

**MMPI-2 AND RORSCHACH ASSESSMENTS OF
ADULTS PHYSICALLY ABUSED AS CHILDREN**

BY

SHARON L. CAIRNS

A Thesis

**Submitted to the Faculty of Graduate Studies
in Partial Fulfilment of the Requirements
for the Degree of**

DOCTOR OF PHILOSOPHY

**Department of Psychology
University of Manitoba
Winnipeg, Manitoba**

© April, 1997



**National Library
of Canada**

**Acquisitions and
Bibliographic Services**

**395 Wellington Street
Ottawa ON K1A 0N4
Canada**

**Bibliothèque nationale
du Canada**

**Acquisitions et
services bibliographiques**

**395, rue Wellington
Ottawa ON K1A 0N4
Canada**

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-23584-X

**THE UNIVERSITY OF MANITOBA
FACULTY OF GRADUATE STUDIES

COPYRIGHT PERMISSION PAGE**

**MMPI-2 AND RORSCHACH ASSESSMENTS OF ADULTS
PHYSICALLY ABUSED AS CHILDREN**

BY

SHARON L. CAIRNS

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
of**

DOCTOR OF PHILOSOPHY

Sharon L. Cairns 1997 (c)

**Permission has been granted to the Library of The University of Manitoba to lend or sell
copies of this thesis/practicum, to the National Library of Canada to microfilm this thesis
and to lend or sell copies of the film, and to Dissertations Abstracts International to publish
an abstract of this thesis/practicum.**

**The author reserves other publication rights, and neither this thesis/practicum nor
extensive extracts from it may be printed or otherwise reproduced without the author's
written permission.**

ACKNOWLEDGEMENTS

It is a daunting task to think back through the years to all the important people who have contributed to the completion of this doctoral degree. Given that it is hard to prioritize the varied but essential contributions, I will try to organize my recognition chronologically.

Firstly, I would like to mention my parents, Marie and Jerry Cairns, who have provided inspiration, support, and encouragement throughout my life. Then, there is my partner, Stephen Fairley, who has furnished unending intellectual, emotional, spiritual, and physical nourishment and the means to pursue and attain my goals. I also thank him for keeping me up-to-date with a computer that has completed the job required.

Next, was a psychologist I met through my work as a nurse, Dr. Robert McIlwraith, who modelled what I wanted to be when I grew up. Then there was another psychologist, Dr. Ron Norton, who recognized my potential and encouraged me to apply to graduate school. Ron also acted as a powerful role-model in terms of embracing the scientist-practitioner model.

Moving on to my graduate work, I am indebted to Dr. Rayleen DeLuca, who has always been there with her support and encouragement and who began my formal training in the area of child abuse. My greatest thanks go to my advisor, Dr. Catherine Koverola, who has provided constant wisdom, guidance, encouragement, and insight, as well as diligent management of the endless paper work involved in obtaining this degree. Catherine has been outstanding with amazingly quick turnarounds on drafts. I am also indebted to her for the organization of her research team. The research team has provided a supportive forum to discuss ideas, share knowledge and work, celebrate successes, and to problem-solve the inevitable glitches that arise in research. I am particularly grateful to Paula Battle, Cindy Hanna, and Michelle Warren for their assistance in data collection.

In addition to Dr. Koverola, a debt of gratitude is also owed to the other members of my advisory committee, Dr. David Martin, Dr. Robert McIlwraith, and Dr. Linda Rhodes, who provided invaluable feedback from the inception of this project to its completion. Special thanks go to all of my committee members, along with my external examiner, Dr. Michael Kral, and defence chair, Dr. Sid Frankel, who all braved the aftermath of Winnipeg's worst blizzard of the century in order to conduct the final oral exam at my external's hotel given the university was closed. I cannot find the words to express my appreciation for members who waded through great distances of thigh deep snow before they reached open roads and bus transportation. The difficulty of orchestrating this exam exemplifies the commitment of Dr. Koverola to her students.

Appreciation is also extended to Llewellyn Armstrong of the Statistical Advisory Service for her invaluable assistance in planning the statistical analyses. I would also like to thank the University of Manitoba and the Medical Research Council of Canada for providing financial aid in the form of fellowships and studentships during my graduate training.

Last, but not least, I would like to thank my dearest friends for providing support and encouragement through the years. In addition to Stephen, these are the people who have shared in my joys and celebrations and who have brightened the darker moments. Of special mention are: Deborah Gilman, Karen McSwain, Faye Ostrowe, and Greg and Linda Rubell.

ABSTRACT

This study compared the affective, cognitive, and interpersonal functioning of young women who were physically or both physically and sexually abused as children with a comparable sample of women with no trauma history. This study also examined the relationship between distress and coping style as well as the relationship between distress and levels of cognitive and affective processing. Participants included 86 female undergraduate students screened for trauma history. Measures used included the Minnesota Multiphasic Personality Inventory, 2nd edition (MMPI-2) clinical scales, post-traumatic scales (PK and PS), and average clinical T-score (Mean CI) and selected variables from the Rorschach. Variables were categorized, a priori, as primarily affective, cognitive, interpersonal, or generalized distress. Multivariate analyses of variance were conducted in each of the areas of functioning. Independent variables were group and coping style. The trauma group demonstrated significantly greater affective, cognitive, interpersonal, and generalized distress than the no trauma group. Univariate analyses indicated significant group differences on the MMPI-2 Scales: Depression (2), Psychopathic Deviate (4), Paranoia (6), Schizophrenia (8), Mania (9), PK, PS, and Mean CI. The multivariate main effect for coping style and the interaction between group and coping style were not significant suggesting that coping style is not an important mediator of distress in these subjects. An analysis of covariance revealed a significant interaction between group and cognitive processing. The higher the level of cognitive processing in the trauma group, the lower the Mean CI. Conversely, in the no-trauma group the higher the level of cognitive processing, the higher the Mean CI. Affective processing was not a significant predictor of distress. These findings provide important empirical data regarding the long-term functioning of individuals who were physically abused as children, a group neglected by the bulk of the trauma literature. Further, the study contributes to the growing body of literature documenting that survivors of interpersonal violence with higher levels of cognitive processing experience less distress than survivors lower in this quality. The clinical, research, and social implications of the findings are discussed.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iv
ABSTRACT	v
LIST OF FIGURES	viii
LIST OF TABLES	ix
I. INTRODUCTION	1
A. Historical Perspective	2
B. Trauma Sequelae	3
C. Vulnerability and Resilience	5
II. CHILDHOOD TRAUMA	5
A. Childhood Sexual Abuse	11
B. Childhood Psychological Abuse	15
C. Childhood Physical Abuse	20
D. Summary	28
III. UNDERSTANDING THE SEQUELAE	29
A. Post-traumatic Stress Disorder	29
B. Traumatogenic Model	37
C. Comprehensive Model of Trauma Impact	38
D. Summary	41
IV. ATTACHMENT THEORY	43
A. Theory	43
B. Infant Styles of Attachment	44
C. Relationship to Childhood Maltreatment	45
D. Adult Attachment	48
E. Summary	58
V. MEASUREMENT OF THE CONSTRUCTS	62
A. MMPI-2	62
B. Rorschach	74
C. Combined use of Projective and Self-Report Measures	102

VI.	CURRENT STUDY	105
A.	Rationale	105
B.	Hypotheses	107
VII.	METHOD	109
A.	Participants	109
B.	Measures	109
C.	Procedure	113
D.	Design	115
VII.	RESULTS	117
A.	Sample Description	117
B.	Descriptive Statistics on Dependent Measures	121
C.	Group Comparisons	123
D.	Cognitive and Affective Processing	138
IX.	DISCUSSION	148
A.	Overview	148
B.	Hypothesis I: Affective, Cognitive, Interpersonal, and Generalized Distress	149
C.	Hypothesis II: MMPI-2 versus Rorschach Variables	157
D.	Hypothesis III: Coping Style	164
E.	Hypothesis IV: Cognitive and Affective Processing	168
F.	Relationship of Findings to Attachment Theory	171
G.	Limitations	172
H.	Conclusions and Clinical Implications	175
X.	REFERENCES	179
XI.	APPENDICES	190
A.	Description of MMPI-2 and Rorschach Variables	190
B.	Background Information Sheet	194
C.	Family Conflict Questionnaire	196
D.	History of Unwanted Sexual Contact Questionnaire	198
E.	Interest in Follow-up Study	204
F.	Consent Form	205
G.	Feedback Sheet	206
H.	Trauma Sequelae	207
I.	Analysis of Subjects Experiencing Other Trauma	211

LIST OF FIGURES

1.	The Interrelationship Between Sexual, Physical, and Psychological Abuse . .	10
2.	Prediction of Attachment Style from Internalized Models of Self and Others (Bartholomew, 1990)	56
3.	MMPI-2 Scores for the Trauma and No-Trauma Groups	127
4.	MMPI-2 Scores for EB Subgroups in No-Trauma Subjects	128
5.	MMPI-2 Scores for EB Subgroups in Trauma Subjects	129
6.	Regression Slope Predicting Mean CI by Adjusted zf for the Trauma Group	144
7.	Regression Slope Predicting Mean CI by Adjusted zf for the No-Trauma Group	145
8.	Regression Slope Predicting Mean CI by Adjusted EA for the Trauma Group	146
9.	Regression Slope Predicting Mean CI by Adjusted EA for the No-Trauma Group	147
10.	MMPI-2 T-Scores for Trauma Subgroups	217

LIST OF TABLES

1.	Symptoms Associated with Childhood Sexual Abuse	13
2.	Symptoms Associated with a Childhood History of Psychological Abuse . . .	16
3.	Symptoms Associated with a Childhood History of Physical Abuse	25
4.	DSM-IV Post-Traumatic Stress Disorder Diagnostic Criteria	31
5.	Symptoms of Complex Post-Traumatic Stress Disorder	34
6.	MMPI-2 Validity, Clinical, and Supplementary Scales	64
7.	Comprehensive System Rorschach Codes	79
8.	Affective, Cognitive, and Interpersonal Rorschach Variables	88
9.	Comparisons of Findings in Studies Using the Rorschach	100
10.	Exclusion of Subjects	116
11.	Annual Family Income	118
12.	Number of Subjects Reporting Each Type of Physically Abusive Behaviour . .	120
13.	Means and Standard Deviations on Affective, Cognitive, Interpersonal and Generalized Distress Variables	124
14.	MANOVA of Affective Variables	130
15.	Intercorrelations Between Affective Variables for No-Trauma and Trauma Groups	132
16.	MANOVA of Cognitive Variables	133
17.	Intercorrelations Between Cognitive Variables for No-Trauma and Trauma Groups	134
18.	MANOVA of Interpersonal Variables	136
19.	Intercorrelations Between Interpersonal Variables for No-Trauma and Trauma Groups	137

20.	MANOVA of Generalized Distress Variables	139
21.	Intercorrelations Between Generalized Distress Variables for No-Trauma and Trauma Groups	140
22.	Means and Standard Deviations on zf and EA for the No-Trauma and Trauma Groups	141
23.	Analysis of Covariance of Mean Cl	142
24.	Intercorrelations Between Cognitive and Affective Processing and Distress for the No-Trauma and Trauma Groups	143
25.	Description of Codetypes	158
26.	Codetypes for Introversive, Extratensive, and Ambitent Subjects in the Trauma and No-Trauma Groups	167
27.	Number of Subjects Reporting Each Type of Sexually Abusive Behaviour During Childhood	212
28.	Means and Standard Deviations on Affective, Cognitive, Interpersonal, and Generalized Distress Variables for Trauma Subgroups	214
29.	Means and Standard Deviations on zf and EA for the Extended Trauma and No-Trauma Groups	218
30.	Percentage of Subjects Classified as Introversive, Extratensive, and Ambitent	218
31.	MANOVA of Affective Variables for the Extended Trauma and No-Trauma Groups	219
32.	MANOVA of Cognitive Variables for the Extended Trauma and No-Trauma Groups	220
33.	MANOVA of Interpersonal Variables for the Extended Trauma and No-Trauma Groups	221
34.	MANOVA of Generalized Distress Variables for the Extended Trauma and No-Trauma Groups	222

MMPI-2 AND RORSCHACH ASSESSMENTS OF ADULTS PHYSICALLY ABUSED AS CHILDREN

The purpose of this project is to examine the affective, cognitive, and interpersonal functioning of young adults who were physically abused as children. In this study childhood physical abuse is defined as being hit or slapped really hard; beat or kicked; pushed, thrown, or knocked down; hit with an object; having hair pulled; burnt or scalded; scratched; and/or having a leg or arm twisted or pulled on more than two occasions by a parent or caregiver prior to the age of 17. In addition, this maltreatment had to result in some form of injury. Prior to reviewing the sequelae that have been associated with the various types of childhood maltreatment, the historical roots of the interest in the impact of trauma will be summarized. Trauma may be conceptualized as exposure to an event or events that posed actual or threatened physical danger to oneself or others resulting in fear, hopelessness, or a sense of horror (American Psychiatric Association; APA, 1994) Three models that attempt to understand the sequelae will then be compared. Next, attachment theory and its association with childhood maltreatment will be reviewed. Finally, selected trauma research utilizing two psychometric tools, the Minnesota Multiphasic Personality Inventory, 2nd edition (MMPI-2) and Rorschach, will be reviewed. These measures will be used to examine affective, cognitive, and interpersonal functioning of maltreated individuals compared with individuals who do not report a history of childhood maltreatment. A descriptive legend of the MMPI-2 and Rorschach variables used is provided in Appendix A.

Historical Perspective

In her historical review of the impact and treatment of trauma, Herman (1992) traces the literature back to the late 1800's when Janet and Freud followed in the footsteps of Charcot in their examination of "hysteria." Whereas Charcot was interested in describing the disorder, Janet and Freud wanted to understand the cause of hysteria. Both Janet and Freud identified psychological trauma as a cause of the disorder but they differed in their understanding of who was susceptible to the disorder. Janet maintained that patients with hysteria were psychologically weak and suggestible while Freud recognized that hysteria could be diagnosed in a wide range of individuals including those who were intellectually gifted and strong willed.

Following Freud's repudiation of the trauma theory of neurosis, interest in psychological trauma declined until World War I when "shell shock" was identified. Similar to Janet's individual vulnerability hypothesis, the anxiety symptoms attributed to shell shock were thought to be associated with central nervous system lesions (Kinzie, 1989) or inferior morality (Herman, 1992). However, a few years after the war, interest waned and those veterans still experiencing difficulty were relegated to the back wards of veterans' hospitals. World War II (WWII) again stimulated interest in "combat neurosis" and the recognition that connection to others was important resulted in brief interventions with the goal of returning the soldiers to their combat units as soon as possible (Herman, 1992). With WWII, there was also increased attention to post-traumatic symptoms in civilians who were survivors of prisoner-of-war and death camps (Kinzie, 1989). Although some investigators focussed on organic factors, the high proportion of survivors

with symptoms made it clear that psychological rather than biological trauma was the precipitating factor (Kinzie, 1989). Again, history repeated itself and psychological trauma was forgotten until the Vietnam War (Herman, 1992). A major difference in the resurgence of interest this time was that the major impetus for recognition of the problem was provided by the veterans. The persistent insistence for acknowledgment of the problem resulted in the American Psychiatric Association's including Post-traumatic Stress Disorder (PTSD) in their diagnostic manual (APA, 1980).

In the 1970's, the women's movement recognized that civilian women are often victims of post-traumatic disorders as a result of rape, childhood abuse, and domestic violence. However, PTSD had to be legitimized by the veterans in the 1980's before it was officially accepted that non-combat experience also resulted in post-traumatic symptoms (Herman, 1992). In many ways, history has come full circle with a return to the interest in the psychological impact of abusive experiences. A major difference at this time is the recognition that all forms of trauma, whether combat, captivity, natural disasters, rape, or childhood maltreatment, have a common core of sequelae, namely post-traumatic symptoms (Briere, 1992; Herman, 1992; Kinzie, 1989).

Trauma Sequelae

All major aspects of human functioning are affected by trauma including physiological, emotional, cognitive, memory, and capacity for interpersonal relatedness (Briere, 1992; Herman, 1992; Kinzie, 1989). However, there is no single syndrome (Jones & Barlow, 1990; Herman, 1992). Each person's "... symptom pattern was related to his individual childhood history, emotional conflicts, and adaptive style" (Herman,

1992, p. 58). Generally, the impact of trauma can be categorized into three main groupings of symptoms: intrusion, hyperarousal, and constriction (Herman, 1992; Kinzie, 1989). Intrusive symptoms include flashbacks, trauma related nightmares, intense response to trauma related stimuli, and reenactment of the trauma (often disguised as some type of risk-taking behaviour). Hyperarousal symptoms include hypervigilance for signs of danger, easy to startle, irritability, and disturbed sleep (initial insomnia, frequent waking, and nightmares). Constriction is evidenced by numbing, dissociation of affect, passive resignation, use of hypnotic states, amnesia, use of alcohol or drugs to numb sensations, restriction of life, and limited planning for the future. As Herman (1992) points out, these constrictive symptoms are often less dramatic than hyperarousal or intrusive symptoms and thus often overlooked. Typically intrusive symptoms predominate immediately following the trauma and constriction is usually primary as a longer term impact.

Trauma "... shatter(s) the construction of the self that is formed and sustained in relation to others" (Herman, 1992, p. 51). The sense of safety in the world and positive self-value are destroyed (Briere, 1992a; Herman, 1992). Following traumatic experience(s) individuals lose their sense of autonomy, initiative, competence, identity, intimacy, and sense of connection with the community. Interpersonal relationships become bound in conflict. Individuals may not tolerate seeing others hurt or threatened and yet may suffer strong aggressive impulses that may be acted upon. Similarly, there is a simultaneous withdrawal from close relationships and a desperate need for protective attachment and connection to others (Herman, 1992).

Vulnerability and Resilience

As Herman (1992) states, "Traumatic events are extraordinary, not because they occur rarely, but rather because they overwhelm the ordinary human adaptations to life" (p. 33). She goes on to say that the potential of harm increases when the individual is surprised, trapped, exposed to the point of exhaustion, physically violated or injured, exposed to extreme violence, or the witness to grotesque death. The greater the exposure to traumatic events, the greater is the likelihood of psychological harm. Given sufficient trauma, no one is immune from the negative effects. The most vulnerable to long term effects are those prone to dissociation, impulsive action, isolation from others, feelings of powerlessness and disconnection from others, those with a history of previous psychiatric disorders, and those who have the trauma inflicted by a member of the support system or who are blamed by the support system (Herman, 1992). The response of the community can either mitigate or deepen the trauma through public acknowledgement and justice or blaming and alienating respectively. Resilience from long term harm has been associated with high sociability, a personal sense of control, active coping skills, and a supportive social network (Herman, 1992; Jones & Barlow, 1990).

CHILDHOOD TRAUMA

Repeated trauma in adult life erodes the structure of the personality already formed, but repeated trauma in childhood forms and deforms the personality. The child trapped in an abusive environment is faced with formidable tasks of adaptation. She must find a way to preserve a sense of trust in people who are untrustworthy, safety in a situation that is unsafe, control in a situation that is terrifyingly unpredictable, power in a situation of helplessness (Herman, 1992, p. 96).

It has been suggested that trauma at different phases of the life cycle may have differing effects and that trauma during childhood is particularly damaging. For example, Cerney (1990) stated that traumatic events during childhood "... weaken if not destroy the very foundations of their thinking and sense of self. Before they have the ability to differentiate between what is real and not real and at a time when their thinking is characterized by concreteness, their most terrifying thoughts become a reality" (p. 787).

Kempe and his colleagues (1962) have been credited with beginning modern awareness, concern, and interest in child maltreatment with their ground-breaking work on severe physical abuse (Briere & Runtz, 1988). Although initial attention to childhood abuse focussed on physical injuries (Azar & Wolfe, 1989), the psychological impact of abuse increased in importance as the field developed. Shengold (1979), for example, described the effects of childhood physical, sexual, or emotional abuse as "soul murder" in that survival demands that these children cognitively and emotionally distort their realities.

A history of trauma from either physical or sexual assault is common in individuals who are experiencing some form of psychological distress. For example, Jacobson and Richardson (1987) interviewed 100 psychiatric in-patients (50 males; 50 females) and found that 81% had experienced either physical or sexual assault. Of these assaults, 57% occurred during childhood. The authors also noted that 60% of their sample had experienced two or more different types of assault (childhood physical abuse, childhood sexual abuse, adult physical abuse, adult sexual abuse). More recently, Briere (1992) suggested that maltreatment may be an important etiological factor in most types of nonorganic psychopathology. However, "... most people who have been abused in

childhood never come to psychiatric attention" (Herman, 1992, p. 122). Those who do, often have higher levels of distress and more symptoms than non-abused patients.

"Physical abuse, sexual abuse, emotional abuse, and neglect of children have been found to affect children in all areas of functioning. Different children are affected in different ways, with some children showing dramatic, pervasive, and sensational symptoms and others being affected in more silent, subtle ways" (Iverson & Segal, 1990, p. 71). Childhood abuse results in an impaired ability to regulate bodily and emotional states (Herman, 1992). The regulation of body states is interrupted by hyperarousal and the child's body being subjected to the whims of the perpetrator. The regulation of emotional states is disrupted by fear, rage, and terror. This disruption can result in chronic anxiety and depression or in extreme detachment from all affect (often self-mutilation is used to restore feeling). All types of maltreatment have been associated with depressive and anxiety symptoms, anger (exhibited by delinquency, truancy, and running away), and self-destructive behaviours (Iverson & Segal, 1990).

Survival and adaptation to intra-familial trauma requires drastic measures such as altered states of consciousness, pathological attachment to the abuser, and a constant alertness to danger (Herman, 1992). Usually, there is a need to keep the family "secret" and maintain social appearances, which makes social contacts inauthentic. In order to maintain attachment to others, the child cannot hold his or her parents responsible. Thus the child maintains that the behaviour did not occur, was not abusive, or that the child deserved such treatment due to "badness." This denial is continuously reinforced by the parents, who are thus protected, and by the community that refuses to attribute the effects

of abuse to maltreatment.

Herman (1992) identifies several sources of the sense of "badness" that abused children develop. Anger and aggression, which are normal responses to abuse are interpreted by the child and others as a sign of "badness." If the child derives any sense of gratification, either through pleasure or special privileges, the sense of badness is enhanced. Thus, abused children will form their identity around this core sense of badness. The child may strive to be good as a caretaker, housekeeper, academic achiever or social conformist but these accomplishments are not internalized as they are not seen as a part of the true self.

The literature describes maltreated children as experiencing socioemotional problems in attachment, interpersonal relating, social perceptions, and self-esteem. In terms of attachment, maltreated children are more likely to be insecurely attached to caregivers (Iverson & Segal, 1990). Although maltreated children's social perceptions are consistent with their experiences of abuse or neglect they are able to accurately distinguish moral and social convention (Iverson & Segal, 1990). Interpersonally, abused children are at risk due to their desperate need for attachment and caring (Herman, 1992). They demonstrate this desperate need through idolization of others and self-denigration which leaves them vulnerable to powerful and authoritarian others. Idealization of others can result in an inability to accurately assess potential danger or untrustworthiness. Thus, these individuals are likely to be further victimized (particularly women) and/or to feel betrayed when others fail to live up to their expectations.

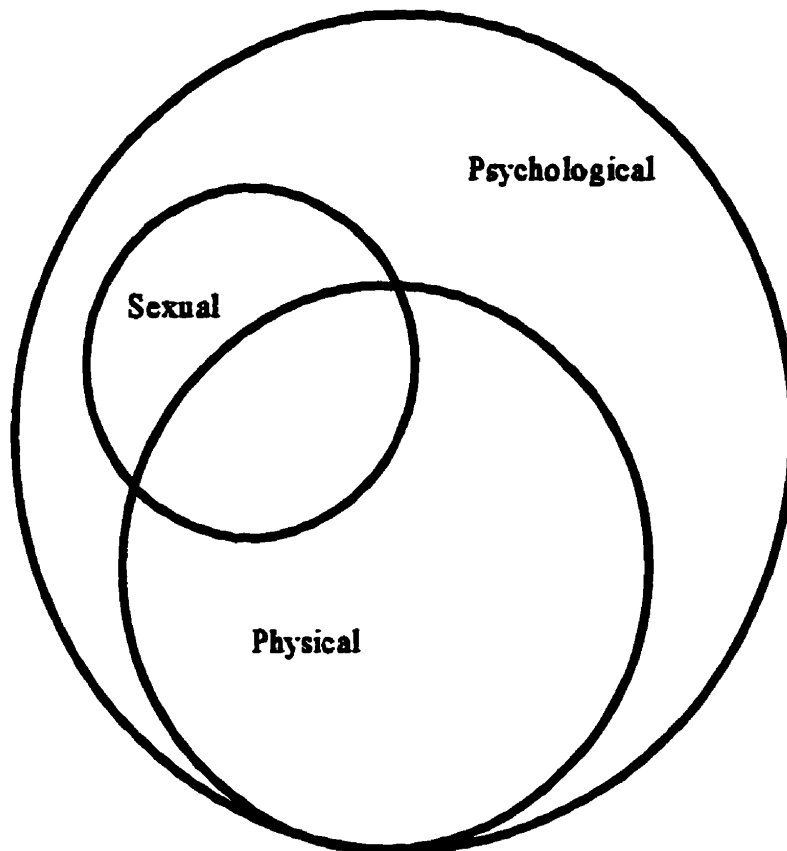
Research on cognitive sequelae of childhood trauma has shown mixed results that

may in part be related to behaviour problems interfering with accurate measurement of intellectual performance (Iverson & Segal, 1990). Deficits in cognitive functioning have been associated with brain damage, lack of environmental stimulation, concentration difficulties associated with inadequate nutrition or rest, distractibility associated with unpredictable environment, inadequate socialization, and language delays which may be associated with brain damage or neglect. Compared with non-maltreated children, maltreated children have impaired concentration and motivation, are slower to initiate tasks, and lack persistence. They also tend to be more egocentric and take less responsibility for task outcomes. All groups of maltreated children suffer low self-esteem (Iverson & Segal, 1990).

As described above, there are a number of problems commonly associated with all forms of child maltreatment. This is understandable given the overlap between types of abuse. By definition, all physical and sexual abuse involves elements of psychological abuse and all forms of sexual abuse that involve contact entail physical maltreatment. The interrelationship between these three major forms of child maltreatment is portrayed in Figure 1. Although sexual abuse comprises a subset of child maltreatment, the immediate and long term sequelae of sexual abuse has been studied most frequently and there is limited empirical research on the long term effects of physical and psychological maltreatment (Briere, 1992; Briere & Runtz, 1988; Oats, 1996). Given the overlap between types of child maltreatment, the common core of responses to trauma, and the relative dearth of empirical literature on the long-term psychological sequelae associated with childhood physical abuse, predictions regarding these sequelae may be informed by

Figure 1

The Interrelationship Between Sexual, Physical, and Psychological Abuse



the literature on other forms of child maltreatment. To this end, I will review the literature on sexual, psychological, and physical abuse.

Childhood Sexual Abuse

The incidence of childhood sexual abuse (involving some form of contact) in the general population ranges from between 20 and 30% for females and 10 to 15% for males (Briere, 1992a). In female clinical populations, the incidence ranges from 36 to 70% (Briere, 1992a). Although there are some inconsistencies in the literature, a greater traumatic response has been associated with greater duration and frequency of abuse (Briere, 1992a; Browne & Finkelhor, 1986; Kendal-Tackett, Williams, & Finkelhor, 1993; Wachtel, 1988), multiple perpetrators (Briere, 1992a; Wachtel, 1988), more invasive acts (Briere, 1992a; Browne & Finkelhor, 1986; Kendal-Tackett et al., 1993; Wachtel, 1988), use of physical force (Briere, 1992a; Browne & Finkelhor, 1986; Kendal-Tackett et al., 1993; Wachtel, 1988), earlier age of onset (Briere, 1992a), adolescent victimization (Browne & Finkelhor, 1986; Wachtel, 1988), older perpetrator (Briere, 1992a; Wachtel, 1988), close, dependent relationship with perpetrator (Browne & Finkelhor, 1986; Kendall-Tackett et al., 1993; Wachtel, 1988), lack of maternal support (Kendall-Tackett et al., 1993), concurrent physical abuse (Briere, 1992a), abuse involving bizarre features (Briere, 1992a), a personal sense of responsibility for the abuse (Briere, 1992a), child participation (Browne & Finkelhor, 1986), unsupportive response to disclosure (Browne & Finkelhor, 1986), and feelings of powerlessness, betrayal and/or stigma (Briere, 1992a).

Not surprising, a less severe impact of sexual abuse has been associated with shorter duration of abuse; the lack of force, violence and penetration; the perpetrator

being someone other than a father figure; a supportive family response to disclosure; and a well-functioning family (e.g., Finkelhor, 1990).

Although not all sexually abused children exhibit later symptoms (Browne & Finkelhor, 1986; Finkelhor, 1990; Kendall-Tackett et al., 1993), a wide variety of symptoms have been associated with a childhood history of childhood sexual abuse. However, there is no one characteristic set of symptoms that differentiates childhood sexual abuse from other types of maltreatment or that is consistent in all childhood sexual abuse survivors (Finkelhor, 1990; Kendall-Tackett et al., 1993).

Given the diversity of symptoms that have been associated with the various forms of trauma, examination and comparison of sequelae can be facilitated by categorization of symptoms. Categorization also offers a number of advantages to the researcher. Specifically, by using categories the researcher can: (1) focus research questions on specific areas of functioning; (2) more easily identify areas of functioning that have been neglected by the literature; and (3) decrease the risk of both Type I (falsely rejecting the Null hypothesis) and Type II (failure to reject a false Null Hypothesis) errors by grouping variables in multivariate analyses rather than conducting numerous individual statistical tests. The Comprehensive Model of Trauma Impact (Koverola, 1992) provides a framework for selecting groupings of sequelae.

