation of maltreatment, and contact with family; and developmental Outcome variables in the areas of language, visual-motor, academic skills, and emotional-social development, behavioural functioning, and emotional /personality functioning. The data-gathering instrument is in Appendix A and will be described below.

The independent variables, in this case called Risk variables, include six categories of maltreatment and two additional risk variables found in the literature to affect children's functioning: Physical Abuse, Sexual Abuse, Psychological Maltreatment, Physical Neglect, Social/Cognitive Neglect, Family Violence, Substance Abuse, and Other Family Dysfunction. Each variable was rated on a five-point scale of severity, adapted from a recent study in which the authors obtained extensive feedback from social workers experienced in evaluating presence and severity of forms of maltreatment (Claussen & Crittenden, 1991). A particularly beneficial aspect of this study was the attempt to detect and measure the presence of psychological maltreatment in the presence of other types of maltreatment and in cases where no other forms of abuse were reported. The scales presented in their research were adapted by this writer so that they all had consistently graduated five-point steps of severity, with a score of five indicating greatest severity. Severity scores were multiplied by years of duration of that condition in the child's life prior to being taken into protective custody. Several additional scales were developed for this study following the same model (Sexual Abuse, Family Violence, Substance Abuse, and Other Family Dysfunction), and certain of the Claussen and Crittenden scales were separated or combined differently following a pilot of the instrument. Original scales of Social/ Emotional Neglect and Cognitive Neglect were collapsed into one scale of Social/Cognitive Neglect, with Emotional Neglect and Emotional Abuse being grouped as Psychological Maltreatment. Further detailed documentation was obtained from Crittenden (personal communication, January, 1993) with full explication of a checklist of the features involved in psychological maltreatment at different stages of child development, and most of these items were placed as examples in that scale revision to enhance ease of rating. Definitions of psychological maltreatment features are provided in Appendix C.

In addition to obtaining severity ratings for each variable, the data form allows recording of the duration of the particular form of maltreatment and the age ranges at which

it occurred, considered to be important factors affecting outcome following maltreatment. An age-adjusted Global Severity measure was formed from the total severity-times-duration scores on the six maltreatment variables, divided by the maximum possible score obtainable by a child at each six-month age increment in the sample.

Data were collected on two demographic covariates (age and sex) and a set of Mediating variables all of which may affect or modify developmental outcome following maltreatment, including intelligence, personal characteristics of resilience, social support, stability of environment, and contact with family. All but age and gender may also be influenced by the type, severity, and duration of risk and maltreatment. Thus for the purposes of statistical analysis in this study, IQ and resilience are being treated as dependent variables, even though they are often viewed as independent variables (traits) in other types of studies.

Intelligence scores were obtained from standardized test results in existing assessment records, with most records containing either the Stanford-Binet Intelligence Scale or the Wechsler Intelligence Scale for Children-Revised, well-normed and standardized instruments of high reliability and validity. In some cases the Wechsler Preschool and Primary Scale of Intelligence or the Peabody Picture Vocabulary Test-Revised were used as the IQ measure. Given the wide range of ages and abilities of the children being studied, there was no single test which would cover all subjects, but the tests used are all ones which are widely acknowledged as having good psychometric properties. Although inter-test correlation is not perfect, the intelligence variable was recorded as a rating within a range rather than a specific score, and so should not be problematic. In cases where the WISC-R was available, Verbal, Performance, and Full Scale IQ scores and individual subtest scores were recorded. Having these scores recorded will facilitate future research from the data base, for example examining hypotheses about maltreatment and deficits in the Acquired Knowledge or Freedom from Distractibility factors. Data were also noted on the presence of

any known disabilities of the child such as serious illness, brain dysfunction, physical handicap, or premature birth, which could predispose the child to poor developmental outcome regardless of the severity of maltreatment.

A checklist to note features of personal resilience in children was borrowed from Mrazek and Mrazek (1987), with each feature found in case descriptions to be marked on the list. Based upon review of case records and the presence of these features in the child's functioning, an overall resilience rating was assigned on a scale of 1 to 5, with 1 being most resilient. Definitions of these characteristics are provided in Appendix D.

Social support was measured by the use of a checklist completed while reviewing case records, followed by the rating of social support on a scale of 1 to 5, with 1 being the highest degree of support. Checklist items were derived from clinical experience with child welfare cases. Not only the presence of supports but also their duration and quality were recorded, to assist in the scaled rating. Ratings were based most strongly on the year leading up to assessment.

Stability of the child's environment after cessation of maltreatment was measured by recording the types, durations, and numbers of placements documented in case records, followed by an overall rating of stability using the five-point scale with 1 being most stable. Most weight was placed upon the one to two years preceding assessment.

For the family contact variable information was recorded from case records on the established frequency of parental access over the preceding year, any changes in access over time, the predictability of the access, and whether visits were supervised or unsupervised. An overall rating was recorded ranging from low contact (5) to high contact (1).

Outcome variables were measured by the recording of test results from standardized testing contained in assessment files, with results expressed within ranges on a five-point scale, with a score of 1 (initially) indicating the best level of functioning. It should be noted that the term "outcome" is used here in a limited sense, in that these are actually interim

developmental measures which have been influenced by individual capacity and environmental effects up to the date of assessment but will continue to be affected by subsequent events and individual choices before full maturation is achieved. Thus they cannot be considered outcome variables in the same sense as variables measured in adult retrospective studies of abuse.

Language development was derived from scores obtained on the Peabody Picture Vocabulary Test-Revised, the WISC-R Vocabulary subtest, the Wepman Test of Auditory Discrimination (for speech sounds), and the Detroit Tests of Learning Abilities Sentence Imitation subtest (auditory memory for verbal information). Adjunct sources of information available in some cases included the Developmental Profile II rating of communication development and the Vineland Adaptive Behaviour Scales communication subscale. Based upon all information available, a score was assigned at one of the five levels of functioning. For cases in which not all test scores were available, the vocabulary measures were used.

Visual-motor development was determined by use of test scores from either the Bender Visual Motor Gestalt Test (BVMGT) or the Beery-Buktenica Test of Visual-Motor Integration, with the BVMGT generally given to children between the ages of 6 to 11 and the VMI to children younger than 6 or older than 11 in the cases being studied. Standard scores and standard deviation scores were used to rate the level of development on the five-point scale.

Academic development was determined from testing in case records using one of the following which was most appropriate for the child at the age when they were tested: the Wide Range Achievement Test (original or revised), Basic Academic Skills Individual Screener (BASIS), Developmental Profile II pre-academic development subscale for children aged five and six, the Brigance Readiness Scale for children near the end of kindergarten, the Kaufman-ABC Achievement subscale, and the school competence scale from the Achenbach Child Behavior Checklist. In most cases of children who were at least

six years of age at testing, WRAT-R scores were available. Standard scores and standard deviations were used to assign a rating of academic development level.

Emotional and Social Development ratings were drawn from multiple sources mainly involving ratings of the child by caregivers and clinical observations during the assessment. Standardized measures used for the sources of information included the Achenbach Child Behavior Checklist Social Competency scale, the Developmental Profile II social development subscale and the Vineland Social Maturity Scale or its revision called the Vineland Adaptive Behavior Scales. Clinician observations were drawn from the assessment report and secondarily from interview and observation notes to supplement the standardized test scores. From the above information, the child was rated on a five-point scale ranging from 1 (well-developed and mature beyond age level) to 5 (very immature for chronological age).

Behavioural functioning was derived from review of assessment records and reports and from notes of interviews with observers of the child's behaviour, clinical observations in reports, and standardized behaviour scale ratings that were available on more recently assessed cases.

Emotional and personality functioning was measured by the use of a rating scale for children's drawings developed for the purposes of this study and rated by a clinician with 25 years of experience in the interpretation of children's drawings and in child welfare cases. His evaluation of emotional /personality functioning was obtained by the summation of ratings on scales of Personality Dysfunction and Emotional Disturbance.

The six individual Outcome measure scores were converted to Z-scores and averaged to produce a Global Developmental Outcome score.

Pilot study of data-gathering instrument. In the process of developing the instrument described above, a pilot study was conducted with ten cases from the research sample, using a preliminary version of the data-gathering instruments. The purposes of the

pilot study were (a) to evaluate inter-rater reliability on the instrument designed for measurement of risk, mediating, and outcome variables; (b) to examine validity features of the drawing rating measure (face, construct, and external); and (c) to critique each instrument in order to make improvements before commencing full scale research.

Inter-rater reliability (preliminary). The researcher completed ratings of all variables except Personality Functioning from information contained in assessment reports, testing materials, and other file documentation on ten cases. Documentation was then made of the rationale for ratings given on scales calling for subjective judgement. Problems in using the instrument and ideas for modification were noted.

A second reviewer, a recent M.A. psychology graduate with experience in psychological assessment of children, was asked to use the data-gathering instrument on the same ten cases to conduct independent ratings of each variable. She was provided with a brief orientation to the instrument and its use; her comments, questions and areas of confusion were noted in the orientation phase and following use of the instrument. On each case, she was presented with a data-gathering instrument with case number, gender and age of the subject recorded to correspond with the instrument completed by the researcher. She was then given the full case file, containing a detailed assessment report, direct test data, supporting background information from various sources and clinical notes of interviews and observations.

The two sets of ratings were tabulated and compared by case, by each variable and by variable set, and an overall reliability coefficient was obtained. The 180 pairs of variable ratings (18 variables X 10 cases) were judged for reliability purposes only as "in agreement" or "not in agreement," without consideration of the amount of discrepancy; of the nine non-agreeing pairs, seven involved a one-point difference and two involved a two-point difference (on consistent five-point scales). Reliability ratings on individual cases ranged from .78 to 1.0, with overall reliability at .94. The individual Risk severity variables'

reliability ratings ranged from a low of .80 on Family Violence to 1.0 on Physical Neglect, Substance Abuse, and Other Family Dysfunction, with an overall reliability coefficient of .91 on this variable set. The composite Total Maltreatment Severity variable was reliable at the .98 level when actual numerical score values rather than the agreement-nonagreement criterion were used; the average scores of the ten cases were 22.2 for the researcher and 22.4 for the reviewer, out of a possible 40 points at highest risk level (8 risk variables X 5 possible points). The range of TMS for both raters was from 16 to 30.

Mediating variables showed the same range of reliability as the Risk variables, from .80 to 1.0, and an overall reliability of .94. Of five variables, only two obtained less than perfect reliability ratings: Social Support (.90) and Family Contact (.80).

Outcome variables all obtained perfect reliability ratings of 1.0, being drawn mainly from standardized test data on file. The Behavioural Functioning variable, however, was obtained by determining a global rating based upon documented observations of the clinician and others reporting on the child; it also obtained a reliability rating of 1.0.

Overall inter-rater reliability on the data-gathering instrument designed for this study was at .94, a very high level for ratings from archival clinical records. The use of a reviewer trained in clinical assessment of maltreated children likely facilitated this result. Results are detailed in Table 1.

Although reliability of the instrument was good, utilization raised a number of questions and pointed out the need for modifications. Several changes in wording needed to be made to ensure clarity of criteria and minimal overlap of risk categories. The original variables and rating scales for Emotional Abuse and Social/ Emotional/ Cognitive Neglect were found to need further clarification and operationalizing, being the most difficult to rate. The Emotional Neglect component was regrouped with Emotional Abuse, resulting in the variable of Psychological Maltreatment, and further examples of this form of maltreatment, with definitions placed in an appendix, were inserted into the scale to aid in

Table 1. Inter-rater Reliability of Measures

Risk Variables		Mediating Variables		Outcome Variables	
Physical Abuse	.90	IQ	1.00	Language	1.00
Sexual Abuse	.90	Resilience	1.00	Visual-Motor	1.00
Psychological Maltreatment	.90	Social Support	.90	Academic	1.00
Physical Neglect	1.00	Stability	1.00	Emotional/Social	1.00
Social/ Cognitive Neglect	.90	Family Contact	.80	Behaviour	1.00
Family Violence	.80				
Substance Abuse	1.00				
Other Family Dysfunction	1.00				
Reliability for Variable Sets	.91		.94		1.00
Reliability of Total Mal-treatment Severity rating	.98		Overall Reliability of Instrument		.94

rating. Making this change also made the Social/Cognitive Neglect scale clearer to rate. Concerns remained that certain types of Psychological Maltreatment might be more severe than others and should not be considered on the same basis (e.g., abandonment). It was decided to highlight the factors when recording raw data but leave that determination for qualitative analysis at a later time to see if such factors indeed were associated with worse outcome. The need to consider developmental level when rating the severity of maltreatment was addressed by notations for each category of the duration and age range at which that form of maltreatment occurred. For example, failing to provide food would have more severe consequences for a toddler than for a child of 12 years who could obtain food independently if necessary.

The Total Maltreatment Severity risk variable is expressed as a total of the scores on the six maltreatment variables (physical abuse, sexual abuse, psychological maltreatment, physical neglect, social/cognitive neglect, and family violence), adjusted for age. Consideration was given to converting this score to a five-point scale for ease of statistical analysis and interpretation and consistency with other measures, but it was kept as a continuous variable in order to provide the fullest possible information for LISREL analysis. Although LISREL 7 (unlike its predecessors) can deal with interval and ordinal variables, it is advantageous to use continuous variables when they are available.

Of the Mediating variables, Resilience was generally easy to rate, with operational definitions of the characteristics available and plentiful information on file to rate the child on the scale. However, the list from Mrazek and Mrazek (1987) seemed lacking in one resiliency feature (sense of humour), which was added. The Social Support scale also required the addition of several features which appeared in cases (e.g., daycare, belonging to a religious community) and a way to record the quality and reliability of the particular supportive feature to facilitate ratings. It would have been desirable to measure an additional variable of Attachment had sufficient information been available in case records. Even though not available in a form which could be rigorously measured, qualitative information on attachment can be gleaned from documentation on both the Social Support and the Contact with Family variables. The Stability (after cessation of maltreatment) scale was reliable and clear, with the exception of needing to specify a criterion for "multiple placements," which was set at three or more moves. The Contact with Family scale was the most problematic of the Mediating scales, needing clarification of components and the addition of an Overall Rating to be equivalent to the others in scoring approach and interpretability.

Outcome variables were generally quite reliable but failed to tap the specificity of information available in records. Modifications were made to delineate the sources of test

information upon which ratings would be based, with space for noting test scores as documentation. Scales for Visual-motor, Academic Skills, and Emotional/Social Development were expanded from three- to five-point scales to be consistent with the Language Development and Behavioural Functioning ratings and to offer finer gradations of outcome information. Two scales which referred to skills being above or below age level norms by two years were amended to refer to standard scores and standard deviations, with the realization that the implications of a two-year delay are not the same for an older child as they are for a young child. A final amendment to the Outcome variable scales was the addition of a Global Developmental Outcome score comparable to the Total Maltreatment Severity score in the Risk variables. This score was derived as the average of the Z-scores of the six developmental Outcome variable scores.

The original and the revised data-gathering instruments appear in Appendix A.

Drawing Checklist

The use of children's projective drawings was recently reviewed and investigated in a study at this university; see Bristow (1993) for a detailed review. Briefly, her study supported the clinical utility of children's projective drawings as diagnostic tools to assess the developmental impact of child maltreatment, when ratings were done by an experienced clinician with knowledge of developmental issues. A Drawing Checklist developed for the purpose of the present study (based upon review of the literature and the writer's clinical training and experience with assessment of maltreated children) is shown in Appendix B. Following a pilot study and modifications, the list contains 47 personality characteristics which can be detected by clinical analysis of children's drawings, with all characteristics expressed in a negative direction for consistency of rating. Each characteristic is rated from 0 to 3 for its presence and severity, with high scores indicating greater severity. For the purposes of the major LISREL analysis, the clinical rater (also involved in the Bristow study) provided a global rating of personality dysfunction and of the nature and severity of

emotional disturbance based upon his analysis of the drawings, with an additional rating of the degree of maltreatment the child seemed to have experienced. In a small subsample of cases showing highest or lowest global outcome scores (best outcome group, $n=12$, 4 males and 8 females, age $M=9.5$; worst outcome group, $n=12$, 6 males and 6 females, age $M=10.9$, total $n=24$), the expert rater completed detailed ratings on the 47 personality characteristics (in order to determine what traits might discriminate between these extreme groups) and a second rating of the three global scores, completed after going through the process of analyzing drawings on all the traits. Reliability of the global ratings over time could thus be assessed, and information could be gathered as to the relative effectiveness of using the measure globally versus using it in its comprehensive form.

Pilot of preliminary Drawing Checklist. Projective drawings from a sample of fifteen cases (ten of which comprised the pilot sample for the data-gathering instrument) were used to conduct a pilot test of the outcome rating measure for Emotional and Personality Functioning. Sets of drawings were selected to range from ages 5 to 16, to include a full range of drawing skill levels; two incomplete sets were included to determine whether cases with incomplete drawing sets on file can be rated thoroughly enough to remain in the research group. The rater, Dr. G., was provided with the rating form and a set of House-Tree-Person and Kinetic Family Drawings for each case and was asked to rate the presence and severity of 39 personality features on a scale of 0 (not present) to 3 (severe), as determined by his clinical experience with interpreting children's drawings. The entire set of drawings was considered as a whole, although notations could be made for individual drawings if desired. Features were expressed consistently in the negative direction such that a high score would be indicative of greater emotional and personality problems. As part of the rating scale, he was asked to provide a global impression of personality functioning on the same five-point scale as other outcome measures, to rate the degree of emotional pathology if any, and to estimate whether and to what extent the drawings indicated a child

who had been maltreated. The rater was blind to any other information about the case except for gender and age of the child.

During the rating process, the researcher was present, and questions, comments, difficulties and criticisms of the instrument made by Dr. G. were noted for incorporation in further revisions. Another sheet was added for additional comments and for cross-validation of the rating scale with the Achenbach Child Behaviour Checklist which had been obtained on each of the pilot cases; this sheet was for the researcher's use.

The individual item ratings presented few problems to the rater. Items included had good face validity for the purpose of examining psychological functioning in children and, specifically, in children who have been maltreated. Occasionally, features were detected in drawings which had no corresponding rating item, and these were added to the revised form so that the construct of personality dysfunction in children could be measured comprehensively and with best possible construct validity. Several items required clarifying wording.

Characteristics listed as clusters of related terms allowed the clinician to circle the specific characteristic which applied best to the case and to give a finer gradation of meaning. Space for comments was provided in the event that a more precise term was needed to tap the general personality feature. [e.g., "Autonomy difficulties" could be characterized by avoidance of age-appropriate autonomy or by a precocious and inappropriate striving for autonomy. Rather than making two items for this construct, the clinician could write his specific comment after the named characteristic.]

Three of the 39 items had zero frequency in the pilot ratings (suicidal tendencies, schizoid, and psychosis), but in a sample of 15 it would not be anticipated that these extreme items would necessarily be present. Other infrequently marked items included Fragmentation (3), Hopelessness (1), Hypervigilance (2), Obsessive-compulsive (2), Dissociation (1), Problems in reality testing/ Overuse of Fantasy (1), Environmental

oppression (3) and Facade (2). As they are likely to be present in the research group, they remain in the revised form; when these features do appear in drawings, they signal serious problems that should not be missed.

Eighteen of the 39 items appeared in more than half of the 15 pilot cases, suggesting that these may be characteristics common in maltreated children. In order of frequency, the items are shown in Table 2.

Table 2. Frequency of Traits in Drawing Pilot Study

Personality Trait	Frequency	
	n	%
Unmet dependency needs / early deprivation	14	93.3
Maternal deprivation and rejection	14	93.3
Undeveloped identity and self-concept	13	86.7
Bodily anxiety or distorted body image	11	73.3
Low self-esteem	11	73.3
Aggression	10	66.7
Distress / inner tension	10	66.7
Impotence / Powerlessness	10	66.7
Dependency problems	10	66.7
Emotional development problems	10	66.7
Anxiety / Fearfulness	9	60.0
Insecurity / poor attachment	9	60.0
Poor impulse control	9	60.0
Poor energy modulation	9	60.0
Traumatized / wounded	9	60.0
Barrenness / Emptiness / Impoverishment	9	60.0
Hostility	8	53.3
Alienation / Loneliness / Isolation	8	53.3

These results are consistent with findings by Bristow (1993) in which this same rater conducted unstructured analyses of characteristics in drawings in the process of sorting cases into maltreated and normal groups. The most significant and powerful predictors of

membership in the maltreated group in the earlier study are also prominent in the results of this pilot study. Bodily anxiety, aggression, impotence, emotional development problems, and poor impulse control all are high-frequency characteristics noted in both studies, adding credence to the reliability of this rater's clinical judgements over time. Two other factors, Fragmentation and Expansiveness, features which discriminated maltreated from controls in Bristow's study, were not frequent features of this pilot group, although they were present in three and four cases, respectively. This lower frequency was also the case in Bristow's maltreatment group, but the items discriminated group membership well due to their complete absence in drawings of control children. It is possible that in a larger sample, more cases would show these features as well.

On most rated items, the ratings covered the full 0 to 3 range of severity scores, with six items only rated between 0 and 2. Generally, sufficient variability of ratings was in evidence to support the use of the present rating scale range. Occasionally (four instances) the rater felt an intermediate score was required for precision. Since the 0 to 3 scale was almost always sufficient, it was decided to keep the scale the same but to assign a value of .5, 1.5 and 2.5 for items marked 0/1, 1/2, or 2/3, respectively. This allowed the finer discrimination when necessary without making the rating procedure unnecessarily cumbersome for the majority of cases.

Total severity ratings (a numerical total of item ratings) ranged from 13 to 64, with a maximum possible score of 117 if every item were scored at 3 points. The maximum score is not feasible, however, as certain items are contradictory and could not be present simultaneously. These composite scores alone did not prove to be useful as an outcome measure, as some of the poorest-functioning children did not have as many scorable items in their drawings due to the poverty of content. Item analysis, however, will be very useful later in case analyses of the most damaged and most resilient children, to see what characteristics discriminate between them. The part of the rating system which involved the

clinician's overall rating of personality functioning appeared to be the most useful, valid, and accurate outcome measure. This global impression score allowed Dr. G. to take into account the individual features but also to formulate an overall impression more in keeping with the way clinicians typically evaluate projective drawings. Such an integrated and holistic qualitative approach to scoring projective drawings has been found to be a better reflection of psychological functioning of children than a strictly quantitative system, when compared with external validation criteria (Tharinger & Stark, 1990). Further information was obtained by requesting a rating of whether emotional disturbance was present, and if so whether the disturbance seemed reactive to current circumstances in the child's life, reflective of some personality deviation and pathology, or reflective of serious and longstanding pathology. The clinician also estimated the degree of maltreatment the child appeared to have experienced, based upon the drawings. The latter two scales were amended from three to four-point scales to allow an additional level of discrimination, at the clinician's suggestion. The combination of personality functioning and emotional disturbance ratings was used as the personality outcome measure in the full research phase of the study.

Validity. To examine external validity, global ratings of Personality Functioning were compared with pilot data on the Emotional / Social Development outcome scores obtained from external reports of the child's functioning (see pilot of Data-gathering Instrument). Although that scale was expanded to a five-point scale to permit finer discrimination, there was good agreement between these two measures in their preliminary forms. Only one case showed normal-range emotional-social development, and that case was also rated by Dr. G. as adequate in personality functioning. All but one of the other cases rated at the lowest score for Emotional / Social Development (3) were rated by Dr. G. as either Poor (4) or Very Poor (5) on a five-point rating scale. The only one of these cases that he rated as adequate was a child whose Emotional/Social Development was

problematic to rate on a three-point scale due to a mixed pattern of pseudomature behaviour alternating with regressed and infantile functioning, which had no appropriate rating level. Interestingly, he commented when rating this case that the child exhibited a facade of coping adequately but was capable of being quite infantile and could be anticipated to show some pathology later in her character development. Of the ten cases which had the E/SD outcome measure available, the rater was in agreement on nine cases or 90%.

Dr. G's global impression ratings were also compared to behavioural ratings on the Achenbach Child Behavior Checklist, a well-standardized measure, as a further assessment of external validity. Of the two cases he had rated as adequate in personality functioning, both cases had nonsignificant behaviour problem scores on the ACBCL on Internalizing, Externalizing, and Total scores. Eleven cases with significant ACBCL scores (T scores at or above 68 on any of the summary scores) were rated by Dr. G. as Poor or Very Poor. One of the 15 cases had no ACBCL available for comparison. The one case on which Dr. G's rating was inconsistent with ACBCL ratings had a very sparse drawing protocol that was outstanding in its barrenness of symbolism and was deemed to indicate poor personality functioning. The corresponding ACBCL was completed by a foster parent who rated few behavioural problem features except for an elevated scale indicating an Uncommunicative pattern such that she knew very little about the child that she could report. Thus her ratings were not at a clinical level of severity, but this may possibly have been due to lack of information upon which to base her judgements. Compared to behavioural ratings on the ACBCL, Dr. G's ratings of cases by the Drawing Checklist were in agreement on 13 of 14 cases, or 92%. Even with drawing sets which were incomplete due to child refusal or inability to draw certain things or which were of poor drawing quality in young or delayed children, the global Personality Dysfunction score was highly correlated with both ACBCL score elevations and other outcome measures of emotional development. Some children showed very poor personality development such that certain items were not even

developmentally appropriate to rate. For example, a child who has no sense of self, identity, or self-reflective capacity cannot be rated on having low self-esteem, as it is simply not yet an issue for that child. The ratings obtained in these extreme cases tended to have high severity ratings on the characteristics which were endorsed, so both the severity composite score and the global rating of personality dysfunction were indicative of poor development outcome.

The Drawing Checklist as given shows good validity when the global impression of Personality Dysfunction is used as the outcome measure. In the course of using the instrument, some modifications were made for clarity and ease of administration and in order to enhance the quality of information gathered. Several existing items had slight changes of wording or another term added to a cluster. Nine other characteristics were mentioned by Dr. G. as important which were not clearly specified in any of the 39 listed personality characteristics, so those were added to the revised version, incorporating them with existing clusters when possible. The revised instrument contains 47 characteristics. One change was made to the rating procedure in the full-scale study. Sets of drawings of non-maltreated children from a custody/access sample ($n=20$) were interspersed during the rating process to protect against a possible bias toward rating all drawings in a more severe direction.

Both the preliminary and revised versions of the Drawing Checklist are presented in Appendix B.

General Findings of Pilot Study

On the ten pilot cases, which were taken from the most recent referrals for assessment, the breakdown of maltreatment categories illustrates the assertion that each child within this population is usually exposed to multiple forms of maltreatment so that it makes no sense to construct groups based upon one form of abuse. Of the ten cases, forms of maltreatment were found in the following frequencies, with severity means (scaled 1-5,

with higher score indicating more severity) of reported cases given in brackets: Physical abuse, 8 ($M=2.25$); sexual abuse, 4 ($M=2.5$); psychological maltreatment, 10 ($M=3.6$); physical neglect, 10 ($M=3.0$); social / cognitive neglect, 10 ($M=4.0$); family violence, 8 ($M=3.12$); parental substance abuse, 8 ($M=3.75$) and other family dysfunction, 10 ($M=3.3$).

Among pilot group cases showing a particular risk variable, highest mean severity scores were obtained on Psychological Maltreatment, Social / Cognitive Neglect, and Substance Abuse. Physical Abuse was present in most cases, but was at a lower level of severity than the other variables; the mean severity level for those with Sexual Abuse was also relatively low.

Although the pilot sample is too small to generalize results, examination of trends in cases indicated that highest levels of Psychological Maltreatment and Social /Cognitive Neglect were most closely associated with intellectual delays, severely delayed development, and poorest emotional outcome. Several cases involving severe neglect or psychological maltreatment showed the worst outcome scores of the sample, even with minimal or no physical or sexual abuse. Severe sexual abuse, accompanied by lack of buffering variables, also resulted in poor outcome.

Preliminary consideration of the pilot data on these cases, which must be very tentative due to the small sample size and need for instrument revision, suggested that mediating variables indeed play an important role in developmental outcome in children, supporting the inclusion of these variables in the theoretical and research model. Children with identical Total Maltreatment Severity ratings showed differential outcome ratings, and a cursory examination of the data indicated that the relative presence or absence of personal resilience traits, good intelligence, social support, stability after cessation of maltreatment, and nature of contact with family played a role in these differences, with different variables being more or less important in different cases. One case with the lowest maltreatment rating of the sample had one of the worst developmental outcome scores; this child was

rated very low on all mediating variables, indicating the exacerbating effect that intervening events can have on even milder forms of maltreatment. Relatively positive outcome was found in three cases which showed high scores on buffering mediating variables. Cases with the highest Resilience ratings tended to be those with lower severity ratings on Psychological Maltreatment and normal or above average intelligence. High Social Support was also noted consistently in cases with better outcome.

Most of the children showed developmental effects in delayed academic skills and delayed emotional/social development, even when other developmental areas were relatively spared. This finding may be partly the result of insufficient sensitivity of those outcome scales or may reflect a direct effect of all maltreatment that is not immediately affected by mediating variables.

The pilot study indicated generally that the proposed research design, procedures, and instruments can be applied to answer the research questions in a meaningful way with good reliability and validity of instruments. There are indications in preliminary data examination which support important clinically- and theoretically-based hypotheses about a model which could explain the relationships among risk, buffering, and outcome variables. A wealth of data are available which could be examined in more detail later to address some of the complex problems in the field of child maltreatment research and treatment.

After all the data were gathered by the researcher using the modified instruments, the rating scales for the eight maltreatment/risk variables, three of the mediating variables, and the behavioural outcome measure were submitted to inter-rater reliability testing due to the subjective nature of these measures. Test-retest reliability and external validity were examined for the Drawing Checklist.

Reliability Studies on Revised Measures

Data Gathering Instrument. Inter-rater reliability testing ($n=26$) was conducted on the 12 subjectively-rated variables which had been recorded by the researcher on scales designed or adapted for this study (Physical Abuse, Sexual Abuse, Psychological Maltreatment, Physical Neglect, Social/Cognitive Neglect, Family Violence, Substance Abuse, Other Dysfunction, Resilience, Social Support, Stability, and Behavioural Outcome). The reviewer, an M.A.-level psychology graduate employed in clinical practice assessing and treating maltreated children, was given 26 randomly-chosen charts from the research group, along with data recording forms labelled with a case number and the age and gender of the child. She was instructed on use of the instruments and was asked to provide independent ratings on the 12 variables for each case.

Table 3. Reliability of Research Measures

Variable	% Agreement	Correlation r
Physical Abuse	96.2	.94
Sexual Abuse	96.2	.92
Psychological Maltx	92.3	.95
Physical Neglect	96.2	.97
Social/Cognitive Neglect	88.5	.93
Family Violence	96.2	.99
Substance Abuse	96.2	.99
Other Dysfunction	96.2	.98
Resilience	84.6	.96
Social Support	92.3	.97
Stability	92.3	.98
Behavioural Outcome	100.0	1.00

Of the 26 cases, there was 100% agreement across the 12 variables on 15 cases (57.7%), with 96.1% of the cases showing greater than 83% agreement. The lowest

agreement rating was 66.7% on one case. It appeared in this case that the reviewer may have done some of the ratings based on longitudinal data at a different point in time than what was used by the researcher, as several assessments were included in the file on this case. Considering the 312 paired ratings of the researcher and the reviewer, 293 (93.9%) were in agreement.

Pearson product-moment correlations between mean scores for researcher-rated and reviewer-rated variables were all significant at $p < .001$. Reliability ratings (based on agreement of raters) and actual score correlations for each variable are shown in Table 3.

Drawing Checklist. Test-retest reliability of the global drawing ratings (personality dysfunction and maltreatment prediction) was assessed on a subsample of 24 cases with the highest ($n = 12$) and lowest ($n = 12$) global outcome scores, with the same rater rescoring the sets of drawings approximately 11 months after his first rating. At the second rating, Dr. G. completed full checklists with all 47 personality traits before scoring global ratings. For these cases, the Pearson product-moment correlation between the Z-scores of the two personality dysfunction (PD) ratings was high ($r = .8293$, $p < .001$, PD1 $M = -.0511$, PD2 $M = -.0400$). The correlation of the two maltreatment prediction (MP) ratings ($r = .6387$, $p < .001$, MP1 $M = 3.375$, MP2 $M = 3.25$) was not as strong, but was still highly significant.

External validity of the measures was examined in relation to other research variables in the study. The first personality dysfunction rating was highly correlated with outcome group, with highest scores observed in group 1, the best global outcome group, and lowest scores in group 2 ($r = -.8141$, $p < .001$). The retest (PD2) showed some improvement in this relationship ($r = -.8606$, $p < .001$). The initial rating of predicted maltreatment severity was highly correlated with the measure of global severity of maltreatment ($r = .6643$, $p < .001$), and substantial improvement in their correlation was found with the second rating ($r = .7664$, $p < .001$).

It would appear that both initial global drawing measures, obtained from unstructured clinical impressions, have acceptable test-retest reliability and external validity, but that these properties were enhanced by the use of a more structured rating scale by which the clinician oriented himself to the case before rendering the global ratings.

Frequency of the most prevalent traits in the randomly-selected pilot group ($n = 15$) and in the best/ worst outcome subsample ($n = 24$) are shown in Table 4.

Table 4. Frequency of Traits in Drawings

Personality Trait	Frequency			
	Pilot ($n=15$)		Retest ($n=24$)	
	n	%	n	%
Maternal rejection/ deprivation	14	93.3	22	91.7
Bodily anxiety/ distorted image	11	73.3	22	91.7
Emotional development problems	10	66.7	20	83.3
Traumatized/ wounded	9	60.0	20	83.3
Unmet dependency needs (early)	14	93.3	19	79.2
Impotence/ powerlessness	10	66.7	18	75.0
Undeveloped self-concept/identity	13	86.7	17	70.8
Insecurity/ poor attachment	9	60.0	16	66.7
Aggression	10	66.7	15	62.5
Depression		<50.0	15	62.5
Anger/ rage/ frustration		<50.0	14	58.3
Anxiety/ fearfulness	9	60.0	14	58.3
Distress/ inner tension	10	66.7	14	58.3
Low self-esteem	11	73.3	14	58.3
Barrenness/emptiness/ impoverish.	9	60.0	13	54.2
Sexualization (traumatic)		<50.0	13	54.2
Autonomy difficulties		<50.0	12	50.0
Poor impulse control	9	60.0	12	50.0
Problems in affect regulation		<50.0	12	50.0
Dependency problems	10	66.7		<50.0
Poor energy modulation	9	60.0		<50.0
Hostility	8	53.3	11	45.8
Alienation/ loneliness/ isolation	8	53.3	11	45.8

Although the composition of the pilot group and the extreme outcome groups differed due to the criteria for selection, a high number of traits were consistently present in high proportions across the different samples. Sixteen traits of the 18 prevalent in the pilot study were also present in high proportions in the retest on extreme groups. These traits appear to be prevalent in maltreated children, appearing even in those whose overall outcome appears good relative to the larger research sample. Two traits were found to be prevalent in the random pilot sample and not in the extreme groups sample (dependency problems, poor energy modulation); and five additional traits were frequent in the extreme-outcome group sample and not in the random sample (depression, anger/rage, traumatic sexualization, autonomy difficulties, problems in affect regulation). [It should be noted that these traits were common in both the best outcome and worst outcome groups, and the groups also shared the feature of identical means on sexual abuse ($M_s = 1.75$ on a 4-point scale, $t = .00$, $p = 1.00$).] As in the pilot study and in the study by Bristow (1993), certain traits were low in frequency but were important discriminators, appearing only in the most damaged group (dependency problems, fragmentation/lack of integration, segmentation, boundary problems, suspiciousness, dissociation and splitting, schizoid, psychosis, and overstimulated).

Further data on the Drawing Checklist and its utility in discriminating extreme groups will be presented in the Results chapter.

Procedure

Research was conducted in three phases.

1. A pilot study was conducted with a small sample of case records of maltreated children ($n = 10$ on Data-gathering Instrument and $n = 15$ on Drawing Checklist). Procedures and results of this phase were presented earlier.

2. After instruments were revised, data were gathered from clinical assessment files (compiled since 1986) on a research group of 109 school-aged maltreated children on all

variables [risk/maltreatment factors, including severity and duration; age at assessment; gender; possible mediating factors including intelligence, personal characteristics, social support, stability after rescue, and nature of contact with family; and developmental outcome measures of school achievement, levels of language and perceptual-motor development, social/emotional development, behaviour, and emotional/personality functioning]. The writer gathered data on all cases, and a number of the cases ($n=26$) were submitted to independent ratings by a second rater to assess inter-rater reliability of 12 subjectively-scored variables. In order to keep measurement of the variables independent, mediating variables were rated first; severity and duration of maltreatment and risk variables were rated second; and standardized measures including IQ and developmental outcome variables were recorded last, as no subjective judgements were involved in their ratings. Results of reliability testing have been reported.

The personality outcome measure was completed by a different rater with no knowledge of the data on other variables. All projective drawings were rated by Dr. G., who has demonstrated his expertise in this area in a previous study (Bristow, 1993) with a high degree of success (88%) at identifying drawings of children based on their membership in maltreated versus normal groups and good consistency on reclassification (80%). He was blind to circumstances of the cases being rated. His global ratings of Personality Dysfunction, Emotional Disturbance/Pathology, and predicted degree of maltreatment were recorded for the purposes of this phase of the study. Projective drawings from 20 nonabused cases (assessed due to prolonged divorce custody and access disputes involving family turmoil and a noxious emotional milieu without reported child maltreatment) were incorporated during the rating process to guard against the potential tendency to rate all drawings in an extreme negative direction. Further detailed ratings were completed by Dr. G. on a subsample ($n = 24$) of the best and worst global outcome cases, using the full

Checklist of all 47 personality traits, for further reliability and validity testing (already reported) and for detailed analysis of the best- and worst-functioning children's records.

Data Analyses

Data analysis at this phase began with examination of descriptive statistics and variable distributions, saving of Z-scores on all variables, and conducting necessary transformations of nonnormally-distributed variables. Bivariate correlations were examined; the Family Contact variable was dropped from further analysis at this point due to lack of significant relationships with any other variables. Between-group comparisons (t tests) were done for male and female research subjects to ascertain whether differences between the group means on key variables were great enough to preclude combining the groups into a single unit for further more complex analyses. Although some differences did exist, with males' data showing considerably greater variability, concerns about sample size prevailed in the decision to use a combined research group.

In preparation for the major analysis (using LISREL 7) with the large number of variables (22) and a relatively small sample size (109) available, data reduction was accomplished by the use of SPSSPC+ Principal Components factor analysis with Varimax rotation to create orthogonal principal components. The six maltreatment variables formed two PCs (Psychological Maltx & Neglect and Physical Aggression) with Sexual Abuse being retained in its original variable form for the third factor. The six outcome variables formed two PCs (Cognitive Outcome and Social Outcome) with the Personality Dysfunction variable remaining in its original form as the third factor (Personality Outcome). Principal components analysis was also conducted for males and females separately and for younger and older subjects separately. While the factor structure held up well for the different age groups, there were some differences in the way in which principal components were formed for the male and female subgroups. Given the need for a sample size of at least 100 for LISREL analysis, however, female and male data were kept

combined with the knowledge that differences existed. Further elimination of variables was accomplished by removing certain variables which were highly redundant with major research variables or which were not as salient to the theoretical basis of the proposed structural model. Substance Abuse was dropped due to its high correlation ($r = .504$, $p < .001$) with the principal component combining Physical Abuse and Family Violence, and Other Dysfunction (parental) was found to be redundant with Psychological Maltreatment and to have a high correlation ($r = .858$, $p < .001$) with the principal component combining Psychological Maltreatment and all forms of neglect.

The major data analysis for this phase of the study was a LISREL 7 (Joreskog & Sorbom, 1989; SPSS, Inc., 1990), submodel 2, nonrecursive structural equation model analysis with Weighted Least-Squares (in effect a set of overlapping multiple regression equations approached in a stepwise manner by the researcher's decision to add or delete parameters to be tested) examining the relationships among the risk, mediating, and outcome variables for the maltreated sample. The LISREL 7 and PRELIS module was accessed through the SPSS for Windows interface, importing raw data through an SPSS system file and using PRELIS to create a matrix system file for LISREL analysis. This input path was required (a) because this study involves a number of variables designated as ordinal, rather than true continuous interval scales, so that the default product-moment correlations were not justified; and (b) in order to be able to rely on the standard errors and chi-square goodness-of-fit indicator produced by the program, the research variables and model required the use of Weighted Least-Squares analysis (rather than the default Maximum Likelihood), which necessitates the production of an asymptotic covariance matrix to be read by LISREL. PRELIS was used to generate a POLYCHOR matrix combining product-moment (continuous by continuous variables), polychoric (ordinal by ordinal), and polyserial (continuous by ordinal) correlations and an asymptotic covariance matrix of the elements of this correlation matrix. The polychoric and polyserial correlations

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are not between sets of actual scores, but are rather the estimates of the correlation between two latent variables or an observed and a latent variable, respectively, where the ordinal variables involved are assumed to have a bivariate normal distribution. Thus when variables are not on a true interval scale, it is advantageous to declare them ordinal so that the proper type of correlation matrix can be generated. Of the four types of correlation matrices generated by PRELIS, the POLYCHOR type has been shown in Monte Carlo studies (Joreskog & Sorbom, 1989) to be the most robust, to have the smallest downward bias and smallest mean square error, to be the best estimator regardless of number of categories of the ordinal variable, to produce the best correlations closest to the true population rho, and to be a consistent estimator of rho across sample sizes. Although there is still some tendency for slight underestimates of correlations in all the correlation matrices generated by PRELIS, the measures of overall goodness-of-fit that LISREL computes [chi-square, adjusted goodness-of-fit index (AGFI), and root mean square residual (RMSR)] behave normally when the asymptotic covariance matrix and weighted least-squares method are used. In order to obtain the necessary asymptotic covariance matrix for this study, the default minimum sample size on the Criteria syntax line had to be overridden and set to 109. For the 11-variable factorial model, a sample size of 198 would have been preferable; for the 9-variable global model, 135 would normally be the minimum.