Based on substantive review articles published between 1986 and 1993, Table 1 summarizes symptoms that have been associated with a history of childhood sexual abuse. Consistent with the Comprehensive Model of Trauma Impact these symptoms have been categorized as affective, behavioural, cognitive, and interpersonal. The interpersonal

Table 1

Symptoms Associated with Childhood Sexual Abuse

Symptom	Source
AFFECTIVE	
Anger	A, B, BF, F
Anxiety	A, B, BF, F, I, K, W
Depression	A, B, BF, F, I, K, W
Fear	A, BF, F, K, W
Guilt	A, BF, W
Shame	BF
BEHAVIOURAL	
Eating disorders	A, B, BF, W
Delinquency	BF, I, K
Indiscriminate/inappropriate sexual activity	A, B, BF, F, K, W
Obsessive-compulsive behaviour	F
Risk taking	B
Running away	BF, I, K, W
Self-destructive/mutilation	A, B, BF, F, I, K, W
Sleep disorders	BF, F, K, W
Somatic complaints	A, B, K, W
Spending sprees	B
Suicidal	B, F, K, W
Truancy	BF, I
Drug/alcohol abuse	A, B, BF, F, K, W
COGNITIVE	
Dissociation	B, F, W
Impaired self-reference	B
Low self-esteem	A, BF, F, I, K, W
Psychosomatic illnesses	B, W

continued

Table 1 con't.

<u>Symptom</u>	<u>Source</u>
INTERPERSONAL	
<u>Behaviours</u>	
Aggressive	F, K, W
Dysfunctional relationships	B, F
Hostile	BF, W
Hypervigilance	B
Impaired intimacy	A, B, W
Interpersonal conflict	A, W
Isolation	A, BF, F, I, W
Overly compliant	I
Passive	W
Poor social skills	W
Revictimization	A, BF, F, W
Role reversal	A, I
Seductive	I
Sexual dysfunction	A, B, BF, F, W
Sexually aggressive	I
Withdrawal	I, K
<u>Cognitions</u>	
Distorted perception of normal relationships	B
Distrustful	A, B, BF, F, I, W
Fantasies of power over men	A
Fear of abandonment	B
Fear of authority figures	B
Fear of being inadequate parent	A
Fearful of opposite sex	I
Feeling stigmatized	A, BF, F
Impaired judgement about trustworthiness	W
Sexually preoccupied	I

Note: A = Alter-Reid et al., 1986; B = Briere, 1992a; BF = Browne & Finkelhor, 1986;
 F = Finkelhor, 1990; I = Iverson & Segal, 1990; K = Kendall-Tackett et al., 1993;
 W = Wachtel, 1988

symptoms have been subdivided into behaviours and cognitions. Although there is obvious overlap between these symptom categories (e.g., depression is associated with behavioural symptoms, interpersonal behaviours, and cognitions), these groupings have been selected as a way of organizing these diverse impacts according to major area of impact.

Childhood Psychological Abuse

Psychological abuse is the most recent form of child maltreatment to be studied (Briere, 1992a). Psychological abuse includes rejecting; degrading; terrorizing; isolating; corrupting; exploiting; denying essential stimulation, emotional responsiveness, or availability; and unreliable or inconsistent parenting (Briere, 1992a).

Although, as conceptualized in Figure 1, psychological abuse is the larger form of maltreatment that encompasses both physical and sexual abuse, the impact of it has been studied much less frequently. Symptoms that have been identified in review articles as associated with a childhood history of psychological abuse are listed in Table 2. These symptoms are categorized similar to those associated with sexual abuse.

Witnessing Violence. Observing domestic violence is another form of interpersonal trauma. For some children, this means witnessing a parent being beaten by a partner (typically husband to wife) but some of these children will also have experienced physical abuse themselves. Thus, individuals in this category may experience pure psychological abuse or a combination of psychological and physical maltreatment. Sinclair (1985) described symptoms that are experienced by various ages of children that grow up in violent homes. Up to age five, children predominantly suffer from physical symptoms

Table 2

Symptoms Associated with a Childhood History of Psychological Abuse

Symptom	Source
AFFECTIVE	
Anger	I
Anxiety	B, I
Depression	B, I
BEHAVIOURAL	
Bizarre or inappropriate behaviour	I
Delinquency	I
Insomnia	I
Running away	I
Self-destructive	I
Somatic complaints	I
Truancy	I
COGNITIVE	
Dissociation	B
Low self-esteem	I
INTERPERSONAL	
<u>Behaviours</u>	
Aggressive	I
Difficulty establishing friendships	I
Hostile	I
Overly compliant	I
Overly non-compliant	I
Poor eye contact	I
Unresponsive	I
Withdrawal	I

continued

Table 2 con't

<u>Symptom</u>	<u>Source</u>
<u>Cognitions</u>	
Distrustful	I
Suspicious	I

Note: B = Briere, 1992a; I = Iverson & Segal, 1990

such as stomach and head aches, sleep problems such as insomnia and fear of the dark, bed-wetting, excessive separation anxiety, whining, and failure to thrive. Children from ages 6 to 12 reduce tension by being seductive or manipulative and either tend to be home bodies or avoid the home. They fear abandonment, fear being killed or fear killing, fear anger, have eating problems, and are insecure and distrustful of the environment. Females in this age range often have somatic complaints and withdraw; are passive, clinging, and approval seeking; have low frustration tolerance or infinite patience; and are frequently "mothers' helpers." Boys in this age range tend to be aggressive, act out, have temper tantrums, fight with siblings and classmates, have low frustration tolerance, and are often considered bullies. Children may be found at either of two academic extremes. They may either exhibit poor concentration, poor school work and attendance, fear of school and be labelled "slow learners" or they may have excellent academic work, perfectionism, fear failure, and be overly responsible. Problems observed in adolescents who grew up with domestic violence include drug and alcohol abuse, running away, pregnancy and early marriage, suicidal thoughts/behaviours, homicidal thoughts/behaviours, promiscuity, and criminal activities.

Jaffe, Wolfe, and Wilson (1990) reviewed the literature on children who witness domestic violence and identified difficulties associated with this form of interpersonal trauma. However, these authors note that it is unclear if personality and psychological factors precede or result from living with violence and caution that many children who witness domestic violence are themselves physically abused. Battered mothers are unable to offer their children the necessary nurturance and support that can result in disruptions in

attachment. During the latency years, these children see role models for conflict resolution, exhibit increased aggressiveness, have externalizing behaviour problems, suffer shame and humiliation due to the "family secret," and have impaired self-esteem, self-confidence, and guilt. During adolescence, these children put into practice the communication and sex roles they have learned, may run away from the home, or may take over parenting duties and become a care-taker of others.

The impact of witnessing abuse varies with the stage of development, the amount of violence, and the individual's ability to cope and understand (Jaffe et al., 1990). With severe violence male children tend to be more passive while female children tend to be more aggressive whereas the opposite pattern is typical when the violence is less severe. Boys learn that violence is acceptable and is a part of intimate relationships. Girls learn about victimization and the ways in which men use violence and fear to have power and control. Children less than eight years of age are more likely to suffer problems in self-concept and cognitive distortions. This is due to their developmental tendency to interpret events in relation to themselves and their inability to attend to more than one dimension of a situation.

Like sexual abuse, there is no specific pattern of disturbance associated with witnessing violence (Jaffe et al., 1990). Many of the developmental adjustment problems (anxiety, somatic complaints, impaired ability to understand social situations and be empathic, increased likelihood of using passive or aggressive problem resolution strategies, school related problems, loyalty conflicts) are found in physically, emotionally, and sexually abused children. Also similar to other forms of abuse, effects may be

mitigated by having a supportive relationship with one parent or having a good relationship with an adult outside the family.

Childhood Physical Abuse

As Briere (1992a) points out, physical abuse has often been difficult to define given a cultural climate that condones the use of physical discipline to socialize children.

In a culture where physical pain is often used by adults to alter or control children's behavior, it is difficult to determine what parental behaviors exceed a given threshold of aversiveness or social acceptability such that they would be defined by most people as physically abusive. For example, is it physical abuse if a parent strikes a child on the buttocks with an open hand? On the face? With a stick? If it is not abusive to spank a child once, is it abusive to do it twice? Three times? Over what period of time? Is spanking that does not leave bruises or welts clearly nonabusive? Does the "reason" for the physical punishment (i.e., the extent of the child's "bad" behavior) determine whether or not the resultant spanking or beating is child abuse? (Briere, 1992a, p. 7).

Given this difficulty in definition, it is extremely problematic to identify the incidence of childhood physical abuse. Due to the variety of definitions of physical abuse and the ways in which this information is collected, the reported incidence varies widely. For example, Berger, Knutson, Mehm, and Perkins (1988), in their study of over 4000 university students, found that 50% were identified as physically abused when liberal criteria were applied (struck with objects, the experience of any injurious or potential injurious violence). Using the criterion of what a Texan survey identified as abusive, 25% of the students were classified as abused. When the most stringent criterion was applied (endorsing a minimum of 5 items on the physical punishment scale), only 9% were identified as physically abused. When asked, 3% of the students identified their experience as physical abuse. Within this study, it is notable that 12% of the students reported having

been injured by their parents.

Demare (1993) identified approximately 31% (29.8% of females; 32.8% of males) of a sample of 1179 university students as physically maltreated by caregivers. He defined maltreatment as reporting any physical abuse item "sometimes" to "very often". Physical abuse items included were twisting a limb, hitting or slapping, pulling your hair, spanking you hard, hitting with an object, punching, kicking, beating up, throwing an object, burning or scalding, choking, harming you with a weapon, breaking bones, torturing, and trying to kill.

A comparison of the incidence of child abuse between the years 1975 and 1985 (Straus and Gelles, 1986) shows a significant decrease. Severe violence (defined as kicking, biting, or hitting with a fist; hitting or trying to hit with something, beating up; threatening with a gun or knife; or using a gun or knife) declined from 140 to 107 per thousand respondents and very severe violence (defined as kicking, biting, or hitting with a fist; beating up; or using a gun or knife) declined from 36 to 19 per thousand. However, the overall rate of hitting children did not significantly decline and in the 1985 study, 62% of the respondents reporting hitting a child. During this period, the public became much more aware of the seriousness of child abuse (10% of a survey in 1976 versus 90% in 1982 identified child abuse as a serious problem). The authors caution that the above figures on the incidence of child abuse may be due to an actual decrease in the rate of child abuse or an increased reluctance to report child abuse given the increased awareness of the problem. One further problem with this study involves sampling procedure. If there was more than one child between the ages of 3 and 17 in each family surveyed, then one child

was randomly selected as the referent child. This may have resulted in lower rates of reporting since, in families where there is violence, not all children are equally abused (Gelardo & Sanford, 1987; Kempe, Silverman, Steele, Droegemueller, & Silver, 1985).

In a review of the literature, Gelardo and Sanford (1987) identified that although child physical abuse occurred in all socioeconomic classes, it was more often associated with lower classes, unemployment, emotional and physical distress, marital discord, and social isolation.

Major criticisms of research into the problems experienced by adults who were physically abused as children are the lack of longitudinal studies and the reliance on retrospective reporting of childhood abuse experiences. To partially address this criticism, Berger et al. (1988) studied adolescents who were receiving social services at the time of the study. Ten of the adolescents had documented histories of physical abuse, 11 had documented histories of physical and sexual abuse, and 13 had no documented history of such abuse. Of the 21 individuals who had histories of physical abuse, only four described their history as including physical abuse while none of the individuals who had no documented history of physical abuse said that they had been physically abused. On the other hand, 19 of the 21 physically abused adolescents met the authors' stringent criterion of endorsing a minimum of five items on the Physical Punishment Scale of the Assessing Environments Questionnaire. None of the individuals lacking such history met this criterion. Thus, this study suggests that retrospectively individuals are likely to deny a history of physical abuse if asked directly but will endorse specific questions about abusive behaviour experienced. It is unlikely that non-abused individuals will either report such a

history or endorse a sufficient number of abusive behaviours experienced.

Based on clinical work with abused children, van Dalen (1989) constructed a model of the impact of physical abuse. Initially, there is cognitive confusion, a lack of understanding of the events leading to the abuse. This results in a distrust of one's own perceptions, an overdependence on adult interpretations of reality, and a hypervigilance to danger signals. To resolve the cognitive confusion, the child actively searches for an explanation for the abuse that frequently results in the child concluding that the abuse was deserved because of bad behaviour. Again, this results in an over-dependence on adult perceptions of what is "good." Children who are able to identify the wrongness of the abuse will experience anger. However, if there is self-blame, then anger is repressed and expressed indirectly which results in guilt. Guilt then motivates the child to seek punishment to alleviate this feeling. Nonetheless, the punishment seeking behaviours also result in a sense of satisfaction with the power to incite an adult's anger. Finally, according to this model, there is denial or resignation to the abuse along with attempts to elicit positive responses from the abuser. Thus, we would expect physically abused children to have impaired self-worth, to distrust their own perceptions, have acting out behaviour (or the converse, pleasing behaviour), to use denial or repression, and to have interpersonally aggressive behaviours.

The majority of research on physical abuse sequelae has concentrated on the short-term effects of physical abuse. Of the long-term studies, most have focussed on intelligence (Oats, 1996), or violent or aggressive behaviour (Malinosky-Rummel & Hansen, 1993). These authors note that many studies of long term sequelae combine

physical and sexual abuse making it difficult to differentially identify symptoms associated with physical abuse. Table 3 summarizes the affective, behavioural, cognitive, and interpersonal symptoms identified in the review literature of childhood physical abuse.

A greater impact of physical abuse has been associated with experiencing more than one form of maltreatment, substance abuse, parental marital violence, parental alcohol abuse (Malinosky-Rummel & Hansen, 1993), injury from the abuse, and physical abuse occurring before age 13 (Milner, Robertson, & Rogers, 1990). Moderating variables include therapy, fewer stressful life events, positive school experiences (Malinoski-Rummel & Hansen, 1993), and supportive relationships (Malinoski-Rummel & Hansen, 1993; Milner et al., 1990).

Three of the empirical studies that report on adult psychological sequelae of childhood physical abuse will follow:

Briere and Runtz (1988) examined psychological distress associated with a childhood history of parental psychological and physical maltreatment in a female university population. Using the Hopkins Symptom Checklist and the Texas Social Behavior Inventory (as a measure of self-esteem), they found that the same families typically reported both psychological and physical maltreatment from both mother and father. The combination of maltreatment was associated with dissociation, suicidal ideation, somatization, anxiety, depression, interpersonal sensitivity, and obsessive compulsive symptoms, but not with self-esteem. They also reported that in addition to these general effects of maltreatment there were unique effects. Paternal psychological abuse was associated with anxiety, depression, interpersonal sensitivity, and dissociation.

Table 3

Symptoms Associated with a Childhood History of Physical Abuse

Symptom	Source
AFFECTIVE	
Anger	G, I
Anxiety	B, I, M
Depression	B, G, I, M
Extremes of affect	I
Fears	G
Guilt	G
Helplessness	G
Joylessness	GS
Negative affect	G, GS, I
Shame	G
BEHAVIOURAL	
Delinquency	GS, I
Drug & alcohol abuse	M
Inappropriate sexual behaviour	K
Poor impulse control	G, GS
Running away	I
Self-destructive	G, I, M
Suicidality	G, M
Truancy	I, M
COGNITIVE	
Cognitive impairment	G
Decreased ego control	B, G, M
Denial	G
Dissociation	B, G, M
Distractible	GS
Fantasies of grandiosity and omnipotence	G
Impaired self-reference	B
Learning disabilities	G

continued

Table 3 con't

Symptom	Source
Less creative	GS
Less persistent	GS
Limited attention span	G
Low self-esteem	G, GS, I
Somatization	M
INTERPERSONAL	
Behaviour	
Aggressive	G, GS, I, M
Avoidant	B, G, GS, I
Dependent	GS
Disturbed relatedness	B
"Frozen watchfulness"	I
Hostile	I, M
Hypervigilant	GS
Ingratiating	GS
Less pro-social behaviour	GS
Less social skills	M
Negativistic	GS
Non-compliant	GS
Passive	GS
Show less affection	GS
Violent	M
Withdrawal	G, GS, I
Cognitions	
Difficulty assessing others' attitudes & intentions	I
Distrustful	G
Egocentric	I
Fearful of others	I
Fearful of physical contact	GS
Interpersonal sensitivity	M
Paranoid Ideation	M
Psychotic thinking	M

Note: B = Briere, 1992a; GS = Gelardo & Sanford, 1987; G = Green, 1988; I = Iverson & Segal, 1990; K = Kendall-Tackett et al, 1993; M = Malinosky-Rummell & Hansen, 1993.

Maternal physical abuse was associated with interpersonal sensitivity, dissociation, and suicide attempts. These associations represent a large effect in that parental maltreatment accounted for greater than 20% of the variance in interpersonal sensitivity, dissociation, and depression. The authors speculated that the lack of association with self-esteem may have been related to the measure chosen.

One commonly examined impact of childhood physical abuse is the potential to repeat the cycle of abuse with one's own children. For example, Milner et al. (1990) used the Child Abuse Potential questionnaire to assess potential for repeating abuse with one's own children. In 375 undergraduates, they found that 91% had been subjected to some form of physical abuse (whipping, slapping/kicking, poking/punching, and/or hairpulling) and that 21% suffered a physical injury (bruises/welts, cuts/scratches, dislocations, burns, and/or bone fractures) as a result of this abuse. Child abuse potential was most highly correlated with being physically abused and being injured, followed by observing another person's injuries and observing physical violence. The lowest correlation with abuse potential was associated with experiencing or witnessing sexual abuse.

One study that did not rely on retrospective reporting of childhood abuse experiences was conducted by Martin and Elmer (1992). They did a follow-up study of 19 (58% of those originally studied as children) individuals who had been severely battered as children. At the time of the follow-up, the subjects ranged in age from 25 to 36 years. Of these, 32% had some form of permanent physical disability resulting from their childhood abuse. The authors suspected that the subjects under reported a history of past or current drinking problems (26%). On the Profile of Mood States, on average,

there was no evidence of serious problems although a few individuals' responses showed difficulty. Similarly, on average, this group showed no evidence of self-esteem or alienation problems. On the Family Environment Scale, the subjects described their families of origin (either birth or foster) as less cohesive, more conflict-ridden, more controlling, and less interested in family recreation than the scale norms. On the Hostility-Guilt Inventory the female subjects scored higher than college women on the assault subscale but the males did not. For both males and females, resentment and suspicion subscale scores were higher than both college and in-patient norms. This finding is inconsistent with the self-reported satisfaction with social supports and number of friends but consistent with the majority of subjects failing to list their intimate partner as "particularly helpful to you in dealing with the problems you encountered as an adult" (p.84). It is possible that this group's perceptions of "supportive relationships" were influenced by these relationships being less abusive than their prior interpersonal experiences. However, as the authors point out, this is difficult to ascertain without closer examination of the quality of the relationships.

Summary

In summary, it is evident that there is a significant amount of overlap in the symptoms that have been associated with sexual, psychological and physical abuse. While there appears to be a few symptoms that might discriminate these three types of abuse, one must be cautious given the relative lack of empirical research on psychological abuse and on physical abuse (other than violent behaviour and physical impact). Although particular types of abuse are reported to have a greater impact on particular symptoms

(e.g., Briere & Runtz, 1988), this is not to say that these symptoms are not present.

Therefore, as suggested by Herman (1992), it may be more fruitful to conceptualize the various types of childhood maltreatment in broader terms such as childhood trauma. I will next review various models that have been used to make sense of the assorted symptoms that have been associated with childhood trauma.

UNDERSTANDING THE SEQUELAE

Post-Traumatic Stress Disorder

Traditionally, post-traumatic stress disorder (PTSD) has been used to understand the sequelae of natural disasters, wars, or accidents (Briere, 1992a). Increasingly, PTSD is used to understand the sequelae of trauma such as child abuse and rape (e.g., Briere, 1992a; Finkelhor, 1990). In fact, in children the most commonly documented precipitant of PTSD is sexual abuse (Koverola, 1995). Incest victims often meet the criteria for diagnosis as PTSD with intrusive symptoms being the most prominent (Briere, 1992a). Although there has been less connection between psychological abuse and PTSD, there have been reports of PTSD when the psychological abuse involves terrorizing or witnessing domestic violence (Briere, 1992a). Childhood physical abuse has been associated with the PTSD symptoms of autonomic arousal, avoidance, and intrusive thoughts of being violent or being injured (Briere, 1992). The Diagnostic and Statistical

Manual of Mental Disorders, 4th Edition (DSM-IV; American Psychiatric Association, 1994) criteria for PTSD are presented in Table 4.

Complex Trauma. Herman (1992) believes that the current PTSD formulation does not capture the complexity of identity and relatedness changes (or deformations) and vulnerability to revictimization that is characteristic of those experiencing prolonged, repeated trauma. With prolonged, repeated trauma there is a loss of the sense of self, enhancement of hyperarousal and intrusive symptoms in addition to increased use of constriction as a means of survival (Herman, 1992). Such chronic trauma has been associated with an overdeveloped inner life (at the cost of other relationships), chronic depressive symptoms, and a tendency to idolize the perpetrator. Such prolonged, repeated trauma occurs in families, religious cults, and political captivity.

Similarly, Terr (1991) suggests distinguishing Type I and Type II traumatic disorders. Type I disorders result from a single traumatic event and these individuals are more likely to present with full, detailed memories of the event; cognitive reworking of the trauma in an attempt to understand it; misidentifications; visual hallucinations (flashbacks); and time distortions. Type II disorders result from long-standing or repeated traumas. These individuals present with massive denial, repression, dissociation, self-anaesthesia, self-hypnosis, identification with the aggressor, aggression turned against the self, and spotty memory of the events or complete amnesia. This repeated traumatization brings with it the anticipation of the next time and results in the need for different coping strategies.

Herman (1992) outlined proposed criteria for "complex post-traumatic stress

Table 4

DSM-IV Post-traumatic Stress Disorder Diagnostic Criteria

-
- A. The person has been exposed to a traumatic event in which both of the following were present:**
- (1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others**
 - (2) the person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behaviour**
- B. The traumatic event is persistently reexperienced in at least one (or more) of the following ways:**
- (1) recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed).**
 - (2) recurrent distressing dreams of the event. Note: In children, there may be frightening dreams without recognizable content.**
 - (3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated). Note: In young children, trauma-specific reenactment may occur.**
 - (4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event**
 - (5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event**
- C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:**
- (1) efforts to avoid thoughts, feelings, or conversations associated with the trauma**
 - (2) efforts to avoid activities, places, or people that arouse recollections of the trauma**

continued

Table 4 con't

- C.
 - (3) inability to recall an important aspect of the trauma
 - (4) markedly diminished interest or participation in significant activities
 - (5) feeling of detachment or estrangement from others
 - (6) restricted range of affect (e.g., unable to have loving feelings)
 - (7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)
 - D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:
 - (1) difficulty falling or staying asleep
 - (2) irritability or outbursts of anger
 - (3) difficulty concentrating
 - (4) hypervigilance
 - (5) exaggerated startle response
 - E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than one month.
 - F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
-

(American Psychiatric Association, 1994, pp. 427-429).

disorder" which is consistent with Terr's Type II trauma. These criteria are outlined in Table 5. Examining Tables 4 and 5, we see that the proposed criteria for the complex form of the disorder include more disturbances of affect, cognition, and interpersonal behaviours than does the DSM-IV version of PTSD.

Consistent with Herman's (1992) and Terr's (1991) conceptualizations, different symptom patterns have been reported in children who present with acute versus chronic PTSD that is secondary to childhood maltreatment. For example, Famularo, Kinscherff, and Fenton (1990) found that children who had PTSD symptoms for less than four months experienced more nightmares, distress on real or symbolic exposure to trauma stimuli, difficulty falling asleep, hypervigilance, exaggerated startle reflex, and generalized agitation/anxiety. In contrast children who had been experiencing PTSD symptoms for more than eight months suffered from greater detachment/estrangement from others, restricted range of affect, thinking that life will be difficult or hard, sadness/unhappiness, and dissociation.

In children suffering PTSD, cognitive symptoms include intrusive thoughts of the trauma and difficulty concentrating; affective symptoms include intense distress with exposure to trauma related stimuli, restricted range of affect, irritability, or outbursts of anger; and interpersonal problems include feeling detached or estranged from others (Koverola, 1995). These symptoms tend to be more profound in chronic trauma such as that found in childhood abuse (Koverola, 1995).

Wolfe, Gentile, and Wolfe (1989) developed a 19-item PTSD scale from Child Behavior Checklist (CBCL) items that corresponded to the DSM-III-R (American

Table 5

Symptoms of Complex Post-Traumatic Stress Disorder.

-
1. **A history of subjugation to totalitarian control over a prolonged period (months to years). Examples include hostages, prisoners of war, concentration-camp survivors, and survivors of some religious cults. Examples also include those subjected to totalitarian systems in sexual and domestic life, including survivors of domestic battering, childhood physical or sexual abuse, and organized sexual exploitation.**
 2. **Alterations in affect regulation, including**
 - persistent dysphoria
 - chronic suicidal preoccupation
 - self-injury
 - explosive or extremely inhibited anger (may alternate)
 - compulsive or extremely inhibited sexuality (may alternate)
 3. **Alterations in consciousness, including**
 - amnesia or hypermnesia for traumatic events
 - transient dissociative episodes
 - depersonalization/derealization
 - reliving experiences, either in the form of intrusive post-traumatic stress disorder symptoms or in the form of ruminative preoccupation
 4. **Alterations in self-perception, including**
 - sense of helplessness or paralysis of initiative
 - shame, guilt, and self-blame
 - sense of defilement or stigma
 - sense of complete difference from others (may include sense of specialness, utter aloneness, belief no other person can understand, or nonhuman identity)
 5. **Alterations in perception of perpetrator, including**
 - preoccupation with relationship with perpetrator (includes preoccupation with revenge)
 - unrealistic attribution of total power to perpetrator (caution: victim's assessment of power realities may be more realistic than clinician's)
 - idealization or paradoxical gratitude
 - sense of special or supernatural relationship
 - acceptance of belief system or rationalizations of perpetrator

continued

Table 5 con't.

- 6. Alterations in relations with others, including**
 - isolation and withdrawal**
 - disruption in intimate relationships**
 - repeated search for rescuer (may alternate with isolation and withdrawal)**
 - persistent distrust**
 - repeated failures of self protection**
 - 7. Alterations in systems of meaning**
 - loss of sustaining faith**
 - sense of hopelessness and despair**
-

(Herman, 1992, p. 121).

Psychiatric Association, 1987) description of PTSD. They then compared mean scores on this scale for 71 sexually abused girls aged 5 to 16 with CBCL normative data. For girls aged 8 to 11, the mean PTSD score was .734 for the sexually abused group versus .156 for the normative sample. Similar means were obtained for the older sample of children aged 11 to 16 (abuse = .765; norm = .157). The majority of these abused children reported PTSD symptoms and most reported a substantial degree of intrusive thoughts and sex-associated fears.

Studies examining the presence of PTSD in individuals who have experienced childhood trauma have found varying results depending on the sample and methodology used. For example, Lindberg and Distad (1985) found that 17 incest survivors (age 24 to 44) who were clinical subjects all met the DSM-III criteria for PTSD. In contrast, Greenwald and Leitenberg (1990) reported on questionnaire data of 54 nurses who reported being sexually abused as a child (1500 questionnaires were distributed). Using a questionnaire based on DSM-III criteria, 20% of this sample currently met the criteria for PTSD and 41% met the criteria at some point in the past when symptoms severity required the symptom to be present "a little bit." When the symptom severity criterion was changed to "moderate," 4% of the sample currently suffered from PTSD and 17% had in the past. When the criterion was set at a symptom severity level of "quite a bit," 7% met the criteria for PTSD in the past and only 2% currently.

Deblinger, McLeer, Atkins, Ralphe, and Foa (1989) examined the presence of PTSD in child (age 3 to 13) psychiatric in-patients by analyzing the presence of PTSD symptoms reported in the medical records. They found 21% of children who were

sexually abused (20 of these 29 subjects had also been physically abused) met the criteria for PTSD. In contrast, only 7% of 29 physically abused subjects and 10% of non-abused subjects met the criteria. A criticism of this study is that to meet the criteria for PTSD, subjects had to have at least one re-experiencing symptom documented but the only re-experiencing symptoms included involved sexualized behaviour. Both of the abuse groups were found to have more avoidant and dissociative symptoms than the non-abused group.

There are a number of objections to using PTSD as a model for understanding the impact of childhood sexual abuse. Objections have included: (1) the view that a PTSD formulation is too narrow in that most survivors exhibit more than PTSD symptoms (e.g. sexualization); (2) there are childhood sexual abuse survivors without PTSD who do experience other symptoms; (3) sexual abuse frequently does not occur under conditions of danger, threat, or violence; and (4) sexual abuse is more a relationship or process rather than an event (Finkelhor, 1990). These criticisms could also apply to childhood histories of physical and psychological abuse.

Traumatogenic Model

Finkelhor and Browne (1985) conceptualized the sequelae of sexual abuse as being associated with four traumatogenic dynamics: sexualization, betrayal, stigmatization, and powerlessness. Three of these dynamics clearly also apply to physical and psychological abuse. The fourth, sexualization has also been related to physical abuse that does not occur with sexual abuse. Although this model is superior to the PTSD conceptualization in that it addresses social factors, it also suffers from a number of limitations. The fact that the model was developed to understand sexual abuse is limiting in two ways: (1) it

does not address other types of trauma influenced by the same dynamics; and (2) the dynamics are not specific to sexual abuse. For example, children who are physically or psychologically abused by caregivers suffer betrayal and powerlessness. Children who live in family homes that are violent and know that violence is not a normal household experience will feel different from their peers and feel stigmatized if the "secret" becomes known. Also, there has been little research to confirm this model because of its complexity and the difficulty of clearly delineating and measuring the variety of mechanisms hypothesized (Kendall-Tackett et al., 1993).

Comprehensive Model of Trauma Impact

A recently developed model useful for understanding the sequelae of childhood trauma is Koverola's (1992) Comprehensive Model of Trauma Impact. This model specifies a trauma or traumata occurring at some point(s) in an individual's life and identifies that the observed impact on an individual's functioning will vary according to the developmental age of the individual at the time of the trauma, the quality of functioning pre-trauma, the nature of the trauma, the point in time at which the individual is seen (i.e., immediately post trauma or at a later life stage), and the social context of the individual pre- and post-trauma (i.e., family, community, and society). This model categorizes areas of individual functioning as cognitive, affective, interpersonal, moral, sexual, and physical functioning. All components of the model are interdependent. For example, an individual's interpersonal development will be influenced by isolation or the presence of social supports, whether the trauma was perpetrated by a caregiver or was accidental, strengths and weaknesses in the other areas of individual functioning, the developmental

stage of the individual at the time of the trauma, and whether the interpersonal development is assessed when the individual is an adolescent, a young adult, or middle aged.

Unlike the traumatogenic and PTSD formulations, this model specifically addresses developmental issues, the duration of the trauma, the point in time at which an individual is assessed, the social context, and the various areas of functioning that may serve as vulnerability or mediating variables. Although more complex than simply looking at variables involved in the trauma or the associated symptoms, such intricacy is required to understand why some individuals seem relatively immune from sequelae while others exposed to a similar trauma suffer greatly. Unlike the traumatogenic model, the comprehensive model uses constructs familiar to psychological researchers and provides a way of putting together the building blocks of empirical evidence. That is, to contribute to knowledge about trauma, one may select one or a few of the variables to focus on keeping in mind that these variables will be interrelated with other parts of the model.

Support for this model is derived from both the empirical and theoretical trauma literature. For example, the importance of considering the time dimension has been documented both in terms of when the trauma occurs in the life cycle (e.g., Cerney, 1990) and the length of time that symptoms have been present (e.g., Famularo et al., 1990). Similarly, there is growing evidence that the nature of the trauma has an impact on the subsequent sequelae (Briere, 1992a; Finkelhor, 1986; Herman, 1992; Kendall-Tackett et al., 1993; Wachtel, 1988). The response of the social network has also received support as an important determinant in moderating or compounding the impact of trauma (e.g.,

Browne & Finkelhor, 1986; Herman, 1992; Kendall-Tackett et al., 1993). The interrelationship between the components of the Comprehensive Model has been well-documented in the childhood maltreatment literature. Focusing on this paper's areas of interest (affective, cognitive, and interpersonal functioning), a few of these interrelationships will be highlighted.

Dissociative symptoms overlap both the cognitive and affective realms of functioning. Dissociation has been defined as ". . . a defensive disruption in the normally occurring connections among feelings, thoughts, behavior, and memories, consciously or unconsciously invoked in order to reduce psychological distress. . . ." (Briere, 1992a, p. 36).

Cognitive and psychodynamic theorists generally agree that people make significant assumptions about themselves, others, the environment, and the future based upon childhood learning. Because the experiences of former child abuse victims are, by definition, usually negative, these assumptions and self-perceptions are often distorted. Abuse survivors may, for example, overestimate the amount of danger or adversity in the world, and underestimate their own self-efficacy and self-worth (Briere, 1992a, p. 23).

Cognitive distortions are likely to arise from both abuse specific events and the individual's attempt to understand the abuse (Briere, 1992a). These distortions may include guilt, shame, low self-esteem, self-blame, helplessness, hopelessness, chronic anticipation of danger, abandonment or betrayal (Briere, 1992a).

Childhood sexual and/or physical abuse is damaging to an individual's sense of self and self-worth and involves a loss of trust in significant others (Cerney, 1990). Severe abuse is likely to result in an impaired or unstable sense of self that leaves these individuals

vulnerable to boundary issues, identity confusion, a sense of personal emptiness, and an inability to comfort the self (Briere, 1992a). Cognitive and affective responses including distrust of others, anger, fear, and low self-esteem contribute to disturbances in relationships (Briere, 1992a). The distorted assumption that aggression is normal in relationships or that love and attention must be purchased or forced in some way often results in revictimization and accommodation to ongoing maltreatment by others (Briere, 1992a). Abused individuals often experience intimacy conflicts with fear and avoidance on one hand, and on the other, a desperate need for closeness and a fear of abandonment (Briere, 1992a). Interpersonal relationships are also affected by many of the tension reduction behaviours that maltreated individuals have learned such as indiscriminate sexual activity, substance abuse, and self-mutilation (Briere, 1992a).

Summary

Three models have been used to understand sequelae associated with childhood maltreatment: Post-traumatic Stress Disorder, Traumatogenic Model, and the Comprehensive Model of Trauma Impact. The PTSD formulation is a medical model that focuses on the presence of a particular set of symptoms. It has been criticized for not addressing all the symptoms associated with childhood maltreatment and for ignoring the context of the maltreatment or trauma. The Traumatogenic model was developed to specifically address sequelae associated with childhood sexual abuse. Although this model addresses social context and more symptoms than the PTSD model, it fails to identify that childhood sexual abuse is a subset of childhood maltreatment with many overlapping dynamics and sequelae. This model also has been criticized due to lack of confirmatory

research. The Comprehensive Model of Trauma Impact overcomes the limitations of the previous two models. It addresses social context, the nature and duration of the trauma, developmental issues, and the interrelationship between these factors and areas of individual functioning. A further advantage of this model is the inclusion of both strengths and areas of difficulty and their interaction. This allows for greater understanding of both resilience and distress. While not explicitly subjected to confirmatory research, this model is supported by the existing empirical and theoretical literature. A means of understanding both individual and family variables that impact on the comprehensive model is attachment theory. The next section will review the basic tenets of this theory and the applicable empirical research.

ATTACHMENT THEORY

Theory

Attachment theory (Bowlby, 1969, 1973, 1977, 1980) is frequently used to understand both normal development and psychopathology. Bowlby (1977) described attachment theory as ". . . a way of conceptualizing the propensity of human beings to make strong affectional bonds to particular others and of explaining the many forms of emotional distress and personality disturbance, including anxiety, anger, depression and emotional detachment, to which unwilling separation and loss give rise" (p. 201).

Attachment has a biological base that ensures closeness with a caregiver and secures protection and survival for the individual (Bowlby, 1969, 1973). In infancy, the main attachment figure is the primary caregiver. The attachment figure becomes a secure base from which the child may explore the world and develop a coherent picture of the environment. Attachment behaviours are readily activated until age three or four and then gradually decline in normal development. In young children, strangeness, hunger, fatigue, illness, and fear mobilize attachment behaviours (Bowlby, 1977).

In attachment theory, working models of the self, others, and relationships are derived from early relationships with others (Bowlby, 1973). This internal working model forms the basis of personality. Based on experience, individuals develop internal working models of whether the attachment figure can be depended on in times of need and whether the self is worthy of others' help. These models guide social interaction, the view of the world, and regulation of emotions. ". . . The early infant-caregiver attachment relationship provides the prototype of later relationships. Through early experiences with the

caregiver, the child evolves expectations of the availability of others in time of need and a complementary model of self as worthy (or unworthy) of care" (Egeland, Jacobvitz, & Sroufe, 1988, p. 1081).

Infant Styles of Attachment

Bowlby (1977) suggested that problems of anxiety, insecurity, and repressed anger are likely to arise when caregivers are unresponsive, disparaging, rejecting, threatening abandonment (as a means of controlling behaviour), or blaming of the child for parental ailments. Empirical support for attachment theory has been garnered using the strange situation (Ainsworth, Blehar, Waters, & Wall, 1978). The strange situation is a laboratory procedure that studies young children's responses to the infants' primary caretakers leaving and returning. These authors described three patterns of attachment: secure, avoidant, and resistant. In secure attachment, the child is not unduly distressed at the caretaker's departure and warmly greets her/him on return. This pattern results from a supportive and responsive caretaker. In the avoidant pattern, the child responds to the mother's return by ignoring her. These caretakers are described as insensitive and emotionally and physically avoidant of the child. The resistant pattern is characterized by the child responding to the mother with both contact seeking and angry outbursts and these caretakers are described as responding inconsistently to the child and reversing roles.

Subsequent research with the strange situation identified a number of children who could not be categorized into one of the initial attachment patterns. These children are now labeled as disorganized/disoriented insecure attachment. "The disorganized child exhibits no single coherent strategy for dealing with the separation and reunion of the

attachment figure because the attachment figure is simultaneously the source of and the solution to the child's anxiety" (Alexander, 1992, p. 186).

Relationship to Childhood Maltreatment

Abused children are unable to form consistent internal models of trustworthy and dependable caretakers and leaves children without an inner sense of safety. As a result, they become dependent on external sources of comfort (Herman, 1992). Differences in attachment style of maltreated versus non-maltreated infants are most frequently studied. Accumulating evidence indicates maltreated infants are more likely to be insecurely attached to their caregivers. A brief sampling of this literature is provided below.

Egeland and Sroufe (1981) compared 32 neglected or abused infants and 33 infants who were judged to have received excellent care. Infants were assessed at age 12 months and again six months later. At age 12 months, the maltreated infants were split between three classifications (38% secure, 38% resistant, and 24% avoidant). In contrast, 75% of the nurtured children were classified as secure, 16% as avoidant, and 9% as resistant. On retest, the nurtured group classifications were very stable and few infants changed classification. The maltreated group was much less stable with 56% classified as secure, 33% as avoidant, and 11% as resistant.

Carlson, Cicchetti, Barnett, and Braunwald (1989) analyzed 43 mother-infant dyads using the disorganized/disoriented classification. Twenty-two of the dyads were abused and/or neglected and were involved with child protection services. The other 21 dyads were of comparable SES but not receiving child protection services. In the maltreated group, 81% of the children were classified as disorganized, 14% as securely

attached, 5% as anxious, and none as resistant attachment. In contrast, in the control group 52% of the children were classified as secure, 19% as disorganized, 19% as resistant, and 10% as anxiously attached.

Crittenden (1992) examined the attachment behaviour of 123 mothers and their 182 children, aged one to four years. Subjects were grouped as abused, abused and neglected, neglected, marginal maltreatment, and adequate parenting. The adequate group had the highest proportion of subjects classified as secure (56%), followed by the remaining groups that varied between 4 and 9%. Children who had been adequately parented were the most cooperative with their mothers, the least compulsively compliant, and in free play spent the least amount of time fighting and being alone. The abused group was more likely to be classified as avoidant (36%) or avoidant/ambivalent (52%), were more aggressive with siblings, and were difficult until about 18 months of age and then became compliant and cooperative. In this group, the younger children spent less time with adults during free play and the older children spent more time with adults, which is a reversal of the normal developmental trend. The abused and neglected group was similar to the abused group but their behaviour was less consistent and these children showed the least self-control. Neglected children were most likely to be classified as avoidant (40%) or avoidant/ambivalent (36%), were the most passive with their mothers and most isolated in free play. These children became more difficult and less passive with increasing age. The marginal maltreatment group was approximately evenly divided among the three types of insecure attachment (34% avoidant; 25% ambivalent; and 31% avoidant/ambivalent). These children were generally cooperative with their mothers and combined both peaceful

and aggressive play with their siblings.

Main and Cassidy (1988) examined the stability of classification between age one year and six years. In the age six classification, "controlling" replaces the infant classification of disorganized. Controlling attachment behaviour involves attempting to actively control or direct the parent either in a denigrating hostile manner or in a solicitous caretaking way. Of the 12 infants that were classified as secure at 12 months, 100% were classified as secure at age six. Of the eight children who were classified as avoidant in the early assessment, 75% were avoidant at age six. In the disorganized group (N = 12), at age six, 66% were classified as controlling. In a follow-up study, the six-year-olds were retested one month later and the stability was 62% when all classifications were used and 86% when children classified as controlling were reassigned to the best-filling alternative classification. Thus, this study demonstrates stability of attachment classification from infancy to early childhood and short-term stability in early childhood.

Cassidy (1988) examined the correlation between attachment classification and sense of self (measured through self-report, puppet interviews, and incomplete doll family stories) in 52 six-year-old children. Securely attached children described themselves positively but were also able to acknowledge limitations. In the doll stories, they described positive, supportive, and accepting relationships with caregivers. Children classified as avoidant tended to idealize self or the attachment figure and were dismissing of attachment relationships. Ambivalent children were split between idealizing self and negative self-statements in the puppet interview and exhibited both hostile and avoidant behaviour in the doll stories. This was the only group who focused on their body during

the puppet interviews. The controlling group was primarily self-denigrating in the puppet interview but some of these children were idealizing of self. In the doll stories, these children were split between open and hostile interpersonal relations. While attachment classification, doll stories, and puppet interviews were all correlated, these were not related to the questionnaire measures of self-esteem.

Adult Attachment

Bowlby (1977) postulates that:

. . . whatever representational models of attachment figures and of self an individual builds during his childhood and adolescence, these tend to persist relatively unchanged into and throughout adult life. As a result he tends to assimilate any new person with whom he may form a bond, such as spouse or child, or employer or therapist, to an existing model (either of one or other parent or of self), and often to continue to do so despite repeated evidence that the model is inappropriate. Similarly, he expects to be perceived and treated by them in ways that would be appropriate to his self-model, and to continue with such expectations despite contrary evidence. Such biased perceptions and expectations lead to various misconceived beliefs about the other people, to false expectations about the way they will behave and to inappropriate actions, intended to forestall their expected behavior (p. 209).

Thus, adult modes of perceiving and relating to others are influenced and possibly severely distorted by early experiences with caregivers. Bowlby (1977) also described the development of individuals who are compulsively self-reliant or compulsive care-givers. The overly self-reliant individual is distrustful of intimacy and inhibits all desire for closeness and is vulnerable to psychosomatic symptoms or depression. The compulsive care-giver learns to maintain attachment by providing instead of receiving nurturing and thus learns to suppress his/her own needs.

Ainsworth (1989) discusses the theoretical likelihood that attachment behaviours

are relevant to a wide range of adult relationships. These relationships include continued attachment to parents; adults to their own children; sexual partners, friends and intimates; and relationships with siblings and other relatives. The extension of attachment theory into adult relationships has most frequently been addressed through interpersonal theory in which individuals can be understood as adopting interaction styles that elicit confirmation of one's self-concept (Bartholomew, 1990). Fearful adults through passive, introverted, aloof, or socially avoidant behaviours are likely to be met with hostile or rejecting responses from others, which perpetuates the internal negative models of self and others. Dismissing individuals through their controlling, hostile, competitive, and arrogant style are likely to have their negative internal model of others reinforced by others being passive, hostile, or rejecting.

Similar to the four attachment styles that have been described as characteristic of children, four adult attachment styles have been identified: secure, avoidant, preoccupied, and fearful (Alexander, 1992). Secure adult attachment is the extension of the secure childhood pattern. These individuals are described as emotionally flexible, self-confident, trusting, comfortable with intimacy, and able to coherently reflect on the past. Avoidant adults, the extension of avoidant children, are described as idealizing a childhood they cannot recall, lacking confidence, uncomfortable with intimacy, and frequently hostile and lonely. These individuals may resolve their simultaneous need for closeness and lack of trust through compulsive sexual activity or the use of alcohol to blunt this need. Preoccupied adults are the extension of resistant children and are described as confused, anxious, clinging, dependent, jealous, overly expressive, and idealizing partners while

having negative self-perception. The coping strategy of these individuals is to focus on the attachment anxiety and therefore, more likely to suffer depression and anxiety. They are vulnerable to attempting to numb this distress by using alcohol or drugs. Fearful adults, disorganized children grown up, are characterized by social inhibition, unassertiveness, and a combination of avoidant and preoccupied traits. These individuals are the most likely to have severe affect regulation problems associated with dissociation and PTSD due to the vacillation between approach and avoidance of the conflict.

Although adult attachment is an extension of Ainsworth et al's (1978) classification of infants, it differs in that classification focuses on mental representations instead of behaviours. "In adults, the presence of mental representations derived from prior experience greatly influences how one behaves with the potential attachment figure and how one experiences the others' behavior" (Sperling, Berman, & Fagen, 1992, p. 241). It is also frequently more difficult to classify in that a relatively secure attachment may coexist with a predominantly insecure attachment style. For example, an adult may be ambivalent about a relationship that is experienced as stable and enduring (Sperling et al., 1992). Consistent with these views of adult attachment, Sperling et al. (1992) proposed a new classification system for attachment in adults which takes into consideration anger and hostility. Thus, they identified: (1) a resistant-ambivalent style that exists when both anger and dependence are high; (2) a dependent style that is present when dependence is high but anger low; (3) an avoidant style when both anger and dependence are low; and (4) a hostile style that is present when anger is high and dependence is low. In healthy individuals, these styles are expected to be flexible between categories of relationships and

more rigid in individuals with severe psychopathology.

West, Sheldon, and Reiffer (1987) described adult attachment as comprised of eight variables. These include: (1) proximity seeking when distressed; (2) attachment figure functions as a secure base, decreasing anxiety and increasing comfort when the attachment figure is present; (3) separation protest -- discomfort and anxiety when the attachment figure is unexpectedly unavailable; (4) feared loss of the attachment figure -- confidence that the relationship will be long-lasting; (5) reciprocity -- mutuality of support giving; (6) availability -- anticipated access to the attachment figure; (7) responsiveness of the attachment figure -- can be counted on for emotional and instrumental support; and (8) use of the attachment figure -- the perception that accessibility of the attachment figure is adequate. Using scales based on these variables, the authors correctly classified 80% of subjects as patients or non-patients using discriminate function analyses. This study suggests the presence of an inverse relationship between psychopathology and quality of attachment.

At present, longitudinal studies of attachment extend only from infancy to six years of age. However, attachment is inferred to continue from childhood into adulthood from retrospective studies which link adult parenting behaviour and intimacy with attachment style (Alexander, 1992).

Feeney and Noller (1990) examined the relationship between attachment style, attachment history and current beliefs about relationships in 374 undergraduates. Secure subjects (55% of the sample) described positive early family relationships, trusting attitudes toward others, ranked highest on measures of self-esteem and lowest on self-

conscious anxiety, and had the most stable romantic relationship history. Avoidant subjects (30% of the sample) were mistrusting and distant from others, rated love experiences as less intense and were most likely to report never having been in love. Anxious/ambivalent subjects (15% of the sample) reported a lack of parental support; dependence and a desire for commitment in relationships (but had a history of short-term relationships); were most likely to have experienced love intensely; and scored highest on idealization, obsessive preoccupation, emotional dependence, and reliance on partner. Responses to questions related to the individuals' mental representations (rewards and dangers of interpersonal relationships) were more related to attachment style than beliefs about romantic relationships. The authors conclude that ". . . attachment style is likely to exact a very pervasive influence on the individual's relationships with others" (p. 286).

Attachment theory predicts that failure to form secure childhood attachments leads to lack of trust in others making it more difficult to develop supportive adult relationships (Egeland et al., 1988). The conditions that might alter this are the presence of an emotionally supportive relationship with an adult during childhood, a therapeutic relationship, and/or a stable, satisfying relationship with a partner as an adult. To examine this prediction, Egeland et al. (1988) examined 47 women who had been maltreated as children and their own relationships with their children. They found that 18 clearly abused their children, 12 provided adequate care, and 17 provided borderline care. All 12 of the non-abusing women had either an emotionally supportive relationship with an adult during childhood or a therapeutic relationship, and described their current relationships as more stable and satisfying. In contrast, in the abusing group only 17% reported having had a

supportive relationship with an adult as a child, none had a therapeutic relationship, and they were more likely to have conflictual relationships with partners, families, and/or friends. This provides support for the hypothesis that without mitigating relationships, maltreated children are likely to suffer attachment difficulties that carry on into their adult life.

Hazan & Shaver (1987) examined the relationship between attachment style and love relationships through a newspaper survey (620 respondents) and attempted to replicate the finding with 108 undergraduates. In the newspaper survey, 56% of the subjects were classified as secure. They described their love experiences as happy, friendly and trusting. They had a longer duration of relationships than the other classifications and described warmer relationships with their parents. Avoidant subjects (25% of the sample) described a fear of intimacy, emotional extremes, jealousy, and were the least accepting. These subjects also described cold, rejecting mothers. The anxious/ambivalent group had the shortest length of romantic relationships and rated high on obsession, desire for union and reciprocation, emotional extremes, sexual attraction and jealousy. In terms of attachment history, these individuals described having "unfair" fathers. In the replication study with students, the love experiences were not replicated but working models of self and relationships were associated with attachment style. The authors described this sample of subjects as more defensive in describing their family relationships than the subjects in the first study. Comparable to the first study, avoidant subjects were more distant from others but did not describe themselves as lonely whereas the anxious/ambivalent subjects reported more loneliness.

Kobak and Sceery (1988) examined attachment style and coping in 53 college students using both peer evaluations and self-report measures. Secure subjects were described as ego-resilient (able to constructively modulate negative affect in problem solving and social contexts), less anxious, less hostile, little distress, and having more social supports. These subjects tended to acknowledge distress and seek support. Dismissing subjects were characterized by low ego resilience, hostility, more distant relationships, more loneliness, and low social supports. These subjects tended to restrict awareness of distress and need for support, and had difficulty recalling distressing childhood experiences. The preoccupied group had low ego resilience, was anxious, had high distress levels, viewed family as more supportive than dismissing group, and perceived self as less socially competent than the secure group. These individuals tended to focus on distress and need for comfort from attachment figures, inhibited autonomy and self-confidence, and recalled distressing events in a confused or incoherent manner. They perceived their parents as loving but role-reversing.

Within the attachment theory framework, Bartholomew (1990) hypothesizes that there are two distinct styles of adult avoidance of intimate relationships: (1) desire close relationships but avoid them due to fear, and (2) lack interest in intimacy, neither fear nor desire closeness with others. Further, she proposes that these disturbances in adult interpersonal attachments stem from the internalization of early adverse family experiences. "Longitudinal research does not yet exist to indicate the later developmental course of avoidant children. However, avoidant strategies may become increasingly anticipatory and habitual, until the expression of negative affect is avoided altogether and

close interpersonal relations which could give rise to approach-avoidance conflicts are shunned" (p. 157). Although there is no empirical evidence on what experiences differentiate dismissing from fearful interpersonal styles, Bartholomew (1990) hypothesized that fearful individuals had parents who were overtly rejecting, dismissing, discouraged expression of negative affect and were less emotionally available, and possibly increased focus on achievement. Dismissing individuals' self-images are preserved by non-rejecting peers whereas peers are more likely rejecting for fearful styles. Interpersonal style as predicted by internal models of self and others is summarized in Figure 2.

The two avoidant styles show two ways of attempting to regulate negative affect (Bartholomew, 1990). Fearful individuals are more likely to inhibit negative affect to avoid alienating others while dismissing individuals avoid negative affect through defenses. The fearful individual is likely to experience more obvious distress while the emotional defensiveness of the dismissing style may result in symptoms that have been associated with PTSD (e.g., emotional numbing, intrusions of threatening material, and a lack of awareness of the connection between somatic symptoms and threatening stimuli).

Following up on this model, Bartholomew and Horowitz (1991) examined the interpersonal styles associated with each of the four classifications in 77 students. In addition to self-report data, the authors obtained information on each subject from a friend chosen by each subject. Subjects classified as secure scored high in coherence, intimacy, warmth, balance of control, level of involvement in romantic relationships, and self-confidence. Dismissing subjects scored high on self-confidence and being in control, and low on emotional expressiveness, frequency of crying, warmth, self-disclosure, intimacy,

Figure 2.

Prediction of attachment style from internalized models of self and others (Batholomew, 1990).

		MODEL OF SELF	
		High self esteem Worthy of love and attention	Low self esteem Unworthy of love and attention
MODEL OF OTHER	Warm, responsive Trustworthy Caring	<u>Secure</u> Fulfilling adult relationships	<u>Preoccupied</u> Overly dependent Insatiable desire for approval
	Rejecting Uncaring Distant	<u>Dismissing</u> Denial of attachment needs, extreme independence. Focus on work and achievement.	<u>Fearful</u> Desire for contact and intimacy but distrusting and fearful of rejection Hypersensi- tive to social approval.

level of romantic involvement, capacity to rely on others, use of others as a secure base, elaboration, and caregiving. Interpersonally these subjects were described as hostile and cold. Preoccupied subjects were opposite to the dismissing group on all dimensions. They reported high levels of interpersonal problems and were described as having an overly expressive, autocratic and competitive interpersonal style. Fearful subjects scored low on self-disclosure, intimacy, level of romantic involvement, reliance on others, use of others as a secure base, self-confidence, and control. They had high levels of interpersonal problems primarily associated with lack of assertiveness and social inhibition. Analyses indicated that positive or negative perceptions of self and others were independent of each other. That is, viewing the self positively was not necessarily associated with viewing others positively (or negatively).

Alexander (1992) used attachment theory as a framework for understanding the diversity of sequelae associated with childhood sexual abuse. She concluded that parental insecurity likely precedes the onset of the abuse and that the style of insecurity will be associated with the types of sequelae that are experienced. For example, the avoidant style includes attempts to cope with rejection through self-deception, idealization, or devaluation of attachment. These individuals may be less able to defend themselves from revictimization and will be less able to seek help from others. On the other hand, this insecure style is also associated with less negative impact on self-esteem. The resistant pattern has been associated with role-reversals and parentification. While the resistant child's neediness may elicit support from other adults it also makes the child more vulnerable to manipulations from others. The fearful style is ". . . expected in the chaotic,

multiproblem incest family characterized by substance abuse, physical abuse, and indiscriminate sexual behavior" (Alexander, 1992, p. 189). The lack of a coherent coping strategy in this pattern predicts a greater impact of the abuse. Additionally, Alexander (1992) hypothesized that the impact of the abuse is expected to be moderated if a child is securely attached to a non-abusive caretaker.

Summary

"Attachment, including disturbances of attachment, thus represents both a life span behavioral descriptor as well as a meta-construct that explains much of early (and later) human relational process" (Sperling, Berman, & Fagen, 1992, p. 240). From the findings on attachment theory, it can be predicted that the majority of children who have been physically abused as children will have been insecurely attached to at least one caregiver as a child and a minority will have achieved secure attachment. However, it is not possible to predict the type of insecure attachment. Thus, as children, these individuals will fall into one of four coping patterns: (1) trusting, assured that s/he deserves love and attention, and appropriately seeks out comfort and support from significant others when distressed (likely the minority of abused children); (2) lacking trust that others will provide support and comfort, denying the presence of these needs, cutting off access to their own emotions; (3) lacking trust that others will be there when needed and doubting that one deserves this, focusing on unmet needs and desperately attempting to have needs met by significant others often through idealization; or (4) lacking trust that others will be there and vacillating between denial of these needs and desperate attempts to have them met. As a result of these early experiences, the children will develop internal models of self,

others, and relationships. Behavioral patterns, both on an individual and interpersonal level, develop based on these internal models that tend to reinforce the internal models and therefore the behaviour patterns. Unless the individual forms a supportive relationship that successfully challenges these internal models, they are likely to continue into adult life.

All except pattern number one (the least likely in children who have been maltreated) are likely to have a profound impact on cognitive, affective, and interpersonal functioning. In terms of cognitive functioning, the inability to view others (or the self) as trustworthy results in various cognitive distortions. Although childhood caregivers may have been untrustworthy, it is a distortion to generalize this to all potential significant others. Secondly, in large part, perceptions of the world and self are largely refined through interactions with others. Individuals who avoid others, are unable to trust them, or idealize untrustworthy others, lose the opportunity to receive accurate feedback on their perceptions. Affectively, the failure of significant others to respond to a wide range of feelings results in constriction or exaggerated focus on particular emotional states. Finally, as stated above, interpersonally, the individual will interact in a manner that tends to reinforce her/his internal models. Therefore, this model can account for the wide range of sequelae that have been associated with maltreatment and the fact that there is no single profile of abused children. It also explains the consistent empirical finding that having a supportive relationship with a significant other or a therapist moderates the impact of the maltreatment.

Finally, adding the Comprehensive Model of Trauma Impact to Attachment Theory provides an even greater understanding of the sequelae. Attachment theory

addresses social and individual components of the model. The time element of the Comprehensive Model adds further significant information. For example, if a child received adequate care until school age and achieved secure attachment prior being maltreated, it would be anticipated that this child would be able to develop outside supportive relationships. She or he would be vulnerable to distorted beliefs such as greater independence and autonomy are not acceptable and may try harder to regain the love and approval of the attachment figure or even to deny that s/he is experiencing maltreatment. Similarly, later onset of abuse will provide the individual with a stronger base in all areas of personal functioning. This individual may experience a sense of loss and betrayal but is less likely to distort reality or have as severely impaired affective functioning. Interpersonally, this individual would have the skills and prior experience with positive relationships that would enable him/her to maintain or establish positive contact with others.