Although LISREL has the capacity in its full model to form latent variables from clusters of observed variables through the specification of several additional matrices of fixed and free parameters, for the data set of this study, this stage (the measurement model) was conducted outside the LISREL system through Principal Components Analysis. The program forms one latent variable for every observed variable when the measurement model is not specified. LISREL Submodel 2 involves *y* variables (jointly dependent, endogenous variables), *x* variables (explanatory, exogenous variables), and zeta $\{\zeta\}$ or error variables (random disturbance terms), which represent an aggregate of all known and

unknown influences of the y s which are uncorrelated with the x s. The parameter matrices which must be specified in this submodel are Beta $\{\beta\}$ (y by y parameters), Gamma $\{\gamma\}$ (x by y parameters), and Psi $\{\psi\}$ (a matrix of the y error terms). When the y variables and corresponding structural equations cannot be ordered so that the Beta matrix is sub-diagonal as would be the case in path analysis, the system is said to be **non-recursive** or interdependent. This type of system allows for direction of effects among y variables to be reversed or bidirectional and to include feedback loops. Model development was theoretically driven by previously-formed hypotheses about relationships among these variables, which included some two-way relationships and reversed effects. Direct effects of maltreatment upon developmental outcome were examined, as well as indirect effects mediated through variables which either buffer the child or create additional stressors which worsen outcome in a downward spiral over time. Two preliminary multivariate structural models of maltreatment effects were developed from these results, with weights and significance levels obtained for paths between the risk and mediating variables, indicating their ability to predict developmental outcome. The two variations of the model explored and retained in the analysis were (a) an 11-variable factorial model utilizing the three derived maltreatment factors and the three developmental outcome factors along with Sex and the four mediating variables, and (b) a nine-variable global model utilizing only the global maltreatment severity and global outcome variables along with Age, Sex, Other Dysfunction, and four mediating variables. Age was dropped in model (a) because of its multicollinearity with the three maltreatment factors, which included duration of abuse in their calculation; it was retained in model (b), because the Global Severity measure was age-adjusted. Other Dysfunction was dropped from the factorial model due to its redundancy with the first principal component, but was kept in the global model to examine its effects.

3. In phase 3 of the study, SPSSPC+ Discriminant Function analysis was run on a subsample ($n = 54$) of the 109 cases to identify those with best and worst global developmental outcome (cut-off criterion: greater than or equal to .75 standard deviation from the mean in a positive or negative direction, respectively) and to ascertain which maltreatment and mediating variables predicted membership in each group. The best-outcome (most resilient) group contained 29 cases (15 males, 14 females), and the worst-outcome (most damaged) group contained 25 cases (13 males, 12 females). This subsample of 54 cases will be the subject of ongoing research stemming from this thesis but outside the scope of the present study. The most extreme cases ($n = 24$) were selected to conduct a pilot model of the future study; results of this preliminary study are addressed later.

Twelve cases showing the most positive overall outcome and 12 cases with most negative overall outcome were subjected to further detailed analysis of projective drawings by Dr. G. (using the 47-item Drawing Checklist rating scale). Groups were compared on all research variables and personality traits on drawings by means of t-tests. Product-moment correlations, frequency analysis, and discriminant function analysis were conducted to study the prevalence, strength, and interrelationships of the personality traits seen in drawings of this subsample and to ascertain which traits were predictive of membership in either extreme group. Cases in the most resilient group were scrutinized to determine whether common buffering factors appear in file records which should be added to the structural model to reduce unaccounted-for variance. The cases with worst developmental outcomes were examined to ascertain what type or combination of types of abuse and other risk factors or lack of buffering factors tended to be associated with poorest outcomes.

In follow-up research including use of the full Drawing Checklist with the larger sample of 54 cases, factor analysis of the personality traits will be done, with further refinements of the Checklist, and another discriminant function analysis will be conducted after reduction of the number of traits. Case records can also be examined for further

qualitative information about unmeasured variables which might have contributed to a particular outcome. For 10 cases of the 54 (4 best, 6 worst), longitudinal assessment data are available, providing the opportunity to examine effects of maltreatment and mediating variables over time and intervening conditions. Although the full longitudinal data sample ($n=31$) was not large enough to conduct a confirmatory study of the preliminary LISREL model at this time, it provides the basis for further research once additional cases can be assessed.

Research Hypotheses

The following hypotheses were tested:

Hypothesis 1. There will be direct negative effects of maltreatment on child outcome, with multiple forms of maltreatment, severity, age, and duration being exacerbating factors.

The presence of psychological maltreatment is expected to be particularly damaging, and chronic neglect and psychological unavailability are expected to be associated with the most global damage and developmental delays.

Hypothesis 2. There will be indirect negative effects of maltreatment mediated by life instability after cessation of maltreatment and by erratic and unsupervised access to the natural family where abuse occurred.

Hypothesis 3. There will be better developmental outcomes when maltreatment risk is mediated by above-average intelligence, personal characteristics of resilience, higher social support, greater stability of care after cessation of maltreatment, and/or access with family which is moderate, regular, and carefully monitored and supervised.

Hypothesis 4. Males will show greater vulnerability and relatively worse developmental outcomes than females as direct and indirect effects of maltreatment.

RESULTS

Data Screening and Basic Statistics

Data analysis began with examination of descriptive statistics and variable distributions and conducting the necessary transformations of nonnormally-distributed variables, after which Z scores were saved. Means, standard deviations, and standard errors of original raw data, along with minimum and maximum scores and final skew and kurtosis Z scores of all research variables after transformation and standardization are shown in Table 5.

Table 5. Descriptive Statistics on Research Variables

Variable	Raw Scores			Transformed & Standardized			
	M	SD	SE	Min	Max	Skew	Kurt. Z
Physical abuse	14.38	10.86	1.04	-1.77	2.46	-.45	-1.33
Sexual abuse	2.03	.87	.08	-1.19	2.28	2.79	-.19
Psychological maltx.	41.73	19.56	1.87	-1.83	2.60	1.26	-1.81
Physical neglect	24.45	14.21	1.36	-2.45	2.52	-2.07	.68
Social/cogn. neg.	32.26	16.37	1.57	-3.00	2.77	-.73	1.00
Family violence	14.85	15.89	1.52	-1.12	2.09	1.16	-2.77
Other dysfunction	29.93	16.54	1.59	-2.52	2.23	.32	.51
Substance abuse	16.28	16.41	1.57	-1.18	1.96	.49	-2.86
Global severity	42.79	14.51	1.39	-2.48	2.19	-1.22	-.68
IQ	3.28	1.28	.12	-1.79	2.91	1.26	.31
Resilience	3.02	1.32	.13	-1.53	1.50	-.36	-2.35
Social support	2.33	1.22	.12	-1.18	1.90	.74	-2.90
Stability	2.49	1.49	.14	-1.07	1.54	.98	-3.23
Language	3.61	1.03	.10	-1.36	2.54	.13	-1.58
Visual motor	4.08	.97	.09	-1.01	2.64	2.17	-1.56
Academic	3.91	.97	.09	-1.21	1.76	.59	-2.54
Emotional/social	4.12	.82	.08	-1.22	2.19	1.73	-.32
Behaviour	3.55	1.12	.11	-1.30	2.28	.73	-1.92
Personality dysfunct.	4.19	.80	.08	-1.07	2.72	1.64	-1.65
Global outcome	.00	.66	.06	-1.79	2.10	.28	-1.50

All risk/maltreatment variables except Psychological Maltreatment were nonnormally distributed, with positive skew that was mild to moderate for Physical Abuse, Physical Neglect, Social/Cognitive Neglect, Family Violence, Substance Abuse, and Other Dysfunction and more extreme for Sexual Abuse. Square root transformations were computed for the moderately skewed variables, resulting in substantially improved normality of distribution. Variables with zero scores had a value of 1 added prior to transformation. Sexual Abuse was eventually converted from continuous data to a four-point ordinal scale of 1 = no sexual abuse, 2 = raw score 1-10 (mild), 3 = raw score 12-27 (moderate), and 4 = raw score 35-56 (severe). Break points in the scores determined groupings, with 31 cases with no documented sexual abuse, 52 cases at the mild abuse level, 18 cases at the moderate abuse level, and 8 cases at the severe abuse level. The age-adjusted Global Severity and the Psychological Maltreatment measures required no transformation, being normally distributed.

Of the Mediating variables, IQ and Resilience did not require transformation; IQ was normally distributed, and Resilience had only slight negative skew and kurtosis due to an elevated number of cases with minimal resilience (a high score). Social Support, Stability, and Family Contact all had a tendency toward U-shaped distributions, with a higher number of cases at each extreme and fewer at middle values. Inverse and square-root transformations were tried, with the square-root transformations being chosen for the first two variables and an inverse transformation for the latter. Even after transformation, Family Contact as measured by this scale showed no meaningful relationships with other variables, so was dropped from analysis and is not shown here.

Outcome variables tended to be negatively skewed, with many cases on the poor-outcome end of distributions. Square-root transformations were computed for Visual Motor, Academic, and Personality Dysfunction after reflecting the variables. Reflect and Log10 transformation were performed on Emotional/Social Development, which had the greatest

negative skew, with this maltreated sample on the whole showing deficiencies in this area of development. Language Development and Behaviour were reflected for consistency of direction of interpretation with other Outcome variables, but required no other transformation. The Global Outcome measure was normally distributed.

Male-female differences. Frequencies of males and females experiencing the various forms of maltreatment and environmental risk variables were examined and chi-square tests of independence performed. Variables were recoded 0 or 1 to reflect presence or absence of the condition, and in the case of Sexual Abuse, the chi-square test was also conducted using the four levels of severity coding. Gender was independent from the presence or absence of seven of the eight variables, although there were some variations in the age ranges at which each gender was exposed to the particular maltreatment/risk variable. However, Sex and Sexual Abuse were found not to be independent in both tests, with the rates of male and female sexual abuse in the sample differing (60% of males and 83.3% of females had some documented sexual abuse; $\chi^2(1) = 6.188, p = .0129$) and the rates of males and females at different severity levels also differing ($\chi^2(3) = 9.520, p = .0231$). No documented sexual abuse was found in 40% of males and 16.7% of females; nearly equal proportions occurred in the mild abuse category with males at 45.5% and females at 50.0%; moderate abuse occurred for 10.9% of males and 22.2% of females; and 3.6% of males and 11.1% of females experienced severe, ongoing sexual abuse. When controlling for age range, there were nonsignificant trends toward more abuse of females in the 7-10, 11-14, and 15-18 age ranges (54.5% vs. 83.3%, Yates corrected chi-square (1) = 2.543, $p = .1108$; 60.0% vs. 88.2%, Yates corrected chi-square (1) = 2.049, $p = .1522$; 50.0% vs. 83.3%, Fisher's exact test one-tail = .1758, respectively). At the youngest age range of 5-6 years, nearly equal rates of sexual abuse occurred among males and females (75% vs. 71.4%, Fisher's exact test one-tail = .6339), but females showed more long-term and severe patterns of sexual abuse in this sample.

Between-group comparisons (*t* tests) were done for male and female subgroups to ascertain whether differences between the group means on individual variables were great enough to preclude combining the groups into a single unit for further more complex analyses. Table 6 shows *t*-test results and male/ female means from transformed *z*-scores on variables with significant differences. Results are based on pooled variance estimates with 107 degrees of freedom on all items.

Table 6. Male-Female Mean Differences on Research Variables

Variable	Males (n=55)		Females (n=54)		<i>t</i>
	M	SD	M	SD	
Sexual abuse	-.2839	.908	.2891	1.014	-3.11**
Psychological maltx.	-.2466	.885	.2512	1.055	-2.67**
Physical neglect	-.2060	.944	.2099	1.020	-2.21*
Other dysfunction	-.2451	.855	.2496	1.081	-2.65**
PSYNEG factor	-.1892	.837	.1927	1.118	-2.02*
* <i>p</i> < .05 ** <i>p</i> < .01, two-tailed					

On three measures - Sexual Abuse, Psychological Maltreatment, and Other Dysfunction - females experienced significantly greater amounts of risk/maltreatment at *p* < .01 (with 107 df, *t* = -3.11, *t* = -2.67, *t* = -2.65, respectively). Females were also significantly higher on exposure to Physical Neglect (*t* (107) = -2.21, *p* < .05) and on a factor PSYNEG composed of Psychological Maltreatment, Physical Neglect, and Social/Cognitive Neglect (*t* (107) = -2.02, *p* < .05). Female mean scores were somewhat higher on all maltreatment variables, even when not at significant levels, which was partly a function of having a higher mean age and thus having been exposed to longer duration of maltreatment before being brought into care.

There was a nonsignificant trend for females to have better scores on mediating variables of Resilience, Social Support, and Stability, while males were slightly higher on

the IQ mediating variable. Outcome variables generally were comparable for males and females, with nonsignificant trends for males to score higher on Language and Visual Motor outcome and the Cognitive Outcome factor and for females to score nonsignificantly better on Emotional/Social Development and Behaviour, and thus also on the Social Outcome factor. Despite the females' higher rates and severity/ duration of maltreatment, overall outcome was not significantly different for males and females. Although some differences on individual variables did exist, concerns about sample size prevailed in the decision to use a combined research group, with Sex retained as a variable in the analysis.

Bivariate Correlations

Bivariate correlations and bivariate scatterplots (regression) were examined for strength of association among variables after required transformations. Table 7 shows product-moment correlations and two-tailed significance levels, with 107 degrees of freedom in all cases. For risk and mediating variables, higher scores indicate a worse condition (e.g., more abuse or greater instability); and for outcome variables, a higher score indicates a better outcome. For brevity, only significant correlations for the full sample will be reported here in point form, with the reader referred to Table 7 for bivariate correlations and levels of significance. Correlations are described as positive or negative in terms of the meaning of the variables, with scoring direction taken into account, so may not correspond to the actual sign of the correlation. Analyses were also conducted separately for males ($n = 55$) and for females ($n = 54$); important differential patterns are reported in Appendix F. Generally, bivariate scatterplots revealed much more dispersion and heteroscedasticity of males' data, while data points in females' plots clustered more closely around the regression line in the expected direction of association between variables. Major significant correlation results are as follows:

1. Age was positively correlated with most of the risk variables, as would be expected given the severity-X-duration coding of these variables.

2. Female gender was positively correlated with sexual abuse, psychological maltreatment, physical neglect, and other dysfunction.
3. Physical abuse was positively correlated with all other risk /maltreatment indicators and also with lower IQ; negative correlations indicated poorer language, academic, and emotional/social development, and worse global outcome.
4. Sexual abuse was positively correlated with age, psychological maltreatment, physical neglect, social neglect, other parental dysfunction, and global severity, and with personality dysfunction.
5. Psychological maltreatment and other parental dysfunction occurred in the context of physical and social/ cognitive neglect; they showed strong cumulative effects with increasing age and were correlated with physical abuse, sexual abuse, family violence, global severity, and with less stability, lower IQ, academic, emotional/ social development, and poorer global outcome.
6. Physical and social/ cognitive neglect were positively correlated with each other, and with age, the other four maltreatment variables, and global severity, as well as negatively correlated with lower IQ, language, academic, emotional/ social development, and personality dysfunction. Physical neglect was differentially correlated with substance abuse, while social/cognitive neglect alone was correlated with other parental dysfunction, lower social support and stability, and poorer visual-motor development and behaviour.
7. Family violence and substance abuse were positively correlated with each other and showed strong associations with physical abuse, physical neglect, other parental dysfunction, and global severity of maltreatment. Family violence was also correlated with social/ cognitive neglect, psychological maltreatment, and - unexpectedly - with better behaviour. Parental substance abuse was correlated with higher resilience in children.
8. Global maltreatment severity was positively correlated with all six of the maltreatment variables contributing to it, and also with substance abuse, other dysfunction,

Table 7. Bivariate Correlations of All Research Variables

Variable	AGE	SX	PA	SA	PM	PN	SN	FV	SU	OD	GS	IQ	RE	SO	ST	LA	VM	AC	ES	BE	PD
SEX																					
	.24*																				
Risk Variables																					
PHYSAB	.29*	.06																			
SEXAB	.25*	.29*	.24*																		
PSYCHMAL	.79**	.25*	.49**	.35**																	
PHYSNEG	.27*	.21*	.51**	.29*	.54**																
SOCNEG	.65**	.09	.49**	.30*	.79**	.60**															
FAMVIO	.03	.05	.49**	.16	.21*	.37**	.23*														
SUBSAB	-.10	.02	.25*	.03	-.02	.27*	-.02	.49**													
OTHDYS	.55**	.25*	.46**	.32**	.74**	.60**	.73**	.29*	.21*												
GLOBSEV	-.06	.01	.65**	.37**	.37**	.68**	.50**	.67**	.34**	.49**											
Mediating Variables																					
IQ	.20*	.12	.30**	.06	.29*	.30*	.40**	.15	.73	.22+	.30*										
RESIL	.16	-.11	.10	-.04	.12	-.02	.16	-.07	-.22+	.02	.01	.52**									
SOCSUP	.18	-.09	.08	-.02	.17	.08	.25*	.10	.03	.05	.07	.09	.27*								
STABIL	.18	-.11	-.12	.07	.22+	.03	.25*	-.12	-.01	.23+	-.01	-.00	.05	.19+							
Development Outcome Variables																					
LANG	-.01	-.13	-.20+	.02	-.10	-.26*	-.28*	-.09	.03	-.09	-.27*	-.77**	-.44**	-.07	.06						
VISNOT	.07	-.15	-.13	-.16	-.10	-.17	-.20+	-.06	-.13	-.12	-.29*	-.55**	-.28*	-.11	-.06	.53**					
ACAD	-.08	-.03	-.26*	-.06	-.20+	-.33**	-.35**	-.15	-.08	-.24*	-.33**	-.61**	-.34**	-.08	-.07	.65**	.60**				
ENO/SOC	-.14	.09	-.25*	-.06	-.25*	-.21+	-.32**	.03	.09	-.22+	-.27*	-.47**	-.56**	-.15	-.16	.41**	.36**	.48**			
BEHAV	-.12	.08	-.12	.02	-.16	-.09	-.20+	.15	.11	-.09	-.04	-.21+	-.19+	-.27*	-.48**	.12	.19+	.12	.40**		
PERSDYS	-.06	-.00	-.29*	-.22+	-.16	-.23+	-.20+	-.06	-.03	-.20+	-.28*	-.35**	-.21+	-.09	-.13	.20+	.25*	.19+	.24*	.28*	
GLOBOUT	-.08	-.03	-.31**	-.11	-.24*	-.32**	-.39**	-.05	-.00	-.24*	-.37**	-.74**	-.50**	-.19+	-.21+	.73**	.73**	.76**	.72**	.53**	.54**

Two-tailed significance with 107 df $p < .05^+$, $p < .01^*$, $p < .001^{**}$.

and lower IQ, with negative correlations with poorer language, visual-motor, academic, and emotional /social development, personality dysfunction, and global outcome.

9. IQ, language development, and academic achievement were highly correlated with each other and all showed strong correlations with resilience, visual-motor and emotional/social development, less personality dysfunction, and better global outcome, and with lower scores on risk variables of physical abuse, physical neglect, social/ cognitive neglect, and global severity. Higher IQ was also correlated with better behaviour and younger age, and both IQ and academic achievement were correlated with less psychological maltreatment and other dysfunction.

10. Resilience was positively correlated with IQ, greater social support, better results on all outcome variables, and better global outcome. An unexpected positive association was found with greater parental substance abuse.

11. High social support was correlated with high resilience, lower social /cognitive neglect, greater stability, better behaviour, and better global outcome.

12. Higher stability was correlated with better behavioural outcome, younger age, lower levels of psychological maltreatment, social/cognitive neglect, and other parental dysfunction.

13. Better visual-motor development was associated with higher IQ and resilience, better language and academic development, better emotional/social development, less personality dysfunction, and better global outcome. Higher levels of social/cognitive neglect and higher global severity were related to poorer visual-motor development.

14. Emotional/social development was positively correlated with IQ, resilience, language and academic development, behaviour, personality dysfunction, and global outcome. Delayed emotional/social development was associated with physical abuse, psychological maltreatment, physical neglect, social/cognitive neglect, other parental dysfunction, and global severity.

15. Behaviour was positively correlated with IQ, resilience, stability, social support, visual-motor and emotional/social development, personality dysfunction, and global outcome. High social/cognitive neglect and psychological maltreatment were the risk variables most highly correlated with negative behaviour.

16. Personality dysfunction was positively correlated with more severe physical abuse, sexual abuse, physical neglect, social/cognitive neglect, other parental dysfunction, and global severity, and was associated with lower IQ, lower resilience, more severe behavioural problems, poorer language, visual-motor, and emotional/social development, and worse global outcome.

17. Global outcome was positively correlated with IQ, resilience, stability, social support, and all of the individual outcome measures. Higher scores on risk variables of physical abuse, psychological maltreatment, physical neglect, social neglect, other parental dysfunction, and global severity were highly correlated with poorer global outcome.

A family contact variable, originally part of the study, was dropped from further analysis at this point due to lack of clear or significant relationships with any other variables.

Data Reduction and Measurement Model

In preparation for the major analysis (using LISREL 7) with the large number of variables (22) and a relatively small sample size (109) available, data reduction was accomplished by the use of SPSSPC+ Principal Components factor analysis with Varimax rotation to create orthogonal principal components. Although LISREL has the capacity in its full model to form latent variables from clusters of observed variables through the specification of several additional matrices of fixed and free parameters, for the present study this stage (the measurement model) was conducted outside the LISREL system. Principal components analysis was also conducted for males and females separately and for younger and older subjects separately.

Maltreatment Variables

Two- and three-factor solutions were considered for the six maltreatment variables. The eventual choice was to form two PCs (Factor I: Psychological Maltreatment & Neglect and Factor II: Physical Aggression) with Sexual Abuse being retained in its original variable form for the third factor rather than using Factor III with an eigenvalue of .80911 or forcing sexual abuse into the first factor of a two-factor solution, where it had low communality (.334) and poor sampling adequacy. The final two factors were derived from a principal components analysis of the remaining five maltreatment variables, accounting for 78.0% of the variance, having eigenvalues of 2.9328 (58.7% of variance) and .96734 (19.3% of variance), respectively. The Kaiser-Meyer-Olkin measure of sampling adequacy showed an acceptable level (.75734) overall, and measures of sampling adequacy for individual variables were all above the .60 level required for good factor analysis (physical abuse, .814; psychological maltreatment, .715; physical neglect, .861; social/cognitive neglect, .705; and family violence, .712). Communalities for the five variables were .68881, .83744, .64367, .85779, and .87238, respectively.

Examination of the residuals between the observed correlations and the reproduced correlations indicated that the solution was not an ideal fit, with some moderate to large residuals present suggesting a possible third factor. However, the eigenvalue for the third factor in the analysis (.471) would have been insufficient to support its use. A Varimax rotation, which converged in three iterations, produced the following rotated factor matrix with orthogonal factors:

	Factor 1	Factor 2
Physical Abuse	.48633	.67253
Psychological Maltx	.90775	.11588
Physical Neglect	.67912	.42716
Social/Cognitive N.	.91567	.13908
Family Violence	.04541	.93291

While psychological maltreatment, social/ cognitive neglect, and family violence showed simple structure, the other two variables were complex, making the factors not as clearly distinguished as one would hope. The scatterplot indicated evidence of correlation among factors based on the complex loadings of physical neglect and physical abuse on both factors. Examination of an oblique rotation of the factors indicated a correlation of .365 between them (an overlap of more than 13% of variance), which would suggest that oblique rotation would be the better approach to the data. However, the need for orthogonal factors, with their relative simplicity and interpretability, in the subsequent LISREL analysis was a compelling criterion which overrode the more conceptually appealing oblique rotation (Tabachnick & Fidell, 1989).

Male-female differences. A major obstacle in arriving at a reliable set of factors was the use of combined male and female samples into one principal components analysis when there were important differences already noted in the patterns of their respective data sets. Although the combination was necessary in order to obtain sufficient sample size for subsequent LISREL analysis, there were sacrifices in terms of higher residuals and overlap between factors and in the need to omit sexual abuse from the analysis. In order to understand how the underlying male-female differences affected the factor structure, principal components analyses were performed for the male and female subgroups using all six maltreatment variables.

For females, the best solution was similar in structure to the solution for the full sample, but with much lower residuals (26% >.05), somewhat more clearly delineated factors, and generally better fit. All variables had high communalities (>.79), and the three factors accounted for 88.5% of variance. The rotated factor matrix indicated simple structure for all but the physical abuse variable:

	Factor 1	Factor 2	Factor 3
Physical abuse	.54919	.73006	.08208
Sexual abuse	.28923	.08178	.95260
Psychological maltx.	.88452	.10869	.24761
Physical neglect	.79855	.35288	.16623
Social/Cog Neglect	.90234	.18703	.22568
Family violence	.10328	.95273	.06479

For females, Factor I with an eigenvalue of 3.638 accounted for 60.6% of variance; Factor II with an eigenvalue of 1.047 accounted for 17.4% of variance; and Factor III with an eigenvalue of .622 accounted for 10.4% of variance. As with the full sample analysis, the third factor had an eigenvalue too low to be considered reliable; thus a separate female PCA solution would involve forming two factors with five variables and treating sexual abuse as a separate variable. For females, psychological maltreatment, physical neglect, and social/cognitive neglect are closely related, with physical abuse also frequent in this context. Physical abuse and family violence are closely related; and sexual abuse forms its own factor (with some loading from psychological maltreatment and social/cognitive neglect).

For males, a three-factor solution on all six variables was viable, but with marginal overall sampling adequacy (Kaiser-Meyer-Olkin MSA = .639) and three variables' MSAs below .60. There were 73% of residuals over .05. The three factors accounted for 74.6% of variance, with physical abuse having low communality (.494), with others from .633

	Factor 1	Factor 2	Factor 3
Physical abuse	.45136	.47266	.25883
Sexual abuse	.01303	.05333	.96096
Psychological maltx.	.90805	.11518	.07568
Physical neglect	.34175	.70046	-.16150
Social/Cog. Neglect	.89335	.10334	-.08175
Family violence	-.06101	.85949	.14836

(physical neglect) up to .926 (sexual abuse). For males, Factor I with an eigenvalue of 2.374 accounted for 39.6% of variance; Factor II with an eigenvalue of 1.173 accounted for 19.6% of variance; and Factor III with an eigenvalue of .929 accounted for 15.5% of variance. For males, psychological maltreatment and social/cognitive neglect are closely related, with physical abuse also frequent in this context. Physical abuse, physical neglect, and family violence are closely related; and sexual abuse forms its own factor (although with some loading from physical abuse). This structure differs from the female pattern in that (a) physical abuse for males is spread more evenly across all contexts, (b) physical neglect of males is not associated with the psychological forms of maltreatment and neglect but rather with a violent and physically abusive environment, and (c) sexual abuse of males tends to occur more in the context of physical abuse rather than with emotional maltreatment and social neglect.

Correlations with other variables. Table 8 shows the bivariate correlations between principal components (factors) and the other research variables. The psychological maltreatment and neglect factor (PSYNEG) correlated significantly with age ($r = .7291$, $p < .001$), as would be expected given the ongoing duration of these forms of maltreatment, and it was somewhat more evident in the female subsample ($r = .1918$, $p < .05$). It was also highly correlated with physical abuse, with other parental dysfunction, and with SOCOUT in the full sample ($r = .4863$, $p < .001$; $r = .7558$, $p < .001$; $r = -.2689$, $p < .01$) and both gender subsamples. Female data patterns contributed most to the significant full-sample correlations between PSYNEG and sexual abuse ($r = .5032$, $p < .001$), global severity ($r = .5884$, $p < .001$), lower IQ ($r = .5403$, $p < .001$), poorer scores on the COGOUT factor ($r = -.4601$, $p < .001$) and all three of its contributing variables, poorer emotional/social development ($r = .4627$, $p < .001$), personality dysfunction ($r = -.2863$, $p < .05$), and global outcome ($r = -.5382$, $p < .001$). For females only, high PSYNEG was associated with lower

Table 8. Bivariate Correlations of PCA Factors and Research Variables

Variable	PSYNEG	PHYSAGG	COGOUT	SOCOUT
Age	.7291**	-.0853	.0007	-.1496
Sex	.1918+	.0302	-.1203	.1254
<u>Risk Variables</u>				
Physab	.4863**	.6725**	-.2261+	-.1534
Sexab	.3313**	.1436	-.0772	-.0036
Psychmal	.9077**	.1159	-.1421	-.2041+
Physneg	.6791**	.4272**	-.2933*	-.0954
Socneg	.9157**	.1391	-.3036**	-.2289+
Famvio	.0454	.9329**	-.1470	.1561
Subsab	-.0695	.5183	-.0790	.1341
Othdys	.7558**	.2330+	-.1776	-.1280
Global Severity	.4114**	.7129**	-.3547**	-.0750
<u>Mediating Variables</u>				
IQ	.3608**	.1535	-.7367**	-.2066+
Resil	.1457	-.0643	-.4174**	-.3092**
Socsup	.1862	.0465	-.0543	-.2617*
Stabil	.2425*	-.2191+	.0617	-.4494**
<u>Develop. Outcome</u>				
Lang	-.2193+	-.1245	.8467**	.0815
Vismot	-.1634	-.0754	.7825**	.1582
Acad	-.2994	-.1658	.8789**	.1220
Em/soc	-.3244	-.0106	.4901**	.6523**
Behav	-.2329+	.1184	-.0126	.9344**
Persdys	-.2192+	-.1294	.2012+	.2803*
Global Outcome	-.3642**	-.0967	.7956**	.5564**
<u>Factors</u>				
PSYNEG	-	.0000 ^a	-.2431*	-.2689*
PHYSAGG		-	-.1667	.1210
COGOUT			-	.0000 ^a

^a) orthogonal PCAsTwo-tailed significance: $p < .05+$, $p < .01^*$, $p < .001^{**}$.

resilience ($r = .3283$, $p < .025$) and receiving less social support ($r = .3848$, $p < .01$). Males' data contributed most to the full-sample correlations between PSYNEG and less stability in care ($r = .4619$, $p < .001$) and between PSYNEG and poor behavioural outcome ($r = -.2883$, $p < .05$).

Significant correlations were observed between the physical abuse and family violence factor (PHYSAGG) and physical neglect, substance abuse, global severity, and greater stability in care, among the full sample and both genders (see Table 8). For females, higher PHYSAGG scores were seen in the context of higher parental dysfunction ($r = .2859$, $p < .05$), and for males higher PHYSAGG was associated with fewer behaviour problems once in care ($r = .2857$, $p < .05$).

Age range analysis. Factor structure found in the whole sample generally held up when the sample was divided into a group aged 5 to 10 and a group aged 11 to 18, with similar results across age groups. Residuals were improved considerably in the divided groups compared to the combined sample. Both groups had good sampling adequacy (.684 and .793, respectively) comparable to the full sample. Communalities of each variable, eigenvalues and percent of variance for each factor, and rotated factor loading matrices are shown by age group in Table 9.

Developmental Outcome Variables

Two- and three-factor solutions were originally considered for the six outcome variables. The eventual choice was to form two PCs (Factor I: Cognitive Outcome and Factor II: Social Outcome) with Personality Dysfunction being retained in its original variable form for the third outcome factor rather than using Factor III with an eigenvalue of .783 or forcing personality dysfunction into the second factor of a two-factor solution, where it had low communality (.468). The cumulative percentage of variance accounted for by the first two factors derived from all six variables was 65.3%. The final two factors were derived from a principal components analysis of the remaining five outcome variables,

Table 9. Principal Components Analysis by Age Group

VARIABLE	Communality					
	Age 5-10	Age 11-18				
Physical abuse	.69587	.68515				
Sexual abuse	.92488	.99554				
Psychological maltreatment	.78684	.79035				
Physical neglect	.69200	.66926				
Social/ cognitive neglect	.87039	.75484				
Family violence	.91942	.79662				
Eigenvalues/ Pct. of Var						
Factor I	2.98439 /49.7	2.89746 /48.3				
Factor II	.96432 /16.1	.98711 /16.5				
Factor III	.94070 /15.7	.80718 /13.5				
Cumulative Percent of Var	81.5	78.2				
Rotated Factor Matrix:						
Factors	I	II	III	I	II	III
Physical abuse	.506	.626	.219	.354	.746	.056
Sexual abuse	.066	.134	.950	.183	.089	.977
Psychological Maltx.	.738	.043	.490	.875	.146	.062
Physical neglect	.777	.297	-.014	.684	.426	.139
Social/ cognitive neg.	.925	.115	.041	.842	.106	.188
Family violence	.091	.952	.068	.060	.888	.070

accounting for 73.7% of the variance, having eigenvalues of 2.62970 (52.6% of variance) and 1.05738 (21.1% of variance), respectively. The Kaiser-Meyer-Olkin measure of sampling adequacy showed an acceptable level (.74021) overall, and measures of sampling adequacy for most individual variables were above the .60 level (language development, .778; visual-motor development, .804; academic development, .714; emotional/ social development, .742; and behaviour, marginal at .565). Communalities for the five variables were .72351, .63728, .78734, .66575, and .87321, respectively

Examination of the residuals between the observed correlations and the reproduced correlations indicated that the solution was not an ideal fit, with some moderate to large residuals present suggesting a possible third factor. However, the eigenvalue for the third factor in the analysis (.558) would have been insufficient to support its use. A Varimax rotation, which converged in three iterations, produced the following rotated factor matrix with orthogonal factors:

Developmental Outcome Vars.	Factor 1	Factor 2
Language	.84668	.08147
Visual-motor	.78247	.15817
Academic	.87889	.12200
Emotional/ social	.49013	.65232
Behaviour	-.01256	.93437

While language, visual-motor, academic, and behaviour showed simple structure, emotional / social development was a complex variable, making the factors not as clearly distinguished as one would hope. The scatterplots indicated evidence of correlation among factors based on the complex loadings of emotional/ social development on both factors. Examination of an oblique rotation of the factors indicated a correlation of .275 between them (an overlap of only 7.5% of variance), supporting the use of Varimax rotation despite some correlation between the factors. As with the maltreatment principal components, the need for orthogonal factors, with their relative simplicity and interpretability, in the subsequent LISREL analysis was a compelling criterion which overrode the more conceptually appealing oblique rotation.

Male-female differences. In order to understand how the underlying male-female differences affected the factor structure and reliability of the outcome factors, two-factor and three-factor principal components analyses were performed for the male and female

subgroups using all six outcome variables. For both genders, measures of sampling adequacy were acceptable, communalities for all variables were greater than .65, the solutions accounted for approximately 80% of the variance, and residuals were within acceptable limits, but the three-factor solution resulted in a third factor with an unacceptably low eigenvalue (males, .754; females, .796). However, factor structures of males and females differed considerably, with the males' factor structure most similar to that obtained for the full sample.

Variables	Males			Females		
	Factor I	II	III	I	II	III
Language	.842	.061	-.040	.817	.230	.064
Visual-motor	.803	.159	.096	.727	.352	-.002
Academic	.885	.149	.079	.867	.085	-.029
Emotional/social	.264	.807	.138	.812	-.089	.317
Behaviour	.035	.893	.120	.080	.150	.968
Personality Dysfunction	.061	.195	.977	.164	.948	.155

For males, language, visual-motor, and academic development formed the first factor, with an eigenvalue of 2.64, accounting for 43.9% of variance; emotional/social and behaviour formed the second factor, at an eigenvalue of 1.36 accounting for 22.7% of variance; and personality dysfunction alone formed the third factor, at an eigenvalue of .75 and accounting for 12.6% of variance. This third factor - as in the solution for the full sample - was not deemed reliable due to its low eigenvalue and the fact that it is made up of a single variable. Personality dysfunction would be treated best as a separate variable for the male subsample.

For females, Factor I included language, visual-motor, academic, and emotional/social development with an eigenvalue of 2.97 and accounting for 49.4% of variance;

Factor II included only personality dysfunction at an eigenvalue of 1.06 and accounting for 17.6% of variance; Factor III included only behaviour, with an eigenvalue of .79 and accounting for 13.3% of variance. The solution for the females' data is distinct from the full analysis and the analysis of males' data in that (a) emotional/ social development is unequivocally grouped with the cognitive outcome variables, with only minor loading with the behaviour factor, and (b) the relative importance of the personality dysfunction and behaviour variables are reversed, with each variable creating its own factor.

While the variables in the separate male and female analyses showed simple structure for all variables, the fact that the genders have different underlying patterns of relationships among variables resulted in a combined principal components analysis of outcome variables with less-reliable and -interpretable factors having complex structure and larger residuals.

Correlations with research variables. In the full sample and both genders, the cognitive development outcome factor (COGOUT) was significantly correlated with IQ, resilience, emotional/ social development, and global outcome (see Table 8). Stronger associations in the female data contributed to the full-sample correlations observed between COGOUT and physical abuse ($r = -.3724$, $p < .01$), PSYNEG ($r = -.4601$, $p < .001$) and particularly physical neglect and social/ cognitive neglect ($r = -.4090$, $p < .01$; $r = -.4808$, $p < .001$), global severity ($r = -.4645$, $p < .001$), and personality dysfunction ($r = .3035$, $p = .026$). For the male subsample only, there was a trend for COGOUT to be associated with age ($r = .2603$, $p = .055$), with older males having better cognitive outcome. For females only, poorer COGOUT was associated with higher levels of psychological maltreatment ($r = -.4020$, $p < .01$) and higher levels of parental dysfunction ($r = -.3454$, $p = .011$).

For the full sample and both genders, high scores on the social development outcome factor (SOCOUT) were correlated with higher stability in care, better global outcome, and lower levels of PSYNEG. For the full sample and females only, significant

correlations were observed between better SOCOUT and lower psychological maltreatment ($r = -.3377$) and better SOCOUT with higher social support ($r = -.4719$, $p < .001$). Better social outcomes for the full sample and for males were associated with higher IQ ($r = -.2539$, $p = .06$, n.s.), higher resilience ($r = -.3980$, $p < .01$), less personality dysfunction ($r = .3257$, $p < .025$), and less social/ cognitive neglect ($r = -.2789$, $p < .05$).

Cautions regarding data reduction methods. Although single-variable factors with low eigenvalues (sexual abuse, personality dysfunction) were dropped in favour of using original variables rather than an unreliable third factor, in both maltreatment and outcome analyses the second factors comprised only two variables each, a situation which is considered to be less reliable than desired. Factors were extracted from pooled data on two subsamples with known differences in data patterns and correlations; this is not an ideal method for arriving at factors, as it may obscure differences rather than illuminating them. Use of the combined sample tended to result in solutions that did not fit as well as separate analyses of each gender's data would have done, with larger residuals and complex structure of certain variables (physical abuse and neglect, emotional/social development) across factors.

Structural Equation Model Analysis

Given the need for a sample size of at least 100 for LISREL analysis in order to have a reasonable chance of converging with a proper, accurate and reliable solution (Loehlin, 1992), female and male data were kept combined with the knowledge that differences existed in the patterns of relationship among variables, as shown in bivariate correlations and in principal components analysis. Reduction of the number of variables was accomplished by principal components analysis of maltreatment and outcome variable sets and by removing certain variables which were highly redundant with major research variables or which were not as salient to the theoretical basis of the proposed structural model. Substance abuse was dropped due to its high correlation ($r = .504$, $p < .001$) with

the principal component combining physical abuse and family violence, and other dysfunction (parental) was found to be statistically redundant with psychological maltreatment and to have a high correlation ($r = .858, p < .001$) with the first principal component combining psychological maltreatment and all forms of neglect (PSYNEG). Preliminary stepwise multiple regression analyses controlled for age and gender indicated the salience of certain variables in predicting either global outcome or the three subtypes of outcome (cognitive, social, and personality). Across all exploratory analyses, variables appearing consistently in final prediction equations included IQ, resilience, stability, either social/ cognitive neglect or its factor PSYNEG, physical abuse and family violence (now combined as PHYSAGG), and global severity. Other variables appeared to be important only in prediction of a specific type of outcome (other dysfunction and sexual abuse with personality outcome, sex and social support with social outcome, age and physical neglect with global outcome). As expected based upon earlier correlation studies, regression equations were different for males and females; rather than splitting the sample, sex was kept as a variable in the structural equation analysis.

The major data analysis for this phase of the study was LISREL 7 (Joreskog & Sorbom, 1989), submodel 2, nonrecursive structural equation model analysis with Weighted Least Squares (in effect the simultaneous solution of a set of overlapping multiple regression equations approached in a stepwise manner by the researcher's decision to add or delete parameters to be tested) examining the relationships among the demographic covariates, risk, mediating, and outcome variables for the maltreated sample. Steps taken to access LISREL were described in the Method chapter. As noted earlier, weighted least squares analysis is required when dealing with ordinal variables, in order to be able to rely upon the standard errors and chi-square goodness of fit indicator produced by the program. The type of correlation matrix generated (POLYCHOR) is one which combines product-moment (continuous by continuous variables), polychoric (ordinal by ordinal), and

polyserial (continuous by ordinal) correlations, and an asymptotic covariance matrix of the elements of this correlation matrix was generated for use by the LISREL program. As discussed earlier, the POLYCHOR type matrix, in contrast to other matrices available in the program, has been shown to be the most robust, to have the smallest downward bias and smallest mean square error, to be the best estimator regardless of number of categories of the ordinal variable, to produce the best correlations closest to the true population rho, and to be a consistent estimator of rho across sample sizes. Although there is still some tendency for slight underestimates of correlations in all the correlation matrices generated by PRELIS, the measures of overall fit that LISREL computes [chi-square, adjusted goodness of fit index (AGFI), and root mean square residual (RMSR)] behave normally when the asymptotic covariance matrix and weighted least-squares method are used. Sample size for the LISREL analysis in this study was marginal, limiting reliability, so care was taken to use all options which would enhance the robustness of measures and subsequent interpretability. Analysis was conducted in two phases, (a) with a model using global maltreatment and global outcome measures, and (b) a model using the principal components and related variables for a more specific factorial study of three types of maltreatment and three aspects of development outcome.