The prediction that maltreated children will present in diverse ways presents a challenge for researchers using standard psychological measures and statistical procedures to describe these individuals. While averages can be valuable in pointing to overall between group differences, averaging may obscure important within group differences that could lead to support for the Null hypothesis. Alternatively, the Null hypothesis may be rejected leading to the conclusion that, on average individuals with a maltreatment history differ from individuals without a maltreatment history. While this is important empirical information, it is also important to look at individuals within the maltreated group who do not differ from a no-trauma group. Knowledge about factors associated with resilience

can lead to more effective intervention. It is, therefore, important that researchers examine within group variability and include independent measures that theoretically could distinguish sub-groups. The next section will review two of the more widely used assessment measures, the MMPI-2 and the Rorschach and their application to trauma.

MEASUREMENT OF THE CONSTRUCTS

MMPI-2

Over the past 50 years, the Minnesota Multiphasic Personality Inventory (MMPI) has become the most widely used clinical testing instrument in the United States. Its utility and practical value have gone unchallenged and, as thousands of studies document, it has been subjected to critical research unlike any other test. Its popularity among practicing clinicians and researchers has remained high, which is surely eloquent testimony to its value. The revised version, MMPI-2, is intended to update the original by bringing it in line with various developments in psychological assessment and treatment. (Strupp, 1990, p. v.)

The MMPI is the most commonly used screening instrument of inpatient centres that are listed in the Directory of the Association of Psychology Internship Centres (Sweeney, Clarkin, & Fitzgibbon, 1987). Although the MMPI is used as a validated measure of manifest symptoms and problems, it is subject to distortion through an individual's desire to be seen in a particular way by others or through an individual's biased view of him or herself. These distortions are present even with the K correction and validity scales (Acklin, 1993).

The MMPI-2, while providing a clear continuity with the original MMPI includes a broadened set of personality scales and measures (Butcher, 1990). Revisions include the rewording of obsolete and awkwardly worded items, the deletion of repetitive items, the addition of new items addressing contemporary problems, and new norms on 2600 nationally representative subjects.

Butcher (1990) offers several cautions to users of the MMPI-2. These include:

(1) use the scale number rather than the scale name as the names often misrepresent the characteristics involved. For example, elevations on Scale 8 (Schizophrenia) indicates

unconventionality, alienation, social distance, and self-doubt rather than a schizophrenic disorder. (2) Look at the pattern or configuration of scores rather than single scales. The meaning of an elevated scale can change dramatically depending on other scale(s) that are elevated. And (3), use caution in identifying an F scale T-score as an indicator of an invalid profile. In clinical population scores of 90 can be seen and under stress conditions scores of 90 to 109 are possible.

Table 6 summarizes the MMPI-2 validity, clinical, and supplementary scales as described by Butcher (1990). As they will not be included in this study, this table omits the three social introversion subscales (Shyness, Social Avoidance, and Alienation) and the 15 content scales: Anxiety, Fears, Obsessiveness, Depression, Health Concerns, Bizarre Mentation, Anger, Cynicism, Antisocial Practices, Type A, Low Self-esteem, Social Discomfort, Family Problems, Negative Work Attitudes, and Negative Treatment Indicators. Although many of these scales are theoretically applicable to this study, they have been omitted to reduce the number of dependent variables given the small sample size. The scales used in this study are summarized in Appendix A.

The bulk of research that has been done on the relationship between trauma and MMPI profiles has focused on combat veterans suffering from PTSD. Two supplementary scales not reviewed by Butcher are the Post-Traumatic Stress Disorder--Keane (PK) and the Post-Traumatic Stress Disorder--Schlenger (PS), scales designed to measure PTSD symptoms. The PK is a 46-item scale and the PS is a 60-item scale (Greene, 1991). Most of the literature uses the PK scale which was developed by Keane, Malloy, and Fairbank (1984). Their original 49-item scale was constructed by identifying

Table 6

MMPI-2 Validity, Clinical, and Supplementary Scales

Scale	Content	Interpretation
<u>VALIDITY SCALES</u>		
? Cannot Say Score	Number of items not answered	Raw score greater than 30 invalidates profile
L Lie Scale	15 items claiming excessive virtue or social desirability	Raw score greater than 8 or 9 suggests defensiveness or social desirability
F Infrequency Scale	60 items that are infrequently endorsed by the general population	Elevations associated with faking bad or exaggerating problems or a plea for help
F(B) Back Side F Scale	Deviant responding to 40 items toward the end of the test	If elevated when F is not, question validity of responding
K Subtle-Defensiveness Scale	30 social desirability items that are less obvious than the L Scale	T-score greater than 70 reflects test defensiveness
TRIN True Response Inconsistency	20 pairs of items in which 2 true or 2 false responses would be inconsistent	Extreme scores indicate a tendency to respond false (low scores) or true (high scores)
VRIN Variable Response	49 pairs of items suggestive of inconsistent responding	Can be used to rule out high F scores being due to random responding

Continued

Table 6 con't.

CLINICAL SCALES

Scale	Content	Interpretation
1 Hs Hypochondriasis	32 items reflecting bodily complaints and overconcern with physical health	T-score > 65 suggestive of excessive concern with physical health
2 D Depression	57 items reflecting somatic and psychological symptoms of depression	Elevated scores suggestive of depression
3 Hy Hysteria	60 items reflecting physical problems and social facility	Elevations suggest tendency to develop physical symptoms under stress and use of repression
4 Pd Psychopathic Deviate	50 items characteristic of antisocial or psychopathic personality disorders	High scorers externalize blame, are manipulative and aggressive in relationships, lack deep affect, and use intellectualization
5 Mf Masculinity-Femininity	56 items reflective of sex-role adaptation	Scores are correlated with education, intelligence, and social class. Males with high scores are more sensitive and have more cultural interests; with low scores are overly masculine. Women with high scores reject traditional roles while those with low scores are more traditional and tend to be passive and dependent in relationships.

continued

Table 6 con't

CLINICAL SCALES con't.

Scale	Content	Interpretation
6 Pa Paranoia	40 items reflective of paranoid thinking and behaviour, suspicious and mistrusting tendencies	Low scorers may be overly cautious in interpretations. T-scores > 65 tend to externalize blame, use projection, are mistrusting and suspicious of others, interpersonally guarded.
7 Pt Psychathenia	48 items related to anxiety, irrational fears, indecisiveness, and low self-esteem	High scores associated with tension, anxiety, self-doubt, and neurotic anxiety.
8 Sc Schizophrenia	78 items related to social alienation, isolation, bizarre feelings and sensations, and general inadequacy	T-scores > 65 reflects unconventionality, alienation, social distance, and self-doubt.
9 Ma Mania	45 items reflecting expansiveness, egotism, irritability, lack of inhibition and control, amorality, and excitement	Low scores suggest low morale and energy; high scorers tend to be overactive, expansive, energetic, unrealistic, and impulsive
0 Si Social Introversion	69 items related to uneasiness in social situations, social insecurity, self-depreciation, denial of impulses, and interpersonal withdrawal	High scorers tend to be socially withdrawn, unassertive, overcontrolled, and submissive. Low scorers tend to be extroverted and manipulative in relationships

continued

Table 6 con't

SUPPLEMENTARY SCALES

Scale	Content	Interpretation
Es Ego Strength	52 items reflecting physical functioning, seclusiveness, morality, sense of reality, personal adequacy and coping	High scores reflect adaptability and personal resourcefulness and ability to handle stress. Low scores reflect worthlessness, helplessness, and difficulty coping.
MAC-R MacAndrew Alcoholism Scale	49 items representative of individuals who abuse alcohol or drugs	Males with raw scores > 26 - 28 and females with raw scores > 23 - 25 may have alcohol or drug problems with the possibility increasing with higher scores.
O-H Overcontrolled-Hostility	31 items that discriminated assaultive individuals	Higher scores suggest overcontrolled assaultive potential and denial of aggressive actions.
Re Responsibility	32 items reflecting conventional behaviour, social consciousness, duty, self-discipline, and morality	T-scores > 65 indicate a self-confident, optimistic view of the world and conventional behaviour. T-scores < 40 suggests individual is untrustworthy, undependable, and lacking in integrity.
Mt College Maladjustment	41 items that discriminate adjusted and maladjusted college students	High scores indicative of individuals who are worried, anxious, procrastinators, have ineffective coping skills, and have a pessimistic view of life.

items that distinguished 100 PTSD combat veterans from 100 psychiatric controls. The PS scale was constructed by comparing veterans with PTSD with veterans who have no psychiatric diagnosis. The PK scale has been criticized for the items being obvious or neutral (as opposed to subtle) given that veterans with PTSD tend to endorse more obvious than subtle items (Hyer, Fallon, Harrison, & Boudewyns, 1987). Based on correlations with other MMPI scales, Moody and Kish (1989) and Greene (1991) criticized the PTSD scales for measuring general psychological maladjustment and dysphoric feelings as opposed to a specific disorder.

Despite these criticisms, the Keane scale has achieved discriminant validity in that mean scores on the Keane PTSD scale have differed for PTSD combat veterans, non-PTSD combat veterans, and non-combat non-PTSD veterans. For example, Hyer et al. (1987) found group means for these groups to be 35.6, 22, and 19 respectively. Similarly, Cannon, Bell, Andrews, and Finkelstein (1987) found that the mean score for PTSD veterans was 34.4 versus 24.1 for non-PTSD psychiatric in-patients.

Combat veterans with PTSD are frequently identified as having elevations on the F scale and on a large number of clinical scales (e.g., Keane et al., 1984, 7 elevated scales; Fairbank, Keane, & Malloy, 1983, elevations on 7 scales; Orr et al., 1990, 5 elevated scales) which contrasts with non-combat psychiatric inpatient veterans (Fairbank et al., 1983, 3 elevations; Orr et al., 1990, 3 elevations) and normal combat veterans (Fairbank et al., 1983, no elevations; Orr et al., 1990, no elevations). Although the high number of elevated scales, high F, and greater endorsement of obvious MMPI items have been used to suggest that PTSD veterans over report symptoms, Orr et al. (1990) found that higher

mean obvious scores and Keane PTSD scores were associated with physiologic reactivity to combat related imagery.

Roberts and his colleagues (1982) compared 38 PTSD combat veterans with 48 non-PTSD combat veterans and 188 non-combat veterans who were seeking treatment for substance abuse. Although they did not report on all of the clinical scales, they noted that elevations on 4 and 6 were more common in the PTSD group than in the other two groups. They also noted that the PTSD group experienced greater problems with intimacy and sociability.

Litz and colleagues (1991) compared MMPI and MMPI-2 assessments of PTSD in Vietnam veterans and found that the two versions were highly comparable. That is, both versions reflected that elevations on Scales 2 and 8 are common in PTSD. These two clinical scales best discriminated PTSD from other groups (mixed veteran psychiatric in-patients, mixed veteran in-patient substance abusers, and non-veteran normals). "Scale 2 reflects the negative symptoms of PTSD (avoidance, social withdrawal, dysphoria, numbing) and Scale 8 reflects the positive symptoms of the disorder (re-experiencing, dissociation, etc.)" (p. 241). On the MMPI-2, the authors found that the PK scale was the most significant discriminator of PTSD from other clinical groups. However, the authors suggest that the PS scale may be more efficient in discriminating non-treatment seeking, community-based samples.

Graham, Watts, and Timbrook (1991) examined the ability of the MMPI-2 to detect faking good and faking bad from standard administration instructions in university students and compared the faking bad profiles to psychiatric patients. The fake bad

instructions yielded higher F and clinical scale scores and lower K scores than the hospitalized patients. When the fake bad instructions were compared to standard instructions in university students, an F scale raw score of 18, an F - K score of 12 for women and 17 for men, and an F(B) score of 19 for men and 22 for women best distinguished the fake bad protocols. However, much higher cutoffs were required when the fake bad protocols were compared to psychiatric patients. That is, F scale raw score of 27 for men and 29 for women, an F(B) score of 23 for men and 24 for women, and an F - K of 27 for men and 25 for women were required to distinguish faked from valid profiles. These findings suggest there is a risk of the more conservative cutoff values incorrectly identifying a truly distressed protocol as faking bad. Faking good was harder to identify than faking bad. In this condition, most clinical scales had T scores less than 50 and the L and K scales were higher than the F scale. When compared to profiles obtained from standard administration instructions, the faked good profiles showed few differences on the clinical scales. The exceptions were that Si (Scale 0) was lower for both males and females and D (Scale 2) was lower for women on the faked profiles. The L scale and the L + K index best distinguished fake good from standard administration profiles. A cutoff of eight on the L scale for both men and women and 23 on the L + K index for women (L + K was not effective in distinguishing male profiles) provided for the most accurate identification of profiles.

One study that used the MMPI in a university population was undertaken by Hovanitz and Kozora (1989) who examined the correlation between MMPI clinical scale elevations and coping style. They found that in men, a problem focused coping style was

more frequent in subjects who had no clinically elevated scales whereas in females a social focused coping style was more common. When they examined subjects who were experiencing high levels of stress yet had no clinically elevated scales, females used less self-denigration and avoidance while males used more problem solving and tended to use less self-denigration and avoidance. Particular scale elevations were related to different patterns of coping styles in males and females. In females, elevations on Scale 1 were associated with self-denigration; Scales 2 and 3 with less problem solving, less cognitive restructuring, and less social focused coping; Scale 4 with less cognitive restructuring and less social focused coping; Scale 6 with more avoidant coping; Scales 7 and 8 with more avoidance and self-denigration; and elevations on Scale 9 were not related to coping style. In males, elevations on Scale 1 were associated with less problem solving, more avoidance and self-denigration; Scale 2 with more avoidance; Scale 3 with less problem solving and cognitive restructuring; Scale 4 with less cognitive restructuring; Scale 6 with more avoidance; Scale 7 with more avoidance and self-denigration; Scale 8 with more avoidance and self-denigration and less social focused coping; and Scale 9 with more avoidance and self-denigration.

MMPI Findings in Trauma Populations. Engels, Moisan, and Harris (1994) compared MMPI profiles of 18 women who reported a history of childhood sexual abuse, 26 women who reported a history of childhood physical abuse, 34 women who reported a childhood history of both physical and sexual abuse, and 32 women who reported no history of childhood abuse. Ages ranged from 20 to 69 with an average age of 35 years. All women were out-patients seeking treatment (primarily for anxiety disorders or

dysthymia) at a behaviour therapy clinic. This clinic does not offer crisis services and screens out suicidal and psychotic individuals. All three trauma groups showed elevations on Scales 2, 4, and 8 with additional elevations on Scales 1, 3, and 7. The no trauma group, on average, showed a 2 - 3 profile. Both groups reporting a history of physical abuse scored higher on Scales 4, 7, and 8 than the no abuse group and the sexual abuse only group. The best predictors of abuse were Scales 4, 8, F, L, and 7. Physical abuse was the best predictor of scores on Scales F, K, 7, and 8. A combined history of physical and sexual abuse was the best predictor of elevations on Scale 4.

Khan, Welch, and Zillmer (1993) examined the MMPI-2 profiles of 31 women in a shelter for battered women. They found mean elevations on Scales F, 4, 6, and 8 with low K scores suggesting difficulty with being overwhelmed, confused, coping problems, sense of inadequacy, anger, unpredictability, potential for inappropriate judgements, and paranoia. On the supplementary scales, elevations were observed on the anxiety, MacAndrew Alcoholism, college maladjustment, and PTSD scales. Low scores were noted on ego strength, dominance, and social responsibility scales. Rosewater (1983, cited in Kaser-Boyd, 1993) asserted that the elevations of Scales 6 and 8 in a study of 118 battered women represented interpersonal mistrust and a distorted perception of reality arising from abuse and not a schizophrenic process.

McCaffrey, Hickling, and Marrazo (1989) reported on an MMPI comparison of 26 out-patient civilians who had experienced some form of trauma (either accident or physical assault). Twelve of the subjects were diagnosed as suffering from PTSD and they showed clinical elevations on seven of the clinical scales. This compared with four scale elevations

for the group that did not meet PTSD criteria. Mean scores on the Keane PTSD scale were not significantly different (PTSD, 25; non-PTSD 18).

Scott and Stone (1986) reported on the MMPI profiles of 27 adolescents and 31 adults who had been subjected to father-daughter incest. Unlike the combat-related PTSD profiles, these subjects had fewer clinically elevated scales. On average, the adults had elevations on two scales (4 and 8) while the adolescents had a mean elevation only on Scale 8. These authors reported that they eliminated six profiles from the analysis due to elevated F and F-K scores. Given that these elevations are expected with PTSD, this study may underestimate the distress of incest survivors.

Hillary and Schare (1993) reported on the MMPI profiles of 19 physically or sexually abused adolescent boys (age 13-18) who were residing in a group home. Although anecdotally, these boys described a number of PTSD symptoms, none of them had clinical elevations of any of the MMPI clinical scales. It is possible that this population was defensive about reporting problems on an overt paper and pencil test.

This literature suggests that adults who were maltreated as children are likely to have MMPI profiles that are less dramatically elevated than profiles found in combat-related PTSD. However, in comparison to non-abused control subjects, they are likely to have overall higher T-scores on the clinical scales with particular elevations on Scales 4, 6, and 8. In addition, the coping study by Hovanitz and Kozora (1989) suggests that general coping style is related to specific scale elevations. Therefore, one would expect the coping styles associated with the various forms of insecure attachment would be associated with different patterns of scale elevations. That is, in females the avoidant style

is likely associated with elevations of Scales 6, 7, 8, and 0. The preoccupied style is likely associated with elevations of Scales 1, 7, and 8. Finally, due to a lack of any coherent coping style, the disorganized attachment style is likely to have higher scores on most scales.

Rorschach

"The basic rationale for projective tests has been that these measures can tap aspects of functioning that the subject may not be willing or able to report and that are also not easily accessible to behavioral observation" (Shapiro, Leifer, Martone, & Kassem, 1990, pp. 235-236). Projective assessment can be "... a highly valued way of studying cognition, perception, affect, and the representation of interpersonal relationships that can contribute to both the clinical process and to the systematic investigation of clinical phenomena" (Blatt, 1975, p. 328). Similarly, Acklin (1993) stated the Rorschach is useful in "... elucidating personality organization and dynamics. ..." (p. 128) in the context of normative data and intergroup comparisons. Given these advantages, it is not surprising that the Rorschach is one of the most commonly used clinical tests (Exner, 1986a).

However, compared with the MMPI, the Rorschach has received more criticism as a research instrument. For example, Acklin, McDowell, and Orndoff (1992) noted that the Rorschach has been criticized as a research instrument due to "... the divergent systems of administration, scoring, and research; the nature of Rorschach scores and the shapes of score distributions obtained; and the type of statistics commonly used (typically distribution free). ..." (p. 367). Exner's Comprehensive System addresses some of these criticisms through standardization, improved reliability and systemic validation research.

This section will provide greater detail on the measure's development, scoring and interpretation, and reliability and validity before examining the literature on the use of the Rorschach in assessing trauma survivors.

Rorschach Development. Exner (1986a) traces the use of inkblots as a psychological test to Binet and Henri who attempted to use them in devising intelligence tests. Hermann Rorschach, interested in the European Blotto game (the use of inkblots for the creation of poems, charades, or the development of elaborate descriptions), observed that schizophrenics responded to the inkblots differently from other individuals. He commenced working with the inkblots in an attempt to identify a tool that would be helpful in differentiating schizophrenia from other disorders (1921).

The current set of inkblots are similar to the ones used by Rorschach with the exception that his had no variations of shading. This feature was the result of a printing error. Following Rorschach's death, five separate Rorschach systems were developed: Beck, Klopfer, Hertz, Piotrowski, and Rapaport. Each of these systems varied in scoring and interpretation. Use of these five different systems and significant personal modifications of individual clinicians and researchers significantly contributed to many negative and contradictory findings in the research literature.

Establishment of the Rorschach Research Foundation in 1968 marked the beginning of the Comprehensive System (Exner, 1986a). The initial goal of the Foundation was to identify the system with the greatest empirical sturdiness and clinical utility but this evolved to integrating the five systems and establishing psychometric norms. Codes or scores used in the Comprehensive System were limited to those on

which 10 to 15 scorers had a minimum .85 inter-scorer agreement across 10 to 20 protocols. The Foundation also developed normative data on this system using 600 non-patient adults, 1580 non-patient children and adolescents, 320 inpatient schizophrenics, 210 inpatient depressives, and 200 outpatients with character problems.

Reliability and Validity. Meta-analyses demonstrate that the Rorschach has adequate reliability and validity. Atkinson (1986) reported that the Rorschach had similar validity to that of the MMPI. Parker (1983) found that in reliability studies approximately 70% of the variance in Rorschach scores can be accounted for in the results and approximately 25% of the variance can be accounted for in validity studies. Parker also identified that both reliability and validity increase when the results are predicted on strong theoretical and empirical grounds. Blatt (1975) reported that validation studies using sound methodological procedures have produced considerable support for the interpretive assumptions.

Acklin, McDowell, and Orndoff (1992) examined the power of 158 Rorschach articles published between 1975 and 1991. Power, the probability of detecting a difference when one is present, is a function of effect size, error variance, alpha, sample size, and statistical test used. "When average power for a research domain is around .50 (essentially a coin toss), a mixed pattern of significant and nonsignificant findings is likely" (p. 371). They found that research using Exner's Comprehensive System yielded greater power than other systems of Rorschach analysis and that the power to detect small (.17), medium (.62), and large (.89) effect sizes was similar to the power found in other behavioral science research. To increase the power of Rorschach research, they

recommend use of Exner's system, larger sample sizes (mode was 40 in their analysis), the use of parametric statistics where possible, and a reduction of error variance.

The Rorschach has been demonstrated to be resistant to the effects of faking bad. Meisner (1988) had 29 university undergraduates read a description of clinical depression and attempt to portray this depression on the Beck Depression Inventory (BDI) and the Rorschach and then contrasted these scores with 29 control subjects. As indicated by elevated BDI scores, the experimental subjects were faking depression but there was no difference in determinant scoring between the two groups. However, the experimental group did show an elevation of morbid (MOR) and blood (BI) contents and a decrease in the number of responses.

The Rorschach has exhibited validity for developmental changes in cognition and affect and control (Wenar & Curtis, 1991). These authors examined Exner's normative data on variables related to expected developmental changes in children and found both significant linear and quadratic trends in the predicted direction. That is, thinking became more complex, integrated and precise; there was increased diversity of ideas; increased conformity in thinking; decreased distortions and misinterpretations; a decrease in egocentrism; a decrease in emotional outbursts; and increased self-control or inwardness. The sensitivity to developmental changes makes the Rorschach particularly suitable for examining trauma, either in childhood or adulthood, as one might expect a regression to a previous level or an arrest in development and failure to achieve expected developmental gains.

Scoring and Interpretation. Compared with other psychometric tools, the

Rorschach is relatively complex to score and interpret. Therefore, this section briefly reviews the Comprehensive System (Exner, 1986a) coding and interpretation.

Each response given to the inkblot is coded for location, developmental quality (DQ), determinants, form quality (FQ), content, populars (P), organizational activity, and special scores. These codings are summarized on Table 7. Location refers to the area of the blot that is used in forming the response. Developmental quality codes the organizational quality of the response. Determinants specify the blot features that contribute to the formation of the percept. They include the use of form (F), movement (M), chromatic colour (C), achromatic colour (C'), shading-texture (T), shading-dimension (V), shading-diffuse (Y), form dimension (FD), pairs (2), and reflections (r). Form is coded separately when it is the only determinant; otherwise it is added to one of the other determinants (before or after depending on the importance of form in the response) with the exception of movement responses. All movement responses are also coded as active (a) or passive (p). Responses that involve more than one determinant (not including form as one of these) are designated as blends. Form quality refers to how well the response fits with the contours of the blot area used. Organizational activity provides a numerical score for the organization and complexity of the stimuli used in the response (e.g., adjacent blot details receive a lower score than distant blot details). Content categorizes the class of object(s) reported. Populars are very conventional responses that occur at least once in every three records. Special scores are coded whenever a response includes some unusual characteristic.

Table 7.

Comprehensive System Rorschach Codes.

<u>Abbreviation</u>	<u>Description</u>
LOCATION	
W	Use of the whole inkblot.
D	A common detail area.
Dd	Unusual detail area.
S	Use of white space (Coded in conjunction with one of the above).
DEVELOPMENTAL QUALITY	
+	Synthesized response in which two or more separate objects are described related and at least one object has a specific form requirement.
as	
v/+	Synthesized response in which two or more separate objects are described related and none have specific form requirements.
as	
o	Ordinary response describes a single object or unrelated objects with specific form requirements.
v	Vague response describes a single object or unrelated objects lacking specific form requirements (e.g., cloud).
DETERMINANTS	
F	Form features contribute to the response.
M	Human movement or other character described in a human-like activity.
FM	Animal movement response that is consistent with the species described.
m	Inanimate movement response.
C	The use of chromatic colour.
Cn	Naming of colours as a response.
C'	Achromatic colour (use of grey, black, or white).
T	Texture responses in which the shading features are described as tactual.
V	Vista responses in which shading is seen as depth or dimensionality.
Y	Diffuse shading in which shading is used but not in reference to texture or vista.
FD	Form dimension is similar to V but uses size or shape rather than shading.
(2)	Pair response reports two identical objects based on the symmetry of the blot.
r	Reflection response, symmetry is described as a reflection or mirror image

Table 7 con't

<u>Abbreviation</u>	<u>Description</u>
FORM QUALITY	
+	Superior-overelaborated responses are unusually precise in their articulation
o	Ordinary, commonly reported responses with appropriate form use
u	Unusual responses that are less commonly reported but are easily seen and do not violate blot contours.
-	Distorted use of form that disregards actual blot contours.

ORGANIZATIONAL ACTIVITY

z	Numerical score accorded the type of organization and complexity of stimuli used in the response (based on use of W, S, and adjacent or distant detail areas).
----------	---

CONTENT

H	Whole human.	Cg	Clothing.
(H)	Fictional or mythological whole human.	Cl	Clouds.
Hd	Human detail.	Ex	Explosion.
(Hd)	Fictional or mythological human detail.	Fi	Fire.
A	Whole animal.	Fd	Food.
(A)	Fictional or mythological whole animal.	Ge	Geography.
Ad	Animal detail.	Hh	Household object.
(Ad)	Fictional or mythological animal detail.	Ls	Landscape.
Ab	Abstract concept.	Na	Nature.
Al	Alphabet letters or arabic numerals.	Sc	Science.
An	Anatomy.	Sx	Sex.
Art	Art objects or paintings.	Xy	X-ray.
Ay	Anthropology.	Vo	Vocational.
Bl	Blood.	Id	Idiographic.
Bt	Botany.		

POPULARS

P	Popular responses.
----------	---------------------------

Table 7 con't

<u>Abbreviation</u>	<u>Description</u>
SPECIAL SCORES	
DV	Deviant verbalization.
DR	Deviant response.
INCOM	Incongruous combination of blot details into a single object.
FABCOM	Fabulized combination positing an implausible relationship between objects.
CONTAM	Contamination fuses two or more impressions into a single response.
ALOG	Inappropriate logic is used to justify a response.
PSV	Perseveration.
CONFAB	Confabulation that generalizes a response from a detail to a larger area of the blot.
AG	Aggressive movement.
MOR	Morbid content.
PER	Personalized response in which personal knowledge or experience is used to justify a response.
CP	Colour projection in which achromatic areas are identified as chromatic.

All of the above codings are then summarized as frequency tallies, ratios, percentages, or scores derived from various combinations of codes. Although the large number of variables contribute to the development of rich clinical profiles, it also contributes to unwieldy complexity for research purposes. The researcher must carefully select variables of interest. Therefore the following section will summarize interpretive information provided by Exner (1986) on variables associated with affective, cognitive, and interpersonal functioning and coping.

In terms of affective functioning, chromatic (FC, CF, and C) and shading (Y, T, and V) determinants, the affective ratio (Afr), and responses involving the use of white space (S) are the mostly widely used indicators. Chromatic responses that are form dominated (FC) show greater modulation of affective displays than colour dominated responses (CF and C). The retest reliability of the colour dominated responses is improved by combining CF and C. The ratio of FC: CF + C tends to be very stable. In adult non-patients responses typically have 1 ½ to 2 ½ times more FC than CF + C. If the ratio is greater than 3:1 then excessive modulation of affect is indicated. When CF + C is greater than or equal to FC there is less willingness or ability to control affect and this is correlated with more impulsive or aggressive behaviour. This ratio is also related to development since children tend to have more colour dominated responses until the age of 12. Of the shading variables, Y is the least stable with a retest reliability of .31. It reflects a situational emotional experience of helplessness and loss of control. Texture responses (T) tend to be very stable (retest reliability of .91). Greater than one T suggests emotional loss and increased emotional or dependency needs while no T is related to interpersonal

guardedness or distancing. Vista responses (V) are also quite stable (.87 retest reliability) and their presence is associated with depression and painful negative introspection. The affective ratio (Afr), the proportion of responses to the last three cards (only totally chromatic cards) reflects receptivity to emotionally toned stimuli. One year retest correlations are .82. Afr is also developmentally linked and decreases with age. The average range in non-patient adults is between .50 and .80. Space responses (S) have been linked to opposition or negativism and tends to be more stable if elevated above the mean. Four or more S responses suggests dissatisfaction and difficulty handling anger. The Comprehensive System also provides a summary index for depression (DEPI) with a score of four or five suggesting significant negative affect.

Experience Actual (EA), the sum of Human Movement Responses and weighted colour responses, has been linked to available resources. Higher scores reflect the development of more inner life and affective experiences. EA has high test-retest reliability in non-patient adults (.83 and .85 for one and three years respectively). It is lower for patients re-tested after psychotherapy and for children with both of these groups showing increases on re-test.