Global Model of Maltreatment Effects

For the global model ($n=109$), there were four exogenous (x) variables--the two demographic covariates age and sex, the global maltreatment severity composite measure (an age-adjusted total of severity-X-duration scores on the six original maltreatment variables), and the additional risk variable of other parental dysfunction. Zero-order correlations and test statistics of these variables obtained from PRELIS, which are shown in Table 10, indicate that these variables are not independent, as would be expected in the theoretical model. Global severity is highly correlated with degree of parental dysfunction ($r = .493$, $p < .001$); age is positively correlated with parental dysfunction ($r = .552$,

$p < .001$), as children tend to be exposed to cumulative effects of this variable over the years unless access is revoked; age and sex are positively correlated ($r = .30$, $p < .001$), with females having a higher mean age in the sample; and sex and parental dysfunction are positively correlated ($r = .306$, $p < .001$), with females being exposed to higher levels of this risk variable.

The model contains five endogenous (y) - or mutually dependent - variables, including the four mediating variables of IQ, personal resilience, stability of placements, and social support, and the global outcome measure, which is an average of the Z-scores of the six original outcome measures. Correlations of endogenous variables with exogenous variables and with each other are shown in Table 10.

Five variables were treated as continuous data (IQ, GLOBOUT, AGE, OTHDYS, GLOBSEV), and four variables were identified as ordinal (STABIL, SOCSUPP, RESIL, SEX). PRELIS provides a test of goodness-of-fit of the model of the underlying bivariate normal distribution of all polychoric and polyserial correlations. Examination of this statistic indicated nonsignificant chi-squares (i.e., good fit) for all but two bivariate correlations, the polyserial correlation of social support and global outcome (chi-square(7) = 16.06, $p = .025$) and the polychoric correlation of sex and stability (chi-square(3) = 8.216, $p = .042$). The fit for these two pairs was marginal. Bivariate summary statistics for each pair of variables suggested that (a) better global outcome means were found both at high levels of social support (score 1 or 2) and at the lowest level of support (score 5)--perhaps among children who function well enough that they are deemed to need fewer supports in the community; and (b) that a disproportionate number of females (27 or 50%) were at the highest level of stability (score 1) with only 3 (.05%) at level 2, while males scores were distributed more evenly between levels 1 and 2 (16 or 29%, and 13 or 23.6%). Gender distribution at lower score levels were comparable.

Table 10. Zero-order Correlations of Global LISREL Variables

Variables	Correlation	Test of Zero Correlation in Bivariate Norm. Distr.	
		Chi-square	p
SOCSUPP vs STABIL	.239 (PC)	6.277	.012*
STABIL vs IQ	-.005 (PS)	.003	.959
SOCSUPP vs IQ	.087 (PS)	.811	.368
RESIL vs STABIL	.088 (PC)	.819	.366
RESIL vs SOCSUPP	.294 (PC)	9.723	.002**
RESIL vs IQ	.536 (PS)	37.955	.000***
STABIL vs GLOBOUT	-.208 (PS)	4.724	.030*
SOCSUPP vs GLOBOUT	-.177 (PS)	3.379	.066
GLOBOUT vs IQ	-.739 (PE)	95.224	.000***
RESIL vs GLOBOUT	-.517 (PS)	34.720	.000***
STABIL vs AGE	.202 (PS)	4.454	.035*
SOCSUPP vs AGE	.182 (PS)	3.595	.058
AGE vs IQ	.196 (PE)	4.178	.041*
RESIL vs AGE	.150 (PS)	2.410	.121
AGE vs GLOBOUT	-.084 (PE)	.751	.386
SEX vs STABIL	-.170 (PC)	3.136	.077
SEX vs SOCSUPP	-.114 (PC)	1.390	.238
SEX vs IQ	.153 (PS)	2.537	.111
SEX vs RESIL	-.166 (PC)	2.973	.085
SEX vs GLOBOUT	-.042 (PS)	.191	.662
SEX vs AGE	.300 (PS)	10.171	.000***
STABIL vs OTHDYS	.246 (PS)	6.686	.010**
SOCSUPP vs OTHDYS	.061 (PS)	.396	.529
OTHDYS vs IQ	.223 (PE)	5.456	.019*
RESIL vs OTHDYS	.021 (PS)	.048	.827
OTHDYS vs GLOBOUT	-.242 (PE)	6.450	.011**
OTHDYS vs AGE	.552 (PE)	40.922	.000***
SEX vs OTHDYS	.306 (PS)	10.597	.000***
STABIL vs GLOBSEV	-.026 (PS)	.073	.787
SOCSUPP vs GLOBSEV	.063 (PS)	.426	.514
GLOBSEV vs IQ	.299 (PE)	10.093	.000***
RESIL vs GLOBSEV	.023 (PS)	.054	.815
GLOBSEV vs GLOBOUT	-.368 (PE)	15.791	.000***
GLOBSEV vs AGE	-.060 (PE)	.379	.538
SEX vs GLOBSEV	.014 (PS)	.021	.884
GLOBSEV vs OTHDYS	.493 (PE)	30.848	.000***

(PE=PEARSON PRODUCT MOMENT, PC=POLYCHORIC, PS=POLYSERIAL)

Two-tailed significance: p < .05*. p < .01**. p < .001***.

Based upon theoretical considerations and the initial consideration of correlations and earlier multiple regression analyses, a model was prepared for LISREL analysis by specifying certain free parameters for estimation while keeping others fixed (not testing for effects). Exploratory efforts were made prior to arrival at the final, most parsimonious model in which 21 of the 50 possible parameters were estimated. One can obtain a perfectly fitted model with minimal residuals by freeing all parameters, but the model obtained in such a way would have no theoretical utility and little chance of individual paths being significant. Therefore, decisions to fix or free parameters were theoretically driven; no automatic model-fitting options were utilized. The entry order of y variables was modified during the process so that fewer "upstream" or reversed-direction paths were required.

In the Beta matrix (y by y relationships) which was specified as "full" for the nonrecursive model in order to allow for reversed-direction relationships, seven parameters were freed for estimation. Figure 2 illustrates the proposed model. The reversed paths included the effect of social support on resilience (hypothesized to be positive), and the effect of global developmental outcome on stability (with the hypothesis that poorer functioning children were more prone to placement breakdowns). Parameters to be estimated with paths following the order of entry of variables included: the effect of IQ on resilience; the effect of IQ on stability; the effect of IQ on global outcome; the effect of resilience on global outcome; and the effect of stability on social support.

In the Gamma matrix (effects of x on y), nine parameters were estimated. The effects of global maltreatment severity on all y variables (IQ, resilience, stability, social support, and global outcome) accounted for five parameters; additional parameters included the effect of age on IQ (hypothesizing declines with age), the effect of gender on resilience and on stability, and the effect of parental dysfunction on stability (hypothesizing that greater parental dysfunction would lead to greater instability for the child).

Figure 2. Proposed theoretical model (global maltreatment & outcome).

The remaining five parameters comprise the diagonal of the Psi matrix, which represents the covariances among the (zeta) error terms influencing the y variables. The value of psi terms indicates a combination of actual error of the term as well as variance accounted for by some variable outside the model. The squared multiple correlations of the psi terms indicate the proportion of variance accounted for by each y variable in the model.

Certain parameters were left free in the model even if significant direct effects were not expected, in order to test for indirect effects and to allow looped pathways of feedback effects among variables. In addition, the presence of certain pathways in this model function in the manner of suppressor variables in multiple regression in that they enhance the importance of other relationships by suppressing irrelevant variance in the model. Comparison of the standardized regression coefficients and the bivariate correlation matrix indicate that the effect of IQ on stability, parental dysfunction on stability, and global severity on resilience enhance the model in this way.

Major results. Examination of all indicators of goodness of fit of the structural model showed a well-fitted yet parsimonious model. The chi-square test of the discrepancy between the observed covariance matrix and the covariance matrix implied by the model showed little difference, with chi-square (14) = 4.50, $p = .992$, so that the model cannot be rejected. The goodness-of-fit index (ratio of squared discrepancies to observed variances) was at .996 (1.00 is perfect fit), and the adjusted goodness-of-fit index (adjusting the GFI by the ratio of the degrees of freedom of the restricted to the null matrix) was at .987. The small change between the two figures indicated a parsimonious fit. The root-mean-square residual (square root of the mean of the squared discrepancies between the observed and implied covariance matrices) was at .036. Examination of standardized residuals for the model supported the inferential tests and goodness-of-fit indicators, with the smallest standardized residual at -1.5 and the largest at 1.295, well within the acceptable range of plus-or-minus 2.0. Largest absolute residuals were between resilience and global outcome (-1.5) and between age and social support (1.295), but neither was at a problematic level. A Q-plot of standardized residuals against normal quantiles indicates a slope well above the 45 degree line (see Figure 3), suggesting residuals smaller than would be predicted by a normal curve.

Finally, the model showed adequate stability in that the $B \cdot B'$ stability index is below 1.00, at .906, considered to be a sufficient condition for satisfying the criterion that all eigenvalues of Beta fall within a "unit circle," permitting the inversion of matrices during computations without creating "explosive" feedback systems. The condition that eigenvalues are less than one also satisfies Fisher's condition for using simultaneous equation systems as approximations of nonsimultaneous systems with time lags that approach zero, allowing the use of simultaneous equations to model causal forces that are not instantaneous (Hayduk, 1987).

Figure 3. Q-Plot of Standardized Residuals: Global Model

The total coefficient of determination for structural equations in the model indicated that 43.3% of variance is accounted for, with above 30% generally being deemed an acceptable level for social science research. Squared multiple correlations for each endogenous variable were: IQ, .129, $p < .05$; resilience, .415, $p < .01$; stability, .291, $p < .01$; social support, .073, n.s.; and global outcome, .595, $p < .01$. These figures indicate the proportion of variance in each variable explained by the whole model. Subtracting each squared multiple correlation from 1.00 provides the proportion of error variance in the prediction of each endogenous variable: IQ, .871; resilience, .585; stability, .709; social support, .927, and global outcome, .405. While some of this amount is true error of measurement, much of it may be due to the parsimony of the model in fixing paths and in removing other variables from consideration in the model or collapsing numerous variables into global measures. [For example, accounting for genetic endowment could account for a

large amount of the variance in IQ, and including the variable of fiscal constraints of child protective services might account for a high proportion of the variance in social support. Yet inclusion of all additional explanatory variables would produce an unwieldy model which exceeded the bounds imposed by sample size.]

Direct, Indirect, and Total Effect coefficients and their T values (equivalent to the number of sampling distribution standard deviations the estimate is away from zero) are shown in Table 11. The hypothesis that the population estimate is zero can be rejected for estimated coefficients that are at least two standard deviations away from zero in either direction, using a normal probability table to obtain corresponding critical values with alpha at least .05. Note that effect coefficients may be large enough to be substantively important, yet fail to reach significance if standard errors are too large. Such is the case for Beta coefficients of IQ-stability, resilience-global outcome, global outcome-stability and less so for Gamma coefficients of sex-stability, other dysfunction-stability, and global severity-stability. Measurement error in the stability variable may contribute to this problem. Hayduk (1987) suggests withholding judgement about such coefficients until further data are available rather than concluding definitively that the relationships are not significant. Most direct effects, as shown in Table 11, are obvious, other than needing clarification of the meaning of the direction of the effect, but interpretation of indirect and total effects is more complex and may be aided by referring to the path diagram shown in Figure 4. The diagram shows the variables linked by arrows indicating direction of effect tested in the model; double-headed arrows are correlations which are not tested parameters. Standardized Gamma coefficients and their significance levels are identified for paths between x and y variables, with zero-order correlations in parentheses. Standardized Beta coefficients are labelled in the same manner among y variables. The standardized structural - or effect - coefficients are interpreted in LISREL as the magnitude of change in x_0 that would be predicted to accompany an unit change in x_1 , with other variables left

Table 11. Effect Coefficients and T Values of Direct, Total, and Indirect Effects in Global LISREL Model

Effect	Direct		Indirect		Total	
	Coeff.	T	Coeff.	T	Coeff.	T
Gamma (x → y):						
Age → IQ	.208	3.198***	0		.208	3.2***
Age → Resil			.122	2.65**	.122	2.65**
Age → Stabil			-.008	-	-.008	-
Age → Socsupp			-.002	-	-.002	-
Age → Globout			-.145	-3.02**	-.145	-3.02**
Sex → Resil	-.167	-1.395	-.021	-	-.188	-1.58
Sex → Stabil	-.309	-2.011*	-.013	-	-.320	-2.12*
Sex → Socsupp			-.079	-1.58	-.079	-1.58
Sex → Globout			.030	-	.030	-
Othdys → Resil			.033	-	.033	-
Othdys → Stabil	.499	3.134***	.002	-	.498	3.13***
Othdys → Socsupp			.123	1.86	.123	1.86
Othdys → Globout			-.005	-	-.005	-
Globsev → IQ	.305	3.767***	0	-	.305	3.77***
Globsev → Resil	-.180	-1.407	.181	2.38*	.001	-
Globsev → Stabil	-.341	-2.061*	.062	-	-.277	-1.99*
Globsev → Socsupp	.077	.844	-.068	-1.48	.009	-
Globsev → Globout	-.191	-1.791	-.184	-2.49**	-.377	-4.83***
Beta (y → y):						
IQ → Resil	.588	3.618***	-.003	-	.584	3.60***
IQ → Stabil	-.353	-1.065	.312	1.18	-.038	-
IQ → Socsupp			-.009	-	-.009	-
IQ → Globout	-.602	-3.603***	-.092	-	-.696	-6.27***
Resil → Stabil			.071	-	.071	-
Resil → Socsupp			.018	-	.018	-
Resil → Globout	-.157	-.882	-.001	-	-.159	-.88
Stabil → Resil			.067	1.72	.067	1.72
Stabil → Socsupp	.244	2.208*	.001	-	.248	2.21*
Stabil → Globout			-.011	-	-.011	-
Socsupp → Resil	.270	2.415**	.001	-	.270	2.41**
Socsupp → Stabil			.019	-	.019	-
Socsupp → Globout			-.043	-	-.043	-
Globout → Resil			-.030	-	-.030	-
Globout → Stabil	-.453	-1.256	-.002	-	-.450	-1.25
Globout → Socsupp			-.111	-1.14	-.111	-1.14

Note: Resil, Stabil, Socsupp, Globout have .005 indirect effects on themselves

Two-tailed significance: $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$

untouched at their original values (rather than "held constant"). This implies that no unwanted constraints are imposed by removing pathways of effects, which would render the model inoperative. In structural equation modeling, when a value changes in one variable, there are repercussions throughout the system which are important in understanding the relationship among all variables. Direct effects are shown by the arrows connecting variables; indirect effects are sums of the products of the coefficients of all routings between pairs of variables which connect the two variables in question. Feedback loops, which permit multiple passes through a variable, may either buffer a DV against changes introduced from other variables or may magnify and enhance the responses of the variables they touch. Total effect coefficients may be less than either direct or indirect effects in cases where suppression occurs due to contradictory DEs and IEs.

Major findings. The major implications of the global model can be summarized in the following points (to avoid confusion, the nature of effects sometimes will be referred to as detrimental or beneficial, rather than negative and positive, as signs of coefficients cannot always be interpreted intuitively):

1. There are strong direct detrimental effects of global maltreatment severity on intellectual development as measured by IQ tests, and indirect detrimental effects of global severity on resilience, mediated by (lack of) social support. Even with the global severity measure age-adjusted, there are additional direct effects of age on IQ and indirect effects of age on resilience, mediated by IQ. Both IQ and resilience of maltreated children showed decline with increasing age, and global outcome was thus compromised at significant levels for older children through these indirect effects. While part of the effect on IQ may be an artifact of test construction in which older children reach a ceiling on certain subtests, it is more likely with this population that the effects reflect the cumulative negative impact of maltreatment, instability, and lack of resources and opportunities to enhance development. Total magnitude of maltreatment over time functions to destroy the native potential and

Figure 4. Path diagram of structural equation model for global outcome of maltreatment. Values above paths are structural coefficients with significance level $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$; values in parentheses are zero-order correlations. Unexplained variance shown for y variables.

resilience with which many children may be born. Children who are in maltreating environments longer before rescue have these vital personal resources drained, with highly detrimental effects on developmental outcome.

2. Global severity has both direct and indirect detrimental effects on global developmental outcome, with total effects highly significant. Indirect effects occur through various paths, including through lowered IQ to outcome, through lowered resilience to outcome, through IQ to resilience to outcome, through IQ to stability to outcome, and through stability to social support to resilience to outcome.

3. More severe global maltreatment directly enhances stability in care (by reducing the success of parents' legal attempts to reclaim the child), although some indirect effects work in the opposite direction, thus weakening the total effect. For example, maltreatment impairs IQ and thus lowers global outcome, which has a feedback effect such that the child is more difficult to care for and placement breakdowns are more likely to occur.

4. A higher rate of parental dysfunction - ranging from immaturity and poor parenting skills up to features such as severe mental illness, character disorder, criminality, or suicide - is linked directly with the child experiencing poorer stability in care, which then affects the amount of social support the child can receive. The high correlation of parental dysfunction with global severity, although not measured in the causal system, indicates that children of dysfunctional parents are at high risk both from direct effects of maltreatment and indirect effects on their stability and support in subsequent caregiving environments.

5. Female gender had significant direct effects on better stability of placements and enhanced resilience, and showed mild indirect effects on the amount of social support obtained (mediated by stability). Greater access to these mediating variables helped to offset the longer duration of maltreatment and higher rates of parental dysfunction associated with the female subsample so that no gender effects were seen on global outcome.

6. IQ had strong positive effects on resilience and on global outcome as expected, but contradictory effects on stability. The direct effects on stability were negative (less intelligent children had more stable placements), while indirect effects mediated through poorer global outcome (with its concomitant social, behavioural, and emotional problems) led to poorer stability.

7. Strong direct effects were found between stability and social support, and receiving more social support significantly enhanced resilience.

8. A negative feedback loop occurred, with poor global outcome leading to lower stability, resulting in lower social support, lower resilience, and thus predicting increasingly lower global outcome over time unless part of the cycle can be interrupted. This feedback loop helps to explicate the findings in item 1 that intellectual functioning and resilience deteriorate with age in the maltreated population.

Factorial Model

A factorial LISREL model was studied to ascertain the specific effects of general types of maltreatment and to analyze their impact on different aspects of developmental outcome. For this model ($n=109$), there were four exogenous (x) variables--the demographic covariate sex, the two maltreatment principal components PSYNEG (psychological maltreatment, physical neglect, and social/ cognitive neglect) and PHYSAGG (physical abuse and family violence), and the maltreatment variable of sexual abuse. Zero-order correlations and test statistics of these variables obtained from PRELIS, which are shown in Table 12, indicate that these variables are not independent, as would be expected in the theoretical model. PSYNEG and sexual abuse are highly correlated ($r = .332$, $p < .001$); and gender is correlated with both PSYNEG ($r = .236$, $p < .025$) and sexual abuse ($r = .394$, $p < .001$), with females having higher severity/duration of both maltreatment measures.

The model contains seven endogenous (y) variables, including the four mediating variables of IQ, personal resilience, stability of placements, and social support, and the developmental outcome measures, including the two orthogonal principal components of SOCOUT (emotional/social development and behaviour) and COGOUT (language development, visual-motor development, and academic skill development) and the personality functioning outcome variable derived from ratings of projective drawings. Correlations of endogenous variables with exogenous variables and with each other are shown in Table 12.

Table 12 Zero-order Correlations of Factorial LISREL Variables

Variables	Test of Zero Correlation in Bivariate Norm. Distr.		
	Correlation	Chi-square	p
SOCSUPP vs STABIL	.239 (PC)	6.277	.012*
SOCSUPP vs RESIL	.294 (PC)	9.723	.002**
STABIL vs IQ	-.005 (PS)	.003	.959
SOCSUPP vs IQ	.087 (PS)	.811	.368
RESIL vs STABIL	.088 (PC)	9.723	.002**
RESIL vs IQ	.536 (PS)	37.955	.000***
SOCOUT vs IQ	-.207 (PE)	4.659	.031*
RESIL vs SOCOUT	-.326 (PS)	12.130	.000***
STABIL vs SOCOUT	-.468 (PS)	27.341	.000***
SOCSUPP vs SOCOUT	-.252 (PS)	7.048	.008**
PERSOUT vs IQ	-.346 (PE)	13.769	.000***
RESIL vs PERSOUT	-.194 (PS)	4.104	.043*
STABIL vs PERSOUT	-.144 (PS)	2.238	.135
SOCSUPP vs PERSOUT	-.077 (PS)	.639	.424
PERSOUT vs SOCOUT	.280 (PE)	8.790	.003**
COGOUT vs IQ	-.737 (PE)	94.295	.000***
RESIL vs COGOUT	-.424 (PS)	21.708	.000***
STABIL vs COGOUT	.076 (PS)	.617	.432
SOCSUPP vs COGOUT	-.042 (PS)	.191	.662
COGOUT vs SOCOUT	.000 (PE)	.000	1.000
COGOUT vs PERSOUT*	.201 (PE)	4.412	.036*
SEX vs STABIL	-.170 (PC)	3.136	.077
SEX vs SOCSUPP	-.114 (PC)	1.390	.238
SEX vs IQ	.153 (PS)	2.537	.111
SEX vs RESIL	-.166 (PC)	2.973	.085
SEX vs SOCOUT	.154 (PS)	2.569	.109
SEX vs PERSOUT	-.004 (PS)	.001	.969
SEX vs COGOUT	-.148 (PS)	2.359	.125
PSYNEG vs IQ	.361 (PE)	15.126	.000***
RESIL vs PSYNEG	.150 (PS)	2.436	.119
STABIL vs PSYNEG	.266 (PS)	7.889	.005**
SOCSUPP vs PSYNEG	.198 (PS)	4.280	.039*
PSYNEG vs SOCOUT	-.269 (PE)	8.055	.005**
PSYNEG vs PERSOUT	-.219 (PE)	5.264	.022*
PSYNEG vs COGOUT	-.243 (PE)	6.522	.011**
SEX vs PSYNEG	.236 (PS)	6.135	.013*

Table 12 continued

Variables	Test of Zero Correlation in Bivariate Norm. Distr.		
	Correlation	Chi-square	p
PHYSAGG vs IQ	.153 (PE)	2.536	.111
RESIL vs PHYSAGG	-.062 (PS)	.404	.525
STABIL vs PHYSAGG	-.238 (PS)	6.216	.013*
SOCSUPP vs PHYSAGG	.031 (PS)	.104	.747
PHYSAGG vs SOCOUT	.121 (PE)	1.568	.210
PHYSAGG vs PERSOUT	-.129 (PE)	1.796	.180
PHYSAGG vs COGOUT	-.167 (PE)	3.002	.083
SEX vs PHYSAGG	.037 (PS)	.147	.702
PHYSAGG vs PSYNEG ^a	.000 (PE)	.00	1.000
SEXAB vs IQ	.059 (PS)	.372	.542
SEXAB vs RESIL	-.070 (PC)	.527	.468
SEXAB vs STABIL	.097 (PC)	1.008	.315
SEXAB vs SOCSUPP	-.011 (PC)	.012	.913
SEXAB vs SOCOUT	-.005 (PS)	.002	.962
SEXAB vs PERSOUT	-.242 (PS)	6.470	.011**
SEXAB vs COGOUT	-.076 (PS)	.614	.433
SEXAB vs SEX	.394 (PC)	18.442	.000***
SEXAB vs PSYNEG	.332 (PS)	12.631	.000***
SEXAB vs PHYSAGG	.153 (PS)	2.517	.113

^a: Formed as orthogonal factors
 (PE=PEARSON PRODUCT MOMENT, PC=POLYCHORIC, PS=POLYSERIAL)
 Two-tailed significance level $p < .05^*$. $p \leq .01^{**}$. $p < .001^{***}$.

Six variables were treated as continuous data (IQ, SOCOUT, PERSOUT, COGOUT, PSYNEG, and PHYSAGG), and five variables were identified as ordinal (STABIL, SOCSUPP, RESIL, SEX, and SEXAB). Examination of the chi-square statistic for goodness-of-fit of the underlying bivariate normal distribution involving ordinal variables indicated nonsignificant chi-squares (i.e., good fit) for all but three bivariate correlations, the polyserial correlation of stability and PSYNEG (chi-square(7) = 16.06, $p = .044$), the polyserial correlation of sex and PSYNEG (chi-square (1) = 4.52, $p =$

.033), and the polychoric correlation of sex and stability ($\chi^2(3) = 8.216, p = .042$). The fit for these three pairs was marginal. Bivariate summary statistics for each pair of variables suggested that (a) stability and PSYNEG did not have a clear linear relationship (b) the bivariate distribution of sex and PSYNEG was affected by differences in means and standard deviations between males and females, and (c) a disproportionate number of females (27 or 50%) were at the highest level of stability (score 1) with only 3 (.06%) at level 2, while males scores were distributed more evenly between levels 1 and 2 (16 or 29%, and 13 or 23.6%). Gender distribution at lower score levels were comparable.

The final, most parsimonious factorial model involved estimation of 28 of a possible 84 parameters. Decisions to fix or free parameters were theoretically driven; no automatic model-fitting options were utilized. The entry order of y variables was modified during the process so that fewer "upstream" or reversed-direction paths were required.

In the Beta matrix (y by y relationships) which was specified as "full" for the nonrecursive model in order to allow for reversed-direction relationships, 13 parameters were freed for estimation. The reversed paths included the effect of social support on resilience (hypothesized to be positive), the effect of stability on resilience (positive), and the effect of personality functioning (Persout) on stability (with the hypothesis that poorer functioning children were more prone to placement breakdowns). Parameters to be estimated with paths following the order of entry of variables included: the (beneficial) effects of IQ on resilience, stability, personality outcome, and cognitive outcome; the (beneficial) effects of resilience on social support and on social outcome; the beneficial effects of stability on social support and social outcome; the effect of social support on social outcome; and the effect of social outcome on personality outcome. Measured effects are mapped in Figure 5.

In the Gamma matrix (effects of x on y), eight parameters were estimated. The effects of gender on resilience and on stability (females expected to be more resilient and to

Figure 5. Proposed theoretical model for specific developmental effects of 3 maltreatment factors, with mediating variables.

have more stability); the (detrimental) effects of PSYNEG on IQ and on stability; the effects of PHYSAGG on IQ (detrimental), resilience (mixed effects), and stability (positive); and the detrimental effect of sexual abuse on personality outcome.

The remaining seven parameters comprise the diagonal of the Psi matrix, which represents the covariances among the (zeta) error terms influencing the seven y variables.

Major results. Examination of all indicators of goodness of fit of the structural model showed a well-fitted yet parsimonious model. The chi-square test of the discrepancy between the observed covariance matrix and the covariance matrix implied by the model showed little difference, with chi-square (28) = 8.40, $p = 1.00$, so that the model cannot be rejected. The goodness-of-fit index (ratio of squared discrepancies to observed variances) was at .993, and the adjusted goodness-of-fit index .983. The small change between the two figures indicated a parsimonious fit. The root-mean-square residual (square root of the

mean of the squared discrepancies between the observed and implied covariance matrices) was at .038. Examination of standardized residuals for the model supported the inferential tests and goodness-of-fit indicators, with the smallest standardized residual at -1.546 and the largest at 1.411, well within the acceptable range of plus-or-minus 2.0. Largest absolute residuals were between stability and PSYNEG (-1.546) and between stability and SOCOUT (1.411), but neither is at a problematic level. A Q-plot of standardized residuals against normal quantiles indicates a slope well above the 45 degree line (see Figure 6), suggesting residuals smaller than would be predicted by a normal curve. Finally, the model showed adequate stability in that the $B*B'$ stability index is below 1.00, at .976.

Figure 6. Q-Plot of Standardized Residuals: Factorial Model

The total coefficient of determination for structural equations in the model indicated that 48.6% of variance is accounted for, with above 30% generally being deemed an acceptable level for social science research. Squared multiple correlations for each endogenous variable were: IQ, .154, $p < .05$; resilience, .413, $p < .01$; stability, .267, $p < .01$; social support, .136, $p < .05$; social outcome, .373, $p < .01$; personality outcome, .195, $p < .05$; and cognitive outcome, .535, $p < .01$. These figures indicate the proportion of variance in each variable explained by the whole model. Subtracting each squared multiple correlation from 1.00 provides the proportion of error variance in the prediction of each endogenous variable: IQ, .846; resilience, .587; stability, .733; social support, .864; SOCOUT, .627; PERSOUT, .805; and COGOUT, .465. These figures represent a combination of error term and unexplained variance in the model for these variables.

Direct, Indirect, and Total Effect coefficients and their T values (equivalent to the number of sampling distribution standard deviations the estimate is away from zero) are shown in Table 13. The hypothesis that the population estimate is zero can be rejected for estimated coefficients that are at least two standard deviations away from zero in either direction, using a normal probability table to obtain corresponding critical values with alpha at least .05.

Interpretation of direct, indirect, and total effects may be aided by referring to the path diagram shown in Figure 7. The diagram shows the variables linked by arrows indicating direction of effect tested in the model; double-headed arrows are correlations which are not tested parameters. Standardized Gamma coefficients and their significance levels are identified for paths between x and y variables, with zero-order correlations in parentheses. Standardized Beta coefficients are labelled in the same manner among y variables. The standardized structural--or effect--coefficients are interpreted in LISREL as the magnitude of change in x_0 that would be predicted to accompany an unit change in x_1 , with other variables left untouched at their original values (rather than "held constant").

Table 13. Effect Coefficients and T Values of Direct, Total, and Indirect Effects in Factorial LISREL Model

Effect	Direct		Indirect		Total	
	Coeff.	T	Coeff.	T	Coeff.	T
Gamma (x → y):						
Sex → Resil	-.233	-2.081*	-.014	-	-.247	-2.17*
Sex → Stabil	-.261	-2.118*	-.004	-	-.260	-2.11*
Sex → Socsupp			-.111	-2.09*	-.111	-2.09*
Sex → SOCOUT			.206	2.86**	.206	2.86**
Sex → Persout			.038	1.31	.038	1.31
PSYNEG → IQ	.346	5.417***	-	-	.348	5.44***
PSYNEG → Resil			.221	3.45***	.221	3.45***
PSYNEG → Stabil	.454	3.746***	-.050	-	.397	3.74***
PSYNEG → Socsupp			.141	2.56**	.141	2.56**
PSYNEG → SOCOUT			-.266	4.09***	-.266	-4.09***
PSYNEG → Persout			-.142	-3.55***	-.142	-3.55***
PSYNEG → COGOUT			-.253	-4.96***	-.253	-4.96***
PHYSAGG → IQ	.185	2.459*			.185	2.46*
PHYSAGG → Resil	-.138	-1.173	.100	1.75	-.038	-
PHYSAGG → Stabil	-.165	-1.621	-.031	-	-.194	-2.02*
PHYSAGG → Socsupp			-.055	-	-.055	-1.62
PHYSAGG → SOCOUT			.108	2.00*	.108	2.00*
PHYSAGG → Persout			-.030	-	-.030	-
PHYSAGG → COGOUT			-.135	-2.41*	-.135	-2.41*
Sexab → Resil			.001	-	.001	-
Sexab → Stabil			.020	-	.020	-
Sexab → Socsupp			.005	-	.005	-
Sexab → SOCOUT			-.010	-	-.010	-
Sexab → Persout	-.210	-2.067*	-.002	-	-.211	-2.07*
Beta (y → y):						
IQ → Resil	.585	4.912***	.005	-	.585	4.79***
IQ → Stabil	-.185	-1.484	.027	-	-.155	-1.50
IQ → Socsupp			.072	-	.072	-
IQ → SOCOUT			-.102	-1.42	-.102	-1.42
IQ → Persout	-.270	-3.390***	-.019	-	-.286	-3.86***
IQ → COGOUT	-.731	-8.353***			-.727	-8.36***
Resil → Stabil			.006	-	.006	-
Resil → Socsupp	.188	1.242	.005	-	.194	1.28
Resil → SOCOUT	-.297	-2.720**	-.017	-	-.316	-3.01***

Table 13 continued

Effect	Direct		Indirect		Total	
	Coeff.	T	Coeff.	T	Coeff.	T
Resil → Persout			-.058	-1.32	-.058	-1.32
Stabil → Resil	.013	.100	.025	-	.039	-
Stabil → Socsupp	.246	2.266*	.010	-	.259	2.35*
Stabil → SOCOUT	-.479	-3.508***	-.028	-	-.515	-3.90***
Stabil → Persout			-.095	-1.30	-.095	-1.30
Socsupp → Resil	.098	.471	.002	-	.099	-
Socsupp → Stabil			.001	-	.001	-
Socsupp → SOCOUT	-.044	-.307	-.031	-	-.076	-
Socsupp → Persout			-.014	-	-.014	-
SOCOUT → Resil			-.001	-	-.001	-
SOCOUT → Stabil			-.018	-	-.018	-
SOCOUT → Socsupp			-.005	-	-.005	-
SOCOUT → Persout	.184	1.354	.002	-	.186	1.37
Persout → Resil			-.004	-	-.004	-
Persout → Stabil	-.096	-.536	-.001	-	-.096	-
Persout → Socsupp			-.025	-	-.025	-
Persout → SOCOUT			.049	-	.049	-

Note: Resil, Stabil, Socsupp, Socout, & Persout have indirect effects on themselves (.019, .009, .019, .009, .009)

Two-tailed significance: $p < .05^*$. $p < .01^{**}$. $p < .001^{***}$

Major findings. The major implications of the factorial model can be summarized in the following points:

1. The PSYNEG factor (psychological maltreatment, physical neglect, and social/cognitive neglect) showed highly significant direct and indirect detrimental effects on all dependent variables in the model, and its strong association with sexual abuse and with gender indicates that it also exacerbates the effects of that form of abuse, especially for females. Strong direct effects of PSYNEG were seen on lower IQ and reduced stability in care. Strong indirect effects were seen on resilience (mediated by both IQ and stability); on

Figure 7. Path diagram of structural equation model for 3 maltreatment factors, mediating variables, and 3 outcome factors. Values above paths are structural coefficients with significance level $p < .05^*$, $p < .01^{}$, $p < .001^{***}$; values in parentheses are zero-order correlations. Unexplained variance shown for Y variables.**

social support (mediated by stability, and by several paths involving IQ, resilience, personality functioning, and stability); on social outcome (IQ to resilience to SOCOUT, stability to resilience to SOCOUT, and several more complex paths); on personality outcome (via IQ to PERSOUT, IQ to resilience to SOCOUT to PERSOUT, stability to social support to resilience to SOCOUT to PERSOUT); and on cognitive outcome (via IQ).

In comparison with the global LISREL model, the effects of PSYNEG are much more significant than the combined effects of global severity.

2. The PHYSAGG factor (physical abuse and family violence) showed only one significant direct effect, having a detrimental effect on IQ, leading to indirect negative

effects on resilience and on cognitive outcome, mediated by IQ. Significant indirect effects were seen on social outcome, with a counterintuitive finding that higher PHYSAGG leads to somewhat better social outcome. Examination of bivariate correlations indicated that this relationship is attributable mainly to the family violence variable being associated with better behaviour in males (at least while they are still children). The mediators between PHYSAGG and SOCOUT in this factorial model are resilience and stability: children (especially males) living in a violent family milieu have elevated scores on resilience, with coping skills such as vigilance and self-sufficiency developed in order to survive and avoid harm and perhaps even to protect mother and siblings; and children exposed to known physical abuse and violence are usually removed quickly from the abusive milieu and are kept in care long term rather than moving back and forth between home and foster homes. The presence of enhanced mediating factors (due to unequivocal response of the child protection system) helps to buffer children who have experienced violent forms of abuse, so that their developmental outcome is not as highly compromised as children whose abuse consists mainly of emotional maltreatment and neglect.

3. Sexual abuse showed significant direct effects only on personality dysfunction, with bivariate correlations indicating that this pattern is most pronounced for males who are sexually abused. In this model, other pathways could not be tested reliably because of strong relationships among the x variables of sex, PSYNEG, and sexual abuse. Although correlation pathways are outside the LISREL model, it can be seen that sexually abused children (especially females) are also exposed to high levels of the PSYNEG factor and its effects on all areas of development. For males (as reported in the analysis of differences in principal components), sexual abuse occurs frequently in the context of physical abuse. To consolidate the findings of the structural model with the preliminary analyses, it can be said that sexual abuse, directly and through its association with other forms of abuse, has (a)

global detrimental effects on females' development and functioning, and (b) specific detrimental effects on males' emotional and personality functioning.

4. There were significant direct and indirect effects of gender. Females were more resilient and remained in more stable placements, which ensured that they received more social support and showed enhanced social outcome.

5. IQ had highly significant and beneficial direct and total effects on resilience, personality outcome, and cognitive outcome. A trend toward enhanced social outcome was also observed. As in the global model, there were contradictory direct and indirect effects of IQ on stability. For the direct effect, having lower IQ led to greater placement stability - understandable in the sense that very delayed children can be kept in care on special needs placements and are recognized by the system as needing to be moved as little as possible. However, mild counteracting indirect effects are seen when low IQ is mediated by emotional/personality problems so that placements break down when caregivers are unable to handle the child.

6. Resilience has highly significant direct and total effects on social outcome. Two feedback loops occur in relation to resilience, indicating that resilience is not a stable trait but rather one which is heavily influenced by events both before protective custody and after. For example, (a) children with low resilience show worse social outcome, which is associated with worse personality functioning; these poorer developmental skills lead to placement breakdowns (greater instability and less social support), which thus lowers resilience further; or (b) children with better resilience are able to obtain more social support, which subsequently enhances their resilience.

7. Stability had important direct beneficial effects on social support and on social outcome, and mild ameliorative effects on personality outcome.

8. IQ, resilience, stability, and social support work together in a complex dynamic interaction to predict social outcome and personality outcome. Even when individual paths have nonsignificant effects, combined effects enhance the ability to predict outcome.

Analysis of Best- and Worst-Outcome Groups

Two groups differentiated by highest and lowest outcome in the sample (criterion $\pm .75$ standard deviation from the standardized global outcome mean) were selected for further study. Application of the criterion resulted in a sample of 54 cases (49.5% of the full sample), with 29 positive outcome cases and 25 negative outcome cases. Outcome scores for group 1 ranged from .75 through 2.1, and scores for group 2 from -1.8 through -.75. There were 15 males and 14 females in the positive outcome group and 13 males and 12 females in the negative outcome group.

Discriminant Function Analysis

Several direct discriminant function analyses were performed on the high and low outcome groups to ascertain what linear combination of risk and mediating variables would predict membership in each outcome group. Method of entry was based on reduction of Wilks' Lambda as the statistical criterion. In the first analysis, the set of variables from the LISREL global model were the predictors; the predictors for the second analysis were the variables from the LISREL factorial model; and a third analysis utilized the original risk and mediating variables as predictors. Z scores of transformed variables were used for analysis. In all analyses, the sample size of the smaller group was greater than the number of predictors, allowing some generalizability to other samples rather than producing overfitted results. Although there was known multicollinearity among these variables due to the nature of the study, the stepwise approach circumvented this problem by tolerance tests at each step and the option of removing variables from the equation if necessary. Group sample sizes were only slightly different, and each group contained at least 20 cases. All variables had been previously transformed if necessary to increase normality of

distribution, and Box's M on each analysis indicated adequate homogeneity of variance-covariance matrices to guarantee robustness of significance testing. Evaluation of these assumptions of discriminant function analysis indicated no threats to multivariate analysis.

Global model analysis. The eight predictors used in this analysis included two demographic variables (age, sex), two risk variables (global severity of maltreatment, other parental dysfunction), and four mediating variables (IQ, resilience, social support, and stability) as used in the global LISREL analysis. Box's M was 13.172, with an approximate $F = 1.206(10, 12264.8)$, $p = .2809$, indicating adequate homogeneity of group covariance matrices.

One discriminant function was calculated to discriminate the two outcome groups, with a chi-square $(4) = 71.294$, $p < .0001$ indicating that the null hypothesis that the population means are equal can be rejected. The eigenvalue of the one discriminant function accounting for 100% of the variance was 3.1616, with a canonical correlation of .8716 indicating a high proportion of variance attributable to differences between the groups.

Results indicated that a combination of four variables (global severity, IQ, resilience, and stability) contributed to discriminate positive and negative outcome among this sample of maltreated children. Table 14 highlights results of the first analysis, listing the predictor variables with univariate F statistic and level of significance, standardized canonical discriminant function coefficients, pooled-within-groups correlations between discriminating variables and the canonical discriminant function (structure matrix), and pooled correlations of predictors.

Based on the within structure correlations, IQ was related most highly to the discriminant function, followed by resilience, global severity, and stability. Social support and age are correlated more highly than stability with the function but did not enter the linear equation, probably due to their correlation with global severity, with resilience and

IQ, and among themselves. Of the four variables in the equation shown in the standardized loadings, IQ was the strongest predictor (.75), with the positive outcome group having IQ in the higher ranges of the variable ($M = -.844$) and the negative outcome group at lower ($M = 1.061$). Global severity was next in strength (.43), with the better outcome group having lower severity scores ($M = -.529$) and the worse outcome group higher severity ($M = .436$).

Table 14. Discriminant Function Analysis: Global Model

Predictor Variable	E(1,52)	p	Standardized D.F. Coeffic.	Structure Matrix corr.
Global severity	13.77	.0005	.43187	.28936
Other dysf.	4.96	.0302		.15613
Age	.33	.5707		.19506
Sex	.0004	.9842		-.14968
IQ	107.30	.0000	.75437	.80788
Resilience	50.68	.0000	.38058	.55520
Social support	6.22	.0158		.21251
Stability	4.84	.0323	.31649	.17154
			Canonical R	.8716
			Eigenvalue	3.1616

Pooled Within-group Correlations Among Predictors

	GLOBSEV	OTHDYS	AGE	SEX	IQ	RESIL	SOCSUP
OTHDYS	.360						
AGE	-.206	-.552					
SEX	-.158	.146	.152				
IQ	-.063	.014	.240	.062			
RESIL	-.085	-.085	.200	-.234	.279		
SOCSUP	.150	-.012	.178	-.163	-.000	.229	
STABIL	-.197	.068	.084	-.124	-.080	.002	.192

Resilience loaded at .38, with positive outcome cases showing higher resilience than negative outcome cases ($M_s = -.511$ and $.956$, respectively). Stability loaded at .32, with positive outcome cases having experienced greater stability ($M = -.201$) than negative outcome cases ($M = .393$). Note that these variables were coded such that a high score was less favourable.

Overall classification rate for the single discriminant function was very good, with 96.3% of cases classified into the correct extreme outcome group. Prediction for group 1 was 100% and for group 2 was 92% (23/25).

Gender differences. Although beyond the scope of this study to address in a detailed manner, separate global analyses were done for males and females, with the variable "sex" removed. For males, six of the seven variables contributed to the function discriminating outcome groups (standardized function coefficients in parentheses): IQ (1.01), stability (.368), resilience (.474), other parental dysfunction (.946), age (-.861), and social support (.266). Although global severity of maltreatment was entered at step two, it was later removed at step seven as not contributing significantly to discrimination of groups with other variables entered. Males with better outcome in this sample seem to be ones who are older, with higher IQ and resilience (lower scores), lower amounts of parental dysfunction, and higher degrees of stability and social support once placed in care. Knowing how much maltreatment they experienced does not add significantly to the ability to predict outcome. For the single function, chi-square (6) = 41.548, $p < .0001$, an eigenvalue of 5.0888 was obtained, with a canonical correlation of .9142. Prediction into both groups was 100%.

For females, two of the seven variables which entered the discriminant function were sufficient to predict outcome: IQ (1.04) and stability (.328). Examination of the structure matrix indicated that IQ, resilience, other dysfunction, and global severity were all highly correlated with the function even though they were not all necessary in the equation.

In contrast with males, for females younger age tended to be more highly associated with better outcome. Although social support was more highly correlated with the discriminant function than stability was, the latter variable was the one which maximally discriminated the groups. For the single discriminant function calculated, chi-square (2) = 32.774, $p < .0001$, with an eigenvalue of 3.1577 and a canonical correlation of .8715. Prediction into outcome groups was 100% correct.

As in other analyses, important differences emerged between the patterns in males' and females' data, with some of this information obscured in the combined sample. For both groups, however, the importance of IQ and stability in predicting type of outcome were consistent.

Factorial model analysis. The 10 predictors used in this analysis included two demographic variables (age, sex), four risk variables (the PSYNEG factor, the PHYSAGG factor, sexual abuse, and other parental dysfunction), and four mediating variables (IQ, resilience, social support, and stability) as used in the factorial LISREL analysis. Box's M was 41.513, with an approximate $E = .961(36, 8674.7)$, $p = .5357$, indicating adequate homogeneity of group covariance matrices.

One discriminant function was calculated to discriminate the two outcome groups, with a chi-square (8) = 75.334, $p < .0001$ indicating that the null hypothesis that the population means are equal can be rejected. The eigenvalue of the one discriminant function accounting for 100% of the variance was 3.8041, with a canonical correlation of .8899 indicating a high proportion of variance attributable to differences between the groups.

Results indicated that a combination of eight variables (IQ, resilience, age, PSYNEG, sexual abuse, sex, other dysfunction, and social support) contributed to discriminate outcome among this sample. Table 15 highlights results of the second analysis, listing the predictor variables with univariate F statistic and level of significance,

standardized canonical discriminant function coefficients, pooled-within-groups correlations between discriminating variables and the canonical discriminant function (structure matrix), and pooled correlations of predictor variables.

Based on the within structure correlations, IQ was related most highly to the discriminant function, followed by resilience, PSYNEG, social support, and other dysfunction. PHYSAGG was correlated more highly than age and sexual abuse with the function but did not enter the linear equation, probably due to its correlation with age and social support. Of the eight variables in the equation shown in the standardized loadings, age was the strongest predictor (-1.03), with the positive outcome group being younger ($M = -.138$) and the negative outcome group somewhat older ($M = .036$). IQ was next in strength (.76), with the positive outcome group having higher IQ ($M = -.844$) and the negative group lower IQ ($M = 1.061$). The PSYNEG factor was next in loading strength (.70), with group 1 and 2 means of -.468 and .447, respectively. Resilience loaded at .47, with better outcome cases showing higher resilience than poor outcome cases ($M_s = -.511$ and .956, respectively).

Sexual abuse had a negative loading of -.42 on the function, with mild levels of sexual abuse present in both groups but group 1 having less severe abuse than group 2 ($M_s = -.231$ and -.124, respectively). Other dysfunction loaded at .39, with group 1 ($M = -.345$) having less exposure to parental dysfunction than group 2 ($M = .251$). Lower loadings were obtained on sex, with slightly more prevalence of males in group 1 (.27, $M_s = -.025$ and -.031, respectively) and social support (.198, $M_s = -.323$ and .356, respectively), with positive outcome cases having experienced greater social support than negative outcome cases. Differences based on gender were actually quite small and would not generalize beyond this sample, as the correlation of gender with the discriminant function was at -.0014 and the variable entered only at step 8, after the stability variable was removed.

Table 15. Discriminant Function Analysis: Factorial Model

Predictor Variable	E(1,52)	p	Standardized D.F. Coeffic.	Structure Matrix corr.
PSYNEG	10.86	.0018	.69616	.23428
PHYSAGG	1.57	.2155		.05276
Sexual abuse	.20	.6575	-.42384	.03171
Other dysf.	4.96	.0302	.38824	.15840
Age	.33	.5707	-1.02908	.04058
Sex	.0004	.9842	.27474	-.00141
IQ	107.30	.0000	.75870	.73650
Resilience	50.68	.0000	.46855	.50615
Social support	6.22	.0158	.19765	.17735
Stability	4.84	.0323		.03075
			Canonical R Eigenvalue	.8899 3.8041

Pooled Within-group Correlations Among Predictors

	PSY	PHYS	SXAB	AGE	SEX	IQ	RES	SOC	STA
PHYS	-.17								
SXAB	.37	.11							
AGE	.81	-.23	.14						
SEX	.07	-.10	.32	.15					
IQ	.16	-.01	.10	.24	.06				
RES	.09	-.10	-.04	.20	-.23	.28			
SOC	.15	.23	-.01	.18	-.16	-.00	.23		
STA	.13	-.31	-.13	.08	-.12	-.08	.00	.19	
ODYS	.79	.04	.52	.55	.15	.01	-.08	-.01	.07

Overall classification rate for the single discriminant function was very good, with 98.15% of cases classified into the correct outcome group. Prediction for group 1 was 100% and for group 2 was 96% (24/25), a slight improvement over the global model analysis.

Gender differences. As in the global analysis, separate global analyses were done for males and females, with the variable "sex" removed. Group sizes below 20 suggest the need for caution in making any generalizations from the results, although high rates of correct prediction may offset the lower reliability to some extent. For males, six of the nine variables contributed to the function discriminating outcome groups (standardized function coefficients in parentheses): IQ (1.09), resilience (.587), other parental dysfunction (1.22), age (-.948), sexual abuse (-.487) and social support (.355). Males with positive outcome in this sample seem to be ones who are somewhat older, with higher IQ and resilience (lower scores), lower amounts of parental dysfunction, and higher degrees of social support once placed in care. Interpretation of the sexual abuse variable is problematic, as similar levels of mild sexual abuse existed in each group ($M_s = -.417$ and $-.476$ for group 1 and 2, respectively), with group 1 having slightly more reported sexual abuse. It is likely that this is an artifact of this set of data and cannot be interpreted to mean that sexually abused boys have better outcome. It is likely that sexually abused boys who are higher functioning overall are more likely to report sexual abuse which has occurred.

For the single function, chi-square (6) = 42.711, $p < .0001$, an eigenvalue of 5.4046 was obtained, with a canonical correlation of .9186. Prediction into both groups was 100%.

For females, three of the ten variables which entered the discriminant function were sufficient to predict outcome: IQ (1.10), stability (.362), and sexual abuse (-.277). Examination of the structure matrix indicated that all other variables were more highly correlated with the function than stability and sexual abuse, with small differences in these two variables being sufficient to discriminate groups after IQ was controlled for in the

equation. In contrast with males, for females younger age tended to be more highly associated with better outcome. For the single discriminant function calculated, chi-square (3)= 33.269, $p < .0001$, with an eigenvalue of 3.3869 and a canonical correlation of .8787. Prediction into outcome groups was 100% correct.

As in other analyses, important differences emerged between the patterns in males' and females' data, with some of this information obscured in the combined sample. For both groups, however, the importance of IQ in predicting type of outcome was consistent.

Variables analysis. Fourteen predictors (age, sex, physical abuse, sexual abuse, psychological maltreatment, physical neglect, social/cognitive neglect, family violence, substance abuse, other dysfunction, IQ, resilience, social support, and stability) were entered in the third analysis, the results of which are presented here only briefly as these variables were not involved in the LISREL analysis. It may be informative, however, to ascertain patterns which would be present without the data reduction and loss of some information necessitated by sample size requirements of LISREL. In the third analysis, Box's M was 41.956, with an approximate $F = 1.7473(21, 9472.5)$, $p = .0184$, indicating only marginal homogeneity of group covariance matrices.

One discriminant function was calculated to discriminate the two outcome groups, with a chi-square (6)= 72.895, $p < .0001$. The eigenvalue of the one discriminant function accounting for 100% of the variance was 3.4267, with a canonical correlation of .8798.

Results indicated that a combination of six variables (IQ, resilience, age, social/cognitive neglect, physical neglect, and stability) contributed to discriminate outcome groups among this sample. The positive outcome group was characterized by being younger, higher in IQ, more resilient, having lower amounts of both neglect variables, and greater stability in care. Prediction into groups by this discriminant function was 100% correct.

For males, eight variables entered the equation to predict group membership with 100% accuracy (IQ, physical abuse, sexual abuse, psychological maltreatment, other parental dysfunction, resilience, social support, and stability) with the discriminant function (chi-square (8) = 49.017, $p < .0001$; eigenvalue 8.2818, canonical correlation .9446). For females, only IQ, sexual abuse, and stability entered the equation, with chi-square (3) = 33.269, $p < .0001$; eigenvalue 3.3869 and canonical correlation .8787. Prediction rate was also 100% for females. Although examination of group means on each of these variables indicated differences in the expected direction in almost all cases, the males in the positive outcome group had slightly higher severity of sexual abuse than males in the negative outcome group ($M_s = 1.667$ and 1.643 , respectively) while for females the opposite was true ($M_s = .679$ and $.965$, respectively). This observation is congruent with other results reported: in the female sample, sexual abuse is correlated with negative effects in numerous areas of development, while for males the correlations are high only in the personality dysfunction outcome variable but not in the cognitive measures (see Appendix F).

The results will be explored in more depth in ongoing research with these good and poor outcome cases. For the purposes of the present study, only the most extreme best and worst cases ($n = 12$ per group) were examined in detail as a pilot study for future research and to enhance understanding of the results of the present study.

Analysis of Extreme Outcome Groups

In outcome group 1 (best), there were four males and eight females, with global outcome Z-scores ranging from 1.261 to 2.098 ($M = 1.69$, $SD = .283$). Group 2 (worst outcome) consisted of six males and six females, with global outcome Z-scores from a low of -1.79 to -1.344 ($M = -1.64$, $SD = .173$). A two-tailed t-test between the groups showed highly significant differences in outcome ($t(22) = 34.70$, $p < .001$). Although Group 1 was younger ($M = 9.5$ years, $SD = 4.15$) than Group 2 ($M = 10.9$ years, $SD = 4.0$), the difference was not significant. Differences were also nonsignificant for other parental dysfunction,

substance abuse, sexual abuse, family violence, the PHYSAGG factor, and social support.

Variables with trends or significant group differences are reported in Table 16.

In general, it was found that children who were exposed to more severe and long term physical abuse and psychological maltreatment were found in the worst outcome group; however, findings were even stronger for those who were exposed to the more

Table 16 **Differences Between Best and Worst Global Outcome Groups**

Variable	Group 1 (n=12)		Group 2 (n=12)		<u>Two-tailed</u>		
	M	SD	M	SD	t	df	p
Physical abuse	8.00	(9.9)	18.79	(9.7)	-2.69	22	.013*
Psychological Maltx	30.67	(19.2)	46.29	(16.5)	-2.14	22	.044
Physical neglect	7.21	(14.5)	30.21	(11.0)	-2.48	22	.021*
Social/cognitive neg.	18.46	(12.4)	38.21	(13.9)	-3.66	22	.001***
PSYNEG factor	-.81	(1.0)	.46	(.92)	-3.14	22	.005**
Global severity	29.45	(14.9)	47.95	(14.4)	-3.10	22	.005**
IQ	1.83	(.72)	5.08	(.90)	-9.78	22	.000***
Resilience	2.42	(1.2)	4.67	(.49)	-5.84	22	.000***
Stability	2.00	(1.3)	3.25	(1.77)	-1.95	22	.064
Language develop (a)	2.42	(.79)	4.92	(.29)	-10.30	13.9	.000***
Visual motor	2.92	(.67)	5.00	(.00)	(b)		
Academic (a)	2.50	(.67)	4.92	(.29)	-11.41	14.9	.000***
Emotional/social	2.92	(.90)	5.00	(.00)	(b)		
Behaviour	2.58	(1.2)	4.67	(.65)	-5.41	22	.000***
Personality dysf. (a)	3.52	(.75)	4.90	(.33)	-5.84	15.1	.000***
COGOUT factor (c)	1.35	(.70)	-1.19	(.23)	11.97	13.4	.000***
SOCOUT factor (c)	.98	(.90)	-1.04	(.47)	6.90	16.7	.000***
Z-Global outcome (c)	1.69	(.28)	-1.64	(.17)	34.70	22	.000***

a: separate variance estimate used

b: t not computed; no variance for one or more samples

c: Factors derived from transformed and reflected variables

Two-tailed probability: *p < .025. **p < .01. ***p < .001.

severe and long term social neglect. Subjects in both groups experienced similar levels of sexual abuse and the environmental risk factors of substance abuse, family violence, and parental dysfunction, yet showed differential outcome. Variables which appeared to differentiate the groups most strongly were intelligence, language development, academic development, and cognitive outcome in general, with large differences in the means for visual motor and emotional/social development which could not be tested since all the worst outcome group subjects were at the lowest score on those scales. As shown in correlation results, severe and prolonged social/cognitive neglect is highly correlated with deficits in these areas, with variation in the strength of relationships between these variables among males and females.

Personal resilience, as well, played a more significant role in determining positive or negative outcome than did any of the maltreatment indicators individually or globally. Both groups experienced similar levels of social support, though probably for different reasons; the poor outcome subjects would often have high special needs which would necessitate provision of many special services and supports, while the best outcome subjects tended to be more resourceful/ resilient children who were able to reach out and seek nurturing and support from others. There were more females in this resilient group in a 2:1 ratio, but examination of gender frequencies in each group showed nonsignificant results (chi-square (1) = .686, $p = .41$). There was a trend for the best outcome subjects to have had more stability in their placements, but this was not a strong relationship.

Projective drawing data. Projective drawings of each of the 24 extreme outcome cases were submitted to analysis using the full 47-item Drawing Checklist as well as the global personality dysfunction (PD) and maltreatment prediction (MALPRED) ratings. The two latter ratings were examined for test-retest reliability, as reported in the Method section. For the best and worst outcome groups in this pilot, there were significant differences on mean scores on personality dysfunction (PD2) ($M_s = .86, -.94, t(22) = 7.93, p < .001$) and

on the second MALPRED rating ($M_s = 2.75, 3.75, t(22) = -3.55, p < .01$). [Scoring on PD2 was kept consistent with the transformed and reflected standardized score of PD1, such that a higher score indicates better outcome, while the MALPRED measure was scored on a scale from 1 = little or no maltreatment to 4 = severe maltreatment]. The remainder of the 54 better and worse outcome cases will be added to this preliminary group in a follow-up study on personality traits appearing in maltreated children with differential developmental outcomes. Although the sample size used for this pilot phase was too small to generate many significant or generalizable results - and thus must be interpreted with caution - the trends noted in the full group are congruent with an earlier study (Bristow, 1993) on drawings of maltreated children, and examination of the differences between subgroups can also shed light on the personality traits which may discriminate children who fare relatively better or worse following maltreatment. The 19 variables appearing with high frequency (>50% of cases) in all drawings (proportions reported in the Method section) included in order of frequency: maternal deprivation or rejection, bodily anxiety/distortion, emotional development problems, trauma, early unmet dependency needs, impotence/powerlessness, undeveloped self-concept and identity, insecurity and poor attachment, aggression, depression, anger/rage, anxiety/fearfulness, distress and inner tension, low self-esteem, barrenness/emptiness, traumatic sexualization, autonomy difficulties (either too little or too much), poor impulse control, and troubles in affect regulation.

Of the set of 47 traits, 36 appeared more frequently in the worst outcome group, 8 appeared in equal frequency, and 3 appeared more frequently in the best outcome group (hypervigilance, controlling, and self-conscious).

Examination of differing frequency of appearance of traits in each group showed trends or significant differences for impotence (chi-square (1) = 3.56, $p = .059$), helplessness (chi-square (1) = 8.22, $p = .004$), dependency problems (chi-square (1) = 4.8, $p = .028$), emotional development problems (chi-square (1) = 4.8, $p = .028$), lack of

integration /fragmentation (chi-square (1) = 3.43, $p = .06$), unbalanced/floating (chi-square (1) = 8.22, $p = .004$), boundary problems (chi-square (1) = 9.88, $p = .002$), and barrenness (chi-square (1) = 4.19, $p = .04$). These traits all appeared more frequently in the worst outcome group. Although the trauma variable occurred equally in both groups, the frequency of the most severe level of trauma in the worst outcome group was significant (chi-square (3) = 8.61, $p = .03$). Nine variables discriminated between the outcome groups by their presence exclusively in the worst outcome group, though frequencies in each case were only 2 of the 12 cases: dependency problems (.75), lack of personality integration (.75), segmentation of experience (.42), boundary problems (1.33), suspiciousness (.25), dissociation (.42), schizoid (.42), psychosis (.25), and overstimulated (.08). [Group 2 means are shown in parentheses. Severity scores on traits range from 0 (not present) to 3 (severe).]

T-tests between groups 1 and 2 using mean severity scores of each trait revealed significant differences on impotence ($M_s = .875, 1.917$, $t(22) = -3.09$, $p < .01$), helplessness ($M_s = .417, 1.67$, $t(22) = -2.73$, $p = .012$), emotional development problems ($M_s = 1.21, 2.75$, $t(22) = -4.3$, $p < .001$), unbalanced ($M_s = .375, 1.79$, $t(22) = -3.24$, $p < .01$), and barren/ impoverished ($M_s = .583, 1.5$, $t(22) = -2.25$, $p < .05$).

Correlations between traits seen in drawings and key research variables (global severity, maltreatment prediction (2), personality dysfunction (2), outcome group, global outcome, and resilience) were examined. Table 17 shows Pearson product-moment correlations of 32 traits having r_s of at least .30 on one of the measured associations.

It was interesting to note for this set of data that traits were correlated with global severity and with the clinician's estimation of maltreatment at similar levels in approximately 70% of the items. Not only was the global MALPRED2 indicator a good predictor of amount of maltreatment experienced by a subject ($r = .7664$, $p < .001$), but individual trait scores were also indicative of the severity of maltreatment. Exceptions

Table 17 **Correlations of Personality Traits in Drawings with**
Key Research Variables. (n = 24)

Trait (a)	Global Severity (a)	MALPRED2 (a)	PD2 (b)	OUTGP (a)	Global Outcome (b)	Resilience (a)
Aggression	.6270*	.6212*	-.4803	.2747	-.3011	.1825
Ambivalent	-.3432	-.3896	.1598	-.0315	.0939	-.2849
Anger/rage	.4532	.3563	-.2322	.0695	-.0785	.1385
Volatile	.4490	.5500*	-.4342	.2379	-.2362	.2817
Tension	.3846	.3500	-.3239	.2321	-.2432	.0514
Self-consc.	-.0855	.0455	.1055	-.3015	.2838	-.2830
Impotence	.1864	.5377*	-.6174*	.5504*	-.5767*	.2702
Helpless	.2697	.5973*	-.5918*	.5037	-.5594*	.5692*
Dependency	.1529	.2785	-.4321	.4376	-.4607	.3075
Lo EmoDev	.6938**	.6662**	-.8033**	.6756**	-.6916**	.4372
Undeveloped	.4916	.6150*	-.5848*	.3290	-.3905	.3249
Insecure	.3001	.3046	-.4359	.2165	-.2187	.1626
Unintegrated	.4141	.3419	-.3732	.3780	-.3924	.3820
Unbalanced	.4056	.4231	-.5887*	.5679*	-.5408*	.4496
Impulsive	.6410**	.6137*	-.5203*	.3509	-.3740	.2412
Energy prob.	.3144	.3272	-.2369	.0724	-.0901	.1651
Boundary pr.	.5468*	.5455*	-.5954*	.6030*	-.6130	.5312*
Affect reg.	.4947	.4282	-.3352	.2242	-.2571	.2051
Trauma	.3126	.2641	-.2891	.2919	-.2977	.0783
Rootless	.1838	.3511	-.3601	.2961	-.3139	.1203
Hypervigil.	.1179	.1457	.0765	-.2900	.2826	-.3546
Suspicious	.3141	.1886	-.2059	.2085	-.1702	.0662
Dissociat'n	.0782	.2670	-.2914	.2951	-.3195	.2983
Schizoid	.1865	.2670	-.2914	.2951	-.3195	.2983
Fantasy	.3359	.4277	-.4372	.3869	-.4132	.4224
Mat Reject	.3111	.2462	-.1436	.1021	-.1120	-.0707
Overstim	.3141	.1886	-.2059	.2085	-.1702	.0662
Barren	.1359	.1304	-.3635	.4325	-.4105	.3122
Gender prob	.4273	.4328	-.4462	.2233	-.2368	.2994
Sex trauma	.3430	.2676	-.1811	.1630	-.1829	.0528
Body anx'ty	.2723	.4461	-.3414	.0870	-.1125	-.0075
LD/organic	.4661	.3709	-.3491	.2894	-.2927	.3281

(a): high score on variable = worse

(b): high score on variable = better

Two-tailed significance: $p < .01^*$. $p < .001^{**}$.

occurred on impotence, helplessness, rootlessness, dissociation, and bodily anxiety; while the clinician's prediction of maltreatment was highly correlated with these traits, they were not as strongly associated with high degrees of maltreatment severity but occurred across maltreatment levels. Two other traits, suspiciousness and overstimulation, were more highly correlated with global severity but not with the clinician's prediction of severity. On the whole, however, clinical ratings of children's drawings appear to have validity as a means of estimating degree of maltreatment the child has experienced.

While the PD2 measure was highly correlated with group membership ($r = -.8606$, $p < .001$), and correlations of individual traits with PD2 and with outcome were often at similar levels, item associations often were not as strong as for the maltreatment measures. Although severity of maltreatment plays an important role in determining overall outcome, it was seen in the structural equation analysis that other variables either exacerbate or ameliorate the effects. Also, a measure of personality dysfunction alone cannot tell us everything about how a child is coping in his or her everyday life, but requires other types of developmental information from various sources.

Traits found to be most highly correlated with membership in the worst outcome group included (in order of strength of association): low emotional development, poor boundaries, unbalanced, impotence, helplessness, dependency problems, barrenness and emptiness, poor reality testing and overuse of fantasy, lack of integration, impulsiveness, and undeveloped self-concept. These traits are also highly correlated with lack of personal resilience, as shown in Table 17, with resilience and outcome group being highly correlated ($r = .7797$, $p < .001$). Three traits discriminated cases in the best outcome group and/or with high personal resilience: ambivalence, self-consciousness, and vigilance to- and control of- the environment. Cases with best outcome and most resilience were those who did not show traits of helplessness or boundary problems, did not avoid reality, had more inner

resources and sense of power, were not severely learning disabled, and had a clearer and more fully-developed sense of self.

Planned statistical analyses. Further study with a larger sample and better sampling adequacy will involve factor analysis of the traits into related clusters, thus reducing the number of variables to enter into a subsequent hierarchical discriminant function analysis. Patterns of the presence or absence of each trait can be studied through hierarchical loglinear analysis. These analyses were inappropriate to conduct for the present study given the small sample size and large number of traits under examination.

Qualitative case analysis. Examination of qualitative data contained in protocols and case files of subjects with best and worst global outcome indicated certain general patterns and trends not necessarily tapped by the research measures or data analysis methods. These findings will be addressed in the Discussion chapter.

DISCUSSION

The major objective of this study was to devise a theoretically-based structural equation model examining the causal and correlational relationships among the multiple maltreatment, risk, and mediating variables which are thought to predict and affect level of functioning, adjustment, and development in maltreated children. Exploration of gender differences in patterns of maltreatment, in mediating variables, and in outcome was a sub-objective of this phase of the research. Two versions of the preliminary causal model were constructed - one which used composite measures of total maltreatment and global developmental outcome, and the other which explored differential effects of subtypes of maltreatment on various aspects of development and adjustment. Both models met the accepted criteria for goodness-of-fit, parsimony, stability, and overall statistical significance, as well as meeting the primary requirement of being theoretically driven. Thus the models can be considered acceptable formulations of the relationships in the data, but cannot be considered the only models which could explain the data. Prior to constructing and testing the estimated parameters of these models, it was necessary to form interpretable factors of related maltreatment variables and developmental outcome variables and to test bivariate relationships among them and between them and other research variables. Doing so provided additional insight into individual maltreatment variables, which usually have been treated separately in the literature, so that some comparison of findings can be made. However, some information and strength of factors was lost through data-reduction methods due to the necessary combination of male and female data, which contained different patterns of interactions among variables.

Another objective of the study was to investigate cases with best and worst outcome to ascertain which variables were most important in predicting direction of outcome and to obtain both quantitative and qualitative data which could enrich understanding of the concepts of resilience and vulnerability in maltreated children.

A final goal was the development and testing of the Drawing Checklist both for use as a clinical outcome measure of psychological functioning in the major part of the study and a way of identifying personality traits of children with differing outcome levels, and as a way of assessing the utility, reliability, and external and predictive validity of clinical ratings of maltreated children's projective drawings.

Multivariate Preliminary Causal Models: Global and Factorial

Four major hypotheses were tested in the two causal model analyses; on the whole, these hypotheses and their sub-hypotheses were supported by the data. (a) There were direct negative effects of maltreatment on child outcome, with multiple forms of maltreatment, severity, age, and duration being exacerbating factors. As expected, psychological maltreatment was found to be particularly damaging, and chronic neglect - particularly social/ cognitive neglect and psychological unavailability - was associated with the most global damage and developmental delays. (b) As predicted, there were indirect negative effects of maltreatment mediated by life instability after cessation of maltreatment, but the mediating effects of erratic and unsupervised access to the natural family where abuse occurred could not be supported statistically. (c) There were better developmental outcomes when maltreatment risk was mediated by above-average intelligence, personal characteristics of resilience, higher social support, and greater stability of care after cessation of maltreatment, but the family access variable was not measured in a way which could determine whether access which was moderate, regular, and carefully monitored and supervised would enhance outcome. Support for the importance of family access conditions as a mediating variable was found only in qualitative analysis of the data on extremely good or poor outcome cases, a point which will be discussed. (d) The hypothesis that males would show greater vulnerability and relatively worse developmental outcomes than females as direct and indirect effects of maltreatment was only partially supported by the data. Although males were indeed less resilient than females in the sample, their global

outcome scores were equivalent due to the greater amount of maltreatment experienced by the females; differences in the predicted direction existed on two of the three outcome factors.

For the following more detailed discussion of each hypothesis, the reader is referred to Figure 8 (a reproduction of Figures 4 and 7 for the reader's convenience) for a visual representation of the relationships.

Composite Hypothesis: (a) There will be direct negative effects of maltreatment on child outcome, with multiple forms of maltreatment, severity, age, and duration being exacerbating factors. (The presence of psychological maltreatment is expected to be particularly damaging, and chronic neglect and psychological unavailability are expected to be associated with the most global damage and developmental delays.) (b) There will also be indirect negative effects of maltreatment mediated by life instability after cessation of maltreatment and by erratic and unsupervised access to the natural family where abuse occurred. (c) There will be better developmental outcome when maltreatment risk is mediated by above-average intelligence, personal characteristics of resilience, high social support, greater stability of care after cessation of maltreatment, and/ or access with family which is moderate, regular, and carefully monitored and supervised. (d) Males will show greater vulnerability and relatively worse developmental outcome than females as direct and indirect effects of maltreatment.

Part (a) of the hypothesis was supported by the global model, in which the global severity measure (the composite of severity-X-duration scores on all six maltreatment conditions) showed direct negative effects on global outcome in the context of all other relationships being measured simultaneously. The more severe and long term the maltreatment and the more types of maltreatment added into the global score, the greater the tendency toward poorer outcome. Although its direct path coefficient was at greater than

Global Model:

Factor Model:

Figure 8. LISREL Path Models for Global (top) and Factor (bottom) Models.

.05 significance level, the total effect of global severity on global outcome with all indirect paths included was highly significant. Bivariate correlations indicated a highly significant relationship, but in this type of model, paths compete with one another for significance as proportion of variance accounted for is partialled out, so that a particular path may not be highly significant even though it is crucial to the dynamics of the model. The fact that the direct effect of global severity on global outcome was not highly significant attests to the importance of mediating variables in determining eventual outcome, supporting parts (b) and (c) of the hypothesis. The most important immediate mediators for global severity were IQ and stability, with both variables negatively impacted by maltreatment. This study provided strong support for the contention that above-average IQ is a buffering factor in maltreated children (Herrenkohl et al, 1994; Martin et al, 1977; Radke-Yarrow et al, 1993), with lower IQ having direct effects on poor outcome as well as indirect effects via lowered resilience. Poor stability entered into an interaction with social support and resilience to affect outcome negatively, supporting the findings of Rosenthal and associates (1991) on the role of placement instability in predicting poor outcome, the findings of Hess & Folaron (1991) regarding the impact of stability and structure on resilience and positive outcomes, and the importance of support systems in fostering positive outcomes with high-risk children (e.g., Luthar & Zigler, 1991).

Before discussing the effects of age on outcome, it should be noted that the age variable reflects age at point of assessment, which would have occurred between two months to two years after coming into care. While the original intent had been to examine effects of age at maltreatment, this was not possible in the present design due to the range of years and multiple, discontinuous developmental periods affected in many cases, often with different types of abuse occurring at different ages for a particular child. The age measure thus represents a rough approximation of the age at which maltreatment was interrupted by placement in care. Few children in the sample experienced early childhood years without

some form of maltreatment, so making comparisons of early or late abuse was not appropriate. The duration measure took these factors into account, with total duration calculated separately for each maltreatment variable. Age (at assessment) had significant indirect effects on global outcome beyond the effects of severity and duration reflected in the age-adjusted global severity score, with increasing age leading to worse outcome. This relationship was mediated through several pathways in the global model. First, ongoing exposure of older children to parental dysfunction during access visits over the years, even when the child was in protective custody and sheltered from most aspects of abuse, had significant effects on stability of placements, which then limited social support so that resilience was also compromised, thus leading to poorer outcome. In addition, parental dysfunction was highly correlated with higher global maltreatment and thus with worse outcome. The suggested importance of parental dysfunction as a strong predictor of child outcome (Crittenden et al, 1994) was supported by the present study, although this was a serendipitous finding and not specifically part of the original hypotheses. [It was also noted that girls were exposed to higher amounts of parental dysfunction, psychological maltreatment, and neglect, related to their higher mean age in the sample. It appeared that these girls remained in maltreating environments longer than boys before being brought into protective custody; to determine whether this finding would generalize to the population of maltreated children would require replication.] The mechanism by which parental dysfunction leads to instability in placements could be as follows: parents who are most disturbed or character disordered often are quite ambivalent about their children and erratic in their own functioning. They may insist on having the child returned to the home in order to meet their own needs for companionship, assistance, or a sense of ownership of the child as an object, and if the parent is in a relatively high-functioning stage may be able to convince child protection workers and judges to return the child. Yet when the child is at home, such parents are unable to cope with the responsibilities of daily life or with the

child's needs. The child ends up back in care (often a different foster home than the previous placement), either because of further abuse, inadequate parenting and protection, or the child's behaviour escalating out of the parents' control as a result of her/ his unmet needs or environmental chaos. In addition, such dysfunctional parents may make conscious or unconscious efforts to sabotage the child's foster placement in order to maintain the child's loyalty and gratify their own needs. Each time a child's placement is changed as the child gets older - either through repeated cycling in and out of the parental home or through foster placement breakdowns - it becomes increasingly difficult for the child to settle, trust, and form secure new attachments, so development is arrested while the child remains in a constantly unsettled state.

Second, increasing age was highly correlated with lower IQ (and thus with lower resilience), with decrements in both of these mediating variables having detrimental effects on global outcome. Results appear to indicate that older maltreated children are at increasing risk of poor developmental outcome and adaptation, most likely due to the cumulative effect of longer duration of maltreatment and the likelihood of more changes of placement occurring over time. Failure to meet earlier developmental milestones prevents children from moving into subsequent stages of development, with the gap widening over time.

In the **factorial** causal model, age was removed from the analysis, as it was redundant with the maltreatment variables. While the global severity measure was adjusted by the highest possible score the child could obtain at his/ her age, the separate maltreatment factors were not adjusted, in order that the total cumulative effects of various types of maltreatment could be investigated. In this submodel, sexual abuse showed significant direct negative effects on personality functioning, but not on either social or cognitive outcome. This finding is congruent with several recent studies which found that from 20 to 49% of sexually abused children may be asymptomatic or may not show

apparent deficits in intellectual and social development (Gomes-Schwartz et al, 1985; Kendall-Tackett et al, 1993), although underlying personality problems and later difficulties in intimate relationships may surface. What was evident in the present study was the close association of sexual abuse with psychological maltreatment and neglect (particularly for females); therefore even though sexual abuse showed only one significant direct effect with all other variables held constant, it can be seen that sexually abused children are also prone to all the hazards which accompany psychological maltreatment and neglect. For males, sexual abuse is more likely to occur in the context of physical abuse and neglect rather than psychological maltreatment. Findings on co-occurrence and synergistic effects of these variables with sexual abuse concurs with the work of Briere (1992) and Hindman (1989). Gender differences affect the interpretation of findings on the sexual abuse variable, with females experiencing significantly more severity for longer durations, yet - due to their higher resilience, stability, and social support - not showing the severe levels of personality dysfunction seen in male sexual abuse victims, who were most frequently victimized at the youngest age range (5 to 6). Females' cognitive and social development tended to be more severely affected than males' development by sexual abuse, but findings were not statistically significant. Rather, a global moderate suppression of development and lowering of functioning was noted in sexually abused girls, while boys showed more blatant and severe emotional damage without noticeable effects on cognitive or social outcome variables. The point should be considered that some selection bias may be operating with the sexual abuse variable: it is possible that children who are brighter and more capable of verbal expression of their experiences are the ones more likely to remember and to be able to report their sexual abuse and thus to obtain support and treatment in overcoming the effects. Brighter children have a wider range of coping strategies and need not rely on repression or dissociation as extensively as more limited children. Males may be more prone to under-reporting and failure to label experiences as victimization: Bristow (personal

communication, 1994) reports that male prison inmates admit in interviews that as children they bartered sex in exchange for cigarettes and money, yet they deny being sexually abused. There may be other children in the lower-functioning end of this sample who have experienced undocumented sexual abuse, which would alter the findings regarding effects of sexual abuse on cognitive and social outcome.

The psychological-maltreatment-and-neglect factor (PSYNEG), while it was significantly correlated with each of the outcome factors in the expected direction of negative effects, showed its strong impact on all types of outcome through indirect paths in the model, with highly significant total effects. While direct paths were initially tested in preliminary models, they were removed for parsimony, as they did not add to the explanatory power of the model or of this variable. As hypothesized, the total effects of psychological maltreatment and chronic neglect - as represented by the combined PSYNEG factor - were by far the strongest effects in the model, with significance levels and types of outcome affected outstripping both PHYSAGG and sexual abuse, a finding congruent with the most recent literature (e.g., Brassard, Hart, & Hardy, 1993; Crittenden et al, 1994; Eckenrode et al, 1993; Manley et al, 1994). Examination of bivariate correlations indicated that chronic social/ cognitive neglect was the most highly correlated with poor global, cognitive, and social outcome of all the risk and maltreatment variables and also was correlated with poor personality outcome to the same high degree as sexual abuse. Chronic physical neglect was also highly implicated in lower IQ, language, academic, and general cognitive outcome, but not social outcome. Psychological maltreatment was most strongly associated with decrements in IQ, academic, and emotional/ social development. In most cases, associations between each of these three variables and poorer results on all outcome variables were stronger for females than for males. PSYNEG had significant negative impacts on all mediating variables, with direct paths to IQ and stability which then branched off to impact upon resilience and social support as well, a pattern also seen with global

severity. Therefore, children exposed to higher degrees of this subtype of maltreatment were globally impaired in the three areas of development studied, with different mediating pathways operating for each type of outcome. Cognitive outcome was impaired via detrimental effects of PSYNEG on IQ; several complex paths involving all four mediating variables were implicated in poorer social outcome; and personality outcome was affected by IQ, by complex paths among all mediating variables, and by a feedback loop in which poor emotional/ personality functioning led to less stability in care, with repercussions on social support, resilience, and social outcome (i.e., behaviour and social skills development), and thus back to even worse emotional functioning. Although the use of orthogonal factors for cognitive outcome and social outcome did not permit testing of a path between them in the model, it is likely in reality that the feedback loop affecting personality outcome would also affect cognitive outcome, particularly its academic achievement component. In formation of the two principal components, it was noted that emotional/ social development loaded on both factors, and it is reasonable to suggest that children who are socially immature and who have behaviour and attention problems (i.e., low SOCOUT) will have increasing problems coping in the school system.

The PHYSAGG factor (physical abuse and family violence), like PSYNEG, had no direct paths tested, but showed significant indirect and total negative effects on cognitive outcome, mediated by detrimental effects of abuse on IQ. Although bivariate correlations also indicated a high correlation between physical abuse and poor global outcome, neither causal model was constructed to test this relationship in isolation from family violence. Because family violence was not significantly correlated with any of the outcome variables, the negative effects of physical abuse were diluted in the analysis by combining these two variables into one factor. In addition, the physical abuse measurement scale adapted from current literature was perhaps too oriented toward the medical model view of possible effects, placing more emphasis on whether abuse resulted in medical services,

hospitalization, or long-term disability rather than considering the frequency and brutality of abusive events in the child's life. Contrary to expectations, PHYSAGG had positive indirect effects on social outcome, as mediated by higher resilience and higher stability in care, with this effect due mainly to the family violence component of the factor and a high covariation with parental substance abuse. This finding can be understood in the sense that children who are known to be physically abused or to be at risk in violent, drug-abuse environments are offered much more immediate, unequivocal protection and are kept in stable care longer, with the onus being on the parent to demonstrate significant changes in lifestyle and functioning before children can be returned. It is clearer to these children than to emotionally abused or neglected children that the problem lies with the parent or the environment, not in themselves, and they receive more sympathy and validation for their position. It is proposed that physically abused children and those in violent homes with drug abuse may appear more resilient due to the development of hypervigilance to danger and a defensive and premature self-reliance; these children (especially males) are seen in clinical practice to become the protector of the mother and siblings and to take their role quite seriously, even at very young ages, while girls may become mother's confidante and emotional support and take on duties of running the home. Bright children of both genders may appear to be more mature and insightful than their parents and strive for self-control and control of their environment. Only longer term follow-up can determine the eventual outcome for these children who skip over childhood into a precocious pseudomaturity, but clinical experience indicates that more severe problems will emerge later in development. Boys with better intellectual abilities may be able to control themselves in general situations (while lower IQ, learning disabled, attention deficit disordered children may act out more in response to physical abuse and violent milieu), but workers in battered women's shelters suggest that boys hold buried rage at the mother who they may feel failed to protect them from a violent spouse. This unconscious rage, coupled with the aggressive role modelling

and identification with the aggressor may only emerge later in dependent intimate relationships with females (dating or marriage), with hair-trigger reactions when the man's fragile sense of control is challenged or when he feels inadequately nurtured.