Cognitive functioning is indicated by cognitive style, quality of percepts, and cognitive activity relating to self. In terms of cognitive style, the Comprehensive System relies on four different scores: Lambda (L), Organizational Activity (Zf), Uncommon detail areas (Dd), and Organizational efficiency (Zd). Lambda, which shows a one year retest reliability of .78, is the proportion of pure F responses on the record. High L (> 1.2) reflects a simplistic approach that ignores or avoids the complexity of the stimuli.

Low L indicates more complex attention to the inkblots and may be related to inefficient use of resources due to psychological turmoil, intellectual striving, or a tendency to overincorporate stimuli in an attempt to avoid error or failure. Zf also examines the issue of complexity and has a 1-year retest reliability of .85. A low Zf score indicates reluctance to tackle complexity while a high score suggests ". . . intellectual striving or a need to deal with the stimulus field in a more careful and precise manner" (Exner, 1986, p. 355). Zd reflects efficiency of data processing. Seventy percent of non-patient adults fall between +3 and -3. Scores greater than +3 are labeled overincorporators and tend to be obsessive or perfectionistic while underincorporators (< -3) tend to be more impulsive. Zd also shows a developmental trend in that 5 to 7-year-olds more often have scores less than -3. Dd is a simple count of responses in which the subject uses an uncommon detail area of the blot. More than three such responses indicate an unusually obsessive approach to the world or a defensive narrowing of the stimulus field to increase manageability.

Quality of percepts can be examined through Popular (P) responses, Form Quality (F+% and X+%), Perceptual Mediatlional Distortion (X-%), Human Movement Responses of poor form quality (M-), the weighted sum of the special scores (WSUM6), and the schizophrenia index (SCZI). Popular responses are conventional responses occurring with a high frequency and have a retest reliability of .86. Most adults will give five to eight popular responses. Less than this reflects inability or unwillingness to provide conventional responses while greater than eight indicates excessive conventionality. In terms of form quality, a difficulty with F+ is that records with few pure form responses will have this percentage substantially influenced by one or two responses. Therefore, the

extended form quality (X+%) is generally a more accurate indicator of conventional, reality-based use of form and has a one year retest reliability of .86. Individuals with X+% greater than 90% tend to be overconventional with the sacrifice of individuality while those with a score of less than 70% suggests atypical translation of stimuli. Whether this atypical translation is due to unconventionality or to distortion is reflected by X-%, the percentage of responses that disregard blot contours and violate reality. An X-% greater than 15% is cause for concern about perceptual distortion. Exner suggests examining such records to determine if the minus scores cluster in the chromatic responses (suggesting problems of emotional control) or around a particular content (suggesting a specific preoccupation). The presence of any poor form quality human movement responses (M-) is concern for peculiarity in thinking. WSUM6 reflects the degree of cognitive slippage in responses. Non-patient adults typically score between four and seven. Finally, a score of four or five on the SCZI is reason to be concerned about inaccurate perception and disordered thinking.

Four of the Rorschach variables are particularly associated with self-concept. The egocentricity index $[3r + (2)/R]$ reflects the degree of self-involvement. This index has an average non-patient adult range of .31 to .42 with a one year retest reliability of .89. This is another developmental variable in that scores tend to decline from age 5 to 16. A high score indicates greater involvement with self and more superficial interpersonal relationships while low scores are associated with negative self-esteem. Morbid responses (MOR) reflect a negative damaged sense of self and pessimistic attitude. The mode for depressed adults is two while only 47% of non-patient adults show one of these responses.

The combination of anatomy and x-ray contents ($An+Xy$) show increased body concerns while an elevation in personalized responses (PER) reflects defense of one's self-image.

Interpersonal functioning is reflected by T (as discussed under affect), human contents [H, Hd, (H), and (Hd)], aggressive responses (AG), and the Isolation Index. Pure H (whole human figures) being greater than Hd (human detail responses) or (H) and (Hd) reflect that one's views of the social environment are based more on real than imaginary experience. Subjects with elevated Hd responses tend to be more guarded and suspicious of their social environment. An absence of H shows a lack of interest in others and/or interpersonal detachment. The likelihood of verbally or physically aggressive behaviour and a negative and/or hostile attitude toward others increases if AG is greater than two. The isolation index has limited validation support and thus will not be discussed further here.

The above indicators cannot be examined in isolation as they have different implications depending on the individual's stress tolerance and control. The D-score is the scaled difference between available resources (EA) and stimulus demands (es). A D-score of zero indicates adequate tolerance for everyday stressors; greater than zero indicates that the available resources exceed demands; and less than zero indicates that resources are limited compared with the demands. The adjusted D score (Adj D) removes current situational stressors (m and Y) from the D-score and reflects more everyday functioning. Experience Actual (EA) is the extent to which resources are organized and accessible with higher EA reflecting more inner life and a greater openness to affective experiences. The es component of D is experienced stimulation that reflects impinging stimulus demands on

the individual. Coping style, the *erlebnisypus* (EB), indicates whether an individual tends to meet basic needs through their own inner life (introversive), through interaction with the world (extratensive), or through inconsistent use of either of these styles (ambitent). Ambitents show the greatest risk of experiencing difficulty under situations of high stress.

Rorschach variables associated with affective, cognitive, and interpersonal functioning are summarized in Table 8. Although variables are listed in only one category or another, the reader is reminded that there is some overlap with some variables fitting into more than one category. For example, M- is listed under cognitive variables but also is related to perceptions of humans and thus could fit in the interpersonal category. The author has attempted to categorize variables according to their primary impact on functioning. Although this Table includes a description of the implications of each of the variables, one must keep in mind that interpretations cannot be made based on a single variable, interpretation is only possible in the context of other variables. It is obvious from the above that affective, cognitive, and interpersonal variables are too numerous to examine in a single study. Therefore, selection of variables may be informed by the Rorschach literature. Variables used in this study are summarized in Appendix A.

There is an emerging literature investigating the utility of the Rorschach as a measure of psychological functioning in trauma survivors. Leifer, Shapiro, Martone, and Kassem (1991) suggest that projective assessment of children who have been sexually abused may be a useful way of getting around problems of guardedness on self-report measures and parent bias in behavior observation measures. This may also be extended to other maltreatment survivors (child and adult).

Table 8

Affective, Cognitive, and Interpersonal Rorschach Variables: Derivation and Implications

<u>Variable</u>	<u>Derivation</u>	<u>Implications</u>
AFFECTIVE VARIABLES		
FC:CF + C	The ratio of form-dominated colour responses to colour-dominated responses.	If the ratio is greater than 3:1 excessive modulation of affect is indicated. If less than 2:1 there is less modulation of affect.
V Vista	Sum of responses using shading to suggest dimensionality.	Presence is associated with depression and painful negative introspection.
Afr Affective Ratio	Ratio of responses to chromatic cards and primarily achromatic cards.	< .50 is associated with affective constriction; > .80 is associated with over-responsiveness to affective stimuli.
S Space	Number of responses using white space in the formation of percepts.	> 3 suggests dissatisfaction and difficulty handling anger.
COGNITIVE VARIABLES		
L Lambda	Ratio comparing frequency of pure form responses with all other answers in the record.	High scores suggest complexity is ignored; low scores indicate more complex attention to stimuli.
Zf Organizational Activity	Number of times a z-score has appeared in the record.	Low scores suggest reluctance to tackle complexity; high scores show careful attention to stimuli.

Table 8 con't

<u>Variable</u>	<u>Derivation</u>	<u>Implications</u>
Dd Uncommon detail Areas	Number of times uncommon area of the blot is used.	High scores suggest obsessive approach to task or narrowing of the stimulus field to increase manageability.
Zd Organization	Difference between the sum of z-scores and the estimated z-sum based on frequency of responses.	High scores suggest over-incorporation and perfectionism while low scores reflect impulsivity
P Popular responses	Number of conventional responses which occur with a high frequency.	< 5 reflects inability or unwillingness to provide conventional responses; >8 indicates excessive conventionality.
X+% Perceptual accuracy	Percentage of responses using conventional form features.	> 90% reflects over-conventional responding; < 70% suggests atypical translation of the stimulus field.
X-% Distorted form use	Percentage of responses that disregard blot contours.	> 15% raises concern about perceptual distortion.
WSUM6 Weighted sum of special scores	Weighted sum of responses that reflect unusual or deviant thinking.	Higher scores reflect greater cognitive slippage; non-patient adults typically score between 5 and 7.
SCZI Schizophrenia Index	A composite index of variables relating to inaccurate perception and disordered thinking.	> 4 or 5 suggests the presence of thinking disturbance.

Table 8 con't

<u>Variable</u>	<u>Derivation</u>	<u>Implications</u>
M - Poor form quality of Human movement Responses	Number of human movement responses using distorted form.	Presence of any suggests peculiar thinking.
[3r + (2)/R] Egocentricity index	Weighted proportion of pair and reflection responses.	> .42 suggests more self-involvement and superficial relationships; < .31 is associated with low self-esteem.
MOR Morbid responses	Number of responses with morbid content.	Higher number of these responses suggest damaged sense of self and a pessimistic attitude.
An + Xy	Combination of number of responses involving anatomy or x-ray contents.	Higher scores reflect greater body concerns.
PER Personalized Responses	Number of responses that use personal experience as basis for percept.	Higher score reflects defensiveness.

INTERPERSONAL VARIABLES

T Texture responses	Sum of responses involving the use of shading to suggest texture.	> 1 suggests emotional or dependency needs; < 1 is related to interpersonal guardedness.
H:Hd	Ratio of whole human contents to human detail responses.	H > Hd reflects social perceptions are based on real rather than imaginary experience. High Hd tend to be guarded and suspicious.

Table 8 con't

Variable	Derivation	Implications
AG Aggressive	Number of responses involving aggressive movement.	> 2 suggests a hostile or negative attitude toward others.
STRESS TOLERANCE AND CONTROL		
D D-score	Scaled difference between available resources (EA) and stimulus demands.	> 0 resources exceed current demands; < 0 current demands exceed resources.
AdjD Adjusted D-score	Removes situational stress from D-score.	Similar to D but represents typical stress tolerance and control.
EA Experience Actual	Sum of human movement and weighted colour responses.	Available resources. High scores reflect more inner life and greater openness to affective expression.
es Experience stimulation	Sum of animal and inanimate movement, achromatic colour, and shading responses.	Current stimulus demands.
EB Erlebnisypus (Coping style)	Human movement minus the sum of weighted colour.	2 or more Introversive; 1.5 to -1.5 Ambitent; -2 or less Extratensive.

As Herman (1992) states:

The formation of a malignant negative identity is generally disguised by the socially conforming 'false self'.... Though some child or adolescent victims may call attention to themselves through aggressive or delinquent behavior, most are able successfully to conceal the extent of their psychological difficulties. Most abused children reach adulthood with their secrets intact (Herman, 1992, p. 110).

The following section reviews the Rorschach literature related to trauma.

Assessment of Trauma Survivors. The Texture response and Pure H responses have received clinical support as measures of attachment and interest in others. For example, Weber, Meloy, and Gacono (1992) compared T and Pure H responses of adolescents diagnosed as conduct disorder with those diagnosed with dysthymia. The conduct disorder group produced fewer T and Pure H responses. The difference between the mean number of Pure H responses was not large (2.27 and 2.53) and not likely clinically significant. However, it is significant that only 67% of the conduct-disorder group produced a Pure H response compared with 97% of the dysthymic group. The history of physical abuse was more than twice as frequent in the conduct-disorder group and suggests there may be a relationship between physical abuse and T and Pure H responses. Owens (1984) compared Rorschach responses of 17 female outpatients who had experienced childhood incest with 17 control subjects who did not report such a history. Of the 67 variables examined, only six were significant suggesting these may have been due to chance although the significant differences were found on variables that would be predicted by the incest literature. That is, the abused subjects scored lower on T, P, r, Zf, and W and higher on Bl. Owens' interpretation of the finding that the incest group

suffered from lower self-esteem (based on fewer reflection responses) was later criticized by Webb and King (1985) as a misuse of data.

Kaser-Boyd (1993) examined the Rorschach protocols of 22 women who had killed their abusive partners and compared them to Exner's non-patient adult norms. She reported that the majority of these women, in addition to being traumatized by their partners, had grown up with a substance abusing father who was episodically violent. Her findings indicated battered women who have killed their partners suffer from cognitive constriction, poor internal resources for problem solving, ambivalent coping styles, passive ideation, affect that is avoided or is intense and poorly modulated, distorted reality testing (but not psychotic), a narrow cognitive focus, and limited scanning of the stimulus field. Although Kaser-Boyd recognizes the difficulty with the small sample, non-random sampling, lack of a control group, and lack of control for developmental and life history variables, she suggested that ". . . passive ideation, ambivalent coping style, and limited internal resources illustrate and may be the Rorschach manifestation of the phenomenon of learned helplessness. . . ." (p. 468).

Cerney (1990) conducted an exploratory Rorschach study that compared in-patient records of individuals for whom childhood sexual and/or physical abuse was documented on the chart with those with no such trauma history recorded. In the first part of her study, she found that subjects with a history of childhood abuse had Rorschach records that could be categorized into two distinct groups. One of these groups produced constricted records with minimal or no use of colour and little if any hostile content. The other group could be considered as emotionally overwhelmed with many colour-

dominated responses with primitive aggressive content. In comparison, the control records showed a moderate use of colour that tended to be form-dominant and aggressive responses that were milder and less primitive than the "overwhelmed" abuse group.

Cerney then sorted 48 records into trauma versus no trauma groups according to the following criteria: (1) Trauma (constricted) had three or less colour responses and three or less aggressive responses with the aggression minor and containing little or no elaboration such as "a crab," "a lobster," (2) Trauma (overwhelmed) had four or more CF + C responses and four or more aggressive responses that were strikingly vicious; (3) Non-trauma had records in which the majority of colour responses were form-dominated with C + CF equaling three or less and a moderate number of aggressive responses. Three raters disagreed on the sorting of six of the 48 records. Of the remaining 42 records, 36 were assigned to the trauma group and six to non-trauma. Examination of the charts revealed a history of only minor trauma (divorce, natural death of grandparents, and geographical move) for the six subjects in the non-trauma group and a history of severe trauma for 26 of the 36 records assigned to the trauma group. Of the remaining ten patients, two revealed a childhood history of severe sexual abuse in later psychotherapy that they received as out-patients. One difficulty with this study is the definition of aggressive responses. Within the Exner system, "a crab" or "a lobster" would not be defined as an aggressive response. Although this study is exploratory and fraught with methodological flaws, it does point to the risk of examining Rorschach data only by group means. The averaging of scores can obliterate important effects.

Hartman et al. (1990) and Swanson, Blount, and Bruno (1990) reported

Rorschach data on two samples (41 and 50 respectively) of Vietnam veterans with PTSD. Their findings revealed a number of similarities including low X+%, low F+%, high X-%, high Lambda, an elevated SCZI (but not in the psychotic range), an elevated WSUM6 (again not at psychotic levels), low T, low Afr, $FC < CF + C$, low D scores, low Pure H, an elevated S-Con along with a normal DEPI, and increased MOR responses. Hartman et al. also reported that their sample had a high — score, a high number of reflection responses with few pairs, and that a large number of subjects had an ambivalent coping style. Swanson et al. found that their subjects had low Adj D, more Mp than Ma, and elevated V. These findings are consistent with other samples of individuals who have experienced trauma in that they show distorted perceptual accuracy, difficulties with affect modulation, a tendency to avoid affectively laden stimuli, and interpersonal difficulties.

Although not specifically looking at childhood trauma per se, Exner (1986b) reported on the Rorschach data of individuals with borderline personality disorder and suggested that their psychological organization and functioning on the Rorschach appears to be related to some form of developmental lag. Specifically, he noted that these patients tended to be affect oriented, had limited capacity for control and/or failure to modulate affective discharges, and vulnerability to become overwhelmed by stress. This is consistent with a large proportion of individuals diagnosed with BPD having a history of childhood trauma. It may be that childhood trauma is associated with this developmental lag observed in adulthood.

Leifer, Shapiro, Martone, and Kassem (1991) compared Rorschach responses of 79 Black children (age 5 to 16) with a documented history of childhood sexual abuse with

32 Black medical patients matched by age and with similar SES. The authors report that a large number of subjects in the abuse group did not participate (41) which makes this a select sample. These authors used R as a covariate to control for number of responses and performed log transformations on skewed variables. They looked at variables associated with ego functioning (F+%, X-%, and WSUM6), adaptive coping and stress (D, EA, and ES), affective functioning (DEPI, SumSh, AFR, zf, and L), interpersonal functioning (Isolation index and human content), and sexual concerns (sx). In each of these areas, the authors performed MANOVA's prior to examining individual scores in each of the areas identified above. They found that subjects who had been abused showed greater impairment on ego functioning, a greater level of affective distress, and a greater number of responses involving a Sx content. In the abuse group, poorer adaptive coping was associated with a higher level of psychological demands. Although the authors found no difference in interpersonal interest, using thematic analyses (Mutuality of Autonomy Scale), they found that the abused group showed a more disturbed perception of interpersonal relationships. In the abused group, zf and EA (usually seen as psychological assets) were correlated with greater distress whereas this was a negative correlation in the non-abused group. As with Cerney's study, this finding highlights the importance of examining more than group means. In this study, abuse related variables were not associated with the Rorschach variables.

Similar to the above study, Shapiro et al. (1990) report on a comparison between 53 sexually abused Black girls between the ages of 5 and 16 and a comparison group of 32 Black medical patients. The Depression Index, achromatic colour, MOR, and Col-Sh

Blends were higher in the abused group suggesting higher levels of distress. There were no significant differences between the groups on Vista or the Egocentricity Index. Within the abused group, Zf and EA were positively correlated with DEPI while in the control group these variables were negatively correlated with DEPI. The authors suggest that ". . . sexually abused girls who are cognitively and emotionally active also experience high levels of depression, compared to abused girls who are psychologically constricted" (p. 244) and that "this relationship may be reversed with time, if cognitive processing of the victimization eventually produces a renewed sense of coherence" (p. 245). These authors caution that generalizability of their findings is limited due to subject selection and the high number of sexually abused subjects who did not participate.

Holaday, Armsworth, Swank, and Vincent (1992) compared 63 traumatized subjects (16 females, 47 males) aged 7 to 17 with Exner's normative data on 10 Rorschach variables. Types of trauma included rape, sexual molestation, incest, severe beatings or accidents that required medical attention and/or resulted in permanent disfigurement, or extreme loss that occurred before the age of nine. Of the coping variables, they found that the traumatized group had lower D scores than Exner's norms but this was not significant for females or children under 12 years of age. Of the cognitive variables, X+%, and egocentricity index were lower in the trauma group. In terms of affect, the trauma group's WSumC was less (but not in females) and no difference on MOR was observed. Interpersonal functioning was reflected in lower T for the trauma group (not in adolescents) and there was no difference in AG content.

Zivney, Nash, and Hulsey (1988) conducted an exploratory study on the

relationship between sexual abuse occurring before or after the age of nine and functioning on the Rorschach. They attempted to control for the large number of statistical tests by sample splitting and cross-validating the findings. They adhered to the following rules for significance: (1) the variable had to be significant in both sample subsets; (2) the direction of the difference had to be the same in both subsets; (3) when subsets were combined, the difference had to be at an alpha level of .01; and (4) the result had to remain significant with the duration of abuse used as a covariate. Five of 120 Rorschach variables met the above criteria suggesting that children who experience early sexual trauma have more disturbed cognition (M- + DV + FABCOM), more damaged self-image (MOR + PER), greater anxiety/helplessness (SUMY), more vague, primitive body concerns (Fd + Cg + Xy + Ab), and a primitive developmental deficit (H + Hd/A + Ad with low X+%). Although the early abuse group showed no reliable differences from a clinical sample, there was a trend for the traumatized subjects to have lower X+% and D scores and to have higher SUMY and S responses.

Nash, Zivney, and Hulsey (1993) examined the relationship between psychopathology on the Rorschach and characteristics of abuse in 102 females between the ages of 5 and 16 with a confirmed history of sexual abuse. They used the mean z-score of M-, SUMSP6, MOR, SUMC', SUMY, and X+% as the measure of pathology and found that higher levels of pathology were associated with victimization by more than one perpetrator, earlier age at the onset of abuse, and abuse that occurred more frequently (> 3 or 4 contacts per month). In contrast, less pathology was observed when the child's primary caretaker was married and living with a spouse. These relationships held

regardless of age at testing and latency between last abuse and testing. Notable in this study is the low $X+%$ (.56) which is also reported in other studies involving trauma.

Viglione (1990) reported on repeated Rorschach measures of a traumatized boy at ages 11-2, 11-9, and 15-5. Traumata included absent father, mother's attempted suicide and substance abuse, and placement in care. Viglione reported that this child had no overt (behavioral or structured measures) signs of psychopathology but a very disturbed Rorschach with poor form quality, an elevated Schizophrenic index, and elevated depressed content on first testing. After seven months of supportive therapy the record was shorter and showed greater control. Four years later there was significant improvement in form quality. He also noted an elevation of reflection responses which was interpreted as an adaptive means of this child being able to parent and soothe himself. Viglione suggested that disturbed trauma-related Rorschach responses may reflect a self-reparative process rather than psychopathology and recommended caution in predicting severe pathology in the context of trauma and minimal overt symptoms. The "disturbed inner world" reflected in Rorschach responses suggests active working through of the trauma rather than avoidance and constriction. He suggested that variation in overt symptomatology, given severe internal disturbance, may be a function of temperament, socioeconomic advantage, and even physical attractiveness that may result in more environmental support.

Table 9 summarizes the above findings in studies that use a comparison group to assess Rorschach findings in traumatized groups. As this table shows, simple comparisons of groups yield many insignificant and contradictory findings. As noted above, several of

TABLE 9

Comparisons of Findings in Studies Using the Rorschach

	Leifer (1991)	Shapiro (1990)	Holaday (1992)	Owens (1984)	Kaer-Boyd (1993)
Ego Functioning					
F+%	n.s.			n.s.	n.s.
X+%			< *	n.s.	< *
X-%	> *				> *
WSUM6	> *				
SUM6				n.s.	
W				< *	
D				n.s.	
Dd				n.s.	
M				n.s.	< *
M -					n.s.
FM				n.s.	
Fr + rF				< *	
3r + (2)/R				n.s.	
(2)				n.s.	
F				n.s.	
Blends				n.s.	< *
DQ+				< *	
DQv/+					n.s.
DQo					< *
DQv					> *
Adaptive Coping and Stress					
D Score		< *		< *	n.s.
EA (resources)	n.s.				< *
es (demands)	> *				< *
a			n.s.		< *
p			> *		< *
R				n.s.	< *
m				n.s.	
P				< *	< *
L	n.s.			n.s.	> *
Zf	n.s.			< *	< *
Zd					< *
Affective Functioning					
DEPI	> *		> *		
Vista			n.s.	n.s.	
Y				n.s.	n.s.
MOR	> *	n.s.			
Egocentricity Index		n.s.	< *		n.s.
Sum Sh	> *				

Table 9 con't

	Leifer (1991)	Shapiro (1990)	Holaday (1992)	Owens (1984)	Kaser-Boyd (1993)
Achromatic colour			> *	n.s.	n.s.
Afr	n.s.			n.s.	< *
WSumC			< *		
FC				n.s.	< *
CF				n.s.	< *
C + Cn				n.s.	> *
FD				n.s.	
Bl				> *	
Interpersonal					
Isolation Index	n.s.				
Human content	n.s.				
Pure H					n.s.
H + Hd				n.s.	
T			< *	< *	< *
S			> *	n.s.	< *
Sexual Concerns					
Sx	> *				

Note. n.s. = non-significant; > * and < * indicate direction of significant difference (trauma to comparison group).

these studies blindly compared the whole set of data from the structural summary and it is reasonable to question how many of these results are due to statistical chance and points to the importance of selecting theoretically important variables. In addition, one might question if these group means obscure significant subgroups of subjects. Particularly, one would want to examine subgroups of organizational activity (Zd) and affective expression. However, there is consistency between the studies such as an elevated X- and DEPI and a lower T score.

Combined Use of Projective and Self-report Measures

In assessment batteries, the MMPI and the Rorschach are the most commonly used (Sweeney, 1987). Thus, research investigating phenomena such as childhood maltreatment sequelae may have greater clinical impact if commonly used clinical measures are employed as opposed to instruments rarely used in clinical practice. There is also sound rationale for using both self-report and projective measures. As Lovitt (1993) suggests, the integrated use of the Rorschach and the MMPI-2 allows the clinician or researcher to "... assess the interrelationships between what patients say about themselves and how they actually perform" (p. 142). Weiner (1993) similarly recommends the use of both since together they provide situational context (structured vs unstructured) and the Rorschach addresses defenses against feeling bad.

Repeatedly, the literature has found low correlations between the MMPI scales and the Rorschach variables (Acklin, 1993). However, Lipovsky, Finch, and Belter (1989) found moderate (but significant) correlations between the MMPI Scale 2 and Rorschach MOR and SUMSH in adolescent in-patients (35 depressed, 25 mixed

diagnoses, non-depressive diagnoses). Archer and Krishnamurthy (1993) examined the correlation between 50 Rorschach variables and 13 MMPI scales in a clinical sample 197 adolescents (116 males, 81 females). Although these authors report a number of significant correlations, they also report that the pattern of significant correlations only slightly exceeds that expected by chance. A canonical correlation showed very little redundancy between the MMPI and Rorschach. These correlations will not be reported here given that the authors conducted 650 statistical tests for each gender. In clinical child studies, the egocentricity index has been found to have no correlation with MMPI validity or clinical scales (Duricko, Norcross, & Buskirk, 1989). These studies are useful in that they point out the limited correlation between these two measures suggesting they are measuring different aspects of functioning.

Shapiro et al. (1990) found that in children, Rorschach indicators of depression were not significantly correlated with the Child Depression Inventory and the Child Behavior Checklist. They found that sexually abused girls had high scores on projective and behaviour observation measures but not on self-report measures. These findings suggest that these subjects were reluctant to report distress and that self-report measures may underestimate impaired functioning.

Recently, Lovitt (1993) reported a case history in which the client's self-report on the MMPI-2 resulted in a normal clinical profile while the Rorschach responses indicated serious dysfunction. The Rorschach suggested that the client does not readily process affective information ($Afr = .40$ and $sum C = 1$), is simplistic in processing of most information ($\Lambda = 1.05$), tends to distort or misperceive stimuli ($X+ \% = .28$ and $X- \%$

= .42 and high Schizophrenia Index). However, the client can perceive obvious stimuli correctly ($P = 5$). The client also tends to retreat into fantasy (M passive $>$ M active), has a poor self-image (egocentricity index = .28), and experiences interpersonal difficulties (lack of COP, low pure H, high S, and no T). Although Lovitt does not report on the client's childhood history, the description of her adult functioning is consistent with a childhood history of trauma. She is described as having ". . . a long history of deep dissatisfaction with her life. She quietly broods about dissatisfaction in her marriage, family, friendships, and her career. She vacillates between stormy and quiet desperation in her relationships with major figures and institutions." (p. 143). The avoidance of affective stimuli, simplistic processing of information, and avoidance of close relationships are all ways of coping with childhood trauma that would facilitate "normal functioning" on the MMPI-2. Since this individual has been in insight-oriented psychotherapy for seven years and the referral question was feasibility of termination, one might assume that the current level of distress indicated by the Rorschach is accurate, as is her ability to cope and function within the average range on the MMPI-2.

This literature highlights the fact that the MMPI and the Rorschach measure two relatively independent facets of functioning. That is, respectively, they measure functioning under structured and unstructured conditions. One would expect that individuals who show impaired functioning on self-report measures would also show impairment on projective measures. However, individuals with more effective coping mechanisms are less likely to show distress on self-report measures.

CURRENT STUDY

Rationale for Study

Childhood physical abuse is one of three interrelated forms of childhood maltreatment that have been associated with traumatic symptoms. Three models that have been used to understand the sequelae associated with childhood maltreatment include Post-Traumatic Stress Disorder, Traumatogenic Model, and the Comprehensive Model of Trauma Impact. Of these models, the Comprehensive Model of Trauma Impact is considered superior as a means of understanding the impact of trauma and as a framework for research. Two of the essential components of this model are the social context and individual functioning. Understanding these components is informed by attachment theory. Attachment theory predicts that the majority of maltreated children will be insecurely attached to at least one caregiver but that some of these children will achieve secure adult attachment as a result of other supportive relationships. Specific types of adult attachment are associated with different coping mechanisms. Thus, attachment theory predicts that childhood maltreatment will not produce a homogeneous set of sequelae.

The MMPI and the Rorschach are two of the most commonly used clinical assessment tools. It is valuable to combine use of these measures since the former reflects what individuals report about themselves and the latter reflects actual performance. The Rorschach has the added advantage of offering information on coping styles and levels of cognitive and affective processing that provide a context for the sequelae identified. This context may help explain the lack of a homogenous set of sequelae to childhood

maltreatment.

This study will extend the previous research on variables associated with a history of childhood trauma by examining developmentally and theoretically relevant Rorschach and MMPI-2 variables. Specific contributions include using popular standardized psychological tests to obtain data on the cognitive, affective, and interpersonal functioning of individuals who report a history of physical abuse compared with subjects who do not report a traumatic childhood history. Given the heterogeneity of functioning identified in traumatized individuals coping styles and levels of cognitive and affective processing that have an empirically demonstrated impact on functioning will also be examined. Coping style will be assessed with EB, which categorizes individuals as: (1) introversives who tend to meet basic needs through inner life, consider alternatives prior to taking action, and keep feelings at a peripheral level during problems solving; (2) extratensives who meet their basic needs through interaction with the world, merge thinking and feeling in problem solving, and engage in trial and error activity; or (3) ambitents who are inconsistent in their use of either of the above styles (Exner, 1993). Level of cognitive processing, operationalized as zf, assesses the extent an individual is open to the complexity of stimuli and engages in organization of this information (Exner, 1993). Level of affective processing, operationalized as EA assesses openness to affective experiences and the development of an inner life (Exner, 1993). As previously noted, most literature on the sequelae of physical abuse focuses on physical injury or short-term emotional sequelae. This study will add to the knowledge about long-term psycho-social functioning of individuals who were physically abused as children. Another specific contribution will be

the reporting of test data on interpersonal functioning; the trauma literature tends to rely on clinical reports of interpersonal functioning as opposed to performance on standardized measures.