It was predicted that males would show greater vulnerability than females, and this hypothesis was supported by the data. In fact, males fared worse on three of the four mediating variables-- resilience, stability, and social support-- in both global and factorial models, but only reaching significant levels on all three paths in the latter model. The prediction that males would have relatively worse developmental outcome than females was supported on the social outcome factor, with trends in that direction on personality outcome, but was not supported for cognitive outcome. The failure to find comparable results for cognitive outcome may be related to significantly higher severity of the PSYNEG factor in the female data; as already discussed, this factor had profound effects on IQ and therefore on cognitive outcome. Therefore, although girls were more resilient, they were also exposed to more maltreatment, particularly of the types which would impair language, visual-motor, and academic development. Gender effects were not seen on global outcome, as the findings in one direction on cognitive outcome (males slightly higher) were offset by contrary findings on social and personality outcome (females higher), illustrating the value of examining subtypes and combinations of outcome domain for a more informative picture of maltreatment effects. Numerous differences between males and females in patterns of bivariate correlations are detailed in Appendix F, being beyond the scope of this study to explore in detail but meriting further research. Principal components analysis conducted to form the factors for the causal model indicated that males and females have somewhat different patterns of maltreatment: for females, psychological maltreatment and both forms of neglect coexist frequently and create a milieu in which physical and sexual abuse may also occur; physical abuse and family violence tend to occur together, with some occurrence of physical neglect; and sexual abuse occurs predominantly in the presence of some

psychological maltreatment and social/ cognitive neglect. The pattern for males differs in that the first factor contains only psychological maltreatment and social/ cognitive neglect, accompanied by some degree of physical abuse; the second factor is composed of physical abuse, physical neglect, and family violence; and sexual abuse may occur accompanied by physical abuse but not by neglect or psychological maltreatment. Thus it would appear that males may be exposed more pervasively to violent forms of abuse across all types of milieu, whereas sexual abuse and psychological forms of maltreatment and neglect are more prevalent and pervasive for females. However, in homes characterized by violence and aggression, females may have their basic needs met better than males, but are more subject to being physically abused. These disparate patterns of maltreatment are quite similar to those found by Wolfe and McGee (1994).

In this sample, personality functioning of males seemed to be most severely affected by acute types of abuse (physical and sexual), while chronic conditions (particularly psychological maltreatment and neglect) and multiple forms of abuse were strongly linked with disturbance in females. Males appear to be removed from abusive environments sooner following acute episodes, while females tend to be exposed to maltreatment longer before coming to the attention of authorities. Results indicate that young females are more resilient than males and able to cope by using more advanced social skills to survive, but as maltreatment becomes more chronic without protection being offered, this coping strategy backfires. Such girls may invest all their developmental energy in survival and in caring for parents and siblings rather than in their own cognitive, emotional, and social maturation. Thus by the time they encounter adolescence, their early resilience has turned to vulnerability. As seen in this sample, older girls fared poorly, with emotional disturbance, acting out, social neediness and immaturity, and school problems all more prevalent.

A final point regarding female- male differences in maltreatment patterns and effects is that patterns in female data were more homogeneous and effects were in the

predicted direction, while male data were more dispersed and contained greater standard error affecting multivariate analyses. Males appear to react to maltreatment more inconsistently, unpredictably, and with more variability than do females. Therefore inclusion of data from males weakened the statistical effects in the causal models just discussed. Ideally, given sufficient sample size, one would choose to create separate structural models for males and for females, allowing for more homogeneity of covariance matrices, more distinct factors with simple structure, lower error, and therefore higher power and statistical significance of measured effects. Despite the drawbacks of using combined data, the hypotheses and preliminary theoretical models of the study were generally well supported.

Resilience and Vulnerability in Maltreated Children

A particular interest in this study was to explore the concept of resilience and vulnerability in maltreated children, with the realization that child abuse does not affect each child in a predictable or consistent manner but is dependent upon positive personal and environmental mediators of adjustment, as proposed by Wolfe (1987) and others. In reviewing the literature, it became clear that resilience cannot be studied as an isolated internal phenomenon, but is inextricably tied to various internal and external resources available to the child and also to attachment experiences and to the nature, duration, and intensity of traumatic experiences.

This integrated view of resilience was supported by the findings of the causal models, with (a) resilience being somewhat heightened in children living in risk-laden situations with sporadic abuse but suppressed by the more insidious, prolonged circumstances of neglect and psychological maltreatment; and (b) resilience affecting and being affected by other mediating variables, including intelligence, stability, and social support. Findings also supported the contentions of major theorists in the field of resilience regarding the importance of protective factors such as extended social support networks,

timeliness and permanence of custody decisions (e.g., stability), remediative experiences in healthy surrogate families, and long-term supportive relationships (e.g., Anthony, 1987; Mrazek & Mrazek, 1987). Support was found for the contention that male maltreated children are more vulnerable than females (e.g., Gamble & Zigler, 1986) to later personality disturbance.

Before elaborating on these general findings, information will be presented on a subset of cases which were examined in greater detail in order to enrich understanding of resilience and its impact on development and adjustment in this maltreated sample. Fifty-four cases drawn from the upper and lower 25% of global outcome scores were studied to determine which variables would predict membership in either positive or negative global outcome groups, and 12 of the most extreme cases in each group were studied through detailed analysis of their projective drawings and further qualitative analysis of case records to ascertain which personality traits and other features might be associated with direction of outcome.

Positive and negative outcome cases. Although optimal outcome after maltreatment cannot be construed as resilience in the true sense of the word - since degree of risk must also be taken into account in determining resilience (Anthony, 1987) - examination of high and low outcome groups ($n = 54$) delineated the best linear combinations of risk and buffering variables which predict outcome in either direction, thus offering insight into the concept of resilience in maltreated children. Commonalities found throughout nine discriminant function analyses (on males, females, and the combined group using the sets of variables in the global and the factorial structural models and the set of original variables) converged to implicate intelligence (IQ) and stability as the most powerful discriminating features in predicting direction of global outcome, with all other variables taken into account. Equations across all sets of variables for females indicated parsimonious solutions in which scores on IQ, sexual abuse, and stability alone could

reliably predict outcome direction, with resilience highly correlated with the discriminant function but not necessary in the equation due to its high correlation with IQ. For males - and therefore for the combined sample as well - linear equations required the inclusion of nearly all variables in a particular set to provide the best prediction of outcome group. Conspicuously absent from any of the prediction equations were global severity, PHYSAGG, family violence, and substance abuse, suggesting that the amount of these risk indicators is not as salient as certain mediating variables and the PSYNEG variables in predicting outcome. Although there were significant differences between groups on global severity, its strong relations with IQ, resilience, and social support made it unnecessary in the equations. PSYNEG and sexual abuse were predictive in the factorial model, along with the risk factor of parental dysfunction. In the analysis of original variables, both forms of neglect were discriminators for the combined group, with differential degrees of physical abuse, sexual abuse, and psychological maltreatment important for prediction of male outcome but only sexual abuse adding to the ability to discriminate female outcome.

As seen in t-tests, bivariate correlations, and structural equation analyses, males are less resilient and receive less of the buffering effect of mediating variables of stability and social support. The discriminant function analyses, however, indicated that for those males who do have better scores on these variables, outcome is significantly enhanced. Positive outcome is also more likely for boys who are older, while for females the reverse is true, as girls' resilience and amount of social support decline, and the effects of greater amounts of psychological maltreatment and neglect take a cumulative toll on development.

Extreme cases. Taking the 24 cases with most extreme outcome scores in each direction (used as a pilot group for a more extensive study of maltreated children's drawings), best and worst groups were found to differ significantly on all outcome variables, factors, and global outcome, in the expected direction. Regarding risk and mediating variables, differences were nonsignificant for parental dysfunction, substance

abuse, sexual abuse, family violence, PHYSAGG, and social support. Both groups had high amounts of social support, but for different reasons: the worst outcome cases were often designated as special needs children who were given numerous support services, remediation, and treatment; the best outcome cases included resilient, verbal children who were adept at seeking and utilizing social support. Younger children had somewhat better outcome, but the opposing age-outcome patterns of males and females led to a nonsignificant difference. Although there were more females in the best outcome group, gender frequency was not significantly different. The most salient maltreatment differences occurred with social/ cognitive neglect, PSYNEG, and global severity, illustrating again the pervasive detrimental effects of these features of maltreatment and of combined forms of maltreatment. IQ and resilience were significantly different between the two groups, as would be expected, knowing how severely these aspects of functioning are impaired by social/ cognitive neglect and the PSYNEG factor. In this particular sample, both groups had moderate to high degrees of stability, with a trend for the best outcome group to have more stability.

The extreme outcome groups illustrate even more graphically the most salient effects within the larger causal models: i.e., children who are severely neglected and psychologically abused, possibly in combination with more severe forms of physical abuse, are severely impaired in their intellectual functioning (as measured by IQ tests) and are therefore much less resilient and unable to make use of external resources provided for them; hence, their development and adjustment are globally compromised. Data from these differential outcome groups provide the basis for interesting follow-up research and cues for prediction of outcome.

Qualitative case analyses. Examination of the qualitative data contained in protocols and case files of subjects with best and worst global outcome indicated certain

general patterns and trends not necessarily tapped by the research measures or data analysis methods.

In the best outcome group, members were often identified as relatively bright, non-learning disabled, attractive children who had some sense of power or importance in their lives. They tended to have stable, long-term placements in which they were able to form new attachments to a reliable caregiver and felt loved, wanted, and special. These children often were ones who had taken a precociously parentified role in their natural family, with a high degree of role reversal such that they were the caregiver and protector for mother and siblings. Their behaviour was not always good, with tendencies to be easily aroused, controlling, and defiant under stress, and had to be helped to relinquish this role in the foster home to allow themselves and their siblings to be parented. They were often the children of bright but substance-addicted and depressed young mothers, who - at times - had been able to show love and nurturing to the children and to let them know that they were valued (even if mainly due to their parentified role). Thus, even though the history of nurturing and protection was not reliable or consistent, these children had received enough to be able to establish a positive self-concept and to see the problem as being outside themselves. They did not feel rejected or unworthy, but had some understanding that being in care was a result of the parents' inability to manage their own lives and provide adequate parenting. Many of these children had been exposed to all types and severities of maltreatment, particularly from violent and substance-addicted boyfriends or husbands of the mothers, yet were able to maintain their hope and resilience and make use of resources offered to them.

In the worst outcome group, cases were typified by severe neglect and instability, and a chaotic, barren, and damaging early life. They tended to have multiple forms of abuse at severe levels which continued for long periods without rescue. Of greatest importance was the predominance of blatant and repeated rejections and abandonment, lack of protection, scapegoating, maximum levels of psychological abuse and terrorism, and the

reinforcement of a negative self-image from earliest years. These children had minimal or nonexistent attachments, generally more severe forms of learning disabilities, fetal alcohol syndrome, both organically- and emotionally-based attention deficit problems, and numerous behavioural problems. Thus they were not seen as rewarding and loveable by new caregivers and so did not receive counterbalancing experiences from teachers or foster parents. Indeed, they were often scapegoated further in placements where they were seen as having "bad blood," or were firmly placed in the role of a foster child who was considered a second-class person and not a member of the family.

Sexual abuse ranging from mild to severe was found in both groups. Qualitative analysis suggested that children in the best outcome group who were sexually abused were ones whose abuse was accompanied by some degree of affection and nurturing, however distorted, and some empowerment within the family in exchange for being exploited. Although they experienced violation and damage, they were often able to disclose their abuse and regain their power by stopping it. Subsequently, these children received intensive treatment and clear messages that they were not responsible for the abuse. Despite outwardly adequate functioning, however, these children often showed severe personality disturbance in drawings and in periodic regressions in functioning when under emotional stress. Sexual abuse in the worst outcome group was of a more overtly traumatizing (coercive or violent) nature and often was suspected for a long time before it was confirmed. Severely neglected children were sometimes molested by multiple¹ extrafamilial perpetrators due to lack of supervision and protection. Social workers' suspicions of sexual abuse were met with adamant denial by parents or suspected perpetrators and with lack of disclosure by the child, thus situations persisted for long durations before protection was provided. Thus in addition to the actual sexual abuse experienced, these children would have felt there was no escape, protection, or support available to them.

For certain variables, the two groups were discriminated by severity and/or duration of the maltreatment, aspects which could not be examined separately in the global analyses as they constituted a composite score. More of the worst outcome cases were exposed to long term abuse from birth up until only a few years prior to the assessment (in some cases as high as 13 or 15 years). Several of the best outcome cases had long term maltreatment, but many were taken into care younger or had prolonged periods of being protected from abuse, even if they eventually returned to the abusive environment for a time. Although physical abuse occurred in both groups, the severity was greater in the worst outcome group, which had incidents of hospitalization and long-term physical damage incurred from the abuse. The physical abuse suffered by the best outcome group fell mainly into the category of harsh punishment and occasional slapping and hitting when a parent lost patience or was under the influence of alcohol or drugs. The prevalence of severe social/cognitive neglect was greater in the worst outcome group; 11 of the 12 cases had severity scores of at least 4 on a 5-point scale, while only one best outcome case had a score as high as 4. More extreme severity scores on physical neglect and psychological maltreatment tended to occur in the worst outcome group as well, with the majority of the worst outcome group having extreme scores of 4 or 5 on the variables, and the best outcome group having more moderate or mild scores with only occasional extreme cases.

Differences in IQ score between the groups were marked, with the best outcome group mean at 113.6 (high average) and the worst group mean in the borderline range at 73.4. Both groups had four cases with Verbal/Performance score discrepancies of at least 15 points, and in all cases, Performance was higher than Verbal. Even for children with best outcome (who had at least average Verbal IQ scores), it would appear that their native capacity had not been realized in areas more responsive to environmental influence and stimulation (the so-called Acquired Knowledge factor). Pronounced negative effects on verbal learning, thought processes, and verbal cognitive development have been found in

studies of traumatized abused children (Fish-Murray et al, 1987), and it was noted in both groups of the present study that trauma indicators were present.

Predictably, the worst outcome group had no cases with a resilience score at adequate levels, with all at scores of 4 or 5. Only one of the best outcome cases had a score of 4, with 7 cases at the high scores of 1 or 2. Qualitative analysis of resilience scale items indicated that certain traits of resilience (as defined by Mrazek and Mrazek) are more favourable than others for overall functioning. The best outcome cases tended to have high frequencies of the following resilience traits, consistent with the findings of Martin and associates (1977) and Mrazek and Mrazek (1987): utilization of relationships for survival, conviction of being loved, cognitive restructuring of painful events (sometimes to the point of denial as a coping mechanism), precocious maturity, and vigilance and alertness to danger. The worst outcome cases had a limited number of any resilience traits, and ones which were present were more dysfunctional in nature (dissociation of affect and idealization of the aggressor) and were connected with severe personality disturbance. Seven of the 12 worst cases showed dissociation, or splitting, which is an extreme defense usually resorted to in the absence of other coping skills. Dissociative tendencies are thought to begin with a history of severe punishment and strict discipline, in which a child cultivates fantasy as an escape. When subjected to specific physical or sexual abuse, the child will tend to use dissociation as a means of coping, being predisposed to high hypnotic suggestibility and dissociative tendencies based upon earlier experiences. While these tendencies are more common in children than in adults, it appears that the patterns can become ingrained coping mechanisms which extend into adulthood when exposure to environmental threat continues and when pre-existing conditions of severe neglect and deprivation prevent a child from developing any other coping skills or ego strength (Putnam, 1985). Identification with the aggressor /abuser - while it may be protective of the child in the short term by reducing the amount of abuse experienced - has long term

consequences for future social relationships and particularly for the risk of the abused becoming an abuser, based on the internalized representational model. Even in the best outcome group, the potential for either character disorder or depression was high, suggesting the need for other ameliorating variables and continued protection from abuse to ensure good long term outcome.

Degrees of social support and stability were clearly different for the groups, with nine of the best outcome group having better-than-adequate levels (score 1 or 2) of these variables, while the worst outcome group had only three cases with good social support and four cases with good stability. Even these individuals with good support were unable to use it constructively, as found in Krystal's (1978) description of those who remain fixated on their trauma. Examination of cases indicated that the majority of the best cases were either in long term permanent placements or adoptions or were in the course of being reintegrated with natural family after help had been successfully provided, pointing to the importance of a secure attachment in predicting adequate functioning and development and optimal use of social resources (e.g., Aber & Allen, 1987; Kobak et al, 1988; Sroufe, 1979). In the worst outcome group, virtually every child could be considered attachment-disordered and highly unlikely to be able to form new healthy attachments, either with surrogate parent figures or in future intimate relationships with partners or children. The attachment literature also suggests that poor early representational models and damaged attachments are associated with inability to use social supports even when available, leading to a downward spiral and increasing isolation with no ameliorating experiences (Pearce & Pezzot-Pearce, 1994). It can be hypothesized that it is this subgroup of victims who will re-enact intergenerational patterns of maltreatment, mediated by their own attachment failures and unresolved trauma.

Although the family contact variable had shown no decipherable patterns in the statistical analyses of the full research group, in these extreme outcome groups, it was clear that the nature and quality of parental access were more salient factors than frequency, as

found by Shepard (1992). In the worst outcome group, qualitative data indicated that nearly all of the children who had any amount of access with parents were having aversive experiences due to ongoing emotional abuse and/or very erratic and inconsistent visiting patterns and broken promises as the norm. The children's behaviour deteriorated following visits, with such symptoms as nightmares, bedwetting, and emotional/ behavioural regression, and it was reported in many of these cases that children resisted attending visits. These circumstances give further evidence of the damaged and disorganized attachment patterns of these children. In the good outcome group, when access occurred it was generally of a positive or neutral nature which did not disrupt the child's stability of functioning. In one case where access was considered to be disruptive and damaging to the child, it was terminated by court order, following strong advocacy by the foster parents on behalf of the child's wishes. In the cases of adoption, access was permanently terminated to allow for forming attachments to the new parental figures, usually following a period of long term fostering in which a relationship was established. Children did not lose their primary attachment figure without having the chance to transfer their attachment to a more reliable person, the importance of which is alluded to by Eagle (1994).

A further discriminating feature of the worst outcome group not tapped by the research variables was the presence of physiologically-based problems in this group. Unlike the best outcome group, there were cases of diagnosed or strongly suspected fetal alcohol syndrome, epilepsy or pseudo-epilepsy, long-term untreated hearing impairments due to neglect of health care needs, severe organic brain damage (possibly from head injury during abuse), and failure-to-thrive in the worst outcome group. In at least one case, a child was exposed to physical abuse in utero due to his mother's engaging in fights during pregnancy. There was no way in this study to determine the degree of physical abuse of pregnant women by their partners and its effect on prenatal development, but in the extreme groups there was equal frequency of severe family violence and substance abuse, which would

seem to control for this possibility. While there were premature, high-risk infants in both groups, as well as children with attention-deficit and learning disabilities, ones in the best outcome group received more services to help them improve development (often arranged by protective service workers or foster parents), while the worst outcome cases were characterized by having parents who failed to obtain and follow through on diagnostic, remedial, and treatment services (i.e., social/ cognitive neglect) and resisted intervention by child protection services while the child remained in their care.

On a detailed administration of the Drawing Checklist on these extreme cases, certain traits were found to discriminate best and worst outcome groups, while other traits could be found in both groups. Considered in light of Briere's (1992) model of child maltreatment effects on psychological adjustment, the traits common across groups fell into all but one category (**dissociation**) of the seven outlined by Briere. [Briere's categories are shown in bold face, with drawing traits in parentheses.] There were high frequencies in the sample and instances in each group of certain **trauma-related symptoms** (trauma, troubles in affect regulation/ arousal); **cognitive distortions** (impotence/ powerlessness); **altered emotionality** (bodily anxiety, depression, anger/ rage, anxiety/ fearfulness, distress and inner tension, low self-esteem); **impaired self-reference** (emotional development problems, undeveloped self-concept or identity, low self-esteem, barrenness and emptiness, autonomy difficulties); **disturbed relatedness** (insecurity and poor attachment, aggression, anger/ rage, traumatic sexualization, autonomy difficulties); and **avoidance** (impulsiveness and acting out). The presence of traits across so many categories of effects would be anticipated, given the multiple and combined forms of abuse experienced by this research sample regardless of outcome level.

Traits which discriminated the worst outcome group at significant levels - either by their presence, frequency, degree of severity, or high association with group membership - were found in all of Briere's categories except for **altered emotionality**, which was present

in both groups in high amounts. The category most clearly discriminating the groups was **dissociation**, with various related traits found only in the worst outcome group (lack of integration/ fragmentation, segmentation of experience, dissociation, unbalanced/ floating, schizoid). The presence of dissociation in this group was further confirmed by its high occurrence on the independently-rated resilience checklist measure. The worst outcome group also was characterized by certain **trauma-related** symptoms (overstimulated - i.e., unmodulated arousal); **cognitive distortions** (impotence, helplessness, poor reality testing and overuse of fantasy, psychosis); **impaired self-reference** (emotional development problems, lack of personality integration, boundary problems, psychosis, emptiness and barrenness, dependency problems); **disturbed relatedness** (suspiciousness and mistrust, dependency problems); and **avoidance** (impulsiveness). Many of these features suggest the alternating intrusive and numbing responses seen in traumatized persons, but suggest that these children have been so overwhelmed and unable to integrate trauma that they have moved into repression of the memories and walling off of experiences from conscious awareness (although these findings are not supported in all the research literature). This defense is being expressed in the extreme form of dissociative reactions. The degree of helplessness of this group indicated the extent to which the effects of trauma have become ingrained, to the point of creating chronic alterations in the central nervous system so that all subsequent development is affected (van der Kolk et al, 1985).

The best outcome group was distinguished in their drawings - though not at significant levels - with certain aspects of **cognitive distortion** and **disturbed relatedness** including self-consciousness and shame, hypervigilance to danger, overcontrol, and ambivalence. Other testing indicators, especially the resilience scale, suggest other aspects of these two categories may be present, including overassertion and hyper-responsibility, intimacy problems, and interpersonal relationship problems related to being oppositional or manipulative. These features, while helping these higher-functioning children to survive

and thrive despite maltreatment, will be counterproductive to healthy adjustment if carried into later life stages when the real dangers are past. Although not incapacitated, these children also showed some features of trauma response (especially vigilance to further danger). However, they are differentiated by having the self-concept development necessary to begin to integrate the traumatic experiences and move beyond them, while the worst outcome individuals have remained fixated.

Samples of drawings from a 14 year old girl (house and person) and an 11 year old boy (spontaneous life drawing) from the best outcome group, and from two children from the worst outcome group - a 15 year old girl (pencil-drawn person and colour person) and a 7 year old boy (tree and a spontaneous drawing of "anything you want to draw") - are shown in Appendix G, with comments.

Can the children in group 1 be labelled "resilient" in the sense of rising above adversity to function normally, or are they simply the ones who experienced minimal maltreatment and therefore are less damaged? While this question will be answered more completely once the entire group of 54 is examined with detailed drawing protocols, examination of the global severity scores and case histories of each of the 12 best outcome cases indicates that at least 7 of the 12 can be considered nominally resilient in the sense of having experienced at least moderate amounts of maltreatment (raw score >25) yet exhibiting favourable outcome. Of these seven cases, five are girls. Three of the seven (the two boys and one girl) would be considered by Anthony's (1987) categories not to be true resilients because they have developed coping strategies based upon a sociopathic approach to the world, in one case accompanied at times by attention-seeking high risk-taking behaviours (a form of intrusive re-experiencing of trauma) which puts him at further risk of harm. Four children (all girls) can unequivocally be considered true resilients, having experienced serious maltreatment yet emerging relatively high-functioning in most domains of their lives, though not unscarred. Two children of the 12 (both girls) would be considered

pseudo-invulnerable due to very low global severity scores; although they had experienced some harshness and tragedy in their lives, events were generally external to the family and due to circumstances beyond the parent's or child's control and did not result in severing of all family bonds. One of these girls had lived in a Somali war zone, believed that her mother had been killed there, and was subjected to severe physical deprivation and neglect as her father fled the country on foot with her and her younger sister and found in Canada that he was unable to provide adequate parenting. The second girl was subjected to emotional abuse during a divorce battle and had experienced several severe losses including family deaths and the permanent disability and retardation of her sister following an auto accident, but maintained a close relationship with her mother and had not been abused. Another three cases (two boys and one girl) were possibly resilient children, with marginal amounts of maltreatment which had been severe but brief in duration, all three having experienced early neglect due to living with drug-addicted single mothers, and the girl at age five having found her mother dead from a drug overdose and subsequently experiencing severe beatings and psychological scapegoating by maternal relatives after they took over her upbringing. In general, therefore, these higher-functioning children were not ones who had lived the "charmed lives" described by Anthony in reference to pseudo-invulnerables; even those whose global maltreatment scores were not high in comparison to the rest of the research sample were certainly exposed to circumstances with the potential to be devastating. A further caution is in order, however, in regard to a very bright and capable girl who was one of the four apparently resilient children (drawings in Appendix G), in that she showed early indications of borderline personality disorder such as serious problems with intimacy, hypersensitivity, occasional suicidal ideation, threats and gestures, overcontrol interspersed with periods of being overwhelmed and flooded with earlier feelings of helplessness and reliving of sexual abuse memories, and extreme neediness with caregivers such that no one seemed able to meet her needs. Her true resiliency can only be

ascertained after more time has elapsed to see if she has been able to integrate following a beneficial foster placement and the intensive therapy and support which were initiated for her following assessment.

Of the 12 worst outcome cases, most (10) had high severity scores above 40. Two children, both males, had lower severity scores than the majority of the best outcome group, suggesting that they were particularly vulnerable even in the absence of serious maltreatment. In these cases, it is necessary to consider negative genetic contributions to physiological and psychological vulnerability and/ or the possibility of unreported abuse of a more severe nature.

To illustrate an individualized view of the dynamic interplay of the various maltreatment and mediating variables which affect children's development and adjustment, two case studies of sibling pairs - one from each of the outcome groups - are presented in Appendix H. Children with siblings in the study were chosen in order to make comparisons with genetic and environmental features controlled to some extent.

The value of detailed case analyses is apparent in the richness of data available, which relate the general statistical findings to the real life experiences of these maltreated children and also provide useful cues for follow-up study.

Summary of findings on resilience. A resilience research scale comprising the 12 characteristics identified in maltreated children by Mrazek and Mrazek (1987) was found to be useful and predictive of outcome in the present study, but with not all traits being equally valid in predicting positive outcome. Characteristics most reliably associated with positive outcome were (a) vigilance/ responsivity to danger, (b) precocious maturity, (c) formation and utilization of relationships for survival, (d) decisive risk taking (being responsible, decisive, and having an internal locus of control), (e) the conviction of being loved, and (f) cognitive restructuring of painful experiences, associated with hope and optimism. Two features on the list - dissociation of affect and idealization of the aggressor's competence -

were consistently associated with very negative outcome, suggesting that these should only be considered resilience traits when used for survival in the immediate situation of abuse but not when carried over into subsequent non-abusive situations.

The proposed role of intelligence as a dispositional factor enhancing resilience (e.g., Herrenkohl et al, 1994; Radke-Yarrow et al, 1993) was strongly supported by the present study. The nature of many of the features of resilience presuppose at least normal intelligence, and this study found evidence that high average intelligence was the strongest predictor of good global outcome, while below average IQ was closely associated with worst global outcome. Few children in the sample had IQ scores above the superior range; of those who did, several appeared in the best outcome group. Even for children with high IQ, this attribute was no guarantee of adequate school performance, but tended to be associated with better social skills and behaviour. One of the children with highest IQ was in the worst outcome group, with very severe personality pathology, poor social outcome, and inability to function well at school despite his intelligence.

Findings about the benefits of social support were in the expected direction, but were not strong by themselves, being better viewed as part of a more complex phenomenon linked to stability, resilience, and level of functioning of the child. Lack of highly significant effects of social support in this study can be understood in the sense that very troubled, damaged, and delayed children may receive high amounts of social support without showing significant improvements in overall functioning, though it may help them maintain their level or make gradual gains in specific areas of development. Average-to-bright children may receive support because of their ability to appeal to others and to adapt in ways which ensure that their needs are met; their functioning and subsequent resilience do appear to be enhanced by additional support, as hypothesized.

The important role of foster care in either enhancing or undermining resilience - although not a controlled part of this study - was supported in qualitative examination of

extreme groups. As suggested by Mrazek and Mrazek (1987), having a stable, loving foster home in which more healthy family experiences can be modelled was an important feature of the best outcome group. Good foster homes impact upon children's resilience and eventual outcome by ensuring that they are protected from further abuse and neglect; providing a stable, safe, supportive atmosphere where the child can relax her or his defences and maladaptive survival strategies and allow new attachments and nurturing to occur; providing healthier role modelling for the child to internalize for future relationships; providing appropriate structure and discipline rather than alternating over-permissiveness with harsh punishment; offering resources and stimulation of development; and nurturing the child's emotional development and self-concept by seeing him or her as a worthwhile, loveable person with potential and respecting the child's needs and feelings (even the child's ongoing love and loyalty for the natural parent). In the best outcome cases, the above aims often proceeded so well that a permanent bond was formed with the child through adoption or permanent foster placement. Conversely, inadequate or poor foster homes or a series of unstable placements were shown to have the opposite effects and caused further harm to vulnerable children, through additional physical abuse or sexual abuse or exploitation by other foster children, through severe scapegoating and psychological abuse, and through conditions which made it impossible for the child to resolve traumatic experiences or to form new healthier attachments.

Findings on family contact as originally measured were equivocal and inconclusive, but did illustrate that frequency or amount of contact is not predictive of outcome. Tentative conclusions, based upon a limited number of case studies, indicated that the factors which matter are: the child's degree of attachment to the parent and whether visits are desired by the child; whether visits are disruptive and unsettling to the child's adaptation and ability to form new attachments; whether visits are regular, predictable, and consistent, with promises kept; whether visits are closely supervised and guided if necessary; whether foster parents

are able to accept the child's longing for the natural parent rather than feeling threatened and betrayed (thus inducing guilt and ambivalence in the child); whether the child is exposed to further emotional maltreatment, parental pathology or other abuse during the visits or is made to feel guilty and bad for being in care; and whether protection and cessation of access are enacted when visits are harmful to the child.

Findings of this study were consistent with the general theme of the trauma literature in that children were shown to react to the trauma of child maltreatment with limitations in emotional, intellectual, academic, and social development, albeit with different patterns among males and females. Even the most resilient children did not escape some of these effects (particularly social development and personality disturbances), and the children exposed to the most severe neglect and early deprivation were most severely affected, remaining fixated on the trauma and unable to move on with their development even after abuse had been stopped. General support was found for certain of van der Kolk's proposed factors affecting adjustment to trauma. The effect of severity of the stressor was incorporated into the study design, with evidence that higher severity and greater duration of exposure to maltreatment were linked to subsequent poor adjustment. The presence of a support system being helpful to adjustment was supported, with qualifications based on the degree of maladjustment already present before support was provided. Prior traumatization - in the form of prior longstanding neglect and psychological maltreatment - was found to be instrumental in creating greater vulnerability to poor developmental outcome. The developmental phase during which maltreatment occurred was not studied directly due to the pervasiveness of maltreatment across all age ranges in the sample, but there were indications that boys were more vulnerable to very early maltreatment with some becoming more hardy later if supports were provided, while girls were initially resilient but could be more vulnerable in later childhood and adolescence if their needs were not met well in the interim. The two remaining factors deemed important by van der Kolk - genetic

[illegible]

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predisposition and pre-existing personality before trauma -could not be incorporated into this study, but one could hypothesize that these features could certainly have affected the results obtained. Given the dysfunctional level of many of the parents of these maltreatment victims, it is likely that genetic vulnerabilities (learning disabilities, intellectual capacity, mental illness) may have been transmitted to the children so that they would have been less resistant to the environmental stressors to which they were subsequently exposed. Pre-existing personality features such as high sensitivity and difficulty screening out noxious stimuli, similarly, could have contributed to the inability to cope with trauma. With the high proportion of this sample having associations with parental substance abuse and violence, it is likely that many of the children were exposed to intra-uterine stressors so that they were born with temperaments which rendered them difficult to soothe or offer stimulation. Combined with inadequate parenting skills and low parental frustration tolerance, this early personality feature could have contributed to attachment failures and thus to subsequent developmental problems. Children are most vulnerable to trauma when lacking a safe base of attachment. All psychic resources must be directed to survival through self-protection; poorly attached children are extraordinarily reactive to internal and external stimuli, over-reactive to frustration, overwhelmed by anxiety, and can remain fixated at early levels of development. Their lack of cognitive flexibility to learn and retrieve information leads to limitations in many areas of development.

The ability to survive and overcome child maltreatment can be summarized, in a positive sense, as the development of ego strength or ego resilience (Anthony, 1987), which was associated in the present study with the following features:

1. The development of a sense of self, which enables the child to have a sense of efficacy, self-esteem, and a "healthy narcissism."
2. The ability to perceive and accept reality, yet to be able to interpret it in positive ways that permit a hopeful vision of the world.

3. The ability to remember the past rather than repressing or dissociating from it, and to be able to integrate affect and experiences into one's ongoing life. After resolution of trauma, to be able to suppress it consciously and go on with the present and future.
4. The ability to use environmental cues for problem solving and to enhance one's safety and security when appropriate.
5. The ability to reach out to others to obtain and utilize support, role models, nurturing, and love.
6. The capacity for empathy and relatedness, predicated upon the opportunity to form adequate attachments in childhood.

It can be seen that many of these traits of ego strength or true resilience rely on: the precursor of healthy attachment, either in original or surrogate families; the resources, support, stability, and safety to promote healing from trauma and formation of nurturing relationships; and the presence of adequate levels of intellectual capacity. Intelligence, resilience, stability, and social support - as demonstrated in this study - interact in a dynamic relationship to mediate between maltreatment and eventual developmental outcome. Although the link between IQ and resilience is very strong, high IQ is not necessarily a guaranteed protector, nor is resilience a permanent state. Even the most resilient child may go through periods of limitation and regression, followed by a pattern of recovery, restoration, and gradual mastery and integration of experiences. Others may encounter further experiences which destroy their hope and trust; developmental stages which trigger early experiences of pain, loss, and vulnerability; or loss of the environmental supports which helped to sustain them in earlier years. As found by Herrenkohl and Egolf (1994), continued resilience depends on multiple factors such as average to above-average intelligence, cessation of abuse, stable caretaking, positive parental expectations of the child, the ability to form positive personal goals, and a realistic view of the abusive parents' limitations, with a desire to be different from them and to seek and use the support of

others. Resilience does not generalize across all areas of development (Herrenkohl et al., 1994; Kaufman, Cook, Arny, Jones, & Pittinsky, 1994), with social and emotional development and adjustment most frequently compromised even in light of positive functioning in other domains. Thus while the global outcome measure of the present study gives some indication of overall resilience, it is best to look at individual domains of adjustment without collapsing the information in a way which obscures differences. Resilience reflects a delicate, dynamic balance between internal and external resources, not a static condition.

Children's Drawings and Maltreatment

Although children's projective drawings have been utilized and recognized in clinical work as sensitive indicators of psychological functioning and symbolic portrayals of life experiences and perceptions since the development of techniques by Machover, Buck, Hammer, and Koppitz (e.g., Buck & Hammer, 1969; Buck, 1978; Hammer, 1978; Koppitz, 1968), their use is still not widely recognized in scientific circles as being reliable or valid, despite a recent resurgence in interest by some researchers. While a full discussion of the literature on children's drawings is beyond the scope of this study, the reader is directed to a Master's thesis at this university by Bristow (1993) in which she explored this theme and conducted a study of drawings of maltreated children which laid the groundwork for use of drawing ratings in the present study.

Rather than pursuing the lines of earlier research on children's drawings in which objective scoring criteria (presence of certain symbols) were deemed to be indicative of emotional problems (e.g., Koppitz, 1968), the present study took an alternative qualitative approach recommended by Tharinger and Stark (1990) and used by Bristow (1993). In this approach, drawings are evaluated for the overall level of personality functioning and emotional disturbance shown, or as global indicators of the degree of maltreatment to which a child has been exposed. In Bristow's study, the professional rater who also participated in

the present study was found to have good ability to detect the drawings of maltreated children and to be able to do so reliably. He has been involved in the clinical interpretation of children's drawings for over 20 years since his early training with Hammer, has trained numerous clinicians including this researcher in the interpretation of drawings, and has conducted research on developmental aspects of drawings, most recently in 1991 (Groves & Fried, 1991). Further, he has been involved either directly or in a supervisory capacity on thousands of assessments of child protection cases such as the ones in this research sample and frequently serves as an expert witness in Family Court. The present study has taken Bristow's work one step further by devising a structured 47-item checklist of personality traits (definitions in Appendix E) which can be detected by a trained clinician with developmental knowledge of children's drawings, in order to study the underlying patterns of personality which may accompany differential developmental outcomes and differential patterns of maltreatment in children. Traits are not rated only by the presence of a certain symbolic indicator in a drawing (the so-called cookbook approach), but also by specific and global qualitative impressions of the entire set of projective drawings based upon clinical experience with maltreated children, using such cues as use of colour and space, placement and orientation of drawn objects, line quality, addition of words, degree of concurrence with developmentally-appropriate percepts for a child of that age, presence of bizarreness, lack of symbolic content, presence of specific abuse-related symbolism, et cetera. As such, the ratings could not be done immediately by any clinician interested in children's drawings, but would require a training period in which experienced clinicians were also familiarized with developmental norms and with patterns seen in drawings of maltreated children. This measure will be submitted to further revisions and study in follow-up research in progress, using a larger sample and incorporating additional trained raters for inter-rater reliability. Larger sample size will permit factor analysis of clusters of traits into scales as well as

further study of profiles of traits associated with certain patterns of maltreatment, independent ratings of resilience, and developmental stages.

In the present study, the use of the global ratings on the Drawing Checklist proved to be reliable and valid, as indicators of both amount of maltreatment experienced and overall personality functioning and emotional disturbance. Global ratings were rendered even more accurate - in terms of external validity criteria of behavioural ratings on the Achenbach Child Behavior Checklist, and independent ratings done by the researcher on global maltreatment severity, global outcome or extreme outcome group membership, and resilience - by first rating the presence and severity of the 47 personality traits. Retest reliability nearly one year after the first rating was .83 for the personality dysfunction/emotional disturbance global measure used as a research variable, while reliability for prediction of degree of maltreatment was .64. At the second rating, prediction of maltreatment was actually more highly correlated with the global severity research measure (from .66 to .77), and personality dysfunction was more highly correlated with outcome group (from .81 to .86), with all ratings well within acceptable scientific limits despite the subjective nature of scoring. Although these results are very encouraging and lend credence to the use of global qualitative ratings of drawings in assessment of maltreated children, further testing of the technique with larger samples, normal groups, and with other clinician-raters will be necessary to ensure generalizability of results.

Ratings of individual personality traits in drawings of a small subset of cases provided interesting - although highly tentative - results which cannot be generalized without further study. However, the results on individual traits in drawings of maltreated children were in accord with the 1993 study by Bristow, using a different sample of cases, which suggests some replicability of findings. Certain traits appeared with high frequency in the research sample as a whole, suggesting that they are associated with maltreatment, regardless of how well the child is functioning overall. As in Bristow's study, bodily

anxiety, aggression, impotence, emotional development problems, and poor impulse control traits appeared frequently (at least 50% of cases). In addition, the present study found high frequency of maternal rejection, trauma, unmet dependency needs, undeveloped self-concept, poor attachment, depression, anger and rage, anxiety/ fearfulness, inner tension, low self-esteem, barrenness/ emptiness, traumatic sexualization, autonomy difficulties, problems in affect regulation, poor energy modulation, hostility, and alienation/ loneliness. The ability to identify additional traits in the present study was probably enhanced by the use of a structured checklist requiring each trait to be considered and either chosen and rated for severity or rejected; the earlier study was designed to take the terms spontaneously offered by the rater and then to compile frequency of content. Another factor contributing to the presence of additional salient traits in the present study was the broader age range, both younger and older than the latency-aged children of Bristow's study. Consistent across Bristow's study, the pilot study, and the retest reliability study, certain traits were low in frequency but were important discriminators (in the former study of maltreated versus controls, and in the latter study of membership in the poorest outcome group). These include dependency problems, fragmentation/ lack of integration, segmentation, boundary problems, suspiciousness, dissociation and splitting, schizoid adjustment, psychosis, and being overstimulated.

In addition to measuring presence or absence of each trait, the present study added the dimension of severity of each trait, a feature which permitted further discrimination between good and poor outcome groups. children with differing degrees of maltreatment, and children who are more resilient than others in the sample. Data are also available for study to isolate the traits which are associated with specific types or subgroups of maltreatment or risk measured in this study. For example, children for whom parental substance abuse has been a prevalent feature of their lives showed higher severity on these traits: oppositionality, anxiety, autonomy problems (too self-sufficient for age),

hopelessness, rootlessness, hypervigilance, denial, inauthenticity/ facade, and learning disabilities. The more physical abuse experienced, the higher the severity scores on such traits as aggression, volatility, inner tension, helplessness, low emotional development, boundary problems, gender confusion, impulsivity, learning disabilities, undeveloped self-concept, and bodily anxiety. With the inclusion of a larger sample, this analysis of personality correlates of different aspects of abuse can be refined and submitted to confirmatory factor analytic studies and discriminant function analyses.

The use of this structured drawing evaluation measure was shown to have utility in assessing the personality traits observed in maltreated children and to have acceptable retest reliability and validity with other constructs pertinent to this population. Its inclusion in the present research offered a way of examining underlying personality structure and functioning of maltreated children through their own symbolic representation of their lives, adding a depth of outcome information not available in standardized measurements of the child's functioning in individual testing or as reported by others. As with any other assessment tool, drawings should not be used in isolation; interpretability is greatly enhanced by clinical observations and comparison with other assessment measures.

Conclusions

The theoretically-based causal model and related hypotheses proposed in this study were well-supported by the data, with the following major conclusions:

1. The severity and chronicity of combined maltreatment has strong detrimental effects on child development and adjustment, with the most salient effects on academic performance, emotional/ social development, and personality functioning.

2. The combination of psychological maltreatment, physical neglect, and social/ cognitive neglect contributes most significantly to the general pattern of developmental damage, and is highly associated for females with incidents of sexual abuse and for males with physical abuse and family violence, supporting recent literature which has found

psychological abuse and chronic neglect to be underlying factors and precursors to all maltreatment.

3. These effects on development and adjustment are mediated by direct effects of maltreatment on intellectual development (as measured by IQ tests) and resilience, and personal resilience traits and better outcome following maltreatment are highly dependent on intelligence.

4. Resilience is part of a complex, dynamic interaction with intelligence, stability in care, and social support and thus can change over time and exposure to new experiences. All of these features play an important mediating role in predicting developmental outcome. Female maltreated children exhibit significantly more resilience than males and are offered greater stability in their placements, thus offsetting the greater amount of maltreatment experienced so that gender outcome differences are nonsignificant.

5. Sexual abuse severity and duration are greater in females, with males most prone to report this form of abuse at the youngest age range of 5 to 6. Sexual abuse has the effect on females of global interference with development at levels somewhat below significance, while the impact on males appears significantly in personality dysfunction but in few other areas of development. The high association of sexual abuse with the psychological/ neglect factor for females appears to be the mechanism by which development is so globally affected.

6. The presence of high degrees of parental dysfunction such as mental illness, character disorder, and criminality are highly predictive of higher degrees of maltreatment, less stability in care, and therefore worse child outcomes. High degrees of psychological maltreatment are nearly synonymous with high parental dysfunction.

7. Maltreatment involving physical abuse and family violence are very highly correlated with parental substance abuse.

8. Older maltreated children are increasingly at risk for developmental and adaptational failure, with younger children being more resilient, less cumulatively damaged, and more likely to be offered a high degree of support and stability.

9. Considering all variables studied, the most consistently salient predictors of development and adjustment of maltreated children are global severity, the combination of psychological maltreatment and all forms of neglect, IQ, resilience, and stability. Differential patterns of maltreatment, mediating variables, and outcome are seen in males and females, with male outcome predicted best by IQ, resilience, stability, parental dysfunction, higher age, and social support and female outcome best predicted by IQ, stability, and extent of sexual abuse.

10. The use of qualitative measures of children's drawings can be an important and revealing adjunct to assessment and research with maltreated children, with preliminary indications that certain trait patterns may characteristic of certain types of maltreatment experiences and developmental outcomes. Conducted by a trained and knowledgeable clinician with understanding of developmental issues, ratings of drawing content are reliable and valid measures.

Like other major stressors in children's lives, maltreatment does not have the same effect on every child. Child maltreatment and developmental outcome and adjustment are multidimensional, complex constructs which must be studied with tools which can tolerate and take advantage of the complex dynamics of the models without sacrificing the ability to look at underlying processes by which effects and interactions may be understood. Maltreatment can vary in type, intensity, frequency, visibility, duration, risk correlates, and age of occurrence; child development and adjustment encompass a wide range of competencies, behaviours, and psychological processes. The relationships between maltreatment and outcome are not always straightforward, but are mediated by internal and external resources available to the maltreated child. In this study, the attempt has been made

to take these complex factors into account and to integrate them into a comprehensive model in order to obtain the fullest picture of the maltreated child's experiences and process. The attempt also has been made, in a preliminary form, to identify causal paths among variables which can later be submitted to confirmatory study with additional longitudinal testing of this sample. As the study does not have an experimental design, despite the use of structural equation modelling which is appropriate for making inferences about causal relationships in such studies, caution is advised in interpreting all paths as causal rather than correlational. Further, while both global and factorial LISREL models met all criteria of well-fitted models and had numerous significant relationships, the final models in this study are not the only explanatory models which would fit the data. They are simply the best-fitted and most parsimonious models for the theoretical constructs and hypotheses being tested, choices which were determined by the researcher. They do not explain comprehensively all the factors involved in child maltreatment or outcome, with much variance remaining to be accounted for outside the model. Other variables of importance which could refine the models would include a reliable measure of attachment, an indicator of parental IQ to assess genetic contribution to the child's intellectual abilities, and an additional risk variable for pre-natal and neonatal factors such as fetal alcohol syndrome or other organic damage, low birth weight, and temperament differences which might be attributable to a toxic or stressful fetal environment. Finally, important gender differences in preliminary data analyses suggest that the models would have been strengthened and rendered more easily interpretable had there been sufficient sample size to construct and test separate models for each gender.

Implications and Potential Applications of Study

This study has contributed to a better understanding of the complex factors which link maltreatment with developmental outcome in children, with a wider range of data than is normally available when doing prospective research with child victims and more

immediate and complete developmentally-based information on childhood functioning than is usually available in retrospective adult studies. There is a wealth of information available for follow-up research on the full research sample, with potential studies of male-female differences, study of four different developmental age ranges, detailed study of WISC-R profiles and factor patterns in maltreated children, further study of personality traits identifiable in drawings of various subgroups of maltreated children - to name a few. Although not included in this study due to the differential assessment procedures involved, another sample of assessment records of 37 pre-school aged (two to four year old) children is available for study. Downward extension of a developmental model of maltreatment effects will be possible in future research, with some modification of data-gathering instruments and measures required. Additional school-aged cases referred for assessment can continue to expand the research potential of this study, through opportunity for replication of results and confirmatory model testing.

Secondly, a number of cases ($n = 31$) are available for subsequent longitudinal examination of intervening conditions and developmental outcome, an approach which is often lacking in the child maltreatment literature. With the additional data from reassessment of more of the sample, sufficient numbers could be gained to do a confirmatory test of the preliminary causal model obtained in the present study. Understanding could be gained regarding ways in which resilience and developmental outcome are further altered by specific interventions (e.g., placement in a good foster home, treatment) or further traumatic events (e.g., loss of important attachments, subsequent abuse) in children's lives.

A third contribution is the identification of key mediating factors contributing to better or worse developmental outcome following maltreatment. Clarification of these factors offers clues as to intervention strategies with maltreated children - at what point, for how long, and by what methods children can be helped to prevent or overcome damage

from maltreatment. Results of this study highlight the great importance of early intervention with maltreated children - particularly females, who seem to be exposed to maltreatment longer before protection is provided. Although young girls may appear to be coping adequately and not in as great a need of resources as their acting-out brothers who come to CAS attention, providing early intervention in the form of support, treatment, and stability can help to ensure that their early resilience continues. To reduce the instances of long-lasting damage to intellectual development (one of the major prerequisites for positive outcome), early in-home stimulation programs, child care resources accessible to families living in poverty, and parenting training and counselling is highly recommended for high-risk families. Growing knowledge about the pervasively negative impact of psychological maltreatment and neglect strongly suggests the need for modification of policies and procedures in child protection and family law; a child should not have to be in imminent danger of physical harm in order to be kept in protective care or to have parental access closely monitored and - if necessary - restricted. While it is desirable to provide supportive intervention in families and to make efforts to enhance existing attachments before children suffer irreparable harm, in the absence of positive change by abusing parents the focus must shift to providing the child with a secure and nurturing home which can offer stability and appropriate stimulation and care. Information gained from the study of more resilient children helps us understand how to provide buffering and remediation for current and future victims who may be more vulnerable to traumatic outcome. More social support resources need to be consistently available to all maltreated children, not only those who have experienced the more blatant forms of physical and sexual abuse or those who are severely damaged already. Young boys, in particular, may need therapeutic assistance to recover from trauma and to be able to form new attachments where they may obtain crucial nurturing and new, more positive, role identifications.

The results of this study illustrate the great importance of enhancing the stability offered to children in care, but doing so is not an easy task. It requires recruiting and building a more extensive and accessible, stable network of foster care providers whose commitment can be long term and who are able to work with social workers in partnership so that problems can be detected early and child care assistance, professional consultation, and relief can be provided to salvage problematic placements. Homes should not be overburdened with too many difficult children at once unless foster parents are highly experienced or additional therapeutic staffing can be provided, as children are otherwise exposed to further risk from the chaotic milieu, lack of sufficient attention, and acting out by disturbed peers. Treatment services should be provided promptly to emotionally troubled and behaviourally disordered children, with the realization that these disorders will contribute to placement breakdown and a gradually worsening cycle of damage to the child and eventually to society in general as the child enters adolescence and adulthood. There must be continued vigilance to abuses in foster homes, with rapid intervention to protect children from further maltreatment; additional resources for screening and careful selection of foster parents are advised. Social workers, foster parents, therapists, and school personnel need to work together to provide for the multiple needs of these children in a coordinated effort and with understanding of their special needs for nurturing, structure, guidance in social skills development, remediation for educational gaps, support, and predictability in life routines. It is important that at least one reliable adult in the child's life sees her or him as valuable and worthy of love and attention, and efforts must be made to help each child have such a person. Even the children who are apparently most resilient need such conditions in order to remain so and to reach their optimal development.

A fourth application of the findings of this study is the refinement of assessment procedures to be used with maltreated children so that the most salient information is available for future research as well as for determining the child's needs and most

appropriate interventions. Multi-modal assessments involving multiple observers of the child, such as the type of assessment upon which these research data were based, are essential in understanding the functioning, needs, and life experience of maltreated children. Examining status in a full range of developmental areas is essential, as a child may appear well-functioning in one area while having extensive damage in others. In addition to the standardized measures typically used in assessment, the present study highlights the value of including projective techniques such as drawing measures to tap the child's underlying dynamics in order to understand his or her needs fully and to inform a plan of care that encompasses emotional needs as well as more basic needs.

Drawing from the causal models, the discriminant function analyses, and the detailed study of extreme outcome cases those variables which predicted better or worse outcome could lead to the derivation of a weighted risk/buffering equation which could be used to predict developmental outcome and identify children at greatest risk and most in need of services in these stringent economic times of waiting lists and limited service availability. A practical outgrowth of this formula could be checklists which could be used by social workers and doctors to identify need for referral of children for assessment or extra services once they are placed in care. While only formulated in a general way at this point, this study suggests that such a risk formula should include ratings for the severity and duration of each form of maltreatment, with psychological maltreatment and neglect assigned double weighting due to their more pervasive impact on development. Parental dysfunction should also receive double weighting, while physical abuse, family violence, and substance abuse would be entered at their original score. For females, sexual abuse would be double-weighted, and for males would also be a flag for obtaining therapy. Additional variables could be added for attachment disorder risk and for physiologically-based risk. From the total risk score, adjustments would be made for: level of IQ (with higher IQ lowering risk), score on a resilience checklist (with most features of the list used

in the present study being considered positive resilience factors, but dissociation and idealization of the aggressor being negative indicators that signalled need for rapid intervention), degree of stability the child had experienced thus far in placements, and amount and quality of social supports currently in place for the child. Persons involved in case planning could therefore obtain an estimate of the overall degree of risk and need for protection, urgency of treatment needs, and could also see in what areas of intervention most effort was needed in order to enhance developmental outcome and adjustment.

Finally, this study has implications for therapists working with maltreated children. It is clear that certain issues will emerge frequently in work with these children, including psychological and behavioural problems associated with attachment disorders and insecurity, difficulties with basic trust, undeveloped self-concept, conflicts over loyalties to parents and foster parents, depression and low self-worth, and myriad fears and generalized anxiety founded upon traumatic memories. It can be difficult for such children to form therapeutic alliances or to use supports offered to them, so it is incumbent upon the therapist to have a full understanding of the child's dynamics and to work actively to build the relationship while also respecting the child's caution and fears of closeness. With such children, the consistency of treatment also becomes even more salient, given their need for stability and structure.

The fact that children are exposed to the traumatizing conditions seen among the 109 children in this research sample is a great societal and personal tragedy, but it is hoped that we can use their experiences and the knowledge gained about how they survive or are damaged by their experiences to learn how to protect and buffer other children in similar conditions and to inform social policy to meet the needs of all maltreated children in a way that serves their best interest.

REFERENCES

- Aber, J.L., & Allen, J.P. (1987). Effects of maltreatment on young children's socioemotional development: An attachment theory perspective. Developmental Psychology, 23(3), 406-414.
- Aber, J.L., & Cicchetti, D. (1984). The socio-emotional development of maltreated children. In B.M. Lester & M.W. Yogman (Eds.), Theory and research in behavioral pediatrics (Vol. 1, pp. 147-205). New York: Plenum Press.
- Ainsworth, M., Blehar, M., Waters, E., & Wall, S. (1978). Patterns of attachment. Hillsdale, NJ: Erlbaum.
- Allen, D.M., & Tarnowski, K.J. (1989). Depressive characteristics of physically abused children. Journal of Abnormal Child Psychology, 17, 1-11.
- Amdur, R.L. (1989). Testing causal models of delinquency. Criminal Justice & Behavior, 16(1), 35-62.
- Ammerman, R.T., Cassisi, J.E., Hersen, M., & Van Hasselt, V.B. (1986). Consequences of physical abuse and neglect in children. Clinical Psychology Review, 6, 291-310.
- Ammerman, R.T., & Hersen, M. (1990). Children at risk: An evaluation of factors contributing to child abuse and neglect. New York: Plenum Press.
- Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. Psychological Bulletin, 103, 411-423.
- Anthony, E.J., & Cohler, B.J. (1987). The invulnerable child. New York: Guilford Press.
- Arend, R., Gove, F., & Sroufe, L.A. (1979). Continuity of individual adaptation from infancy to kindergarten: A predictive study of ego-resiliency and curiosity in pre-schoolers. Child Development, 50, 950-959.
- Asher, H.B. (1983). Causal modeling: Second edition. (No. 3 in Series: Quantitative Applications in the Social Sciences). Newbury Park, CA: Sage Publications.

- Asher, S.J. (1988). The effects of childhood sexual abuse: A review of the issues and evidence. In L.E.A. Walker (Ed.), Handbook on sexual abuse of children, (pp. 3-18). New York: Springer Publications.
- Augoustinos, M. (1987). Developmental effects of child abuse: Recent findings. Child Abuse & Neglect, 11, 15-27.
- Azar, S.T., Barnes, K.T., & Twentyman, C.T. (1988). Developmental outcome in psychically abused children: Consequences of parental abuse on the effects of a more general breakdown in caregiving behaviours. Behavior Therapist, 11, 27-32.
- Benedict, M I., Zuravin, S., Brandt, D., & Abbey, H. (1994). Types and frequency of child maltreatment by family foster care providers in an urban population. Child Abuse & Neglect, 18(7), 577-585.
- Berliner, L. (1991). Therapy with victimized children and their families. In J.N. Briere (Ed.), Treating victims of sexual abuse (pp. 29-46). San Francisco: Jossey-Bass.
- Besharov, D. J. (1990). Recognizing child abuse: A guide for the concerned. New York: Free Press/ MacMillan, Inc.
- Block, J.H., & Block, J. (1980). The role of ego-control and ego-d resiliency in the organization of behavior. In W.A. Collins (Ed.), Development of cognition, affect, and social relations: The Minnesota Symposia on Child Psychology, Vol. 13 (pp. 39-101).
- Bousha, D.M., & Twentyman, C.T. (1984). Mother-child interactional style in abuse, neglect, and control groups: Naturalistic observations in the home. Journal of Abnormal Psychology, 93, 106-114.
- Bowlby, J. (1958). The nature of the child's tie to his mother. International Journal of Psychoanalysis, 39, 350-373.
- Bowlby, J. (1980). Attachment and loss, Vol. III: Loss, sadness, and depression. New York: Basic Books.

- Brassard, M.R., & Gelardo, M.S. (1987). Psychological maltreatment: The unifying construct in child abuse and neglect. School Psychology Review, 16(2), 127-136.
- Brassard, M., Germain, B., & Hart, S. (Eds.). (1987). Psychological maltreatment of children and youth. New York: Pergamon Press.
- Brassard, M.R., Hart, S.N., & Hardy, D.B. (1993). The Psychological Maltreatment Rating Scales. Child Abuse & Neglect, 17, 715-729.
- Briere, J.N., (1992). Child abuse trauma: Theory and treatment of the lasting effects. Newbury Park, CA: Sage Publications.
- Briere, J., & Runtz, M. (1988). Multivariate correlates of childhood psychological and physical maltreatment among university women. Child Abuse & Neglect, 12, 331-334.
- Briere, J., & Runtz, M. (1990). Differential adult symptomatology associated with three types of child abuse histories. Child Abuse & Neglect, 14, 357-364.
- Briere, J., & Zaidi, L.Y. (1989). Sexual abuse histories and sequelae in female emergency room patients. American Journal of Psychiatry, 146, 1602-1606.
- Bristow, K.I., (1993). The impact of child maltreatment and child sexual abuse on children's drawings. Unpublished master's thesis, Carleton University: Ottawa.
- Buck, J.N. (1978). The House-Tree-Person Technique. Los Angeles: Western Psychological Services.
- Buck, J.N. & Hammer, E.F. (Eds.) (1969) Advances in the House-Tree-Person technique: Variations and applications. Los Angeles: Western Psychological Services.
- Burleson, B.R., Delia, J.G., & Applegate, J.L. (1992). Effects of maternal communication and children's social-cognitive and communication skills on children's acceptance by the peer group. Family Relations, 41, 264-272.
- Burnett, B. (1993). The psychological abuse of latency-age children: A survey. Child Abuse & Neglect, 17, 441-454.

- Butler, S.M., Radia, N., & Magnatta, M. (1994). Maternal compliance to court-ordered assessment in cases of child maltreatment. Child Abuse & Neglect, 18(2), 203-211.
- Canadian Institute of Child Health. (1989). The health of Canada's children: A CICH profile. Ottawa, ON.
- Carlson, B.E. (1991). Outcomes of physical abuse and observations of marital violence among adolescents in placement. Journal of Interpersonal Violence, 6(4), 526-534.
- Carlson, V., Cicchetti, D., Barnett, D., & Braunwald, K. (1989). Disorganized / disoriented attachment relationships in maltreated infants. Developmental Psychology, 25(4), 525-531.
- Carmen, E.H., Reiker, P.P., & Mills, T. Victims of violence and psychiatric illness. American Journal of Psychiatry, 141, 378-379.
- Cassidy, J. (1988). Child-mother attachment and the self in six year olds. Child Development, 59, 121-134.
- Chandler, S.M. (1982). Knowns and unknowns in sexual abuse of children. Journal of Social Work & Human Sexuality, 1, 51-68.
- Christopoulos, C., Bonvillian, J.D., & Crittenden, P.M. (1988). Maternal language input and child maltreatment. Infant Mental Health, 9, 272-286.
- Chu, J.A., & Dill, D.L. (1990). Dissociative symptoms in relation to childhood physical and sexual abuse. American Journal of Psychiatry, 147(7), 887-892.
- Cicchetti, D., & Carlson, V. (Eds.) (1989). Child maltreatment: Theory and research on the causes and consequences of child abuse and neglect. New York: Cambridge University Press.
- Cicchetti, D. & Garnezy, N. (1993). Prospects and promises in the study of resilience. Development & Psychopathology, 5, 497-502.

- Cicchetti, D., Rogosch, F.A., Lynch, M., & Holt, K.D. (1993). Resilience in maltreated children: Processes leading to adaptive outcome. Development & Psychopathology, 5, 629-647.
- Cicchetti, D., Toth, S.L., & Hennessy, K. (1989). Research on the consequences of child maltreatment and its application to educational settings. Topics in Early Childhood Special Education, 9, 32-55.
- Claussen, A.H., & Crittenden, P.M. (1991). Physical and psychological maltreatment: Relations among types of maltreatment. Child Abuse & Neglect, 15, 5-18.
- Committee on Sexual Offences against Children and Youths (1984). Sexual offences against children: Report of the committee on sexual offences against children and youths. Ottawa: Canadian Government Publishing Centre.
- Conaway, D.J., & Hansen, L.P. (1989). Social behavior of physically abused and neglected children: A critical review. Clinical Psychology Review, 9, 627-652.
- Craft, J.L., & Staudt, M.M. (1991). Reporting and founding of child neglect in urban and rural communities. Child Welfare, 70(3), 359-370.
- Crittenden, P.M. (1989). Teaching maltreated children in the pre-school. Topics in Early Childhood Special Education, 9, 16-32.
- Crittenden, P.M. (1992). Children's strategies for coping with adverse home environments: An interpretation using attachment theory. Child Abuse & Neglect, 16, 329-343.
- Crittenden, P.M., & Ainsworth, M.D.S. (1989). Child maltreatment and attachment theory. In D. Cicchetti & V. Carlson (Eds.), Child Maltreatment: Theory and research on the causes and consequences of child abuse and neglect. pp. 432-463. New York: Cambridge University Press.
- Crittenden, P.M., Claussen, A.H., & Sugarman, D.B. (1994). Physical and psychological maltreatment in middle childhood and adolescence. Development & Psychopathology, 6, 145-164.

- Culp, R.E., Watkins, R.V., Lawrence, H., Letts, D., Kelly, D.J., & Rice, M.L. (1991). Maltreated children's language and speech development: Abused, neglected, and abused and neglected. First Language, 11, 377-389.
- Dean, A.L., Malik, M.M., Richards, W., & Stringer, S.A. (1986). Effects of parental mistreatment on children's conceptions of interpersonal relationships. Developmental Psychology, 22, 617-626.
- Deblinger, E, McLeer, S.V., Atkins, M.S., Ralphe, D., & Foa, E. (1989). Post-traumatic stress in sexually abused, physically abused, and nonabused children. Child Abuse & Neglect, 13, 403-408.
- DeYoung, M. (1982). The sexual victimization of children. Jefferson, NC: McFarland.
- Dubowitz, H., Black, M., Harrington, D., & Verschoore, A. (1993). A follow-up study of behavior problems associated with child sexual abuse. Child Abuse & Neglect, 17, 743-754.
- Eagle, R.S. (1994). The separation experience of children in long-term care: Theory, research, and implications for practice. American Journal of Orthopsychiatry, 64(3), 421-434.
- Eckenrode, J., Laird, M., & Doris, J. (1993). School performance and disciplinary problems among abused and neglected children. Developmental Psychology, 29, 53-62.
- Egeland, B. (1983). Comments on Kopp, Krakow, and Vaughn's chapter. In M. Perlmuter (Ed.). The Minnesota Symposia on child psychology, 16, pp. 129-185. Hillsdale, NJ: Erlbaum.
- Egeland, B. & Erickson, M.F. (1987). Psychological unavailable care- giving. In M. Brassard, B. Germain, & S. Hart (Eds.). Psychological maltreatment of children and youth, pp. 110-120. New York: Pergamon Press.
- Egeland, B., & Sroufe, L.A. (1981). Attachment and early maltreatment. Child Development, 52, 44-52.

- Egeland, B., Sroufe, L.A., & Erickson, M. (1983). The developmental consequence of different patterns of maltreatment. Child Abuse & Neglect, 7, 459-469.
- Elmer, E. (1967). Children in jeopardy: A study of abused minors and their families. Pittsburgh: University of Pittsburgh.
- Elmer, E. (1977). A follow-up study of traumatized children. Pediatrics, 59, 273-279.
- Elmer, E. (1978). Effects of early neglect and abuse on latency aged children. Journal of Pediatric Psychology, 3(1), 14-19.
- Elmer, E., & Gregg, G. (1967). Developmental characteristics of abused children. Pediatrics, 40, 596.
- Emery, R.E. (1989). Family violence. American Psychologist, 44, 321-328.
- Erickson, M.F., & Crichton, L. (1981). Antecedents of compliance in two-year-olds from a high risk sample. Paper presented at the biennial meeting of the Society for Research in Child Development, Boston.
- Erickson, M.F., & Egeland, B. (1987). A developmental view of the consequences of maltreatment. School Psychology Review, 16, 156-168.
- Erickson, M.F., Egeland, B., & Pianta, R. (1989). The effects of maltreatment on the development of young children. In D. Cichetti & V. Carlson (Eds.), Child maltreatment: Theory and research on the causes and consequences of child abuse and neglect. New York: Cambridge University Press.
- Famularo, R., Kinscherff, R., & Fenton, T. (1990). Symptom differences in acute and chronic presentation of childhood post-traumatic stress disorder. Child Abuse & Neglect, 14, 439-444.
- Famularo, R., Kinscherff, R., & Fenton, T. (1991). Parental substance abuse and the nature of child maltreatment. Child Abuse & Neglect, 16, 475-483.
- Fantuzzo, J.W., DePaola, L.M., Lambert, L., Martino, T., Anderson, G., & Sutton, S. (1991). Effects of interparental violence on the psychological adjustment and

- competencies of young children. Journal of Consulting and Clinical Psychology, 59(2), 258-265.
- Finkelhor, D. (1984). Child sexual abuse: New theory and research. New York: Free Press.
- Fisher, P.M. (1991). Women survivors of childhood sexual abuse: Clinical sequelae and treatment. Unpublished doctoral dissertation, Simon Fraser University, Burnaby, British Columbia.
- Fish-Murray, C.C., Koby, E.V., & van der Kolk, B.A. (1987). Evolving ideas: The effect of abuse on children's thought. In B.A. van der Kolk (Ed.), Psychological trauma, pp. 89-110. Washington, DC: American Psychiatric Press.
- Gamble, T.J., & Zigler, E. (1986). Effects of infant day care: Another look at the evidence. American Journal of Orthopsychiatry, 56, 26-42.
- Garnezy, N. (1985). Stress-resistant children: The search for protective factors. In J.E. Stevenson (Ed.), Recent research in developmental psychopathology (pp. 213-233). Oxford: Pergamon Press.
- Garnezy, N., Masten, A.S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. Child Development, 55, 97-111.
- Garrison, E.G. (1987). Psychological maltreatment of children: An emerging focus for inquiry and concern. American Psychologist, 42(2), 157-159.
- Gelardo, M.S., & Sanford, E.E. (1987). Child abuse and neglect: A review of the literature. School Psychology Review, 16, 137-155.
- George, C., & Main, M. (1979). Social interactions of young abused children: Approach, avoidance, and aggression. Child Development, 50, 306-318.
- Gil, D.G. (1974). A socio-cultural perspective on physical child abuse. In J.E. Leavitt (Ed.), The battered child, pp. 164-169. U.S.A: The General Learning Corporation.

- Gill, M. & Miller, D. (1986). Child welfare issues in Canada. Ontario Children's Aid Society Journal, 35, (7), 5-11.
- Gomes-Schwartz, B., Horowitz, J.M., & Sauzier, M. (1985). Severity of emotional distress among sexually abused preschool, school age, and adolescent children. Hospital & Community Psychiatry, 36, 503-508.
- Graziano, A.M., & Mills, J.R. (1992). Treatment for abused children: When is a partial solution acceptable? Child Abuse & Neglect, 16(2), 217-228.
- Green, A.H. (1983). Dimensions of psychological trauma in abused children. Journal of the American Association of Child Psychiatry, 22, 231-237.
- Greenspan, S.I., & Pollock, G.H. (1989). The course of life: Volume II. Early childhood. Madison, WI: International Universities Press.
- Greenspan, S.I., & Pollock, G.H. (1991a). The course of life: Volume III. Middle and late childhood. Madison, WI: International Universities Press.
- Greenspan, S.I., & Pollock, G.H. (1991b). The course of life: Volume IV. Adolescence. Madison, WI: International Universities Press.
- Groves, J.R. & Fried, P.A. (1991). Developmental items on children's human figure drawings: A replication and extension of Koppitz to younger children. Journal of Clinical Psychology, 47(1), 138-145.
- Hammer, E.F. (1978). The clinical applications of projective drawings. Springfield, IL: Charles C. Thomas.
- Hart, S.N., & Brassard, M.R. (1987). A major threat to children's mental health: Psychological maltreatment. American Psychologist, 42(2), 160-165.
- Hart, S.N., Germain, R.B., & Brassard, M.R. (1987) The challenge: To better understand and combat psychological maltreatment of children and youth. In M. Brassard, B. Germain, & S. Hart (Eds.). Psychological maltreatment of children and youth, pp. 3-24. New York: Pergamon Press.

- Haugaard, & Emery, R.E. (1989). Methodological issues in child abuse research. Child Abuse & Neglect, 13, 13-100.
- Health and Welfare Canada. (1990). Reaching for solutions: The report of the special advisor to the Minister of National Health and Welfare on child sexual abuse in Canada. (Cat. No. H74-28). Ottawa, ON: National Clearinghouse on Family Violence.
- Hayduk, L.A. (1987). Structural equation modeling with LISREL: Essentials and advances. Baltimore, MD: Johns Hopkins University Press.
- Herman, J.L. (1981). Father-daughter incest. Cambridge, MA: Harvard University Press.
- Herman, J.L., Perry, C., & van der Kolk, B.A. (1989). Childhood trauma in borderline personality disorder. American Journal of Psychiatry, 146, 490-494.
- Hess, P.M., & Folaron, G. (1991). Ambivalences: A challenge to permanency for children. Child Welfare, 70(4), 403-424.
- Herrenkohl, E.C. & Egolf, B. (1994). Resilient early schoolage children from maltreating homes: Outcomes in late adolescence. American Journal of Orthopsychiatry, 64(2), 301-309.
- Hindman, J. (1989). Just before dawn: From the shadows of tradition to new reflections in trauma assessment and treatment of sexual victimization. Ontario, OR: AlexAndria Associates.
- Jaffe, P.G., Wolfe, D.A., & Wilson, S.K. (1990). Children of battered women. Newbury Park, CA: Sage Publications.
- Johnson, B.K., & Kenkel, M.B. (1991). Stress, coping, and adjustment in female adolescent incest victims. Child Abuse & Neglect, 15, 293-305.
- Joreskog, K.G. & Sorbom, D. (1989). LISREL 7: A guide to the program and applications (2nd Edition). Chicago, IL: SPSS, Inc.

- Kashani, J.H., Daniel, A.E., Dandoy, A.C., & Holcomb, W.R. (1992). Family violence: Impact on children. Journal of the American Academy of Child and Adolescent Psychiatry, 31(2), 181-189.
- Kaufman, J., & Cicchetti, D. (1989). Effects of maltreatment on school-age children's socio-emotional development: Assessments in a day camp setting. Developmental Psychology, 25, 516-524.
- Kaufman, J., Cook, A., Arny, L., Jones, B., & Pittinsky, T. (1994). Problems defining resiliency: Illustrations from the study of maltreated children. Development & Psychopathology, 6, 215-229.
- Kaufman, K.L., & Rudy, L. (1991). Future directions in the treatment of physical child abuse. Criminal Justice & Behavior, 18(1), 82-97.
- Kempe, C.H. & Helfer, R.E. (1968, 1974, 1980). The battered child. Chicago, IL: University of Chicago Press.
- Kempe, C.H., Silverman, F., Steele, B., Droegemueller, W., and Silver, H. (1962) The battered child syndrome. Journal of American Medical Association, 181, 17-24, 105-112.
- Kempe, R.S., & Kempe, C.H. (1978). Child abuse. Cambridge, MA: Harvard University Press.
- Kendall-Tackett, K.A., Williams, L.M., & Finkelhor, D. (1993). Impact of sexual abuse on children: A review and synthesis of recent empirical studies. Psychological Bulletin, 113, 164-180.
- Kiser, L.J., Heston, J., Millsap, P.A., & Pruitt, D.B. (1991). Physical and sexual abuse in childhood: Relationship with PTSD. Journal of the American Academy of Child and Adolescent Psychiatry, 30(5), 776-783.
- Kobak, R.R., & Sceery, A. (1988). Attachment in late adolescence: Working models, affect regulation, and representations of self and others. Child Development, 59, 135-146.

- Kolko, D.J. (1992). Characteristics of child victims of physical violence: Research findings and implications. Journal of Interpersonal Violence, 7(2), 244-276.
- Koppitz, E.M. (1968). Psychological evaluation of children's human figure drawings. New York: Grune & Stratton.
- Krugman, R.D., & Krugman, M.K. (1984). Emotional abuse in the classroom. American Journal of Diseases of Children, 138, 284-286.
- Krystal, H. (1978). Trauma and its effects. Psychoanalytic Study of the Child, 33, 81-116.
- Kyrios, M., & Prior, M. (1990). Temperament, stress and family factors in behavioural adjustment of three-five year old children. International Journal of Behavioural Development, 13(1), 67-93.
- Lamphear, V.S. (1985). The impact of maltreatment on children's psychosocial adjustment: A review of the research. Child Abuse & Neglect, 9, 251-263.
- Leavitt, F. (1994). Clinical correlates of alleged satanic abuse and less controversial sexual molestation. Child Abuse & Neglect, 18(4), 387-392.
- Leifer, M., Shapiro, J.P., & Kassem, L. (1993). the impact of maternal history and behavior upon foster placement and adjustment of sexually abused girls. Child Abuse & Neglect, 17, 755-766.
- Leighton, B. (1989). Spousal abuse in metropolitan Toronto: Research report on the response of the criminal justice system. (Report No. 1989-02). Ottawa: Solicitor General of Canada.
- Loehlin, J.C. (1992). Latent variable models: An introduction to factor, path, and structural analysis: 2nd Edition. Hillsdale, NJ: L. Erlbaum Associates, Publishers.
- Luthar, S.S. (1991). Vulnerability and resilience: A study of high risk adolescents. Child Development, 62, 600-616.

- Luthar, S.S., Doernberger, C.H., & Zigler, E. (1993). Resilience is not a unidimensional construct: Insights from a prospective study of inner-city adolescents. Development & Psychopathology, 5, 703-717.
- Luthar, S.S., & Zigler, E. (1991). Vulnerability and competence: A review of research on resilience in childhood. American Journal of Orthopsychiatry, 61(1), 6-22.
- Luthar, S.S., & Zigler, E. (1992). Intelligence and social competence among high-risk adolescents. Development & Psychopathology, 4, 287-299.
- Lynch, M.A., & Roberts, J. (1982). Consequences of child abuse. London: Academic Press.
- Main, M. (1981). Avoidance in the service of attachment: A working paper. In K. Immelmann, G. Barlow, L. Petrinoitch, & M. Main (Eds.), Behavioral development: The Bielefeld interdisciplinary project, pp. 651-693. New York: Cambridge University Press.
- Main, M., & George, C. (1985). Responses of abused and disadvantaged toddlers to distress in age mates: A study in a daycare setting. Developmental Psychology, 21, 407-412.
- Main, M., & Goldman, R. (1984). Predicting rejection of her infant from mother's representation of her own experience: Implications for the abused-abusing intergenerational cycle. Child Abuse & Neglect, 8, 203-217.
- Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. Greenberg, D. Cicchetti, & M. Cummings (Eds.), Attachment in the preschool years: Theory, research, and interventions. Chicago: University of Chicago Press.
- Main, M., & Stadtman, J. (1981). Infant response to rejection of physical contact by the mother: Aggression, avoidance and conflict. Journal of the American Academy of Child Psychiatry, 20, 292-307.

- Manley, J.T., Cicchetti, D., & Barnett, D. (1994). The impact of subtype, frequency, chronicity, and severity of child maltreatment on social competence and behavior problems. Development & Psychopathology, 6, 121-143.
- Martin, H.P., & Beezley, P. (1977). Behavioral observations on abused children. Developmental Medicine & Child Neurology, 19, 373-378.
- Martin, J.A., & Elmer, E. (1992). Battered children grown up: A follow-up study of individuals severely maltreated as children. Child Abuse & Neglect, 16, 75-87.
- Mash, E.J., & Johnston, C. (1990). Determinants of parenting stress: Illustrations from families of hyperactive children and families of physically abused children. Journal of Clinical Psychology, 19, 313-328.
- Masten, A.S. (1989). Humor and creative thinking in stress-resistant children. Unpublished doctoral dissertation, University of Minnesota.
- Matas, L., Arend, R., & Sroufe, L.A. (1978). Continuity of adaptation in the second year: The relationship between quality of attachment and later competence. Child Development, 49, 547-556.
- McCarthy, D. (1979). Recognition of signs of emotional deprivation: A form of child abuse. Child Abuse & Neglect, 3, 423-428.
- Melnick, B., & Hurley, J.R. (1969). Distinctive personality attributes of child-abusing mothers. Journal of Consulting & Clinical Psychology, 33, 746-749.
- Milner, J.S. (1991). Current perspectives on physical child abuse. Criminal Justice & Behavior, 18(1), 4-7.
- Morgan, S.R. (1979). Psycho-educational profile of emotionally disturbed abused children. Journal of Clinical Child Psychology, 8, 3-6.
- Morris, R.J., Bergen, J.R., & Fulginiti, J.V. (1991). Structural equation modeling in clinical assessment research with children. Journal of Consulting & Clinical Psychology, 59(3), 371-379.

- Mrazek, P.J., & Mrazek, D.A. (1987). Resilience in child maltreatment victims: A conceptual exploration. Child Abuse & Neglect, 11, 357-366.
- Murphy, J.M., Jellinek, M., Quinn, D., Smith, G., Poitras, F.G., & Goshko, M. (1991). Substance abuse and serious child mistreatment: Prevalence, risk, and outcome in a court sample. Child Abuse & Neglect, 15, 197-211.
- National Committee for Prevention of Child Abuse. (1983). Physical child abuse. Chicago, IL: NCPCA.
- National Committee for Prevention of Child Abuse. (1986). Physical child neglect. Chicago, IL: NCPCA.
- Ney, P.G, Fung, T., & Wickett, A.R. (1994). The worst combinations of child abuse and neglect. Child Abuse & Neglect, 18(9), 705-714.
- Ontario Association of Children's Aid Societies. (1992). Ontario's recession...tough times for children. OACAS Journal, 36(2), 2-8.
- Pearce, J.W. & Pezzot-Pearce, T.D. (1994). Attachment theory and its implications for psychotherapy with maltreated children. Child Abuse & Neglect, 18(5), 425-438.
- Putnam, F.W., Jr. (1985). Dissociation as a response to extreme trauma. In R.P.Kluft (Ed.), Childhood antecedents of multiple personality. Washington, DC: American Psychiatric Press, Inc.
- Radke-Yarrow, M. & Brown, E. (1993). Resilience and vulnerability in children of multiple-risk families. Development & Psychopathology, 5, 581-592.
- Rende, R., & Plomin, R. (1993). Families at risk for psychopathology: Who becomes affected and why? Development & Psychopathology, 5, 529-540.
- Romney, M.C. (1982). Incest in adolescence. Pediatric Annals, 11, 813-817. Rosenberg, M.S. (1987). New directions for research on the psychological maltreatment of children. American Psychologist, 42(2), 166-171.

- Rosenthal, J.A., Motz, J.K., Edmonson, D.A., & Groze, V. (1991). A descriptive study of abuse and neglect in out-of-home placement. Child Abuse & Neglect, 15, 249-260.
- Salzinger, S., Feldman, R.S., Hammer, M., & Rosario, M. (1991). Risk for physical child abuse and the personal consequences for its victims. Criminal Justice & Behavior, 18(1), 64-81.
- Salzinger, S., Kaplan, S., Pelcovitz, D., Samit, C., & Krieger, R. (1984). Parent and teacher assessment of children's behavior in child maltreating families. Journal of the American Academy of Child Psychiatry, 23, 458-464.
- Sanders, B., & Giolas, M.H. (1991). Dissociation and childhood trauma in psychologically disturbed adolescents. American Journal of Psychiatry, 148(1), 50-54.
- Schneider-Rosen, K., Braunwald, K., Carlson, V., & Cicchetti, D. (1985). Current perspectives in attachment theory: Illustration from the study of maltreated infants. In I. Bretherton & E. Waters (Eds.), Growing points in attachment theory and research: Monographs of the Society for Research in Child Development (pp. 194-210). Chicago: University of Chicago Press.
- Shepard, M. (1992). Child visiting and domestic abuse. Child Welfare, 71(4), 357-367.
- Speiker, S.J., & Booth, C. (1988). Family risk typologies and patterns of insecure attachment. In J. Belsky & T. Nezworski (Eds.), Clinical implications of attachment (pp. 95-135). Hillsdale, NJ: Erlbaum.
- Spinetta, J.J., & Rigler, D. (1972). The child-abusing parent: A psychological review. Psychological Bulletin, 77, 296-304.
- SPSS, Inc. (1990). SPSS LISREL 7 and PRELIS: User's guide and reference. Chicago, IL: SPSS, Inc.
- Sroufe, L.A. (1979). The coherence of individual development: Early care, attachment, and subsequent developmental issues. American Psychologist, 34, 834-841.