Hypotheses

(1) It is hypothesized that compared with the non-trauma group the trauma group will demonstrate significantly more impaired affective, cognitive, and interpersonal functioning on both the MMPI-2 and on the Rorschach. In addition, the trauma group is expected to show greater distress on the MMPI-2 generalized distress measures (MeanCI, PK, and PS) than the non-trauma group. These findings are predicted based on: (a) attachment theory (e.g., Alexander, 1992; Bowlby, 1997) which predicts maltreated children are more likely to experience insecure attachment and insecure attachment is associated with greater distress; (b) the literature describing the impact of trauma (e.g., Briere, 1992a; Herman, 1992; Kinzie, 1989); and (c) the empirical literature that demonstrates distress on the MMPI in a variety of traumatized populations (e.g., Engels et al., 1994; Khan et al., 1993; Orr et al., 1990).

(2) It is hypothesized that the Rorschach will indicate significantly greater impairment of functioning than the MMPI-2. This prediction is expected due to reports that: (a) the MMPI is subject to distortion due to a desire to be seen in a particular way (Acklin, 1993); (b) the Rorschach taps aspects of functioning subjects are unwilling or unable to report (Shapiro et al., 1990); (c) the Rorschach addresses defences against feeling bad; and (d) maltreated children tend to conceal psychological difficulties.

(3) The inclusion of coping style (as indicated by EB) is expected to improve

description of the specific areas of impaired functioning within the trauma group given the mediating function of coping in response to trauma (e.g., Jones & Barlow, 1990). The subgroups: introversive, extratensive, and ambitent are expected to show differential response patterns on the MMPI-2 and Rorschach variables (Exner, 1993). It is predicted that there will be a significant interaction between trauma group and coping style . The symptom pattern associated with trauma has previously been related to adaptive style (Herman, 1992) with active coping skills associated with resilience (Herman, 1992; Jones & Barlow, 1990). There is also evidence to suggest that traumatized individuals are more likely to be ambitensive (e.g., Hartman et al., 1990; Kaser-Boyd, 1993).

(4) It is also predicted that in the trauma group, higher levels of cognitive and affective processing (zf and EA) will be significantly associated with greater levels of distress (higher MMPI-2 MeanCI) and that the opposite will hold true for the no trauma group. This finding is expected based on: (a) reports that cognitive and emotional constriction is a coping and survival strategy for maltreated children (Herman, 1992; Shengold, 1979); (b) empirically, Leifer et al. (1991) and Shapiro et al. (1990) found that zf and EA were correlated with greater distress in their abuse group and negatively correlated with distress in their non-abused group; and (c) Lovitt's (1993) report that the avoidance of affective stimuli and simplistic processing of information on the Rorschach may facilitate "normal" functioning on the MMPI-2.

METHOD

Participants

Subjects were 86 female introductory psychology students between the ages of 18 and 24 from the University of Manitoba. Females were chosen to facilitate comparison with the larger body of abuse literature and to provide a more homogeneous sample. Given that males and females have different experiences and reactions to abuse (e.g., Peake, 1987) a much larger sample would have been required to permit gender comparisons. The age restriction was used to increase homogeneity of the sample utilizing the most frequently occurring age group within the selected population. They were selected from two larger studies that examined other aspects of trauma history. Selection was guided by willingness to participate in a follow-up study and history of trauma. Based on the above criteria subjects included 46 who reported a history of physical abuse that resulted in some form of injury by a parent or caregiver, a history of sexual abuse before age 17, or a history of some other form of childhood trauma (trauma group) and 40 subjects who reported no history of trauma (non-trauma group). All subjects participated in the study for experimental credit. They were given the option of discontinuing participation at any time during the study without academic penalty.

Measures

Background Information Sheet. The Background Information Sheet consists of 17 questions covering demographic data and a number of questions pertinent to another study. This questionnaire is located in Appendix B. The current study examines only the demographic information including age, ethnicity, socio-economic status (SES), living

situation, parental relationship status, and current involvement in an intimate relationship.

Family Conflict Questionnaire. The Family Conflict Questionnaire is a five-item questionnaire asking the subject if they experienced any of eight types of violence prior to the age of 17. This questionnaire asks about the frequency of occurrence, the perpetrator of the violence, any injuries resulting from the violence, and if the subject perceives herself as having been physically abused. This questionnaire is located in Appendix C.

History of Unwanted Sexual Contact Questionnaire. This three-part questionnaire asks the subject about unwanted sexual experiences prior to age 17 with someone at least five years older, unwanted sexual experiences prior to age 17 with someone less than five years older, and unwanted sexual experiences after their 17th birthday (see Appendix D).

MMPI-2. The MMPI-2 (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) is a 567-item self-report measure of personality functioning. It has been normed on 2600 subjects and includes validity, clinical, supplementary, and content scales. These scales have adequate short-term (2 week to one month) and long-term (1 year) test-retest reliability (Greene, 1991). Specific variables of interest are the clinical scales (with the exception of Scale 5, which is unlikely to be associated with psychological distress) and two supplementary PTSD scales, the PK and PS. In addition, a generalized distress measure was calculated by averaging the T scores for all the clinical scales except for Scale 5 (MeanCI). The average clinical T score has been used as a measure of overall emotional disturbance (Khan, Welch, & Zillmer, 1993). Variables used in this study are summarized in Appendix A. Validity of the profiles was assessed by examining the Cannot Say Score (?), Lie Scale (L), the difference between the Infrequency Scale (F) and

the Back Side F Scale, the Subtle Defensiveness Scale (K), True Response Inconsistency (TRIN), and Variable Responding (VRIN).

To statistically control error rate through the use of multivariate analyses of variance (MANOVA's) the MMPI-2 variables were categorized according to area of functioning. Categories were chosen from the Comprehensive Model of Trauma Impact (Koverola, 1992), which recognizes there is overlap and interrelationships among the categories. Scales 2, 7, and 9 were assigned to the Affective category based on their emphasis on depression (Scale 2), anxiety (Scale 7), and hypomania (Scale 9). Scales 1, 3, and 8 were assigned to the Cognitive category due to their emphasis on preoccupation with health concerns (Scale 1), tendency to focus on physical problems and use repression (Scale 3), and unconventionality and self-doubt (Scale 8). Scales 4, 6, and 0 were assigned to the Interpersonal category due to their emphasis on externalizing blame (Scales 4 and 6); manipulation and aggression in relationships (Scale 4); interpersonal guardedness, mistrust, and suspicion of others (Scale 6); and social insecurity, social withdrawal, and submissiveness (Scale 0). PK, PS, and MeanCI were classified as general measures of distress.

There has been some controversy in the literature about using raw scores versus standardized scores (T-scores) and K-corrected versus non-K-corrected scores in MMPI research (e.g., Butcher & Tellegen, 1978). In this study T-scores will be used in the analyses of data rather than the raw scores as the T-scores offer the advantage of having the same meaning for a given T-score across the clinical scales. This means that clinical significance is indicated by a T-score greater than 65 regardless of the raw score. K-

corrected scores will be used as these scores are the most familiar to clinicians and are the scores used in determining profile codetypes.

Rorschach. The Rorschach is a projective assessment tool that was administered and scored using Exner's (1986a) Comprehensive System. This system provides evaluations of validity, stress tolerance and control, coping, cognition, affect, self-image, and interpersonal functioning. Exner (1986a) provides normative data on 600 non-patient adults. The variables examined in this study (EB, Afr, S, L, X-%, H, COP, zf, EA, and T) have reasonable one-year test-retest reliability (Exner, 1986a). Similar to the treatment of the MMPI-2 scales, Rorschach variables were categorized as measures of affective, cognitive, or interpersonal functioning. Affective functioning was assessed using Afr (receptivity to emotionally toned stimuli) and S (dissatisfaction and difficulty handling anger); cognitive functioning using L (attention to complexity of stimuli) and X-% (perceptual distortion); and interpersonal functioning using T (interpersonal distance or neediness), H (interest in others, social perception based on real experience), and COP (perception of positive interactions between people and willingness to participate in these interactions). EB was used to classify coping style as introversive, extratensive, or ambitent. In Exner's (1986) normative sample, 40% of subjects were classified as introversive, 36% as extratensive, and 24% as ambitent. Zf and EA were used as measures of affective and cognitive processing. The Comprehensive System does not include any variables analogous to the general measures of distress on the MMPI-2. A description of the Rorschach variables used in this study is provided in Appendix A.

Procedure

Of the original large study (Data 1: $n > 500$) an insufficient number of subjects who reported a history of physical abuse and no history of sexual abuse were available for the follow-up study. Therefore, subjects were also drawn from a second large study (Data 2: $n > 800$). In these larger studies subjects were administered packages of questionnaires in groups of 150 subjects. Part of this package included the Background Information Sheet, Family Conflict Questionnaire, and the History of Unwanted Sexual Contact Questionnaire. At the end of the questionnaires, a separate sheet asked students if they wished to participate in a follow-up study involving approximately three hours of individual psychological testing (see Appendix E). The Family Conflict Questionnaire and History of Unwanted Sexual Contact Questionnaire of students who indicate interest in the follow-up study were examined for history of abuse. Subjects were randomly selected by a research assistant so that the primary researcher was blind to trauma status until all data were collected and scored.

Selected subjects were contacted by the researcher and individual appointments made to administer the Rorschach and the MMPI-2. Testing was preceded by the subject reading and signing a consent form for participation (see Appendix F). Students were informed that they could withdraw their participation at any time without academic penalty. Administration of these two tests was counterbalanced with an equal number in each group receiving each test first (test order was assigned by the research assistant). The Rorschach was administered and scored according to the Exner system. Standard administration and scoring instructions were followed for the MMPI-2 (Hathaway &

McKinley, 1989). On completion of the test administration, subjects were given a written feedback sheet regarding the study (see Appendix G) and informed that a written summary of the results would be available on completion of the study.

The structural summaries for the Rorschach were calculated with the Rorschach Interpretation Assistance Program, Version 2 (Exner, Cohen, & Mcguire, 1990). Interscorer agreement was calculated on 23% of the Rorschachs as percentage agreement for location, developmental quality, determinants, form quality, content, populars, z-scores, and special scores as recommended by Weiner (1991). Percentage agreements, respectively, were 91.1, 86.7, 80.1, 81.4, 79.5, 95.4, 83.0, and 72.2. Disagreements on determinants, content, and special scores were frequently associated with one scorer coding multiple variables while the other scorer coded a single variable. Disagreements on form quality were always within one point, for example, + versus o, o versus u, and u versus -. Due to the relatively low agreement on determinants, content, form quality, and special scores and the importance of specific variables to this study, separate agreement was calculated for t, h, X-%, and COP. Percentage agreements were 97.7, 97.5, 88.6, and 95.6, respectively.

Although the original intent was to examine physical abuse as the only form of trauma, an insufficient number of these subjects were available given that physical abuse frequently co-occurs with other forms of violence. Therefore, the trauma group did not exclude individuals with a history of other forms of trauma. The trauma group consisted of 8 subjects who endorsed a history of violence that resulted in some form of injury (bruises or scratches, cuts, injuries requiring medical treatment, or other injuries) at the

hands of a parent or caretaker and 13 subjects who experienced both a history of physical abuse as above and a history of sexual abuse. The non-trauma group included 40 subjects who reported no physical or sexual abuse and no history of other trauma. Twenty-five subjects were omitted from the study: 12 who reported experiencing sexual abuse and did not meet the criteria for physical abuse, and 13 who reported a history of some other form of trauma. For an analysis of these other traumatized subjects see Appendix I. The deletion of sexually abused and other trauma subjects resulted in a final sample of 40 no-trauma subjects and 21 subjects with a reported history of physical abuse. Table 10 summarizes the exclusion of subjects.

Design

This study is a non-experimental, correlational design (Cook & Campbell, 1979). Subjects were assigned to groups according to retrospective self-reported history of childhood abuse. The groups were compared on the variables of interest.

Table 10

Exclusion of Subjects

No Trauma		Deleted	Final N
		1 outlier	
40		4 invalid	35
<hr/>			
86	Px Only		
	8		
	Px & Sx	1 invalid	
Trauma	13	12 Sx only	
	Sx Only	13 Other T	
46	12		20
	Other		
	Trauma		
	13		

Note. Px = Physical abuse only, Px & Sx = Both physical and sexual abuse, Sx = Sexual abuse only, Other T = Other trauma.

RESULTS

Sample Description

To determine if there were differences between the sub-samples derived from the two data sources (data 1: $n = 42$; data 2: $n = 44$), they were compared in terms of age, ethnicity, SES, living situation, parental relationship status, and involvement in an intimate relationship based on the demographic data from the Background Information Sheet (see Appendix B). Due to the low numbers of individual minority subjects, the chi square for ethnicity was calculated by comparing Caucasian to minority subjects using the chi square correction formula due to one cell with an expected frequency less than 10 but greater than five. For SES, there were relatively few subjects in the lower SES levels in both groups. Therefore, the chi square for SES was calculated using three groups: $< \$25,000$, $\$25,000$ to $45,000$, and $> \$45,000$. The chi square for parental living situation was calculated on whether parents were living together or not because there were too few subjects whose parents were divorced, separated, or widowed. This calculation also used the correction formula due to a cell with a low expected frequency.

Between the two sub-samples, there were no significant differences in age ($t = 1.55$, $df = 85$, $p > .05$), ethnicity ($\chi^2 = .2612$, $df = 1$, $p > .05$), SES ($\chi^2 = 0.125$, $df = 2$, $p > .05$), living situation ($\chi^2 = 0.475$, $df = 1$, $p > .05$), whether parents were living together or not ($\chi^2 = 0.002$, $df = 1$, $p > .05$), or involvement in an intimate relationship ($\chi^2 = 0.002$, $df = 1$, $p > .05$). Given the absence of differences, the subsamples were combined for all subsequent analyses.

Within the total sample ($n = 86$) the mean age was 18.9 ($sd = 1.41$). Of the 86 subjects who reported their ethnic background, 76.7% were Caucasian, 1.2% were Black, 15.1% were Asian, 1.2% were Aboriginal, and 5.8% classified their background as "Other". A summary of the percentage of subjects in each of the SES categories is contained in Table 11. As can be seen from this table, the majority of students live in a family with an annual income greater than \$35,000.

Table 11

Annual Family Income

Annual Income	Percentage of Subjects (n)
< \$15,000	7.4% (6)
\$15,000 - 25,000	6.2% (5)
\$25,000 - 35,000	8.6% (7)
\$35,000 - 45,000	18.5% (15)
\$45,000 - 55,000	22.2% (18)
> \$55,000	<u>37.0%</u> (30)
Total	99.9%* (81)

Note. * Total differs from 100% due to rounding error.

Eighty percent of subjects reported that they were still living with their parents (59 of 74 subjects completing this question). The majority of subjects (83.9%) reported their parents live together. Of the remaining subjects, 10.3% had parents who were divorced,

2.3% had parents who were separated, and 3.4% described their parental status as "Other". Of the 82 subjects reporting on relationship status, 59.8% were currently in an intimate relationship.

Demographic variables were then analyzed for differences between subjects who reported no history of trauma and those who reported a history of trauma using the same procedure as that used for analyzing the two data sources. There was a significant difference in age ($t = -2.86$, $df = 85$, $p < .05$) with the subjects reporting a trauma history being older (mean = 19.35, $sd = 1.72$) than the subjects who reported no trauma history (mean = 18.49, $sd = 0.87$). There were no significant differences in ethnicity ($\chi^2 = 0.441$, $df = 1$, $p > .05$), SES ($\chi^2 = 1.63$, $df = 2$, $p > .05$), living situation ($\chi^2 = 0.14$, $df = 1$, $p > .05$), parental marital status ($\chi^2 = 0.87$, $df = 1$, $p > .05$), or involvement in an intimate relationship ($\chi^2 = 2.79$, $df = 1$, $p > .05$).

Physical Abuse. The types of abusive behaviour reported are summarized in Table 12. On average, these subjects reported experiencing four different types of abusive behaviour at the hands of a parent or adult caregiver. As can be seen, all 21 of the subjects classified as physically abused reported being hit or slapped really hard. The least frequently reported abuse was burning or scalding, which was reported by 9.5% of the physically abused subjects. The majority of physically abused subjects reported being maltreated by both parents (66.7%). Mothers were implicated by 85.7% of subjects; fathers by 76.2% of subjects; and step-fathers by 4.8% of subjects. No step-mothers were identified as perpetrators.

Table 12

Number of Subjects Reporting Each Type of Physically Abusive Behaviour

Abusive Behaviour	Frequency				Total n	Percentage
	1-2	3-10	11-20	≥20		
Hit or slapped you really hard	3	8	4	6	21	100.0%
Hit you with an object	6	4	2	3	15	71.4%
Push, throw or knock you down	8	5	0	1	14	66.7%
Beat or kicked you	4	5	2	1	12	57.1%
Pull your hair	3	4	2	0	9	42.9%
Scratch or dig fingernails in	5	1	0	1	7	33.3%
Twist or pull your arm or leg	4	2	1	0	7	33.3%
Burn or scald you	2	0	0	0	2	9.5%

All 21 of these subjects reported receiving bruises or scratches as a result of these assaults, six (28.6%) reported being cut, and one subject reported injuries of sufficient severity to warrant medical intervention. No other injuries were reported.

Five subjects (23.8%) considered themselves physically abused as a child. These individuals reported experiencing significantly more types of abuse ($\bar{x} = 5.2$) than reported by subjects who did not classify themselves as abused ($\bar{x} = 3.8$; $\chi^2 = 4.91$, $p < .05$). Sixty

percent of subjects who classified themselves as abused reported more than one type of injury compared with 25% of subjects who did not consider themselves abused.

Sexual Abuse. Subjects were identified as both physically abused and sexually abused if they reported unwanted sexual experiences that occurred before age 17 with someone at least five years older than the subject. On average, these subjects reported experiencing 2.1 different types of sexually abusive behaviour. The percentage of subjects who reported each type of behaviour follows: sexual kissing (61.5%); fondling of buttocks, thighs, breasts or genitals (76.9%); insertion of objects in vagina or anus (15.4%); oral sex (15.4%); anal intercourse (7.7%); attempted vaginal intercourse (30.8%); and completed vaginal intercourse (7.7%). Sixteen perpetrators were identified by these 13 subjects. The majority of perpetrators were known to the subject (87.5%). Forty-three percent of the perpetrators were male relatives (father, 6.3%; step-father, 6.3%; brother, 12.5%; male cousin, 12.5%; and other male relative, 6.3%). The remaining known perpetrators included: male neighbour (6.3%), male friend of parents (18.8%), boyfriend (12.5%), and male friend (6.3%). None of the reported perpetrators were women. The use of threat or force was reported by 69.2% of the subjects.

Descriptive Statistics on Dependent Measures

To analyze the data, dependent variables were categorized as affective, cognitive, interpersonal, or generalized distress. Affective variables included Afr and S from the Rorschach and Scales 2, 7, and 9 from the MMPI-2. Cognitive variables included the Rorschach variables L and X-% and the MMPI-2 Scales 1, 3, and 8. Interpersonal variables included T, H, and COP from the Rorschach and Scales 4, 6, and 0 from the

MMPI-2. Generalized distress variables included MeanCl, PK, and PS from the MMPI-2 (no analogous generalized distress measures are available for the Rorschach).

Of the original 40 no-trauma subjects, the MMPI-2 was assessed as invalid for four subjects, all due to the L scale T-scores being greater than 65 (Greene, 1991). One Trauma subject's MMPI-2 was also invalid due to L being greater than 65. All other validity indicators were within acceptable limits.

The data were examined for within group outliers, defined as scores falling greater than three standard deviations from the mean. Based on the recommendations of Tabachnick and Fidell (1996) one subject was deleted from the no-trauma group on the assumption that this subject was not from the same population. This subject scored greater than three standard deviations above the group mean on four of the MMPI-2 variables (Scale 1 = 80, Scale 2 = 77, Scale 3 = 87, and MeanCl = 65.8). The remaining eight outlying scores were changed to one unit larger than the next most extreme score to preserve the deviance of the case without perturbing the analyses (Tabachnick & Fidell, 1996). These outliers were within six subjects from the no-trauma group and all were on Rorschach variables (Ag = 5, COP = 5, H = 9, Lambda = 2.17, Afr = 1.25, zf = 41, EA = 25.5, MOR = 10). All of these subjects had a higher than average number of responses to the Rorschach, which would have influenced these scores. The adjusted scores were used for all subsequent analyses.

The data were then tested for normality using the Wilkes test. Several of the Rorschach variables were not normally distributed. Of these, S, Zf, EA, and H were highly correlated with the number of Rorschach responses ($r = .57, .77, .73$, and $.51$

respectively). Adjusting these variables for the number of responses by calculating ratios (variable/R) resulted in the variables being normally distributed. Lambda and Afr also failed to achieve a normal distribution and were corrected by a square root and log transformation respectively. Two other variables, Scale 6 and COP, also failed to achieve a normal distribution. The distribution for these variables was not corrected through log or square root transformations and it was decided that the benefits of further attempts at transformation would be outweighed by the increased difficulty interpreting the results. The effect of these variables not being normally distributed decreases the power of the test to detect a significant difference between the means.

Scatter plots were then examined to test for homogeneity of variance. The data transformations described above resulted in improved homogeneity on those variables. Heterogeneity was present for Scales 2, 4, 6, 7, 8, and 9, MeanCI, PK, and PS with the trauma group showing greater variability of scores than the no-trauma group. Given the magnitude of the differences between the group means, this heterogeneity was judged as satisfactory.

Group Comparisons

To determine if the physical abuse sub-group differed significantly from the physical and sexual abuse sub-group, multiple t-tests were performed. None of these tests were significant suggesting these sub-groups could be collapsed into one trauma group. Sub-group means are reported in Appendix I. Table 13 shows the means and standard deviations on the affective, cognitive, interpersonal and generalized distress variables for the no-trauma and the trauma groups.

Table 13

Means and Standard Deviations on Affective, Cognitive, Interpersonal, and Generalized Distress Variables

	No-Trauma	Trauma
Affective		
Afr	0.516 (0.239)	0.595 (0.259)
Log Afr	-0.753 (0.425)	-0.609 (0.440)
S	3.051 (2.282)	4.286 (2.795)
Adj S	0.126 (0.080)	0.168 (0.074)
Scale 2	45.829 (7.842)	56.650 (14.165)
Scale 7	52.629 (8.489)	58.550 (15.803)
Scale 9	53.029 (8.566)	64.200 (15.429)
Cognitive		
Lamda	0.606 (0.365)	0.553 (0.367)
Sq Lam	0.747 (0.221)	0.709 (0.231)
X-%	0.222 (0.100)	0.219 (0.099)
Scale 1	49.943 (8.110)	53.250 (9.193)
Scale 3	48.657 (7.787)	53.100 (10.789)
Scale 8	51.383 (6.571)	64.350 (16.452)
Interpersonal		
T	0.538 (0.720)	0.429 (0.507)
H	2.692 (1.490)	3.667 (3.055)
Adj H	0.111 (0.060)	0.140 (0.085)

Table 13 con't

	No-Trauma	Trauma
COP	1.103 (1.071)	1.286 (1.347)
Scale 4	47.857 (6.504)	62.500 (13.375)
Scale 6	48.143 (10.469)	55.400 (14.544)
Scale 0	45.486 (9.457)	50.500 (11.963)
Generalized Distress		
Mean CI	49.213 (4.206)	57.611 (9.894)
PK	50.114 (7.888)	63.750 (15.331)
PS	50.886 (7.995)	63.200 (13.900)

Note. No-trauma *n* for Rorschach variables = 39 and for MMPI-2 variables = 35. Trauma *n* for Rorschach variables = 21 and for MMPI-2 variables = 20.

Figure 3 plots the MMPI-2 Scores for the no-trauma and trauma groups. As can be seen in this figure, with the exception of L, K, and Scale 5, the no-trauma group scored lower than the trauma group.

Within the no-trauma group 33.3% ($n = 13$) of subjects were introversive, 25.6% ($n = 10$) were extratensive, and 41.0% ($n = 16$) were ambitent. Within the trauma group 47.6% ($n = 10$) of the subjects were introversive, 19.1% ($n = 4$) were extratensive, and 33.3% ($n = 7$) were ambitent. The difference between these proportions was not significant, $\chi^2 (2) = 1.19, p > .05$. Figures 4 and 5 show the mean MMPI-2 scores for the three EB styles in the no-trauma and trauma groups respectively. As can be seen in these figures, coping style did not differentiate average MMPI-2 Scores within these groups.

A 2 X 3 between subjects multivariate analysis of variance (MANOVA) was performed on five affective dependent variables: Scale 2, Scale 7, Scale 9, Log Afr, and Adjusted S (Adj S). Independent variables were group (trauma and no-trauma) and EB (introversive, extratensive, and ambitent). With the use of Wilks' criterion, the combined DVs were significantly affected by group, $F (5, 45) = 6.08, p < .01$ but not by EB, $F (10, 90) = 0.38, p > .05$, or by the interaction between group and EB, $F (10, 90) = 1.43, p > .05$. The results of the MANOVA and univariate evaluation of the dependent variables are summarized in Table 14. Traumatized subjects scored significantly higher than non-traumatized subjects on Scale 2 (mean of 56.7 versus 45.8) and Scale 9 (mean of 64.2 versus 53.0). Within cell correlations were not pooled because of the different pattern of correlations for the two groups.

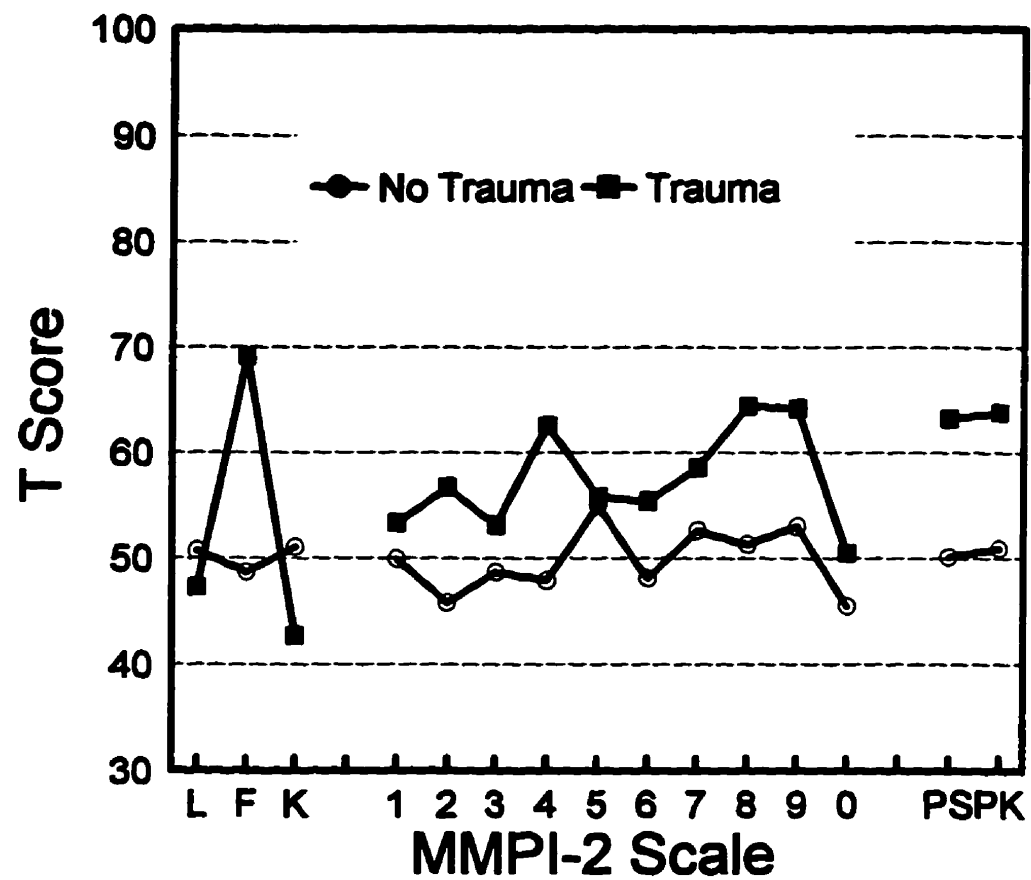


Figure 3. MMPI-2 Scores for the Trauma and No-Trauma Groups.

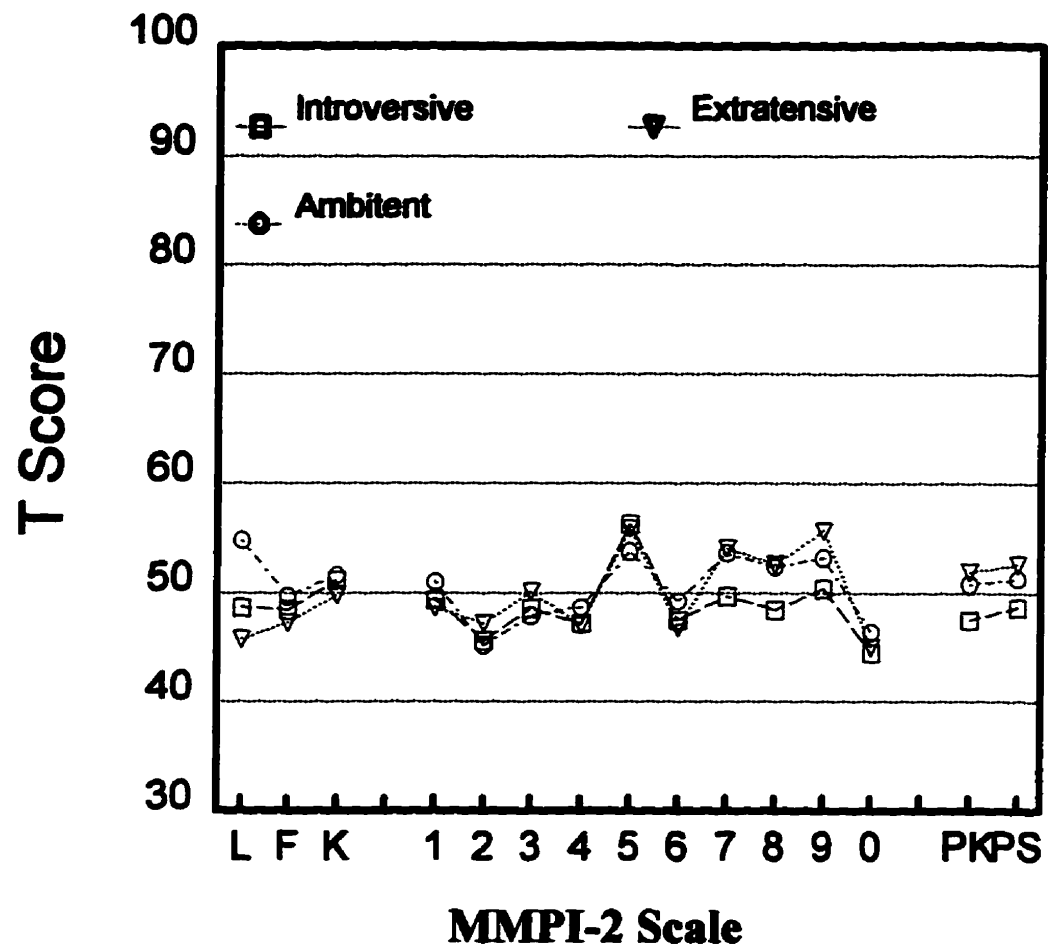


Figure 4. MMPI-2 Scores for EB Subgroups in No-Trauma Subjects.

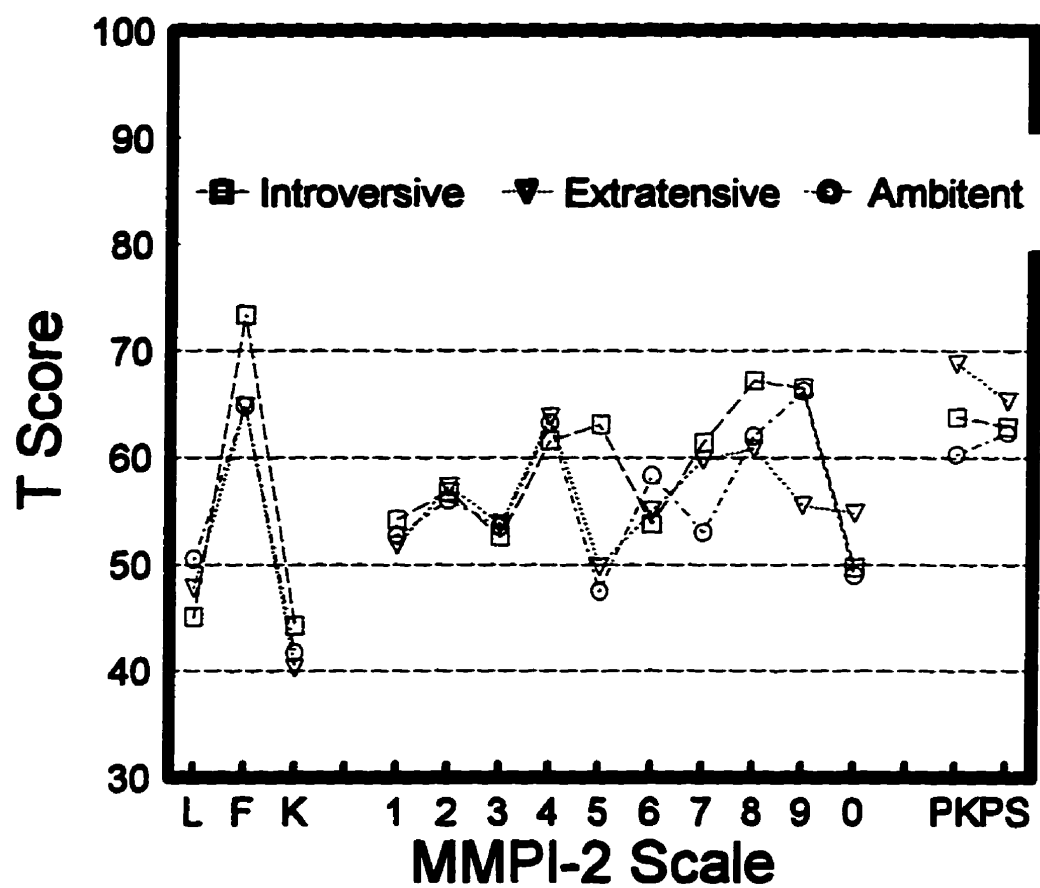


Figure 5. MMPI-2 Scores for EB Subgroups in Trauma Subjects.

Table 14

MANOVA of Affective Variables

Dependent	Effect	F*	df	p	η^2 *
Multivariate	GR*	6.08	5, 45	< .01	.40
	EB*	0.38	10, 90	ns	.08
	GR X EB	1.43	10, 90	ns	.26
Scale 2	GR	10.83	1, 49	< .01	.18
	EB	0.08	2, 49	ns	.00
	GR X EB	0.01	2, 49	ns	.00
Scale 7	GR	2.55	1, 49	ns	.05
	EB	0.35	2, 49	ns	.01
	GR X EB	1.28	2, 49	ns	.05
Scale 9	GR	7.97	1, 49	< .01	.14
	EB	0.43	2, 49	ns	.02
	GR X EB	1.85	2, 49	ns	.07
LogAfr	GR	1.55	1, 49	ns	.03
	EB	0.7	2, 49	ns	.03
	GR X EB	1.51	2, 49	ns	.06
Adjusted S	GR	3.63	1, 49	ns	.06
	EB	0.12	2, 49	ns	.00
	GR X EB	0.42	2, 49	ns	.03

Note.

GR = Group, EB = Erlebnistypus, Multivariate F = Wilks' Lambda, Univariate F = Type III SS, η^2 = partial η^2 for univariate analyses.

The intercorrelations between the affective variables for the two groups are shown in Table 15. In the no-trauma group Scale 2 was significantly correlated with both Scales 7 and 9 whereas in the trauma group Scale 2 was only significantly correlated with Scale 7.

A second 2 X 3 between subjects multivariate analysis of variance (MANOVA) was performed on five cognitive dependent variables: Scale 1, Scale 3, Scale 8, Sq Lam, and X-%. Independent variables were group (trauma and no-trauma) and EB (introversive, extratensive, and ambitent). With the use of Wilks' criterion, the combined DVs were significantly affected by group, $F(5, 45) = 2.79, p < .05$ but not by EB, $F(10, 90) = 0.31, p > .05$, or by the interaction between group and EB, $F(10, 90) = 0.90, p > .05$. The results of the MANOVA and univariate evaluation of the dependent variables are summarized in Table 16. Traumatized subjects scored significantly higher than non-traumatized subjects on Scale 8 (mean of 64.4 versus 51.4). Within cell correlations were not pooled because of the different pattern of correlations for the two groups. The intercorrelations between the cognitive variables for the two groups are shown in Table 17. In the no-trauma group Scale 1 was significantly correlated with Scale 3 whereas in the trauma group Scale 1 was significantly correlated with Scales 3 and 8 and Scale 3 was significantly correlated with Scale 8.

A third 2 X 3 between subjects MANOVA was performed on five interpersonal dependent variables: Scale 4, Scale 6, Scale 0, COP, and Adjusted H. Independent variables were group(trauma and no-trauma) and EB (introversive, extratensive, and ambitent). With the use of Wilks' criterion, the combined DVs were significantly affected by group, $F(5, 45) = 5.58, p < .01$ but not by EB, $F(10, 90) = 1.49, p > .05$, or by the

Table 15

Intercorrelations Between Affective Variables for No-Trauma and Trauma Groups

Subscale	Scale 2	Scale 7	Scale 9	LogAfr	Afr	Adj S	S
No Trauma Group (n = 35)							
Scale 2	--	0.49**	-0.33*	0.22	.27	-0.02	-.22
Scale 7		--	-0.09	0.12	.19	-0.21	-.17
Scale 9			--	0.04	.11	0.05	-.00
LogAfr				--	.96**	-0.11	-.12
Afr					--	-.15	-.16
Adj S						--	.80**
S							--
Trauma Group (n = 20)							
Scale 2	--	0.75**	-0.11	0.36	.29	0.08	-.01
Scale 7		--	0.28	0.37	.37	0.15	.30
Scale 9			--	0.05	.17	-0.06	.16
LogAfr				--	.98**	-0.4	-.09
Afr					--	-.39	-.09
Adj S						--	.76**
S							--

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

Table 16

MANOVA of Cognitive Variables

Dependent	Effect	F*	df	p	η^{2*}
Multivariate	GR*	2.79	5, 45	< .05	.24
	EB*	0.31	10, 90	ns	.07
	GR X EB	0.9	10, 90	ns	.17
Scale 1	GR	1.49	1, 49	ns	.03
	EB	0.14	2, 49	ns	.01
	GR X EB	0.15	2, 49	ns	.01
Scale 3	GR	2.57	1, 49	ns	.05
	EB	0.08	2, 49	ns	.00
	GR X EB	0.05	2, 49	ns	.00
Scale 8	GR	13.02	1, 49	< .01	.21
	EB	0.04	2, 49	ns	.00
	GR X EB	1.08	2, 49	ns	.04
Sq Lam	GR	0.1	1, 49	ns	.00
	EB	0.17	2, 49	ns	.01
	GR X EB	0.09	2, 49	ns	.00
X-%	GR	0.79	1, 49	ns	.02
	EB	0.73	2, 49	ns	.03
	GR X EB	2.99	2, 49	ns	.11

Note. GR = Group, EB = Erlebnistypus, Multivariate F = Wilks' Lambda, Univariate F = Type III SS, η^2 = partial η^2 for univariate analyses.

Table 17

Intercorrelations Between Cognitive Variables for No Trauma and Trauma Groups

Subscale	Scale 1	Scale 3	Scale 8	Sq Lam	Lam	X-%
No Trauma Group (n = 35)						
Scale 1	--	0.58**	0.31	-0.01	.01	0.11
Scale 3		--	0.18	0.05	.01	0.17
Scale 8			--	0.09	.07	0.08
Sq Lam				--	.98**	-0.12
Lam					--	-.11
X-%						--
Trauma Group (n = 20)						
Scale 1	--	0.73**	0.52*	0.06	.03	0.18
Scale 3		--	0.49*	0.03	.00	0.06
Scale 8			--	0.25	.19	0.04
Sq Lam				--	.99**	-0.01
Lam					--	-.03
X-%						--

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

interaction between group and EB, $F(10, 90) = 0.53$, $p > .05$. The results of the MANOVA and univariate evaluation of the dependent variables are summarized in Table 18. Traumatized subjects scored significantly higher than non-traumatized subjects on Scale 4 (mean of 62.5 versus 47.9) and Scale 6 (mean of 55.4 versus 48.1).

Within cell correlations were not pooled because of the different pattern of correlations for the two groups. The intercorrelations between the interpersonal variables for the two groups are shown in Table 19. In the no-trauma group none of the intercorrelations were significant whereas in the trauma group Scale 4 was significantly correlated with Scale 6 and COP was significantly correlated with Adjusted H.

For the analysis of T, values greater than two were changed to two given the similarity of interpretive significance for scores greater than one. Within the no-trauma group 59.0% ($n = 23$) of subjects' records contained no T responses, 28.2% ($n = 11$) contained one T, and 12.8% ($n = 5$) contained greater than one T response. Within the trauma group 57.1% ($n = 12$) of subjects' records contained no T responses, 42.9% ($n = 9$) contained one T response, and no records contained greater than one T response. The difference between these proportions was not significant, $\chi^2(2) = 3.58$, $p > .05$.

A fourth 2 X 3 between subjects MANOVA was performed on the three generalized distress dependent variables: MeanCI, PK, and PS. Independent variables were group (trauma and no trauma) and EB (introversive, extratensive, and ambitent). With the use of Wilks' criterion, the combined DVs were significantly affected by group, $F(3, 47) = 6.18$, $p < .01$ but not by EB, $F(6, 94) = 1.03$, $p > .05$, or by the interaction

Table 18

MANOVA of Interpersonal Variables

Dependent	Effect	F*	df	p	η^2 *
Multivariate	GR*	5.58	5, 45	< .01	.38
	EB*	1.49	10, 90	ns	.26
	GR X EB	0.53	10, 90	ns	.11
Scale 4	GR	26.76	1, 49	< .01	.35
	EB	0.12	2, 49	ns	.00
	GR X EB	0.05	2, 49	ns	.00
Scale 6	GR	4.49	1, 49	< .05	.08
	EB	0.33	2, 49	ns	.01
	GR X EB	0.06	2, 49	ns	.00
Scale 0	GR	3.39	1, 49	ns	.07
	EB	0.25	2, 49	ns	.01
	GR X EB	0.37	2, 49	ns	.02
COP	GR	0	1, 49	ns	.00
	EB	1.72	2, 49	ns	.07
	GR X EB	1.53	2, 49	ns	.06
Adjusted H	GR	1.04	1, 49	ns	.02
	EB	5.94	2, 49	< .01	.20
	GR X EB	0.7	2, 49	ns	.03

Note. GR = Group, EB = Erlebnistypus, Multivariate F = Wilks' Lambda, Univariate F = Type III SS, η^2 = partial η^2 for univariate analyses.

Table 19

Intercorrelations Between Interpersonal Variables for No Trauma and Trauma Groups

Subscale	Scale 4	Scale 6	Scale 0	Cop	Adj H	H
No Trauma Group (n = 35)						
Scale 4	--	0.27	-0.2	0.1	0.09	-.04
Scale 6		--	-0.15	0.03	0.24	.00
Scale 0			--	-0.14	-0.03	-.09
COP				--	0.26	.43**
Adj H					--	.74**
H						--
Trauma Group (n = 20)						
Scale 4	--	0.67**	0.39	-0.05	-0.14	.01
Scale 6		--	0.26	-0.09	-0.04	.21
Scale 0			--	-0.08	-0.11	-.19
COP				--	0.44*	.60**
Adj H					--	.82**
H						--

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

between group and EB, $F(6, 94) = 0.98, p > .05$. The results of the MANOVA and univariate evaluation of the dependent variables are summarized in Table 20. Traumatized subjects scored significantly higher than non-traumatized subjects on MeanCI (mean of 57.6 versus 49.2), PK (mean of 63.8 versus 50.1) and PS (mean of 63.2 versus 50.9). Within cell correlations were not pooled because of the different pattern of correlations for the two groups. The intercorrelations between the generalized distress variables for the two groups are shown in Table 21. While the three measures were significantly correlated with each other in both groups, the strength of the association was greater in the trauma group.

Cognitive and Affective Processing

A one-way between-subjects analysis of covariance (ANCOVA) was performed on MeanCI. The independent variable was group (trauma and no-trauma). Covariates were adjusted zf and adjusted EA (cognitive and affective processing). Means and standard deviations on zf and EA are summarized in Table 22. The results of the ANCOVA are summarized in Table 23. There was a significant main effect for group, $F(1, 49) = 21.11, p < .01$ and for the interaction between group and adjusted zf, $F(1, 49) = 19.16, p < .01$. The higher the level of cognitive processing in the trauma group, the lower the average clinical score on the MMPI-2. Conversely, in the no-trauma group the higher the level of cognitive processing, the higher the Mean CI. Cognitive processing was significantly related to distress but in the opposite direction to that predicted. The interaction between group and adjusted EA was not significant.

Table 20

MANOVA of Generalized Distress Variables

Dependent	Effect	F*	df	p	η^2*
Multivariate	GR*	6.18	3, 47	< .01	.28
	EB*	1.03	6, 94	ns	.12
	GR X EB	0.98	6, 94	ns	.12
MeanCI	GR	15.73	1, 49	< .01	.24
	EB	0.01	2, 49	ns	.00
	GR X EB	0.26	2, 49	ns	.01
PK	GR	17.96	1, 49	< .01	.27
	EB	0.74	2, 49	ns	.03
	GR X EB	0.52	2, 49	ns	.02
PS	GR	15.51	1, 49	< .01	.24
	EB	0.29	2, 49	ns	.01
	GR X EB	0.1	2, 49	ns	.00

Note. GR = Group, EB = Erlebnistypus, Multivariate F = Wilks' Lambda, Univariate F = Type III SS, η^2 = partial η^2 for univariate analyses.

Table 21

Intercorrelations Between Generalized distress Variables for No Trauma and Trauma Groups

Subscale	MeanCI	PK	PS
No Trauma Group (n = 35)			
MeanCI	--	0.47**	0.39*
PK		--	0.93**
PS			--
Trauma Group (n = 20)			
MeanCI	--	0.88**	0.90**
PK		--	0.96**
PS			--

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

Table 22

Means and Standard Deviations on zf and EA for the No-Trauma and Trauma Groups

Variable	No Trauma	Trauma
zf	14.90 (6.60)	16.00 (5.92)
Adjusted zf	0.61 (0.17)	0.66 (0.18)
EA	8.28 (4.68)	10.07 (5.85)
Adjusted EA	0.33 (0.11)	0.39 (0.13)

Note. No Trauma $n = 39$; Trauma $n = 21$.

Table 23

Analysis of Covariance of Mean CI

Source of Variance	E	df	p	η^2
Group	21.11	1, 49	< .01	.30
Adjusted Zf	4.47	1, 49	< .05	.08
Adjusted EA	0.27	1, 49	ns	.01
Adj Zf X Group Interaction	19.16	1, 49	< .01	.28
Adj EA X Group Interaction	2.51	1, 49	ns	.05

Note. F = Type III SS, η^2 = partial η^2 .

Analysis of effect size revealed that adjusted EA accounted for 5% of the variance (partial $\eta^2 = .05$). As can be seen in Table 24, which shows the intercorrelations between Mean CI, Adjusted zf, and adjusted EA, the correlations between distress and affective processing were not significant.

Figures 6 and 7 show the regression lines predicting Mean CI by Adj zf for the trauma group and the no-trauma groups respectively. Figures 8 and 9 show the regression lines predicting Mean CI by Adj EA for the trauma and no-trauma groups respectively.

Table 24

Intercorrelations Between Cognitive and Affective Processing and Distress for the No-Trauma and Trauma Groups

Variable	Mean CI	Adj zf	Zf	Adj EA	EA
No-Trauma Group (n = 35)					
Mean CI	--	.42*	.10	-0.03	-.09
Adj zf		--	.46**	.37*	.11
Zf			--	.36*	.81**
Adj EA				--	.65**
EA					--
Trauma Group (n = 20)					
Mean CI	--	-.54*	-.10	-0.16	-.10
Adj zf		--	.34	.59**	.10
Zf			--	.55**	.85**
Adj EA				--	.71**
EA					--

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

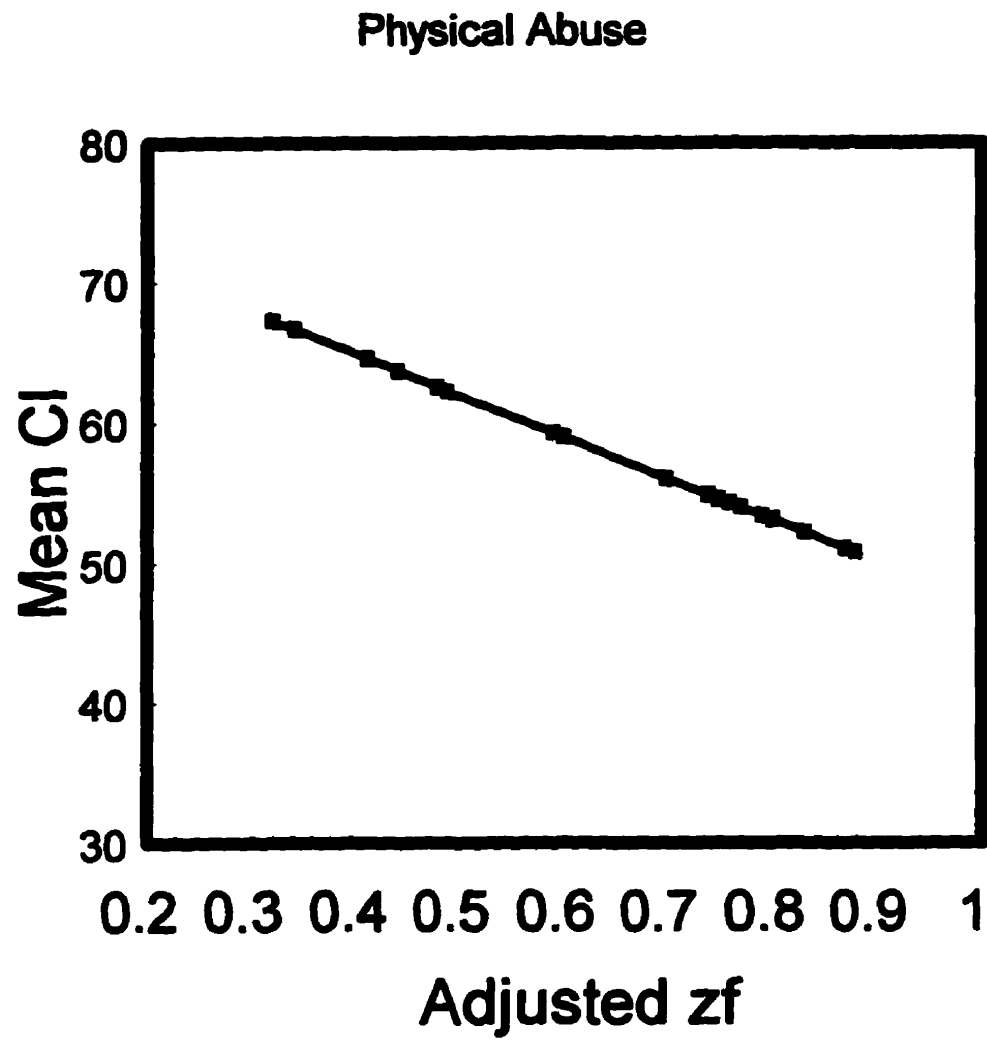


Figure 6. Regression slope predicting Mean CI by Adjusted zf for the Trauma Group.

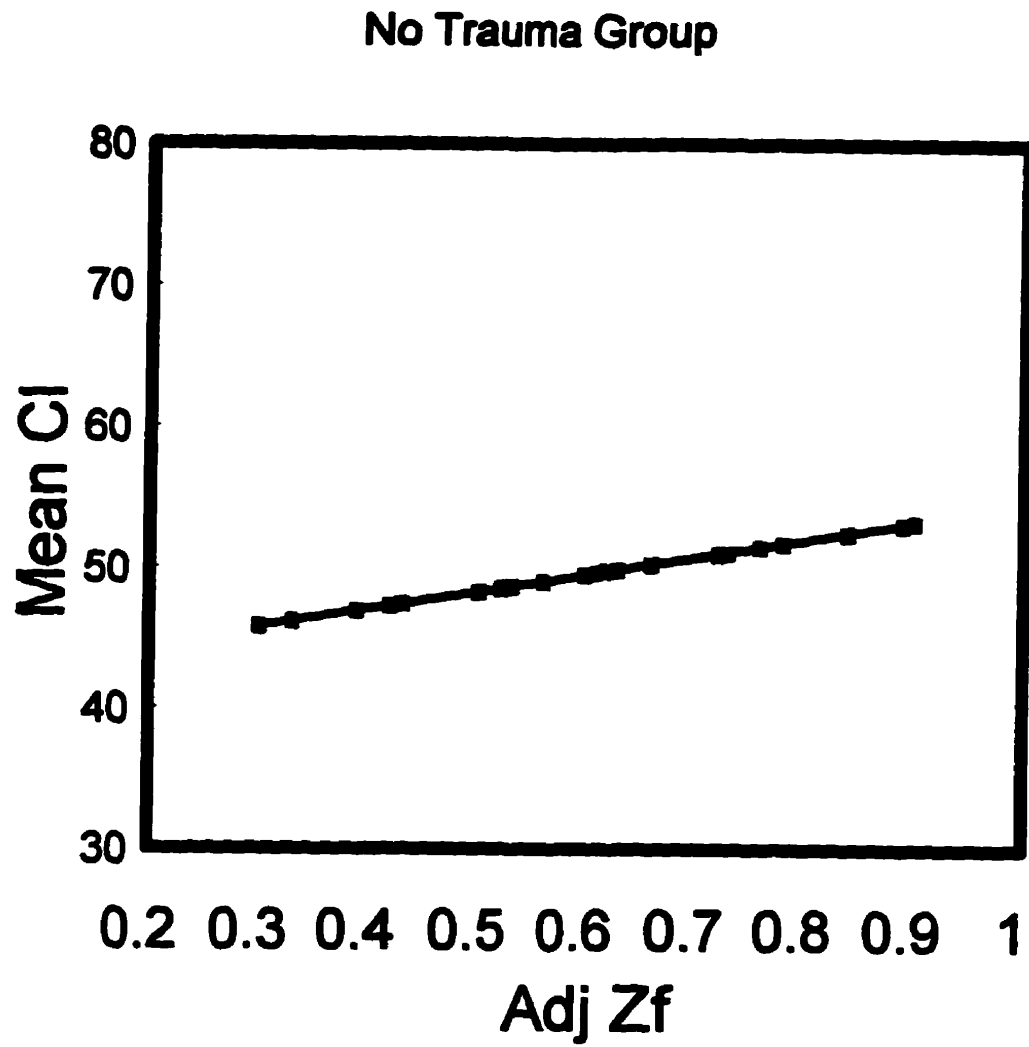


Figure 7. Regression slope predicting Mean CI by Adjusted zf for the No Trauma Group.

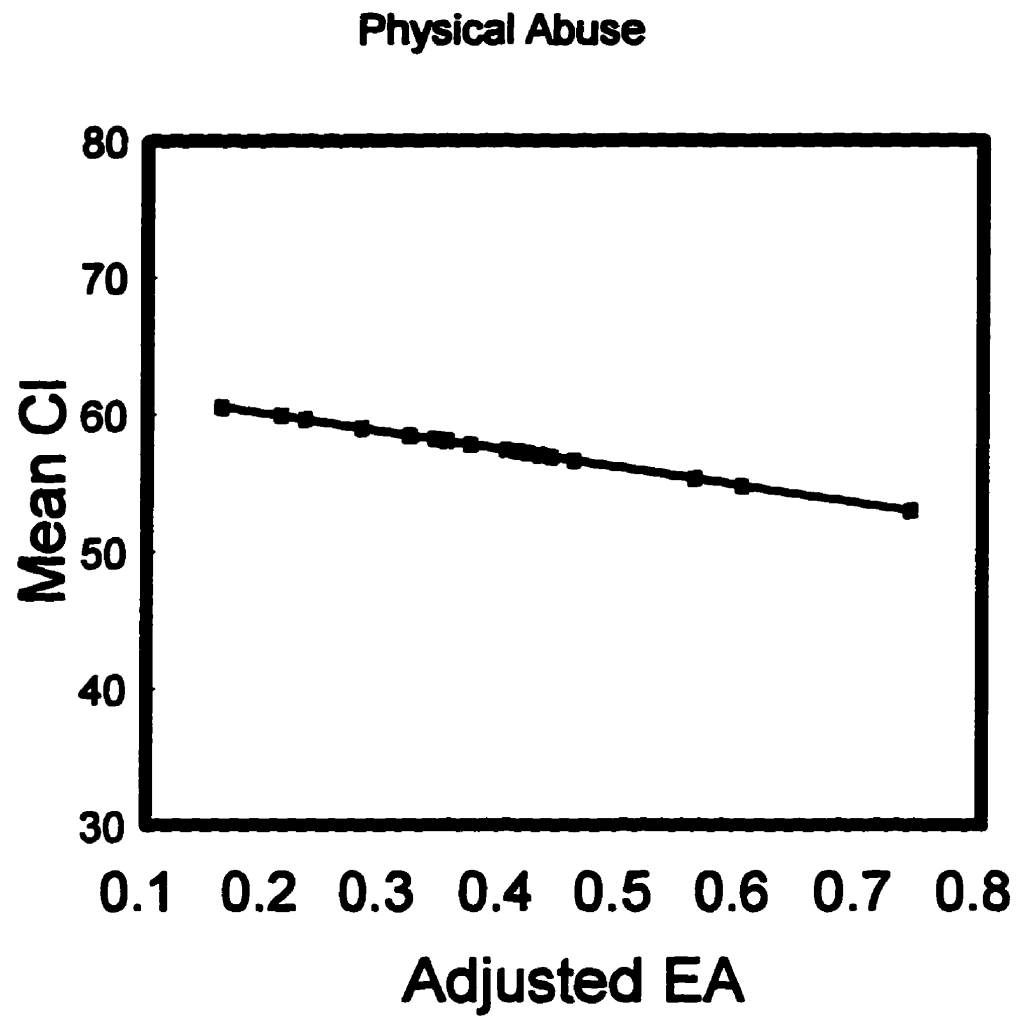


Figure 8. Regression slope predicting Mean CI by Adjusted EA for the Trauma Group.