- Sroufe, L.A. (1983). Infant-caregiver attachment and patterns of adaptation in preschool: The roots of maladaptation and competence. In M. Perlmutter (Ed.). Minnesota symposium in child psychology. (Vol. 16, pp. 41-81). Hillsdale, NJ: Erlbaum.
- Sroufe, L.A., & Rutter, M. (1984). The domain of developmental psychopathology. Child Development, 55, 17-29.
- Stagg, V., Wills, G.D., & Howell, M. (1989). Psychopathology in early childhood: Witnesses of family violence. Topics in Early Childhood Special Education, 9(2), 73-87.
- Steele, B.F. (1986). Notes on the lasting effect of early child abuse throughout the life cycle. Child Abuse & Neglect, 10, 283-291.
- Steele, B.F., & Pollock, C. (1968). A psychiatric study of parents who abuse infants and small children. In R.E. Helfer & C. H. Kempe (Eds.), The battered child, pp. 414-463. Chicago, IL: University of Chicago Press.
- Stevens-Simon, C. & McAnarney, E.R. (1994). Childhood victimization: Relationship to adolescent pregnancy outcome. Child Abuse & Neglect, 18(7), 569-575.
- Stewart, C.C. (1988). Brief to the select committee on education: Philosophy and goals of education. Toronto: Metro Action Committee on Public Violence Against Women and Children.
- Straus, M.A., Gelles, R.J., & Steinmetz, S. (1980). Behind closed doors: Violence in the American family. Garden City, NY: Doubleday/Anchor.
- Straus, M.A., & Smith, C. (1990). Family patterns and child abuse. In M.A. Straus & R.J. Gelles (Eds.), Physical violence in American families: Risk factors and adaptations to violence in 8,145 families, pp. 258-259). New Brunswick, NJ: Transaction.
- Tabachnick, B.G. & Fidell, L.S. (1989). Using multivariate statistics: 2nd Edition. New York: Harper & Row Publishers.

- Terr, L. (1990). Too scared to cry: Psychic trauma in childhood. New York: Harper & Row.
- Terr, L.C. (1991). Childhood traumas: An outline and overview. American Journal of Psychiatry, 148(1), 10-20.
- Tharinger, D.J., & Stark, K. (1990). A qualitative versus quantitative approach to evaluating the Draw-A-Person and Kinetic Family Drawing: A study of mood- and anxiety-disordered children. Psychological Assessment: A Journal of Consulting & Clinical Psychology, 2(4), 365-375.
- Toro, P.A. (1982). Developmental effects of child abuse: A review. Child Abuse & Neglect, 6(4), 423-431.
- Trickett, P.K., McBride-Chang, C., & Putnam, F.W. (1994). The classroom performance and behavior of sexually abused females. Development & Psychopathology, 6, 183-194.
- U.S. Department of Health and Human Services (U.S. Advisory Board on Child Abuse and Neglect). (August 1990). Child abuse and neglect: Critical first steps in response to a national emergency. (Stock No. 017-092-00104-5). Washington, DC: U.S. Government Printing Office.
- Van der Kolk, B.A. (1987). Psychological trauma. Washington, DC: American Psychiatric Press.
- Van der Kolk, B.A., Greenberg, M.S., & Boyd, H. (1985). Inescapable shock, neurotransmitters, and addiction to trauma: Towards a psychobiology of post-traumatic stress. Biological Psychiatry, 20, 314-325.
- Wahlsten, V.S. (1994). Development and survival: A study of children at risk living in adverse psychosocial milieu. Child Abuse & Neglect, 18(9), 715-723.

- Waters, E., Wippman, J., & Sroufe, L.A. (1979). Attachment, positive affect, and competence in the peer group: Two studies in construct validation. Child Development, 50, 821-829.
- Webster-Stratton, C. (1985). Comparison of abusive and nonabusive families with conduct-disordered children. American Journal of Orthopsychiatry, 55, 59-68.
- Webster-Stratton, C. (1991). Stress: A potential disruptor of parent perceptions and family interactions. Journal of Clinical Child Psychology, 19, 302-312.
- Welsh, W.N. & Gordon, A. (1991). Cognitive mediators of aggression: Test of a causal model. Criminal Justice & Behavior, 18(2), 125-145.
- Wertlieb, D., Weigel, C., Springer, T., & Feldstein, M. (1989). Temperament as a moderator of children's stressful experiences. In S. Chess, A. Thomas, & M.E. Hertzog (Eds.), Annual progress in child psychiatry and child development: 1988. New York: Brunner/Mazel.
- White, .L., Moffitt, T.E., & Silva, P.A. (1989). A prospective replication of the protective effects of IQ in subjects at high risk for juvenile delinquency. Journal of Consulting & Clinical Psychology, 57, 719-724.
- Wodarski, J.S., Kurtz, P.D., Gaudin, J.M., & Howing, P.T. (1990). Maltreatment and the school-age child: Major academic, socioemotional, and adaptive outcomes. Social Work, 35(6), 506-513.
- Wolfe, D.A. (1987). Child abuse: Implications of child development and psychopathology. Newbury Park, CA: Sage.
- Wolfe, D.A. & McGee, R. (1994). Dimensions of child maltreatment and their relationship to adolescent adjustment. Development & Psychopathology, 6, 165-181.
- Wyatt, G.E., & Newcomb M. (1990). Internal and external mediators of women's sexual abuse in childhood. Journal of Consulting & Clinical Psychology, 58(6), 758-767.

- Young, L. (1981). Physical child neglect. Chicago, IL: National Committee for Prevention of Child Abuse.
- Zigler, E. & Farber, E.A. (1985). Commonalities between the intellectual extremes: Giftedness and mental retardation. In F. Horowitz & M. O'Brien (Eds.), The gifted and talented: Developmental perspectives, (pp. 387-408). Washington, DC: American Psychological Association.

APPENDIX A:
DATA-GATHERING INSTRUMENT

- 1. Pilot Version**
- 2. Revised Version**

PILOT VERSION:

INDEPENDENT VARIABLES

August 6, 1992

C. Shaffer

RISK FACTORS:

RATING CODES

Maltreatment category(ies)Severity Duration Age range(s)COMMENTS

- ☐ 1. Physical abuse
☐ 2. Sexual abuse
☐ 3. Emotional abuse
☐ 4. Physical neglect
☐ 5. Social/emotional/ cognitive neglect
 (psychologically
 unavailable caregiving)
☐ 6. Family violence
☐ 7. Substance abuse
☐ 8. Other family dysfunction
☐ 9. None of above: adequate

Total Maltreatment Ratings: _____ / _____

Comments _____

MEDIATING VARIABLES/ AMELIORATIVE AND EXACERBATING FACTORS:

Gender

- ☐ 1. Male
☐ 2. Female

Intelligence (at earliest testing on SBIS, WISC-R, WPPSI, PPVT)

- ☐ 1. Superior or higher (120+)
☐ 2. High Average (110-119)
☐ 3. Average (90-109)
☐ 4. Dull Average (80-89)
☐ 5. Borderline (70-79)
☐ 6. Mildly retarded (60-69)
☐ 7. Moderately retarded or lower (≤ 50)

If available: VIQ _____ PIQ _____ FSIQ _____ VIQ-PIQ _____

 Subtest Scores: I _____ S _____ Ar _____ V _____ Co _____ DS _____
 PC _____ PA _____ BL _____ OA _____ Cd _____ Ma _____

Distractibility _____

AcqKno _____

VerbReas _____

Spatial _____

Other disability: (specify) [] _____

(serious illness; brain dysfunction; physical handicap)

IVs (cont.)

Personal characteristics/skills of resilience (after Mrazek, 1987)

- ☐ 1. alertness and responsivity to danger
☐ 2. precocious maturity
☐ 3. dissociation of affect
☐ 4. information seeking
☐ 5. formation & utilization of relationships for survival
☐ 6. positive projective anticipation **OVERALL RATING** _____
☐ 7. decisive risk taking
☐ 8. the conviction of being loved 1 = high personal resilience
☐ 9. idealization of aggressor's competence 5 = low personal resilience
☐ 10. cognitive restructuring of painful experiences
☐ 11. altruism
☐ 12. optimism and hope

Social support

Duration

- ☐ 1. other family-adult(s); specify _____
☐ 2. other family- child(ren) _____
☐ 3. peer friendships _____
☐ 4. foster parents _____
☐ 5. social worker/child care worker _____
☐ 6. therapist _____
☐ 7. other special adult: circle-teacher, Big Bro/Sis, coach, **OVERALL**
principal, neighbour, babysitter, other _____ **RATING**
☐ 8. pet _____
1 = high support 5 = low support

(In)Stability after cessation of maltreatment

- ☐ 1. permanent adoption
☐ 2. one long-term stable foster placement
☐ 3. remain in family home with services & supports (relief home)
☐ 4. successful return home after temporary CAS intervention
☐ 5. several foster placements with attempts to reintegrate with family
☐ 6. short-term group home placements/ institutional/ treatment facility
☐ 7. multiple placements due to placement/adoption breakdowns
☐ 8. other (describe) _____ **OVERALL RATING** _____
1 = stable 5 = unstable

Contact with family (after protective custody) (specify parents or sibs)

- ☐ 1. no access
☐ 2. limited access (1-4 times per year) with supervision
☐ 3. limited access due to distance; no supervision required
☐ 4. moderate access (monthly to every two months)
☐ 5. regular access (every 2 weeks)
☐ 6. frequent access (at least weekly or on demand of child)
☐ 7. open telephone access (can be used with other options)

For access option checked, note if characterized by sporadic, unpredictable access; broken appointments ☐

Visits supervised ☐ / unsupervised ☐

MALTREATMENT RATING SCALES

1. Severity of Physical Abuse

- ☐ 0=No physical abuse
- ☐ 1=Physical mistreatment without marks or injury (slap, push)
- ☐ 2=Mild: not requiring medical tx (scratches, bruises)
- ☐ 3=Moderate: requiring medical tx but not hospitalization (broken bones, burns)
- ☐ 4=Serious injury requiring hospitalization, but not permanent dysfunction (beating; concussion)
- ☐ 5=Severe to very severe injury involving long term (6 mo.+) or permanent dysfunction or life-threatening injury

COMMENTS:

2. Severity of Sexual Abuse

- ☐ 0=No sexual abuse
 - ☐ 1=Covert sexual abuse (teasing, invasion of privacy, "accidental touch," voyeurism, sexualized hugs and nurturing)
 - ☐ 2=Overt abuse: French kissing, fondling or requests to touch or look at adult's genitals
 - ☐ 3=Active sexual abuse: oral sex, mutual masturbation, simulated intercourse, digital penetration
 - ☐ 4=Intercourse, sodomy
 - ☐ 5=Ritualized abuse: use of child in group sex; violent assault
- Note: Adult or teen perpetrator

COMMENTS:

3. Severity of Emotional Abuse

5 subtypes (see Operational Definitions)

Rejecting; Terrorizing; Isolating; Exploiting/Corrupting; Ignoring or Denying Emotional Responsiveness

- ☐ 0=None of above in evidence
- ☐ 1=Occasional isolated instances of one type, possibly in teasing or playful manner
- ☐ 2=Repeated instances of one type or multiple cases of 2+ types
- ☐ 3=Regular but short term EA under conditions of parental stress, interspersed with nurturing
- ☐ 4=Regular incidents of 3+ types for prolonged periods of child's life
- ☐ 5=Pervasive & severe EA from more than one family member; scapegoating; intergenerational EA

COMMENTS:

4. Severity of Physical Neglect

- ☐ 0=No physical neglect of child
- ☐ 1=Brief/mild lapses of att'n to non-essential needs (delay in changing soiled diaper)
- ☐ 2=Inconsistent att'n to non-essential needs (times of poor hygiene)
- ☐ 3=Moderate physical neglect leading to potential developmental harm (poor nutrition/feeding, lack of supervision and structure)
- ☐ 4=Serious chronic neglect leading to need for medical tx; leaving unsupervised regularly
- ☐ 5=Severe to very severe neglect resulting in hospitalization, failure to thrive, lifethreatening neglect

COMMENTS:

5. Severity of Other Neglect (Social/Emotional/Cognitive)

- ☐ 0=No S/E/C neglect
- ☐ 1=Brief or mild inattention to child's needs for supportive interpersonal contact; occasional failure to provide adequate range of stimulation
- ☐ 2=Inconsistent responsiveness to social/emotional needs; failure to encourage or reinforce exploration, effort, or achievement
- ☐ 3=Chronic inattention to child's needs which results in behaviour problems, e.g., anxiety, withdrawal, bed-wetting, neg. behav.; chronic disregard of cognitive needs leading to potential developmental delay
- ☐ 4=Moderate to severe S/E/C neglect which results in the need for intervention by protective services, need for medication, placement in special class or school; neglect leading to cognitive or language performance below age level
- ☐ 5=Severe S/E neglect resulting in need for out-of-home placement or treatment facility; severe C neglect resulting in mental retardation, learning disability, or language dysfunction

COMMENTS:

6. Severity of Family Violence

- ☐ 0=None present
- ☐ 1=Single incident; child not witness
Limited # of incidents; child aware
- ☐ 2=Sporadic, unpredictable episodes;
child aware/ witnessed
- ☐ 3=Regular incidents with several family members; child present
- ☐ 4=Regular, frequent incidents over prolonged duration; child required to witness/participate under threat of harm. Attempts to protect battered parent/sib.
- ☐ 5=Homocide of parent/sib by family member

COMMENTS:

7. Severity of Parent Substance Abuse

- ☐ 0=None present
- ☐ 1=Rare instances of being drunk
- ☐ 2=Limited # of drunken episodes and occasional illegal drug use
- ☐ 3=Regular substance abuse, child witnessed; interference with daily life routine
- ☐ 4=Chronic substance abuse as lifestyle, affecting social life and financial stability of home and ability to care for children
- ☐ 5=Very severe substance abuse, with criminal involvement (child use)

COMMENTS:

8. Other Family Dysfunction

- ☐ 0=None present
- ☐ 1=Immaturity of parents; egocentricity
- ☐ 2=Difficulty coping with daily living; poor problem-solving/parenting skills
- ☐ 3=Periodic episodes of depression, mental illness, or bizarre behaviour (in home)
- ☐ 4=Frequent episodes or chronic depression or mental illness requiring hospitalization; chronic character disorder
- ☐ 5=Attempted or actual suicide or homocide by parent

COMMENTS:

DEPENDENT VARIABLES

Measures of Development

Language Development test scores (Peabody Picture Vocabulary Test-Revised)

- ☐ 1. Superior or higher (standard score 120+)
- ☐ 2. High Average (110-119)
- ☐ 3. Average (90-109)
- ☐ 4. Below Average (75-89)
- ☐ 5. Severely Delayed (below 75 standard score)

Visual-motor Development test scores

Bender Visual Motor Gestalt Test (ages 5-11)

Beery-Buktenica Developmental Test of Visual Motor Integration (VMI)
(subjects above or below BG norms)

- ☐ 1. Above normal development by 2+ years
- ☐ 2. Within normal developmental range
- ☐ 3. Below normal development by 2+ years

Academic Skill Development

Wide Range Achievement Test and WRAT-Revised

Basic Academic Skills Individual Screener (BASIS)

Developmental Profile II for children aged 5-6 (Academic subscale)

- ☐ 1. Above age level norms by 2+ years
- ☐ 2. Within normal range for age
- ☐ 3. Below age level norms by 2+ years

Emotional and Social Development

Developmental Profile (social scale)

Vineland Adaptive Behaviour Scales/ Social Maturity Scale

Maturity of drawings

Clinical observations

- ☐ 1. More mature than chronological age (precocious, pseudomature)
- ☐ 2. Age appropriate
- ☐ 3. Immature for chronological age (regressed, infantile)

Measures of Emotional, Behavioural, and Personality Functioning

Behavioural Functioning (Achenbach Child Behavior Checklist from observations and reported observations by teachers, social workers, foster parents, and parents) To be done on small pilot group only.

Score: degree of behavioural pathology compared to test norm group

Global Rating from observer reports in case records: (on all cases)

- ☐ 1. No known behaviour problems; "ideal" child
- ☐ 2. Minimal behaviour problems; mostly adequate functioning
- ☐ 3. Moderate behaviour problems of short duration (under stress)
- ☐ 4. Prolonged periods of difficult-to-manage behaviour
- ☐ 5. Severe behavioural problems requiring outside intervention or resulting in placement breakdowns

COMMENTS: (Behavioural descriptors) _____

Emotional and Personality Functioning

House-Tree-Person Technique
Kinetic Family Drawing

(See Rating schema attached)

FINAL VERSION

INDEPENDENT VARIABLES

(C. Shaffer May 31, 1993)

RISK FACTORS:

RATING CODES

Maltreatment categoriesSeverity Duration Age range(s)COMMENTS☐ 1. Physical abuse☐ 2. Sexual abuse☐ 3. Psychological maltreatment☐ 4. Physical neglect☐ 5. Social/cognitive neglect☐ 6. Family violence☐ 7. Substance abuse☐ 8. Other family dysfunction

Total Maltreatment Ratings:

_____ / _____

GLOBAL SEVERITY _____

Comments _____

MEDIATING VARIABLES/ BUFFERING AND EXACERBATING FACTORS:

Gender☐ 1. Male ☐ 2. FemaleIntelligence (at earliest testing on SBIS, WISC-R, WPPSI, PPVT)-Circle☐ 1. Superior or higher (120+)☐ 2. High Average (110-119)☐ 3. Average (90-109)☐ 4. Dull Average (80-89)☐ 5. Borderline (70-79)☐ 6. Mildly retarded (60-69)☐ 7. Moderately retarded or lower (≤ 50)

If available: VIQ _____ PIQ _____ FSIQ _____ VIQ-PIQ _____

Subtest Scores: I _____ S _____ Ar _____ V _____ Co _____ DS _____

PC _____ PA _____ BD _____ OA _____ Cd _____ Ma _____

FACTORS:

Sequencing/

Distractibility _____

AcqKno _____

VerbConc _____

Spatial _____

Other disability: (specify) ☐ _____

(serious illness; brain dysfunction; physical handicap; prematurity; fetal alcohol syndrome)

Personal characteristics/skills of resilience (after Mrazek & Mrazek, 1987)

- ☐ 1. alertness and responsivity to danger
☐ 2. precocious maturity
☐ 3. dissociation of affect
☐ 4. information seeking
☐ 5. formation & utilization of relationships
☐ 6. positive projective anticipation
☐ 7. decisive risk taking
☐ 8. the conviction of being loved
☐ 9. idealization of aggressor's competence
☐ 10. cognitive restructuring of painful experiences
☐ 11. altruism
☐ 12. optimism and hope
☐ 13. sense of humour

OVERALL RATING _____

1 = high personal resilience 5 = low personal resilience

Social supportDuration /Quality

- ☐ 1. other family-adult(s); specify _____
☐ 2. other family-child(ren) _____
☐ 3. peer friendships _____
☐ 4. foster parents (attached?) _____
☐ 5. social worker/child care worker/PAR _____
☐ 6. therapist _____
☐ 7. other special adult: circle-teacher, Big Bro/Sis, coach, principal, neighbour, babysitter, other _____
☐ 8. pet _____
☐ 9. daycare _____
☐ 10. religious/ church community _____

OVERALL RATING _____

1 = high support 5 = low support

(In)Stability after cessation of maltreatment

- ☐ 1. permanent adoption (at younger age = more stable)
☐ 2. one long-term stable foster placement
☐ 3. remain in family home with services & supports (relief home)
☐ 4. successful return home after temporary CAS intervention
☐ 5. several foster placements with attempts to reintegrate with family
☐ 6. short-term group home placements/ institutional/ treatment facility
☐ 7. multiple placements (3+) due to placement/adoption breakdowns
☐ 8. other (describe) _____

OVERALL RATING _____

1 = stable 5 = unstable

Contact with family (specify parents or sibs)

- ☐ 1. no access Reason _____
☐ 2. limited access (1-4 times per year) Reason _____
☐ 3. moderate access (monthly to every two months)
☐ 4. regular access (every 2 weeks)
☐ 5. frequent access (at least weekly or on demand of child)
☐ 6. open telephone access (can be used with other options)

Access sporadic, unpredictable; broken appointments? ☐Visits supervised ☐ unsupervised ☐ Child attached? Y/N

OVERALL RATING _____

1 = high amount of contact 5 = low contact

MALTREATMENT RATING SCALES

1. Severity of Physical Abuse

- ☐ 0=No physical abuse
- ☐ 1=Physical mistreatment without marks or injury (slap, push)
- ☐ 2=Mild injury, not requiring medical tx.; harsh punishment
- ☐ 3=Moderate: requiring medical tx but not hospitalization (broken bones, burns)
- ☐ 4=Serious injury requiring hospitalization, but not permanent dysfunction (beating, concussion)
- ☐ 5=Severe to very severe injury involving long term (6 mo.+) or permanent dysfunction or life-threatening injury

COMMENTS:

2. Severity of Sexual Abuse

- ☐ 0=No known sexual abuse
 - ☐ 1=Covert sexual abuse (teasing, invasion of privacy, "accidental touch," voyeurism, sexualized hugs and nurturing)
 - ☐ 2=Overt abuse: French kissing, fondling or requests to touch or look at adult's genitals
 - ☐ 3=Active sexual abuse: mutual masturbation, oral sex, simulated intercourse, digital penetration
 - ☐ 4=Intercourse, sodomy
 - ☐ 5=Ritualized abuse: use of child in group sex; violent assault
- Note: Adult or teen perpetrator

COMMENTS:

3. Severity of Psychological Maltreatment

- ☐ 0=None of above in evidence
- ☐ 1=Occasional isolated instances of one type, possibly in teasing or playful manner
- ☐ 2=Repeated instances of one type or multiple cases of 2+ types
- ☐ 3=Regular but short term PM under conditions of parental stress, interspersed with nurturing
- ☐ 4=Regular incidents of 3+ types for prolonged periods of child's life
- ☐ 5=Pervasive & severe PM; by more than one family member; scapegoating; intergenerational PM

*

- ☐ Rejecting ☐ Withholding Affection
- ☐ Terrorizing ☐ Abandonment
- ☐ Isolating ☐ Role Reversal
- ☐ Exploiting/Corrupting
- ☐ Ignoring/Denying Emotional Responsiveness
- ☐ Shaming/Humiliating/Embarrassing
- ☐ Invasion of Boundaries/Symbiosis/Prevention of Independence
- ☐ Excessive Criticism/Unrealistic Expectations
- ☐ Undermining of Other Relationships

*Definitions in Appendix C

COMMENTS:

4. Severity of Physical Neglect

- ☐ 0=No physical neglect of child
- ☐ 1=Brief/mild lapses of att'n to non-essential needs (delay in changing soiled diaper)
- ☐ 2=Inconsistent att'n to non-essential needs (times of poor hygiene, not feeding regularly)
- ☐ 3=Moderate physical neglect leading to potential developmental harm (poor nutrition/feeding, or lack of supervision and structure)
- ☐ 4=Serious chronic neglect leading to need for medical tx; leaving unsupervised regul.
- ☐ 5=Severe to very severe neglect resulting in hospitalization, failure to thrive, life-threatening neglect

COMMENTS:

5. Severity of Other Neglect (Social/Cognitive)

- ☐ 0=No S/C neglect
- ☐ 1=Brief or mild inattention to child's needs for supportive interpersonal contact; occasional failure to provide adequate range of stimulation
- ☐ 2=Inconsistent responsiveness to social/cognitive needs; failure to encourage or reinforce exploration, effort, or achievement
- ☐ 3=Chronic inattention to child's needs which results in behaviour problems, e.g., anxiety, withdrawal, bed-wetting, neg. behav.; chronic disregard of cognitive needs leading to potential developmental delay
- ☐ 4=Moderate to severe S/C neglect which results in the need for intervention by protective services, need for medication, placement in special class or school; neglect leading to cognitive or language performance below age level
- ☐ 5=Severe S/C neglect resulting in need for out-of-home placement or treatment facility; severe C neglect resulting in mental retardation, learning disability, or language dysfunction

COMMENTS:**6. Severity of Family Violence**

- ☐ 0=None present
- ☐ 1=Single incident; child not witness
Limited # of incidents; child aware
- ☐ 2=Sporadic, unpredictable episodes;
child aware/ witnessed
- ☐ 3=Entrenched abusive patterns
with child sometimes present
- ☐ 4=Regular, frequent incidents over
prolonged duration; child required to
witness/participate under threat of harm;
attempts to protect battered parent/sibling
- ☐ 5=Homocide of parent/sib by family member

COMMENTS:**7. Severity of Parent Substance Abuse**

- ☐ 0=None present
- ☐ 1=Rare instances of being drunk
- ☐ 2=Limited # of drunken episodes
and occasional illegal drug use
- ☐ 3=Regular substance abuse, child
witnessed; interference with daily life routine
- ☐ 4=Chronic substance abuse as
lifestyle, affecting social life
and financial stability of home
and ability to care for children
- ☐ 5=Very severe substance abuse, with
criminal involvement (child use)

COMMENTS:**8. Other Family Dysfunction**

- ☐ 0=None present
- ☐ 1=Immaturity of parents; egocentricity
- ☐ 2=Difficulty coping with daily living; poor problem-solving/parenting skills
- ☐ 3=Periodic episodes of depression, mental illness, or bizarre behaviour (in home)
- ☐ 4=Frequent episodes or chronic depression or mental illness
requiring hospitalization; chronic character disorder; criminal lifestyle
- ☐ 5=Attempted or actual suicide or homocide by parent

COMMENTS:

DEPENDENT VARIABLES

Measures of Development

Language Development test scores e.g.: PPVT(-R) _____ WISC-R Vocab _____
 Wepman Auditory Disc. _____ Sentence Memory _____

- ☐ 1. Superior or higher (standard score 120+)
- ☐ 2. High Average (110-119)
- ☐ 3. Average (90-109)
- ☐ 4. Below Average (75-89)
- ☐ 5. Severely Delayed (below 75 standard score)

Visual-motor Development test scores

Bender Visual Motor Gestalt Test (ages 5-11)

Beery-Buktenica Developmental Test of Visual Motor Integration (VMI)
 (subjects above or below BG norms)

☐ 1. Above normal development by 2+ S.D.	Record Standard Score _____
☐ 2. Above normal development by 1-2 S.D.	Percentile _____
☐ 3. Within normal developmental range	Age Equivalent _____
☐ 4. Below normal development by 1-2 S.D.	
☐ 5. Below normal development by 2+ S.D.	

Academic Skill Development

Wide Range Achievement Test and WRAT-Revised

Basic Academic Skills Individual Screener (BASIS)

Developmental Profile II for children aged 5-6 (Academic subscale)

Kaufman-ABC; Brigance Readiness Inventory

☐ 1. Above norms by 2+ S.D.	<u>St. Scores Percentiles Grade/Age</u>
☐ 2. Above normal level by 1-2 S.D.	
☐ 3. Within normal range for age	
☐ 4. Below normal level by 1-2 S.D.	
☐ 5. Below normal level by 2+ S.D.	

Emotional and Social Development (check basis of rating)

_____ Achenbach Child Behaviour Checklist (social competency)

_____ Developmental Profile (social scale)

_____ Vineland Adaptive Behaviour Scales/ Social Maturity Scale

_____ Recorded observations of others

_____ Clinical observations in file

- ☐ 1. Well-developed & mature beyond age, in balanced manner
- ☐ 2. More mature than chronological age (precocious, pseudomature)
- ☐ 3. Age appropriate
- ☐ 4. Less mature than age or fluctuating between immature & pseudomature
- ☐ 5. Very immature for chronological age (regressed, infantile)

Measures of Behavioural, Emotional, and Personality Functioning

Behavioural Functioning (Achenbach Child Behavior Checklist from observations and reported observations by social workers, foster parents, and/or parents) To be done on small pilot group only.

Score: degree of behavioural pathology compared to test norm group

T Scores: **Total**_____ **Internalizing**_____ **Externalizing**_____

Global Rating from observer reports in case records: (on all cases)

- ☐ 1. No known behaviour problems; "ideal" child
- ☐ 2. Minimal behaviour problems; mostly adequate functioning
- ☐ 3. Moderate behaviour problems of short duration (under stress)
- ☐ 4. Prolonged periods of difficult-to-manage behaviour
- ☐ 5. Severe behavioural problems requiring outside intervention or resulting in placement breakdowns

COMMENTS: (Behavioural descriptors) _____

BEHAVIOURAL FUNCTIONING _____

Emotional and Personality Functioning

House-Tree-Person Technique
 Kinetic Family Drawing

(See Drawing Checklist attached) **PERSONALITY DYSFUNCTION** _____

GLOBAL DEVELOPMENTAL OUTCOME _____ (Average of outcome scores)

APPENDIX B:
DRAWING CHECKLIST

1. Pilot Version
2. Revised Version

PILOT VERSION ITEM CHECKLIST FOR DRAWINGS Case# _____ M/F _____ Age _____

Severity ratings: 0 = Not present 1 = Mild 2 = Moderate 3 = Severe

X	Characteristic	Achromatic			Chromatic			KED	Overall Severity
		H	T	P	H	T	P		
[]	Aggression _____								
[]	Hostility _____								
[]	Anger/rage _____								
[]	Anxiety/fearfulness _____								
[]	Distress/inner tension _____								
[]	Self-consciousness/shame _____								
[]	Impotence/powerlessness _____								
[]	Helplessness, low competence _____								
[]	Low self-esteem _____								
[]	Dependency _____								
[]	Unmet dependency needs/early deprivation _____								
[]	Emotional development problems _____								
[]	Undeveloped self concept/identity _____								
[]	Insecurity/poor attachment _____								
[]	Autonomy difficulties _____								
[]	Fragmentation (lack of integration) _____								
[]	Unfocussed/disorganized/unbalanced _____								
[]	Poor impulse control _____								
[]	Energy lacking/too much _____								
[]	Boundary problems/expansiveness _____								
[]	Traumatized, wounded _____								
[]	Depression _____								
[]	Sadness, hopelessness _____								

X	Characteristic	H	T	P	H	T	P	KED	Severity
☐	Loneliness, isolation								
☐	Suicidal tendencies								
☐	Hypervigilance								
☐	Obsessive/compulsive/controlling								
☐	Suspiciousness/mistrust								
☐	Alienation/disconnectedness/dissociation/splitting								
☐	Schizoid or withdrawn								
☐	Problems in reality testing /overuse of fantasy								
☐	Psychosis								
☐	Maternal rejection/deprivation								
☐	Environmental oppression/menace								
☐	Barrenness/emptiness/impoverishment								
☐	Facade/inauthenticity								
☐	Gender confusion & lack of differentiation								
☐	Sexualization (traumatic)								
☐	Distorted body image & bodily anxiety								

SEVERITY COMPOSITE SCORE (TOTAL SCORES ABOVE) _____

GLOBAL IMPRESSION OF PERSONALITY DYSFUNCTION (RATING) _____

Comments: _____

- ☐ 1=Very good functioning
☐ 2=Good
☐ 3=Adequate
☐ 4=Marginal
☐ 5=Poor

- Disturbance is primarily:**
☐ 1. No disturbance
☐ 2. Reactive to situation
☐ 3. Serious pathology

- Maltreatment appears:**
☐ 1. None or minimal
☐ 2. Moderate
☐ 3. Severe

ADDITIONAL COMMENTS

Case # ____ M/F ____ Age ____

Additional Features:**Positive Characteristics:****Drawings Primarily: Internalizing [] Externalizing [] Normal []****Achenbach CBCL Scores:**

Total T = ____ Internalizing T = ____ Externalizing T = ____

Elevated Scales:

<u>Female 4-5</u>	<u>Female 6-11</u>	<u>Female 12-16</u>	<u>Male 4-5</u>	<u>Male 6-11</u>	<u>Male 12-16</u>
☐ Somatic	☐ Depressed	☐ Anx.-Obses.	☐ Dep/SWd	☐ Schi-Anx	☐ Somatic
☐ Depressed	☐ Soc.Withd.	☐ Somatic	☐ Somatic	☐ Depress.	☐ Schiz.
☐ Schiz-Anx.	☐ Somatic	☐ Depr-With.	☐ Immature	☐ Uncommun.	☐ Uncomm.
☐ Soc.Withd.	☐ Schiz-Obses.	☐ Imm-Hyper	☐ SexProbs.	☐ Obs-Comp.	☐ Immature
☐ Obesity	☐ Hyperactive	☐ Delinquent	☐ Schizoid	☐ Somatic	☐ Obs-Comp.
☐ Aggressive	☐ Sex Probs.	☐ Aggressive	☐ Aggress'v	☐ Soc.With.	☐ Host-With.
☐ Sex Probs.	☐ Delinquent	☐ Cruel	☐ Agg-Delin.	☐ Hyper.	☐ Delinq.
☐ Hyperact.	☐ Aggressive			☐ Aggress.	☐ Aggress.
	☐ Cruel			☐ Delinq.	☐ Hyper.

Comments about the rating process:**Rating form developed by C. Shaffer**

FINAL VERSION **ITEM CHECKLIST FOR DRAWINGS** Case# _____ M/F _____ Age _____

Severity ratings: 0 = Not present 1 = Mild 2 = Moderate 3 = Severe

X	Characteristic	Achromatic H T P	Chromatic H T P	KFD	Overall Severity
☐	Aggression _____				
☐	Ambivalence _____				
☐	Hostility _____				
☐	Oppositional/defiant _____				
☐	Anger/rage/frustration _____				
☐	Volatility/reactivity _____				
☐	Anxiety/fearfulness _____				
☐	Distress/inner tension _____				
☐	Self-consciousness/shame _____				
☐	Impotence/powerlessness _____				
☐	Helplessness, low competence _____				
☐	Low self-esteem _____				
☐	Overdependency/counterdependency _____				
☐	Unmet dependency needs/early deprivation /unmet needs for warmth, protection _____				
☐	Emotional development problems /immature, infantile _____				
☐	Undeveloped self concept/identity _____				
☐	Insecurity/poor attachment _____				
☐	Autonomy difficulties _____				
☐	Fragmentation (lack of integration) _____				
☐	Segmenting/compartmentalizing of experience _____				
☐	Unfocussed/disorganized /unbalanced, floating _____				
☐	Poor impulse control _____				

X	Characteristic	H	T	P	H	T	P	KFD	Severity
[]	Energy lacking/too much _____								
[]	Boundary problems/expansiveness _____								
[]	Problems in affect range or regulation _____								
[]	Traumatized, wounded _____								
[]	Depression _____								
[]	Sadness, hopelessness _____								
[]	Loneliness, isolation, alienation/ lack of rootedness/ belonging _____								
[]	Suicidal tendencies _____								
[]	Hypervigilance _____								
[]	Obsessive/compulsive/controlling _____								
[]	Suspiciousness/mistrust _____								
[]	Disconnectedness/dissociation/splitting _____								
[]	Denial _____								
[]	Schizoid or withdrawn _____								
[]	Problems in reality testing /overuse of fantasy _____								
[]	Psychosis _____								
[]	Maternal rejection/deprivation _____								
[]	Environmental oppression/menace _____								
[]	Overstimulation _____								
[]	Barrenness/emptiness/impoverishment _____								
[]	Facade/inauthenticity _____								
[]	Gender confusion/lack of differentiation _____								
[]	Sexualization (traumatic) _____								
[]	Distorted body image & bodily anxiety _____								
[]	Learning disabled/organic _____								

SEVERITY COMPOSITE SCORE	_____	Item Ratings Summary	
		_____ @ 3 = _____	
		_____ @ 2.5 = _____	
		_____ @ 2 = _____	
		_____ @ 1.5 = _____	
		_____ @ 1 = _____	
	# of item s= _____	_____ @ .5 = _____	- Severity Comp. Score

Comments: _____

Personality Dysfunction	Nature of Disturbance	Maltreatment Severity
☐ 1=Very good functioning	Disturbance is primarily:	Maltreatment appears:
☐ 2=Good	☐ 1.No disturbance	☐ 1. None or minimal
☐ 3=Adequate	☐ 2.Reactive to situation	☐ 2. Mild
☐ 4=Poor	☐ 3. Some pathology/ distorted develop.	☐ 3. Moderate
☐ 5=Very Poor	☐ 4. Serious pathology	☐ 4. Severe

Comments:

ADDITIONAL COMMENTS

Case # _____ M/F _____ Age _____

Additional Features:

Positive Characteristics:

Drawings Primarily: Internalizing [] Externalizing [] Normal []

Achenbach CBCL Scores:

Total T = _____ Internalizing T = _____ Externalizing T = _____

Elevated Scales:

<u>Female 4-5</u>	<u>Female 6-11</u>	<u>Female 12-16</u>	<u>Male 4-5</u>	<u>Male 6-11</u>	<u>Male 12-16</u>
☐ Somatic	☐ Depressed	☐ Anx.-Obses.	☐ Dep/SWd	☐ Schi-Anx	☐ Somatic
☐ Depressed	☐ Soc.Withd.	☐ Somatic	☐ Somatic	☐ Depress.	☐ Schiz.
☐ Schiz-Anx.	☐ Somatic	☐ Depr-With.	☐ Immature	☐ Uncommun.	☐ Uncomm.
☐ Soc.Withd.	☐ Schiz-Obses.	☐ Imm-Hyper	☐ SexProbs.	☐ Obs-Comp.	☐ Immature
☐ Obesity	☐ Hyperactive	☐ Delinquent	☐ Schizoid	☐ Somatic	☐ Obs-Comp.
☐ Aggressive	☐ Sex Probs.	☐ Aggressive	☐ Aggress'v	☐ Soc.With.	☐ Host-With.
☐ Sex Probs.	☐ Delinquent	☐ Cruel	☐ Agg-Delin.	☐ Hyper.	☐ Delinq.
☐ Hyperact.	☐ Aggressive			☐ Aggress.	☐ Aggress.
	☐ Cruel			☐ Delinq.	☐ Hyper.

Comments about the rating process:

Rating form developed by C. Shaffer
May 25, 1993

APPENDIX C:
PSYCHOLOGICALLY MALTREATING BEHAVIOURS: DEFINITIONS

Psychologically Maltreating Behaviour: Definitions

Adapted from Crittenden (personal communication, January 1993)

Ignoring: The parent demonstrates no attachment to the child and fails to provide nurturance; fails to recognize the child's presence in such acts as calling the child to meals, waking him/her in the morning, keeping promises or agreements, and treating the child like a member of the family; does not listen or respond to child's questions, fails to give praise for accomplishments or show an interest in the child's welfare; rarely talks with the child, even when addressed.

Scapegoating: The parent consistently singles out one child to criticize and punish, to perform most of household chores, and to receive fewer rewards; blames child for many domestic and financial problems; routinely requires the child to eat meals in isolation from the family.

Unrealistic expectations: The parent has unrealistic expectations of achievements for the child and criticizes, punishes, ostracises or condemns the child when he/she does not achieve far above normal ability levels; typically responds to child's accomplishments with denigration or criticism, comparing them unfavourably to adult performance; typically does not give praise, support, or recognition for improved skills; often tells child he/she is a failure; constantly corrects the child coldly and harshly.

Role reversal: The parent makes inappropriate demands on and exploits child by expecting him/her to take care of parent, to be a companion, to protect the parent, and to perform tasks which the parent is unwilling to do; uses child as a spy, ally, confidante in the parent's romantic relationships, marital or divorce problems, and as a result places child in middle of adult battles; demands excessive household and adult responsibilities of child; keeps child home from school and normal peer activities to take responsibilities at home; depends on child for direction, entertainment, affection.

Withholding physical or emotional affection: The parent expresses no affection toward child and avoids or resists all physical closeness such as hugging, touching, or smiling; seldom responds to, stimulates, or holds infant during feeding; does not comfort or cuddle child, avoids kissing or touching or any playful or spontaneous interactions with child; never comforts child when he/she is in distress; ignores young child's crying for extended periods of time; typically confines child to crib or stroller without stimulation for more than six waking hours each day; seldom speaks to child with warmth or affection.

Humiliation and denigration: The parent regularly denigrates and ridicules child or attributes to him/her characteristics of an offensive and hated person; frequently calls child names such as liar, thief, whore; regularly tells child he/she is too fat, thin, uncoordinated; shames child for showing normal emotions such as affection, grief, or sorrow; frequently

calls child derogatory, offensive, or obscene names and says that the child is worthless, stupid, or unwanted; shames or humiliates child, especially in presence of peers.

Instability: The parent provides no stability or security for the child; changes expectations frequently and unpredictably; fluctuates from rigidity to indifference in behavioural standards; regularly encourages or tells child to leave home or threatens to leave child.

Exploiting or corrupting: The parent exposes the child to maladaptive or harmful influences; engages in serious criminal activity with the awareness of the child, encourages or requires the child to steal, to engage in illegal or immoral activities, or to attack others; forces child to use drugs or alcohol and to become intoxicated for the parent's entertainment; exposes child to parent's regular intoxication; forces child to watch cruel behaviour toward family pet or encourages him/her to torment and abuse animals; sexually exploits child by forcing or permitting the watching of pornographic materials; performs sexual acts in the child's presence.

Denial of independence: The parent does not permit the child autonomy or independent learning; becomes angry, insulting, and/or critical toward child if he/she expresses any individual thoughts or opinions or has feelings about situations or people which are different from the parent; consistently tells and threatens child that if he/she tries to make decisions or take actions independently that terrifying consequences will happen to the child; always speaks for the child and does not permit independent expressions or treat child as a separate person with own concerns, feelings, and tastes.

Isolation: The parent denies the child the opportunity to learn from others by prohibiting child from participating in social activities commonly engaged in by child's peers (such as outdoor play); consistently prohibits child from playing with all nearby children of similar age; forces child to give in to all conflicts; consistently blames child for any interpersonal problems he/she has with others even when child is innocent.

Terrorizing: The parent uses excessive threats and psychological punishments; threatens to desert child, to remove needed or treasured possessions without promise of return, and threatens mutilation and dismemberment; uses harsh and bizarre punishments including exposure to fearful situations, verbal assaults and taunts, prolonged isolation, prohibition of household members from communicating with child; using physical restraints or confinement or force and prolonged physical discomfort; tells frightening stories to young child.

Undermining of other relationships: The parent denigrates the spouse or other family members and undermines the child's attachments by refusing all legitimate opportunities for visits or contact; regularly makes angry, critical, or untrue statements about the other parent in the child's presence and pressures him/her to reject the other parent and to take the parent's side in disputes.

APPENDIX D:
DEFINITIONS OF PERSONAL RESILIENCE CHARACTERISTICS

Definitions of Personal Resilience Characteristics of Maltreated Children

Adapted from Mrazek and Mrazek (1987)

1. **Rapid responsivity to danger**: the ability to recognize and adapt to the requirements of the immediate social setting in order to avoid harm. Skill requires intense vigilance, intelligence, wilful inhibition of affect, and often conscious forethought. Some maltreated children develop a style of hypervigilance in all uncertain social situations and remain on guard, careful, and quick to avoid escalating situations.
2. **Precocious maturity**: acting older than one's years, being pseudo adult, overly responsible and engaged in role reversal with parents. Maltreated children often prize these behaviours as they have helped them survive and have been a source of self-esteem and a sense of control over an unpredictable environment; often they have been praised for them.
3. **Dissociation of affect**: the ability to distance oneself from intense feelings as a defense. Later discussions of painful events will be done with little expression or feeling. Temporary dissociation may be necessary to allow the child to function, while pervasive and persistent blunting of affect may have negative consequences for future relationships.
4. **Information seeking**: the desire to learn as much as possible about one's environment in order to have a body of knowledge and awareness that can be used at crucial moments. This factor is associated with positive long term outcomes.
5. **Formulation and utilization of relationships for survival**: the ability to create relationships that will result in critical help and support at times of crisis or need. Some maltreated children relate quickly and intensely to adults with whom they come into contact and are seen as being indiscriminately affectionate. They are constantly seeking attachment and approval or attention and become skilled at obtaining it.
6. **Positive projective anticipation**: the ability to project oneself into the future and fantasize about how life will be when the difficult times are over. This requires both dissociation from the negative effects of the present and the intellectual and emotional capacity to imagine oneself in a different time and place, which gives a mechanism for gaining a sense of control over the present.
7. **Decisive risk taking**: the ability to make things happen by making crucial decisions and dealing with the consequences despite the personal risk. More resilient children believe that they can have an impact on the environment and need not remain passive recipients of what is going to happen.

8. The conviction of being loved: to achieve this the child must have enough self-esteem to believe that he/she is worthy of love and must be able to believe that someone he/she loves reciprocates the feelings. Some maltreated children in care build up images of family members who are sad and suffering because the child is away, others remember a favourite adult who cares about them, others may dream of a future person who will love them and help them undo the suffering, while others turn to religion for help and believe that there is a personal God who loves them and is a source of comfort and protection.

9. Idealization of an aggressor's competence: identification with the aggressor, which usually has a negative connotation, has some positive aspects if the child chooses to recognize the aggressor's competencies and identifies with those traits in a way that enhances self-esteem. Such traits might include the ability to earn money, have friends, or be physically strong or healthy. Such positive identification may serve survival purposes by leading to a decrease in the aggressive behaviour which had been directed toward the victim.

10. Cognitive restructuring of painful experiences: the ability to reprocess past negative events in one's own mind in order to make them more acceptable or congruent with one's current view or wishes. Negative events may be reframed as being not so bad and possibly leading to something better in the future. These children can identify positive aspects of the past and ascribe good motives to abusers so that they do not need to reject the individual completely. They can also look at their own behaviour and focus on the positive aspects. If unchecked, this protective mechanism can lead to serious loss of reality or become a way to justify wrongdoing, but it can provide a foundation from which to develop more adaptive interactions.

11. Altruism: involves getting pleasure from giving to others what one would like to receive. If motivated by unmet needs, the child may unconsciously give up on getting nurturance and affection for himself and instead provide for others. Many abused children will direct this altruism toward the protection and care of younger siblings or to the protection of others who are in danger. They are often proud of their deeds and are positively reinforced for them. They may choose models or heroes of very giving people and begin to solidify their identity as a helping person. If their altruism is unsuccessful or unappreciated, a depressive reaction can be expected.

12. Optimism and hope: an overriding characteristic which involves an orientation to life that permeates many personal characteristics and is reinforced by the successful use of the other traits and skills that foster resilience. Optimistic people tend to be seen as more attractive, fun, and able to obtain support from others. Optimism and hope protect against negativism and depression and form a basic life view to which the child can return when crises are past and the other survival skills are no longer needed.

APPENDIX E

DEFINITIONS OF PERSONALITY TRAITS MEASURED IN DRAWINGS

Definitions of Personality Traits Measured in Drawings

Aggression: emotional/behavioural consequence of frustration and conflict when it has exceeded the limits of tolerance; may involve hurtful action or statements directed toward others or may stay at the level of fantasy about such actions.

Ambivalence: having simultaneous, contrasting or mixed feelings about some person, object, or idea; being pulled in two opposing directions; often used in the sense of simultaneous or quickly alternating love and hate for a significant attachment figure.

Hostility: a long-lasting emotional state characterized by enmity toward others, manifested by a desire to harm or inflict pain upon those at whom it is directed; includes long-standing resentment and a sense of being wronged or deprived.

Oppositional/defiant: going up against authority in an attempt to do as one wishes without external restraints; pushing against limits and testing authority figures - may be seen in children who are actually seeking stronger limits and structure to help them feel more secure.

Anger/rage/frustration: related set of strong but usually brief emotional reactions to conditions in which one is restrained, interfered with, mistreated, threatened, or harmed; may be accompanied by physical reactions due to arousal of sympathetic nervous system. Rage is generally a more volatile and unrestrained or unmodulated form of expression than anger, while frustration is often associated with being unable to do something one would wish to do. Rage is associated with deep-seated feelings from earlier years which are triggered by present-day events and produce a reaction completely out of proportion to the offence.

Volatility/reactivity: condition of being easily aroused, explosive, changeable in relation to immediate environmental influences.

Anxiety/fearfulness: (a) unpleasurable emotional state associated with psychophysiological changes in response to a threat which is not real / (b) ... to a threat which is real or has been real in the child's experience leading to apprehension about new experiences.

Distress/inner tension: marked discomfort, agitation, emotional upset; internal physiological state in which pressure builds up and requires physical or emotional release in order to return person to state of equilibrium.

Self-consciousness/shame: (a) heightened sensitivity about the acceptability of the self / (b) sense of the self being unacceptable and bad, with feelings of responsibility for the unacceptability.

Impotence/ powerlessness: feeling that one has no personal power, authority, or control of situation (accompanied by the wish for such power).

Helplessness/low competence: feeling unable to do for oneself, lacking in abilities and skills.

Low self-esteem: negative self-regard, lack of worth.

Overdependency/counterdependency: dependency problems consisting of relying either too much or too little on adult assistance, attention, and support, relative to what is age appropriate.

Unmet dependency needs/early deprivation/unmet needs for warmth & protection: not having one's vital needs met (food, water, warmth, shelter, affection, love, security); lack of nurturing, protective, stimulating caregiving during infancy and early childhood resulting in continuing feelings of deprivation and lack.

Emotional development problems/immature, infantile: incomplete emotional development relative to age-appropriate expectations, indications of functioning or identifying oneself far below chronological age.

Undeveloped self-concept/identity: failure to develop a coherent, integrated sense of self with an essential, continuous set of personality features.

Insecurity/poor attachment: lack of a secure base as found in primary bond to a significant caregiver. Not having healthy internalized representation of intimate relationships to work from in forming subsequent relationships.

Autonomy difficulties: either having difficulties in moving away from attachment figures in order to exercise age-appropriate freedom of action and choices, or being overly self-sufficient prematurely before childhood dependency needs have been fulfilled.

Fragmentation/lack of integration: experience of the self as unintegrated, i.e., discontinuous in thoughts, feelings, and actions.

Segmentation/compartmentalization: setting up artificial, rigid boundaries between aspects of life so that integration and resolution cannot occur.

Unfocussed/disorganized/unbalanced/floating: traits in evidence for a person who has no internal organizational framework into which to fit and sort experiences and no external anchor or structure by which to order life. Inability to recognise relevant input, thus often overwhelmed by stimuli.

Poor impulse control/ impulsive: undeveloped or underdeveloped regulation of impulse to act, move, or speak; unreflective about consequences of actions.

Poor energy modulation: tendency to become either too energetic and "hyper" without being able to stop oneself, or to exhibit lassitude and inability to get started on actions.

Boundary problems/ expansiveness: being unaware or unsure where the self begins and ends or where limits exist between self, others, and environment; manifested in inappropriate intrusiveness with others or vulnerability to violation by others.

Problems in affect range or regulation: inability to experience a full range of types and degree of emotional responses; trouble managing one's emotional responses, being easily triggered.

Traumatized/wounded: having lasting psychic injury caused by an extreme emotional assault resulting in shock and lasting effects on perceptual and mental processing; trauma is often represented symbolically as a wound or visible damage.

Depression: generally, a mood state characterized by a sense of inadequacy, a feeling of despondency, a decrease in activity or reactivity, pessimism, sadness and related symptoms. Depression may be of varying types and severity, requiring further diagnostic indicators for specificity.

Sadness/hopelessness: anhedonia, grief, feeling that there is nothing pleasureable to anticipate in life. May result from irremediable loss or disappointment.

Loneliness/isolation/alienation/lack of rootedness or belonging: a state of being (or the perception of being) without significant human connections or membership in a family, kinship, or friendship network.

Suicidal tendencies: impulses or thoughts related to ending one's own life or inflicting harm on one's body; may arise out of depression, shame and hopelessness, impotent anger against another, or a desperate need to gain the attention of others.

Hypervigilance: extreme watchfulness for cues and dangers in one's environment, for the purposes of survival and need fulfilment when other protection is not assured; diverts psychic energy away from other developmental tasks.

Obsessive/compulsive/controlling: experience of recurrent, persistent thoughts, ideas, and feelings or the need to engage in repetitive, ritualized behaviours as a means of alleviating anxiety and tension, or warding off anticipated danger or harm; trying to

manipulate and take charge of one's environment to a high degree in order to keep life more predictable and safe.

Suspicious/mistrustful: having lack of faith in the goodwill of others; doubting and being skeptical regarding the sincerity of others; unable to take risk of intimacy out of fear of being hurt.

Dissociated/disconnected/splitting: having a coordinated set of activities, thoughts, attitudes, or emotions which become separated from the rest of the person's personality and function semi-independently. In mild form, seen as compartmentalization, depersonalization, and hypnotic amnesia; in more extreme forms become dissociative disorders and multiple personality disorder. Breakdown in the usual integrated functions of consciousness, emotion, perception of self, and sensory/motor behaviour.

Denial: a primitive defence mechanism (unconscious) that simply disavows or denies thoughts, feelings, wishes, or needs that cause anxiety.

Schizoid/withdrawn: in childhood, a disorder marked by lack of ability to form friendships with peers, a lack of interest in doing so, and lack of pleasure in such social interaction; child is withdrawn, aloof, seclusive, and reacts negatively to demands for relatedness.

Problems in reality testing/overuse of fantasy: inability to view events in the way they are viewed by most others and to determine one's actual relationship with the external physical and social environment; lack of development in a set of ego functions that enable the child to distinguish between subjective impression and external reality and to adjust to those constraints. Tendency to escape frequently from unpleasant realities by concocting imagined scenarios in their place.

Psychosis: general term for a number of severe mental disorders of organic or emotional origin, typified by gross impairment in reality-testing and including symptoms such as delusions, hallucinations, severe regressive behaviours, dramatically inappropriate mood and incoherent thoughts and speech; can be seen in bizarre symbolic representations in drawings.

Maternal deprivation/rejection: the experience of being without adequate mothering (or surrogate mothering) as in cases of severe neglect and emotionally unavailable caregiving; being given blatant messages that one is unwanted and unloved.

Environmental oppression/menace: the perception that the environment is cold, unnurturing, overly restrictive, unstable, threatening, or dangerous.

Overstimulation: condition in which a child is exposed to a degree of chaos, sensory impingement, and lack of opportunity for calming that she/he remains in constantly aroused state; persistence of this condition can result in neurological changes which affect learning and development as well as emotional state.

Barrenness/emptiness/impoverishment: a state of being characterized by lack of an inner life, personal resources, or richness of experience; a robotlike existence with little meaning or joy.

Facade/inauthenticity: a false front developed to use as a public persona, with genuine thoughts and feelings hidden within oneself and not subjected to the judgements of others; distortion of the process of individuation, usually in response to environmental pressures to conform and not to be one's real self at the risk of losing security or love.

Gender identity confusion/lack of differentiation: being uncertain with which gender to associate oneself in terms of typical societal patterns; portraying male and female figures in an identical manner with no indication of physical differences.

Sexualization (traumatic): being overidentified at a precocious age with secondary sexual characteristics or sexualized behaviours; seeing oneself mainly in terms of being a sexual object. In drawings, overt portrayal of sexual parts or clear symbolic representations of sexual parts or acts.

Distorted body image/bodily anxiety: having an unrealistic and distorted notion of how one's body appears, with grotesqueness, disproportion, missing or damaged parts typical signs; having feelings of anxiety about the safety and integrity of one's body and feeling subject to violation.

Learning disabled/organic: not able to learn and demonstrate competence on academic material despite apparently normal intelligence - may be due to innate organic (brain dysfunction) conditions or acquired secondary to lack of stimulation, chaotic environment, and emotional turmoil.

APPENDIX F:
BIVARIATE CORRELATIONS OF ORIGINAL RESEARCH VARIABLES
FOR FULL SAMPLE AND FOR MALES AND FEMALES

Bivariate Correlations

Bivariate correlations were examined through the SPSSPC+ Correlation procedure and through bivariate scatterplots (regression) for strength of association among variables after required transformations. Table 7 shows product-moment correlations and two-tailed significance levels, with 107 degrees of freedom in all cases. (Occasional reference will be made to relationships with factors which are reported later and displayed in Table 8.) On the sex variable, males are coded "1" and females "2". Risk variables are coded in the direction of higher scores indicating a more severe degree of maltreatment or other risk; for mediating variables, a higher score also indicates a worse condition (e.g., greater instability); and for Outcome variables, a higher score indicates a better outcome. Analyses conducted separately for males ($n = 55$) and for females ($n = 54$) are not presented in tabular form but differential patterns of interest will be noted as general results are presented, with the correlation r and significance level of gender results specified. Generally, bivariate scatterplots revealed much more dispersion and heteroscedasticity of males' data, while data points in females' plots clustered more closely around the regression line in the expected direction of association between variables.

Age was significantly correlated with most of the risk variables, as would be expected given the severity-X-duration coding of these variables. The relationships were strongest for females, who were older in this sample and therefore had experienced maltreatment for longer periods before protective custody; this pattern was particularly true for physical and sexual abuse and for physical neglect, on which males did not show a significant age correlation. For males, age was negatively correlated ($r = -.2929$, $p < .05$) with global severity, while for females the correlation was positive but nonsignificant ($r = .1492$, $p = .282$). Since this variable was age-adjusted, results suggest that females may be exposed to abuse until older years, while abuse of males may be more prevalent in their younger years. Males showed significant positive age correlations with stability ($r = .4436$, $p < .001$), suggesting that males experience increasing instability in placements as they get older. For females, there were significant positive correlations between age and resilience ($r = .3914$, $p < .01$) and age and social support ($r = .3293$, $p < .02$), indicating that for females these mediating variables are strongest when girls are young but may be eroded or less available in older years. Age was negatively correlated for females with emotional/social development ($r = -.3528$, $p < .01$), indicating that while the younger girls showed more favourable development in this area, older girls tended to be delayed in emotional/social development.

As noted in t-test results, gender was significantly correlated with sexual abuse ($r = .2878$, $p < .01$), psychological maltreatment ($r = .2501$, $p < .01$), physical neglect ($r = .2089$, $p < .05$), and other parental dysfunction ($r = .2485$, $p < .01$), with females having greater severity of these variables.

For the entire sample and for both male and female subsamples, physical abuse was significantly positively correlated ($p < .001$) with psychological maltreatment, physical

neglect, social/emotional neglect, family violence, other dysfunction, and global severity (see Table 7). Other variables had significant correlations with physical abuse in the whole sample, but due to the strength of the association in only one gender group. The significant correlations shown for physical abuse and more sexual abuse, lower IQ, poorer language, academic, and emotional/social development, global outcome, and cognitive outcome were attributable to their high correlations in the female subsample ($r = .3109, p < .025$; $r = .4689, p < .001$; $r = -.4124, p < .01$; $r = -.3845, p < .01$; $r = -.3071, p < .025$; $r = -.4369, p < .001$; and $r = -.3724, p < .01$, respectively). The strong associations shown in the male subsample between physical abuse and parental substance abuse ($r = .3740, p < .01$) and between physical abuse and the personality dysfunction outcome variable ($r = -.3276, p < .025$) contributed most to the presence of these relationships in the full sample.

Significant correlations in the full sample between sexual abuse and age, psychological maltreatment, physical neglect, social neglect, other parental dysfunction, and global severity were due mainly or in large part to their strong association in the female subsample ($r = .2493, p = .069$; $r = .5531, p < .001$; $r = .4285, p < .001$; $r = .4868, p < .001$; $r = .4998, p < .001$, and $r = .5910, p < .001$). For males, the only significant association with sexual abuse - also shown in the full sample - was for the personality dysfunction outcome variable ($r = -.3303, p < .025$).

Significant relationships with psychological maltreatment (PM) shown in Table 7 for the full sample are nearly all attributable to their strong relationships in the female group. For both genders, psychological maltreatment occurs in the context of other parental dysfunction and physical and social/ cognitive neglect, and it has strong cumulative effects with increasing age. For males, the existence of a high degree of this variable is associated with high instability in subsequent placements ($r = .4234, p < .001$), with less significant findings in this direction for the whole sample. For all other significant correlations with this variable - with physical abuse, sexual abuse, family violence, global severity, and with lower IQ, academic, emotional/ social development, and global outcome - relationships are based upon strong associations in the female data ($r = .5531, p < .001$; $r = .4285, p < .001$; $r = .2655, p < .05$; $r = .5459, p < .001$; $r = .5229, p < .001$; $r = -.3929, p < .01$; $r = -.4419, p < .001$; and $r = -.4991, p < .001$). Five additional variables - resilience, social support, language, visual-motor, and behaviour - were correlated with psychological maltreatment in the female subsample only. Higher PM for girls is associated with lower resilience ($r = .3287, p < .025$), low social support offered once placed in care ($r = .3684, p < .01$), poorer outcome in language ($r = -.3991, p < .01$), visual-motor ($r = -.3130, p < .025$), and behaviour ($r = -.2648, p = .05$).

The pattern of correlations for physical neglect (PN) was similar to that for psychological maltreatment. In most cases, significant full sample correlations were attributable to strong associations in the female subsample. Data of both genders contributed significantly to the correlations between PN and physical abuse, psychological maltreatment, social/ cognitive neglect, family violence, and global severity. For the significant correlations between PN and age, sexual abuse, IQ, language, academic,

emotional/social development, and personality dysfunction, only female data contained significant associations ($r = .4248, p < .001$; $r = .4285, p < .001$; $r = .4291, p < .001$; $r = -.4017, p < .01$; $r = -.4287, p < .001$; $r = -.2931, p < .05$; $r = -.3268, p < .025$). In addition, females had associations at $p < .05$ between PN and social support ($r = .2886$) and PN and poorer visual-motor development ($r = -.2907$). For males, the association of PN and substance abuse ($r = .3405, p < .01$) was the only unique contribution to the correlations noted in Table 7.

Social/cognitive neglect (SN) was significantly correlated with age, physical abuse, psychological maltreatment, physical neglect, and other dysfunction for the full sample and for both male and female groups. Female data contributed most strongly to the relationship of SN to sexual abuse ($r = .4868, p < .001$), family violence ($r = .3148, p < .025$), global severity ($r = .6901, p < .001$), lower IQ ($r = .5490, p < .001$), lower social support ($r = .3879, p < .01$), poorer language development ($r = -.4968, p < .001$), poorer visual-motor ($r = -.2941, p < .05$), academic ($r = -.4449, p < .001$), and emotional/social development ($r = -.4521, p < .001$), personality dysfunction ($r = -.2700, p < .05$), and poorer global outcome ($r = -.5106, p < .001$). Females showed a unique pattern of more severe social/cognitive neglect being associated with lower resilience ($r = .2969, p < .05$), a trend not seen in the full sample. Males made a unique contribution to the relationship seen in the full sample between SN and stability, with more severe SN associated with greater instability in care ($r = .5269, p < .001$).

Family violence (FV) showed consistent patterns of association with physical abuse, physical neglect, substance abuse, and global severity of maltreatment, for the full sample and both gender groups. Only females' data contributed significantly to the sample correlations for FV and psychological maltreatment ($r = .2655, p = .05$), social/cognitive neglect ($r = .3148, p < .025$), and other parental dysfunction ($r = .3639, p < .01$). Males showed unique (and unexpected) correlations between high FV and better behaviour ($r = .2987, p = .027$), a relationship not seen in the female subsample.

The substance abuse (SU) variable was significantly correlated with family violence, other parental dysfunction, and the PHYSAGG factor (see Table 8) for the full sample and both genders. The significant correlations observed in the full sample for SU and physical abuse, physical neglect, and global severity were mainly attributable to strong relationships in the male data ($r = .3740, p < .01$; $r = .3405, p = .011$; and $r = .4421, p < .001$, respectively). A nonsignificant trend was seen in females (and to a lesser extent in males) for high degrees of parental substance abuse to be associated with greater resilience (females: $r = -.2506, p = .068$; males: $r = -.1918, p = .161$), a trend which reached significance ($r(107) = -.2217, p < .025$) in the full sample.

Relationships between other parental dysfunction (OD) and the other variables were quite similar to the patterns observed with psychological maltreatment. For the full sample and for both males and females, significant correlations were observed between OD and age, physical abuse, psychological maltreatment, both forms of neglect, and global severity.

Female data contributed to the significant relationships of OD with sexual abuse ($r = .4998$, $p < .001$), family violence ($r = .3639$, $p < .01$), IQ ($r = .4063$, $p < .01$), poor academic achievement ($r = -.3792$, $p < .01$), poor emotional/ social development ($r = -.3412$, $p = .012$), personality dysfunction ($r = -.2611$, $p = .05$), and poorer global outcome ($r = -.4114$, $p < .01$). For females, but not for the full sample, there were significant negative correlations between OD and language development ($r = -.2982$, $p < .05$). Males showed an association between OD and greater instability in care ($r = .3087$, $p < .025$).

Global maltreatment severity (GS) was significantly correlated with physical abuse, physical neglect, family violence (three of the variables contributing to the GS score), and other dysfunction, across genders. In the full sample and for the female subsample, significant associations were found between GS and sexual abuse ($r = .5910$, $p < .001$), psychological maltreatment ($r = .5459$, $p < .001$), social/cognitive neglect ($r = .6901$, $p < .001$) - which contribute to the GS score - and between GS and lower IQ ($r = .4234$, $p < .001$), poorer language development ($r = -.3936$, $p < .01$), visual-motor development ($r = -.4135$, $p < .01$), academic ($r = -.4119$, $p < .01$), emotional/social development ($r = -.3134$, $p < .025$), personality dysfunction ($r = -.3084$, $p < .025$), and global outcome ($r = -.4669$, $p < .001$). For the full sample and for males, GS was highly correlated with the severity of parental substance abuse ($r = .4421$, $p < .001$).

In the full sample and for both male and female subsamples, IQ showed strong correlations with resilience, language development, visual-motor development, academic achievement, (less) personality dysfunction, better global outcome, and the COGOUT factor (Table 8). For males, higher IQ was associated with better behaviour ($r = -.2904$, $p < .05$) and a trend toward better social outcome ($r = -.2539$, $p = .06$). Female data contributed most to the full-sample patterns of correlations between lower IQ and higher age ($r = .3173$, $p < .025$); greater physical abuse ($r = .4689$, $p < .001$); higher scores on psychological maltreatment, physical neglect, and social/cognitive neglect (r 's = .5229, .4291, and .5490, respectively; all p 's $< .001$); other dysfunction ($r = .4063$, $p < .01$); and higher global severity ($r = .4234$, $p < .001$).

For the full sample and both male and female groups, resilience (RE) was significantly correlated with IQ; language, visual-motor, academic, and emotional/social development; and with global outcome. Males contributed most to the full-sample pattern of correlation between RE and social support ($r = .3258$, $p < .025$), behaviour ($r = -.3209$, $p < .025$), and the SOCOUT factor ($r = -.3980$, $p < .01$). Females contributed to the correlations between greater parental substance abuse and RE ($r = -.2506$, $p = .06$, n.s.) and between RE and better personality functioning ($r = -.2930$, $p < .05$). Correlations observed only in the female subsample included higher RE at younger ages ($r = .3914$, $p < .01$) and less resilience among girls with higher amounts of psychological maltreatment, and social/cognitive neglect ($r = .3287$, $p < .025$ and $r = .2969$, $p = .029$, respectively).

Males and females showed notably different patterns in terms of which variables were correlated with social support (SO). Of the significant bivariate correlations shown for

the full sample, male data showed only the correlation of high SO with high resilience ($r = .3258, p < .025$). The strength of female associations or trends contributed to the significant correlations between greater SO and lower social /cognitive neglect ($r = .3879, p < .01$), greater stability ($r = .2353, p = .08, n.s.$), better behaviour ($r = -.4456, p < .001$), and better global outcome ($r = -.2941, p < .05$). Females showed certain correlations with SO that were unique. Females received greater social support at younger ages ($r = .3293, p < .025$), when they had experienced less severe physical abuse ($r = .2616, p = .05$) as well as less severe psychological maltreatment and physical neglect ($r = .3684, p < .01$ and $r = .2886, p < .05$). Girls who received greater support showed better emotional/social development ($r = -.2759, p < .05$).

While social support was a salient variable for females, the stability (ST) variable showed more significant correlations among the male subsample. For the full sample and both genders, ST was significantly correlated with better behavioural outcome and better social outcome (factor). Males experienced increasing instability with age ($r = .4436, p < .001$), and higher degrees of instability in conjunction with higher levels of psychological maltreatment, social/cognitive neglect, and other parental dysfunction ($r = .4234, p < .001$; $r = .5269, p < .001$); and $r = .3087, p < .025$). For males, a high degree of stability was associated with more positive global outcome ($r = -.3127, p < .025$).

Language development (LA) showed predictably high correlations with IQ, resilience, visual-motor and academic development, and global outcome for the full sample and both genders. Older boys in the sample showed better language development ($r = .2711, p < .05$); all other strong correlations were related to female data. Girls with higher levels of physical abuse, physical neglect, and social/ cognitive neglect, as well as higher global severity of maltreatment, showed poorer language development ($r = -.4124, p < .01$; $r = -.4017, p < .01$; $r = -.4968, p < .001$; and $r = -.3936, p < .01$). Females with poorer language development showed corresponding decrements in emotional/social development ($r = .5704, p < .001$) and in personality functioning ($r = .3415, p = .012$), a trend not seen in males. The relationship between language development and psychological maltreatment was contradictory for males and females, with high PM for females associated with poorer language development ($r = -.3991, p < .01$) and for males with better language development ($r = .3081, p < .025$).

For the full sample and both genders, better visual-motor development (VM) was associated with higher IQ and resilience, better language and academic development, and better global outcome. Girls with higher levels of social/cognitive neglect and higher global severity had poorer visual-motor development ($r = -.2941, p < .05$; $r = -.4135, p < .01$). Females with poorer VM development also showed poorer emotional/ social development ($r = .5266, p < .001$) and greater personality dysfunction ($r = .3603, p < .01$). For females only, higher levels of psychological maltreatment and physical neglect were also associated with poorer visual-motor development ($r = -.3130, p < .025$; $r = -.2907, p < .05$).

Academic development (AC), in the full sample and both genders, was correlated with IQ; resilience; language, visual-motor, and emotional/social development; and global outcome. Females' data contributed most strongly to the correlations of low academic development with physical abuse ($r = -.3845$, $p < .01$), psychological maltreatment ($r = -.3929$, $p < .01$), physical neglect ($r = -.4287$, $p < .001$), social/ emotional neglect ($r = -.4449$, $p < .001$), other dysfunction ($r = -.3792$, $p < .01$), global severity ($r = -.4119$, $p < .01$), and personality dysfunction ($r = .2344$, $p = .08$, n.s.).

In the full sample and for both genders, emotional/ social development (ES) was significantly correlated with IQ, resilience, language and academic development, behaviour, and global outcome. Correlations from the females' data contributed most to the significant associations between delays in ES and physical abuse, psychological maltreatment, physical neglect, social/cognitive neglect, other parental dysfunction, and global severity (detailed above). For the ES and personality dysfunction correlation, the association was strongest for males ($r = .3089$, $p < .025$). For females only, ES development was found to be worse with higher age ($r = -.3528$, $p < .01$), and better ES development was associated with receiving more social support.

For the full sample, behaviour (BE) was significantly correlated with stability, emotional/ social development, personality dysfunction, and global outcome. Stability was especially important for males' behavioural outcome ($r = -.5573$, $p < .001$) and quite strong for females as well ($r = -.4004$, $p < .01$). There was a stronger trend in males (but also present in females) for more severe degrees of the PSYNEG factor to be associated with poorer behavioural outcome ($r = -.2883$, $p < .05$) - for males mainly due to the strong correlation with social/ cognitive neglect ($r = -.3124$, $p < .025$) and for females due to the correlation with psychological maltreatment ($r = -.2648$, $p = .05$). For males, more severe degrees of the PHYSAGG factor were associated with less acting out ($r = .2857$, $p < .05$); although physical abuse showed minimal positive or negative correlation with behaviour, family violence was correlated with fewer behavioural problems ($r = .2987$, $p = .027$). For the full sample and especially for boys, better behaviour was associated with higher IQ and resilience and better visual-motor development ($r = -.2904$, $p < .05$; $r = -.3209$, $p < .025$; $r = .2608$, $p = .05$); i.e., boys with fewer intellectual and personal resources and with learning disabilities were more likely to exhibit more severe acting out. For girls, the degree of social support received showed strong correlations with behaviour ($r = -.4456$, $p < .001$), a pattern not seen in the male subsample.

For the full sample and both genders, personality dysfunction (PD) was significantly correlated with more severe physical abuse, lower IQ, more severe behavioural problems, and worse global outcome. For males more severe personality dysfunction was associated with sexual abuse ($r = -.3303$, $p = .014$) and poorer emotional/social development ($r = .3089$, $p < .025$), a pattern seen in the full sample but not among females. Female data contributed most to the correlations in the full sample between PD and physical neglect ($r = -.3268$, $p < .025$), social/cognitive neglect ($r = -.2700$, $p < .05$), other parental dysfunction ($r = -.2611$, $p = .05$), global severity ($r = -.3084$, $p < .025$), resilience ($r = -.2930$,

$p < .05$), the COGOUT factor of language/visual-motor/academic ($r = .3035$, $p = .025$). Delays in language and visual-motor development, particularly, seemed associated in females with more personality dysfunction ($r = .3415$, $p = .01$; $r = .3603$, $p < .01$).

Significant correlations with global outcome (OUT) in the full sample and both genders were observed with IQ, resilience, and all of the individual outcome measures and outcome factors. Females' data contributed most strongly to the sample correlations between global outcome and physical abuse ($r = -.4369$, $p < .001$), psychological maltreatment, physical neglect, and social neglect - ($r = -.4991$, $-.4713$, $-.5106$, all $p < .001$), other parental dysfunction ($r = -.4114$, $p < .01$), global severity ($r = -.4669$, $p < .001$), and social support ($r = -.2941$, $p < .05$). For males, the stability variable was correlated with global outcome ($r = -.3127$, $p < .025$), a pattern seen in the full sample but not significantly in the female data.

APPENDIX G:
SAMPLE DRAWINGS FROM BEST & WORST OUTCOME CASES

Sample Drawings from Best & Worst Outcome Cases

Drawings 1 and 2: M.C., female, age 14-5, best outcome group

Person, House: illustrates high-level concept formation, overly-mature age identification, sense of personal power, but with indicators of dependency needs, ambivalence, overuse of fantasy, possible suicidal concerns.

Drawings 3 and 4: T.P., female, age 15-8, worst outcome group

Person (black & white), Person (colour): illustrates severe lack of integration, bodily distortion, autonomy problems, helplessness, aggression, anger, hostility, undeveloped self-concept, boundary problems, problems in reality testing, possible psychosis, emotional development problems (infantile age identification in drawing 4).

Drawings 5 and 6: A.T., male, age 7-7, worst outcome group

Tree, spontaneous drawing ("anything you would like to draw"):

Captions: "No body is allowed to touch my tree"

"A witch making poison candy for Hallowe'en"

illustrates aggression, hostility, anger, volatility, fearfulness and anxiety, unmet needs for protection, poor self-esteem, insecurity, unbalanced, traumatized, mistrust/suspiciousness, maternal deprivation, environmental menace, lack of gender differentiation, distorted body image, possible sexual trauma.

Drawing 7: D.A., male, age 11, positive outcome case

Spontaneous drawing ("your life over the past few years")

Description of life circumstances and drawing on next page.

Drawing 7 is a graphic illustration of the process of resilience, as conceptualized by an 11 year old boy who had experienced maternal deprivation and abandonment by mother and several stepmothers, a narcissistic and rejecting father, physical and sexual abuse, and repeated rejection and scapegoating by parental figures. In the previous year an attempt was made to reunite him with his birth mother, but the attempt had recently failed due to mother's priorities being to meet her own needs and to act on impulses regardless of the boy's needs. Although there could be a warm and playful relationship between them, she was unable to commit to a permanent plan for his care. In this picture, he portrayed his life as "a bumpy road with lots of ups and downs and a big cliff." Starting in the upper left corner, he symbolically portrayed his mother and himself together ("a mom and a kid tree"), followed by a "weeping willow that's really weeping," an isolated house out in the forest with a couple living in it (mom and the new abusive partner she chose over her son) and a lone pine tree (himself, now larger but alone and outside the home). He then began on the other side of the road and the river, drawing a barren tree stripped of all its leaves (reflecting the desolation he had felt after his mother's final abandonment), but proceeded to draw his future state with a large, sturdy tree. This final symbol shows his perceptions of his own resourcefulness, strength, and ability to recover from loss and disappointment, but it also bears the symbol of trauma (hole in the tree) which will remain with him.

30 years

No Body is allowed
to touch my tree.

"everything you use it
to dream"

a witch
making
candy for
the flower

By my

APPENDIX H:
ILLUSTRATIVE CASE STUDIES

Illustrative Case Studies

Case Study 1: C.B., Female, age 6-6, plus brother, age 5-4

This child from the best outcome group was the older of two children of a bright and attractive chronically substance-addicted mother and an alcoholic father, with entrenched patterns of family violence during her early years. Her birth weight was low at 5 pounds, 3 ounces, although she was full-term. She was subjected to mild physical abuse such as hitting, slapping, and pushing; sexual abuse by several perpetrators (by a babysitter at mother's home and later by a teenaged brother of her first foster parents); regular and prolonged psychological maltreatment (exposure to corruption, denying emotional responsiveness, shaming, invasion of boundaries, unrealistic expectations, role reversal with mother, abandonment, and manipulation of her emotions) interspersed with some nurturing; gross neglect during periods of maternal drug use (leaving unsupervised regularly, locking in bedroom, poor feeding and hygiene); moderate social/cognitive neglect interspersed with periods of mother trying to teach the child skills prematurely; entrenched family violence; chronic substance abuse; and mild other parental dysfunction such as poor parenting and problem-solving skills. Initially and for some time after being placed in care, she demonstrated a strong but insecure (anxious) attachment to her mother, with a tendency to worry about mother and a compulsion to look after her needs when they were together. The strength of the attachment declined eventually, after years of broken promises and inability of the mother to resolve her personal problems in order to resume care of the child, but by the time the maternal attachment ebbed, a strong attachment had formed with the foster mother.

C.B. was assessed by the researcher at ages 3-5, 5-0, and 6-6, and at each assessment showed signs of being a very resilient child. She was a bright, attractive, affectionate girl who was precociously mature and responsible, was alert to danger and able to take self-protective action and to look after her younger brother, constantly asked questions so that she would know what to expect and what was expected of her, was skilled at forming and utilizing relationships to have her needs met, believed that she was loved and loveable, was able to take an optimistic and hopeful view of events, and was able to show altruism and a helpful nature toward others. She did not use the more negative resilience traits of dissociation or idealization of the aggressor, being very alert and oriented to reality and able to tell people that she wished that her parents would stop doing bad things so that she could go home. C.B. was in two long-term foster placements: in the first, the foster mother had some difficulty handling this child's controlling, sometimes belligerent behaviour and inability to accept parenting. In addition, she was sexually abused by a relative of the foster parents, having already been victimized in mother's care and thus more vulnerable to subsequent victimization. In the second foster home, she was provided with much love and nurturing by parents who were patient and accepting of her personality and vulnerabilities and delighted with her evident capabilities; there, she was able to relinquish her precocious self-sufficiency and allow herself to be cared for like a normal child. She formed a strong, secure attachment to both foster parents, who later adopted her and her younger brother. Through Children's Aid and the foster parents, she

was provided with numerous high quality social supports such as extended family, the ability to be placed in the same home as her brother without having to parent him, peer friendships in her neighbourhood and school, a committed and caring social worker, a parent assistance worker to assist while settling in to the new foster home, a supportive church community through the foster parents, and a loving and stimulating foster home where she was eventually adopted. Her brother, who also experienced all of these things (except the sexual abuse) at a younger age, also appeared in the best outcome group. In addition, he had been an unwanted child who was nearly aborted; he went through a very difficult birth, with fetal distress due to the cord being wrapped around his neck, and was born with a heart murmur. Both children at their last assessment tested in the High Average range of intelligence, with the girl having increased approximately 10 points since her first assessment. Her brother's score had dropped somewhat, as at the time of assessment he seemed quite depressed and unable to relinquish his hopes of going home to his mother despite her further deterioration of functioning and the removal of parental access. Outcome measures showed C.B. functioning at average levels in language and academic skills, below average in visual-motor skills, above average in social maturity, and having shown only moderate behavioural difficulties during stressful periods after parental visits. Her personality functioning was rated as adequate, but with some distortions in her development in reaction to the circumstances of her life, characterized by aggression, anger, self-consciousness, strong needs for warmth and protection, impulsiveness, bodily anxiety, hypervigilance, and various problems in dealing with intense emotions. The brother's outcome scores were similar, with a major increase in maturation, behavioural adjustment and settling after parental access stopped. Although personality functioning was deemed adequate, some damage and depressive tendencies were noted, with traits of insecurity, helplessness, and dependency evident.

Case Study 2: J.S., Female, age 14-1, with sister, age 12-2

This child of aboriginal ancestry (with possible fetal alcohol syndrome due to mother's heavy alcoholism) was in the worst outcome group (ranked ninth among the lowest global outcome scores), although her younger sister was in the best outcome group (ranked sixth from the top of the sample). Until the age of 10, she was exposed to mild but pervasive physical abuse and harsh punishment; sexual abuse by her maternal grandfather at age 4 or 5 as well as witnessing her mother having sex with numerous men including grandfather; severe psychological maltreatment and extreme instability; severe neglect - physical, social/cognitive; sporadic family violence; very severe substance abuse by both parents, who encouraged this child to use marijuana and alcohol as young as age two; and severe parental dysfunction including character disorder and criminal involvement. The family was never in one location long enough for protective services to intervene in the family. Her younger sister was exposed to the same risk factors until age 8. The only difference in risk exposure was that J.S. was exposed to further emotional maltreatment, humiliation, scapegoating, and denigration in the foster home (with frequent threats by the foster father to eject her from the home), while her younger sister was praised and identified as an ideal child in contrast to J.S.'s "bad girl" role. The younger sister was capable of manipulating the parents to her own advantage and setting up her sister to act out for her, as

noted by school personnel. J.S. was identified as being low in resilience, with IQ at the borderline level. She experienced high stability in one long-term foster placement, but the support received there was tarnished by the accompanying emotional maltreatment and barely veiled racial prejudice by the foster father. While she received a moderate degree of social support, most relationships were qualified by some negative aspects or frequent turnover, with the exception of her special education/social adjustment class teacher who took a genuine interest in her progress and well-being. There had been no parental access within three years prior to assessment, though she worried that her father would know where she lived and might come and harm her.

On all outcome measures, she was at the lowest possible score, except for slightly higher language development which was borderline. Her younger sister, whose IQ was in the average range, was far more resilient, with better social skills and the ability to use relationships to have her needs met, the conviction of being loved, precocious maturity, information seeking, and a hopefulness and optimism about her future. She showed no indications of fetal alcohol syndrome. Although she could be rather manipulative, she was generally able to obtain and use social supports provided and had more conscious memories of the sexual abuse experienced, while J.S. repressed and denied the events. The younger sister's standardized outcome measures were all in the average range, and her behaviour was described as being the "ideal" child. In reality, however, she was overly compliant in a false and ingratiating manner, self-righteous about her own good behaviour, prone to setting up her sister for punishment, self-conscious, rigid, and perfectionistic - conditions which seemed to have arisen in response to the foster parents' measuring the sisters against one another and offering each of them opposing roles to play in the family in a manner which impaired their ability to use one another as a source of support. The price she was paying for her adaptation to the situation was evident in her drawings, with traits of underlying hostility, oppositionality, anger, insecurity, anxiety, inauthenticity, bodily anxiety, and trauma. In her portrayal of a girl in her human drawing, she began by drawing her own black hair, then quickly rejected that image, turned the paper over, and produced a pretty blond, blue-eyed girl, smiling and batting her eyelashes. Although initially resilient in comparison to her sister, it can be predicted that she will encounter severe identity problems by mid-adolescence and may not appear so resilient or adaptable at that time.

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