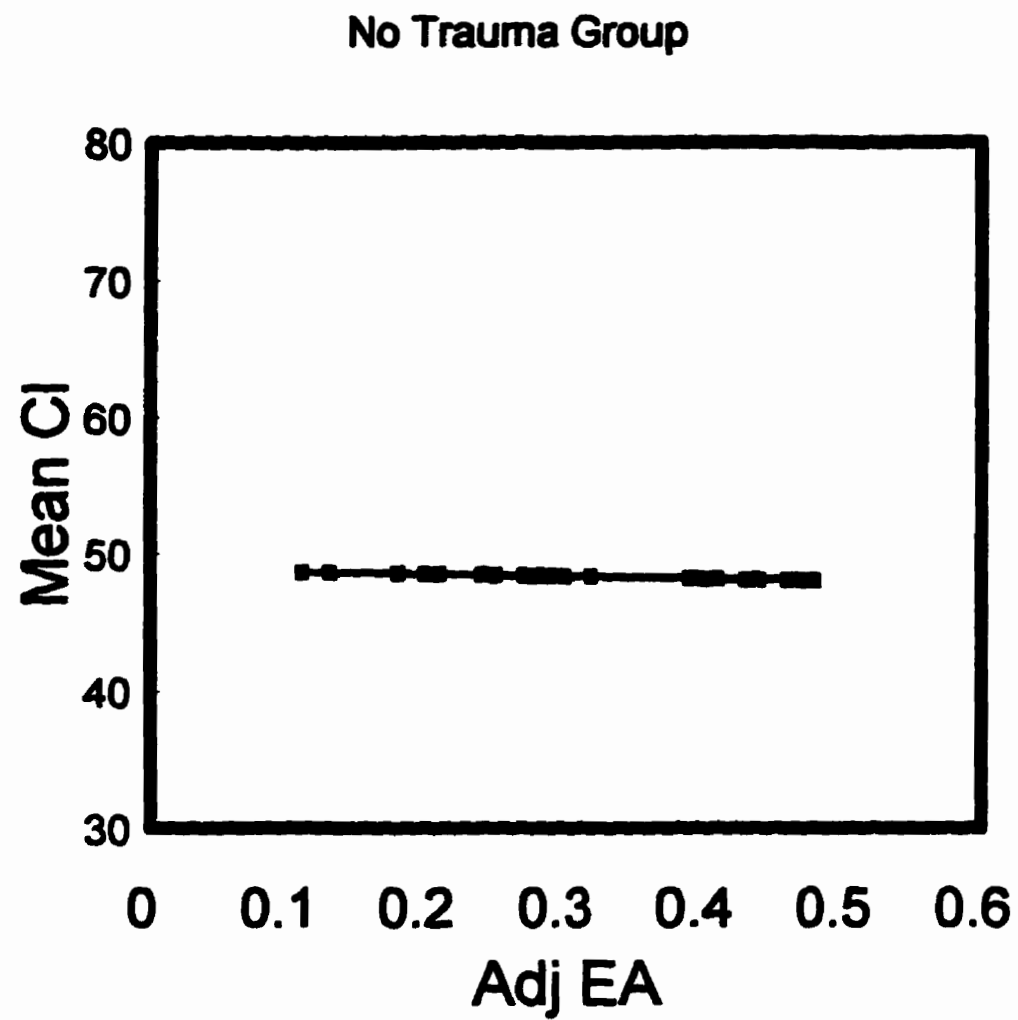


Figure 9. Regression slope predicting Mean CI by Adjusted EA for the No-Trauma Group.

DISCUSSION

Overview

The results of this study support hypothesis one, which predicted the trauma group would demonstrate greater affective, cognitive, interpersonal, and generalized distress than the no-trauma group. There was a significant main effect for group in each of the four areas investigated with the group means in the more distressed range for the trauma group. Hypothesis two, which predicted the trauma group would show greater distress on the Rorschach than on the MMPI-2 variables, was not supported. In fact, eight of the 12 MMPI-2 variables showed a significant difference between the two groups, while none of the seven Rorschach variables were significantly different between the two groups. Hypothesis three, which predicted coping style would influence the pattern of results on the dependent measures, was not supported. None of the four interactions between coping style and group were significant suggesting that coping style is not a significant predictor of affective, cognitive, interpersonal, or generalized distress functioning as measured in this study. Hypothesis four, which predicted levels of cognitive and affective functioning would have a differential impact on trauma and no-trauma subjects, is supported for cognitive functioning, but in the opposite direction to that predicted. Trauma subjects with higher levels of cognitive functioning report less distress on the MMPI-2 than trauma subjects with lower levels of cognitive functioning. The opposite relationship holds for the no-trauma subjects. While not statistically significant, there was a trend for the trauma subjects with higher levels of affective processing to evidence lower distress than trauma subjects with lower levels of affective processing. In contrast, level

of affective processing had minimal effects on level of distress in no-trauma subjects.

The current findings are significant in that they provide empirical data regarding the long-term functioning of individuals who were physically abused as children, a group neglected by the bulk of the trauma literature. Given the probability that clinical samples will include a high proportion of individuals who have experienced physical abuse (e.g., Jacobson & Richardson, 1987), it is valuable that the measures used included two of the most widely used clinical psychological assessment tools. This study also adds to the growing body of data documenting a relationship between cognitive processing and response to trauma.

Hypothesis I: Affective, Cognitive, Interpersonal and Generalized Distress

The trauma group scored significantly higher than the no-trauma group in the affective, cognitive, interpersonal, and generalized distress categories of functioning. This finding is not surprising given the consistent findings that, on average, subjects with a trauma history experience greater distress than subjects without a history of trauma (e.g., Briere, 1992a; Herman, 1992). The impact on various areas of functioning has been particularly well documented for childhood sexual abuse (e.g., Briere, 1992a; Browne & Finkelhor, 1996). Given that the traumatic dynamics of physical abuse are hypothesized to be similar to those found in childhood sexual abuse (Finkelhor & Browne, 1985), it was expected that individuals who were physically abused by a caretaker would demonstrate distressed functioning in a number of areas. This study confirms that, indeed, individuals who were physically abused do experience difficulties in regulating affect and thoughts, and engaging in rewarding intimate relationships.

While the inclusion of subjects with a combined history of physical abuse and sexual abuse clouds this issue to some extent, the exploratory examination of the subgroups of trauma (Appendix H) reveals that subjects who describe only a history of physical abuse report greater distress than sexually abused subjects and subjects reporting a history of both physical and sexual abuse. This difference cannot be attributed to differences in the forms of physical abuse reported by the two groups (mean number of types = 4.1 and 4.2, respectively). Nor can the difference be attributed to whether subjects considered themselves abused or not (25% versus 23.1% respectively for the two groups). The only difference identified between the two groups was reported perpetrator of the abuse. Both groups had an equal percentage of subjects identifying both parents as perpetrators (62.5% and 61.5%). However, in the physical abuse only group more subjects reported that the only perpetrator was the father (25% versus 12.5% for mother only). This ratio was reversed in the combined abuse group where more subjects identified the mother as the only perpetrator (30.8% versus 7.7% for father only). Although this might seem to be a plausible reason for group differences, it is likely an unstable finding due to the small number of subjects in each group reporting abuse by only one parent (3 in the physical abuse only group and 5 in the combined abuse subgroup. It might also be argued that the type of sexual abuse experienced by these subjects was relatively minor. However, examination of this data reveals that 30.8% of these subjects experienced penetrating sexual acts, a form of abuse that is typically associated with greater distress (e.g., Kendal-Tackett et al., 1993).

The finding that physically abused only subjects report greater distress than

combined abuse subjects requires replication due to the small number of subjects in each sub-group. However, one might speculate that the greater distress reported by the physical abuse only subjects might be related to a current societal phenomenon. More specifically, there has been significantly more media attention paid to sexual abuse; the focus being clearly that in childhood sexual abuse something wrong has been done to the victim. In contrast, media attention to physical abuse (with the exception of extreme cases that result in death) has focused on the debate as to whether or not parents have the right to “discipline” their children. In fact, there are recent instances of the legal system supporting corporal punishment. For example, the New York Times recently reported that a judge took off his belt and ordered a grandmother to whip an 18-year-old drug offender (“Judge Gets,” 1996). This emphasis on individuals deserving to be treated with violence can lead to self-blame on the part of the victim.

It is well known that, developmentally, children are egocentric and look to themselves to find the reason for a care giver’s anger or violence. Adopting an internal sense of “badness” occurs when the normal responses to maltreatment (anger and aggression) are labeled as bad and allows the child to maintain attachment to abusive care givers (Herman, 1992). This internalization of being “bad” is reinforced by parents who blame the child for parental behaviour that lacks control. Internalization of blame is consistent with Janoff-Bulman’s (1979) description of characterological self-blame. Compared with individuals who attribute ill-treatment to situational or behavioral factors, individuals who feel deserving of ill-treatment and blame their own character are more likely to experience lower self-esteem and greater levels of distress. Given this context, it

follows that individuals who are abused in the name of punishment learn to hate themselves, feel worthless, lack self-confidence, and in some cases give up on trying to “get it right” thus becoming rebellious. Clinically, addressing these attributions has been identified as an important component of intervention in group treatment of child sexual abuse survivors (Schubarth & Lanhan, 1991).

MMPI-2 Scale elevations. Identification of significant group differences on a number of the MMPI-2 scales bears further investigation of the group and individual differences within the context of the meaning of the scale elevations. However, the reader needs to keep in mind that the MMPI-2 is a clinical assessment tool and the current subjects are from a non-clinical sample. In fact, they are relatively high functioning individuals who are attending university. The purpose of using a clinical tool was not to identify psychopathology; rather, it was to demonstrate that physically abused subjects will show areas of difficulty on standardized clinical measures. It is the author’s opinion that areas of difficulty reflect a traumatic response to childhood maltreatment.

On average, the trauma subjects scored higher than the no-trauma subjects on Scales 2, 4, 6, 8, 9, Mean CI, PK, and PS. Interpretive descriptors, abstracted from Butcher (1990) and Greene (1991), that fall within the affective, cognitive, interpersonal, and generalized distress categories of functioning follow. The reader should note that some of the descriptors appear to conflict (e.g., depression and euphoria) due to subjects differing on the scales they score highly on. For example, subjects are unlikely to score high on both scales 2 and 9 (depression and mania). Therefore, these descriptors do not apply to all of the trauma subjects, but are characteristic of subjects who score highly on a

given scale. Similarly, the reader should keep in mind that the following descriptors are more accurately treated as hypotheses about idiographic functioning and are subject to verification or rejection based on profile codetype and other indices such as the MMPI-2 Harris-Lingoes subscales or Critical Item scales. All of the MMPI-2 clinical scales are heterogeneous in composition and each of the descriptors is consistent with only a subset of the scale items. For example, descriptors such as the use of projection (scale 6) or hostile and bellicious toward authority figures (scale 4) are derived from a small number of items on each of these scales and should be verified through one of the means suggested above.

Following each descriptor the number of the scale elevation associated with this characteristic will be provided in parentheses. Affectively physically abused subjects are more likely than no-trauma subjects to experience greater depression (2), euphoric mood (9), emotional lability (9), lack of deep affect (4), and/or general dysphoria (PK and PS). Cognitively, they are more likely to experience pessimism and lack of hope (2), guilt (2), self-depreciation (2), flight of ideas (9), impulsivity (9), grandiose thinking (9), unconventional thinking (8), difficulty with logic and concentration (8), poor judgement (8), avoidance of reality through fantasy (8), self-doubt (8), egocentric thinking (4), difficulty planning ahead (4), externalization of blame (4 and 6), and use of projection (6). Interpersonally, these subjects are more likely to be socially withdrawn (2), outgoing (9), narcissistic (9), have feelings of alienation (8), socially distant (8), hostile and rebellious toward authority figures (4), unreliable (4), irresponsible (4), manipulative and aggressive in relationships (4), suspicious and mistrusting of others (6), overly sensitive (6),

personalize the actions of others (6), and interpersonally guarded (6). Overall, these subjects are likely to present with greater general maladjustment (PK, PS, and MeanCI).

Within this study, 75% of the abused subjects have at least one elevation on one of the clinical scales and 50% have elevations on four or more scales. The most frequently occurring clinical elevation is on Scale 8 with 55% of the traumatized subjects scoring greater than 65. Elevations on Scale 8 are associated with social alienation, isolation, bizarre feelings and sensations, and general inadequacy (Butcher, 1990). This is closely followed by Scale 9 and PK with 50% of the subjects scoring in the clinical range. Elevations on Scale 9 are associated with overactivity, expansiveness, high energy, impulsivity, and being unrealistic (Butcher, 1990). Elevations on PK are associated with general maladjustment and dysphoric feelings and has been used to discriminate individuals with PTSD (Greene, 1991). Forty-five percent of the trauma subjects have clinical elevations on scale 4 and 40% have elevations on Scale 7 and PS. Elevations on Scale 4 are associated with externalization of blame, manipulation and aggression in relationships, lack of deep affect, and use of intellectualization (Butcher, 1990). Elevations on Scale 7 are associated with tension, anxiety, self-doubt, and neurotic anxiety (Butcher, 1990). Elevations on PS have similar meanings to those on PK.

The high proportion of subjects scoring in the clinical range on the PTSD scales, PK and PS, is consistent with the formulations of Briere (1992a) and Herman (1992) who emphasize the importance of recognizing that the symptoms reported by these subjects are consistent with post-traumatic symptoms. However, the PK scores are lower than that observed in combat veterans with PTSD. The current findings were compared with the

pattern of MMPI-2 elevations found in other populations with a trauma history. The one study that looked specifically at a history of physical abuse and MMPI scores in women, Engels et al. (1994), reported physical abuse only subjects had high points on Scales 2, 8, and 4 with additional elevations on Scales 1, 3, and 7 while the combined physical and sexual abuse group had elevations on Scales 4, 2, and 8 with additional elevations on Scales 1, 3, and 7. However, this population was significantly different in that they were older (mean age = 35) and were drawn from a clinical sample of individuals seeking treatment at an out-patient behaviour therapy clinic, primarily for anxiety and dysphoria. This latter characteristic may be responsible for the elevations on Scales 2 and 7, which were less prevalent in the current non-clinical population. The pattern of MMPI-2 elevations in this study is also somewhat different from the high points reported by Khan et al (1993) for a group of battered women (4, 6, and 8); by Scott & Stone (1986), who found Scales 4 and 8 most frequently elevated in women who were incest survivors; by Roberts et al. (1982), who found elevations on Scales 4 and 6 most common in combat veterans with PTSD; or by Litz et al. (1991), who found Scales 2 and 8 most frequently elevated in combat veterans with PTSD. Elevations on Scales 4 and 8 seem to be consistent for individuals with a history of childhood interpersonal violence.

The cluster of most frequent elevations on Scales 4, 8 and 9 poses some interesting questions about development within this population. On the original MMPI it was this triad of scales that were most frequently found in normal adolescents (Greene, 1991). Compared with other traumatized subjects, the high frequency of Scale 9 elevations along with the more typically identified Scale 4 and 8 may be suggestive of a developmental lag.

Elevations on scale 9 are associated with impulsivity, acting out behaviour, interpersonal problems, relationships that tend to be superficial and lack intimacy, and a potential for belligerence – characteristics not uncommon in adolescents. Physical abuse may delay the normal socializing process. Further support for a developmental lag is suggested by O'Connell Higgins (1994) who reported that the majority of her resilient subjects stated they would not have qualified as psychologically healthy in their early adulthood. We know from Piaget that the acquisition of more sophisticated thought process is developmental in nature. Neimark (1975); however, identified that between 40 and 60 percent of college and university students are unsuccessful at solving problems involving formal operations. Given that the current sample was in the early adulthood phase of development, it is possible that assessments conducted later in the lives of abused individuals would normalize for more subjects. Conversely, the typical elevations on Scales 4 and 8 might remain. Further research examining a broader age range would be enlightening. The elevation on Scale 9 is consistent with Egeland et al.'s (1991) finding that this scale was elevated in young (mean age 20.4), pregnant women at risk for abusing their children. A history of childhood abuse was estimated at 80% for this sample. This group, on average had elevations on Scales 4, 8, and 9. A maturity hypothesis is supported by the finding that subjects with greater cognitive processing showed less distress. The measure of cognitive processing used in this study, z_f , tends to increase from age 5 (10.08) to age 16 (12.61) in normal children and adolescents (Exner, 1993). This ability to engage in more complex cognitive processing is developmental in nature.

MMPI-2 analysis by codetype. Interpretation of the MMPI-2 relies on analysis of

codetypes. The majority of subjects in the trauma group had a codetype involving clinical elevations while this was true for a minority of no-trauma subjects. Table 25 identifies the codetypes found in this study, the number of subjects in each group with the codetype, and a description of characteristics frequently associated with the codetypes. The reader needs to be aware that these are probabilistic statements and may or may not apply to a given individual (Greene, 1991). The information must be placed in the context of other data regarding the individual. It is notable that there is relatively little overlap in the codetypes present for the two groups. While only 25% of the trauma group had profiles within normal limits (WNL), 75% of individuals in the no-trauma group had WNL profiles. Descriptors associated with codetypes found within the trauma group more frequently include severe levels of distress associated with anger, superficial relationships, acting-out behaviour, thinking difficulties, and unpredictability. Conversely, codetype descriptors for the no-trauma group more often contain minor difficulties, somatic complaints, and anxiety.

Hypothesis II: MMPI-2 versus Rorschach Variables

The hypothesis that the Rorschach variables would show greater difference between the two groups than the MMPI-2 variables was not supported. The consistent lack of statistically significant differences between the groups on the Rorschach variables in this study is surprising given previous significant findings (e.g., Weber et al., 1992; Owens, 1984; Hartman et al., 1990; and Swanson et al., 1990). However, a number of Rorschach variable means differed in the expected direction. Compared with no-trauma subjects the trauma subjects have greater difficulty with anger (S), less need for

Table 25

Description of Codetypes

Codetype	n*	Description
WNL	5, 27	happy, healthy, contented, satisfying relationships
Spike 9	3, 2	impulsive, acting-out, relationships lack depth and intimacy, rebellious, and hostile
7 - 8	3, 0	worried, tense, agitated, poor social skills and judgement, difficulty forming close relationships, withdrawn, and isolated
8 - 9	2, 0	excitement, confusion, disorientation, excessive daydreaming and fantasy, poor reality testing, depressed, anxious, hostile, unpredictable, relationships marked by distrust and suspicion
4 - 8	2, 0	difficulty with close relationships, distrust others, withdrawn, angry, resentful of others, emotionally inappropriate, unpredictable, problems in logic and thinking
3 - 8	1, 0	difficulty in thinking and concentration, somatic complaints, immature, egocentric, dependent, hostile, tense, worried, emotionally inappropriate
2 - 4	1, 0	situational or chronic depression, acting-out, intellectual insight and intention to change but lack of behavioral follow-through, hostile, dependent, egocentric, immature, interpersonal conflict
6 - 9	1, 1	angry, hostile, difficulty thinking and concentrating, poor judgement, over-react to minor stresses, egocentric
2 - 8	1, 0	severe depression, anxiety, agitation, fear loss of control, confusion, difficulty with concentration and attention, obsessive ruminations, withdrawn, isolated, chronic poor adjustment
9 - 4	1, 0	acting-out, overactive, impulsive, irresponsible, shallow relationships, untrustworthy, poor judgment, low persistence
Spike 7	0, 2	mildly tense and anxious, shy, reserved, social isolated, may present with phobias, compulsions, and obsessions
Spike 0	0, 1	chronic minor psychological and emotional distress, easily frightened, shy, introverted, lack self-confidence, uncomfortable in relationships

Continued

Table 25 con't

Codetype	n*	Description
Spike 1	0, 1	chronic vague somatic complaints, not psychologically minded, may use complaints to manipulate others
1 - 2	0, 1	vague somatic complaints, lack insight, concrete thinking, poor attention and concentration
6 - 7	0, 1	anxious, worried, suspicious, rigid, hypersensitive, stubborn, indirect expression of hostility, keep people at a distance

Note: *Number of subjects with each codetype in the trauma and no-trauma groups, respectively. Descriptions have been extracted from Greene, 1991.

interpersonal closeness (T), and a greater preoccupation with people (H and COP).

One potential reason for the lack of significant findings may be related to the data transformations performed to make the Rorschach data fit into the parametric analyses. Of particular concern is the controlling for R using a proportion score, which is “too simple and leads to major distortions” (Exner, 1992). Current recommendations for Rorschach researchers suggest that if controlling for R is deemed necessary then partialling is encouraged (McGuire, Kinder, Curtiss, & Viglione, 1995). A related problem is selection of Rorschach variables. Many chosen for use in this study are unrefined, simple counts (e.g., S, H, COP, and T). Recently, Weiner (1995) recommended that researchers use refined (include meaningful categorization such as H, form quality, human detail, and fictionalized human content), interactive (conjoint examination of clusters of variables), conceptually based in personality terms, selective, and reliably scorable variables.

As pointed out by Cerney, (1990) valuable data on the Rorschach may be lost in the process of collapsing group data into averages. The current lack of findings argues for the importance of looking at the Rorschach as a whole rather than at specific variables. Interpretation of the Rorschach is guided by examination of the data within the context of other variables. Wood, Nezworski, and Stezskal (1996) criticize that some of the Rorschach variables have questionable validity, but Exner (1996) responds “... Single responses might form the basis for a working hypothesis regarding personality organization or functioning, but ... the interpretive approach to Rorschach data is cluster based and that any hypothesis generated from one source is subject to modification or

rejection because of other data in the cluster.” (p. 12). This need to examine more than a single variable argues for a more qualitative approach to understanding individual responses to trauma when using the Rorschach. It is possible that examination of the constellations (suicide potential, schizophrenia index, depression index, coping deficit index, hypervigilance index, and obsessive style index) would prove more fruitful. These constellations are based on a composite of related variables, which would provide greater reliability than the use of a single variable.

The above lack of statistical findings on the Rorschach suggest that the MMPI-2 might be a superior measure for detecting quantitative differences between groups. This conclusion is supported by the relatively consistent findings in the literature that assesses the impact of trauma with the MMPI-2. In contrast, the Rorschach has yielded inconsistent findings in this area. Quantitative research with the Rorschach requires a more sophisticated approach than that used in this study. The interested reader is referred to a new book on the subject by Exner (1995a). The Rorschach also provides a wealth of rich qualitative data. This is highlighted by one trauma subject’s (physical abuse only) response to Card VII:

Response: Well, just reminds me of me and my best friend. And, sometimes we don’t tell everything to each other. And, but, sometimes we also feel the same way. But when we do tell things to each other, we’re very open and sometimes it looks like our lives, well, like we’re in the rocking position, sometimes we’re not, like, steady, we’re kind of tip-topping, balancing off the hill or something, instead of remaining firm. And seems like we’re standing on the same ground. We’re sharing, we’re going to be sharing the same future. We’re very, we’re both very talkative. Um, there might be something that might separate us, but there will be bridge, still, to connect. We both love to eat, ‘cause it seems like, the stomachs are very rosy, or, I don’t know, seems quite emphasized here. We might

stumble along the path but, we would fall in the same direction, so therefore we are not alone or separated. So it seems like the ground that is curving upwards and that's where we're standing on is very, like, excitable, exciting, upwards, adventurous. So when we're there instead of where it's stable on the ground, the part where the ground just stays upright, normal, almost like a rocking horse.

Inquiry: Okay, so first, I just thought that that was me and my best friend. Because this looks like a head and it looks like we have a ponytail, right? Here are the bangs, here are the nose, here's the mouth, here's the neck, here's the body, these are the hands. And, sometimes we don't tell, okay, the way I see that we don't tell everything to each other is because this hand here is like, kind of like, curving back. It's like, "Naw, I won't tell you that, you know, I'll just keep it behind me." That's why the hand is back. It's not, like, reaching out to each other, it's behind them. And we also feel the same way because the way our ponytails are somewhat uplifted in the air and when I, I always think about a rabbit, how it perks its ears. So the way, in the same way our ponytails are perking the same way in agreement, like, "Oh, really? Yeah, okay", you know?

E: Rocky position?

Because, right now, um, we don't have feet. But if we did we'd be standing on this curve, right here. So, it looks like, you know, like we could topple any moment, 'cause we're somehow balancing. We're not standing all feet on the ground. It's just that rocky, kind of.

E: Might separate you?

Yeah. So, we're sharing the same future because we seem to be standing on the same ground. And, um, and we're both talkative because it's like, dark around this mouth region. Dark region of the mouth, which represents that it is used frequently, muscles are used and separate us, because there's this little thing here that seems to be, like a separating thing. Like the dark, the dark area is not fully connected with the other dark area. So it's like an obstruction of some sort.

E: Bridge to connect (where?)

And I just thought that the bridge was the same feelings that we share. Like, this, um, water colour area, it's flowing through this obstruction, so, it's like a spirit flowing through solidity. So, even though something may be physical here there's a spirit that flow through from me to her.

E: Rosy stomachs?

'Cause here the stomachs and they're just darker in shading. So I just thought that it was rosy in a way that we love to eat. And we do. Rosy, as in like, sweet stuff. (#544, February, 1994.)

While this is an unusually elaborated response, it is useful as an example in that it

highlights excessive concern about attachment, emotional neediness, poor interpersonal boundaries, difficulty trusting, a hypervigilance to detail and the potential meanings of these details, tangential thinking, and a tendency to personalize stimuli. It is notable that this presentation is consistent with the subject's MMPI-2 profile (elevations on 9, 6, 8, 4, 7, PK, and PS). The clinical presentation of individuals with this profile includes the following descriptors: active, energetic, difficulty in thinking and concentration, may exhibit indications of a psychotic process reflective of a mood disorder, distrustful of others, project feelings and problems onto others, difficulty expressing feelings appropriately, poor judgement, grandiose, egocentric, exaggerated need for affection combined with suspiciousness and fear of involvement (Greene, Brown, & PAR Staff, 1990).

We know that while some traumatized individuals exhibit extreme levels of distress, others show strong resilience. The above example describes a distressed subject. The Rorschach can also assist us in understanding characteristics associated with traumatized subjects who appear resilient on the MMPI-2. For example, the Rorschach interpretive report on one physically abused subject whose MMPI-2 was within normal limits included the following hypotheses:

Examines alternatives before making decisions, high level of ideational activity, deals with feelings on an intellectual level, unconventional thinking except in obvious situations, perfectionistic style, hypervigilant style, good capacity for control, high stress tolerance, emotional control along with willingness to process emotional stimuli, angry attitude toward the environment, personality style oriented to reaffirming and protecting self-value, self-image has some negative features, introspective, an interest in others and desire for closeness but some discomfort/insecurity in interpersonal relationships (Subject 75; Exner, 1990).

These hypotheses along with the MMPI-2 profile suggest a person who is coping well but does struggle with internal conflicts regarding self-image, potential threats in the environment, and interpersonal relations. It also indicates high levels of cognitive processing, which has been associated with greater resilience. This Rorschach profile is a rich source of information regarding self-concept, affective, cognitive, and interpersonal functioning that adds to the information provided by the MMPI-2. However, an individual case profile has no generalizability to other individuals. This descriptive information is less amenable to quantitative analyses but a qualitative analysis could provide information about descriptors common to distressed versus non-distress trauma subjects.

In summary, the individual Rorschach variables used in this study were not useful in detecting statistically significant differences between the two groups. It was suggested that quantitative studies might be more successful if the variables selected refined, interactive, conceptually based, selective, and reliably scorable. In addition, the two case examples discussed suggest that the Rorschach can be usefully employed on a qualitative level and provide information additive to that available with the MMPI-2.

Hypothesis III: Coping Style

In this study, coping style fails to account for a significant amount of the heterogeneity in levels of distress reported by individuals who have been subjected to interpersonal violence. Coping style was assessed with the Rorschach variable, EB style (Exner, 1993). The EB classifies individuals as introversive, extratensive, or ambitent. An individual with an introversive style tends to keep feelings at a peripheral level during problem solving and consider all apparent alternatives in formulating decisions. A person

with an extratensive style tends to merge feelings with thinking during problem solving and engage in trial and error activity. An ambitent coping style involves inconsistent use of the two preceding strategies. Although EB has been identified as an important variable in determining response style and is known to influence scores on other Rorschach variables (Exner, 1995b) these types of coping style do not seem to influence the level or type of distress reported on the MMPI-2 in trauma and no-trauma subjects. On the MANOVA's none of the main effects for coping style and none of the interactions involving coping style were significant. The follow-up univariate analyses indicated a main effect for coping style and perception of whole human figures on the Rorschach (H). Adjusted for number of responses, introversives gave more H responses ($\chi = .155$) than did extratensives ($\chi = .075$). This is likely due to the finding that introversives tend to give more human movement responses and, therefore, more human responses (Exner, 1993).

The finding that coping style was not related to distress conflicts with Hovanitz & Kozora (1989) who found that coping styles were associated with different groupings of MMPI elevations in university students. It also conflicts with Proulx, Koverola, Fedorowicz, and Kral's (1995) finding that coping style was associated with distress in both sexually abused and non-abused university students. The difference between these findings may be related to the measures of coping style used. Hovanitz and Kozora specified coping as problem focused, social focused, self-denigrating, avoidant, or use of cognitive restructuring. Similarly, Proulx et al. (1995) specified coping strategies including escapism, seeking meaning, self-blame, minimization, support mobilization, and instrumental action. In contrast to these specific strategies, the current study examined

general styles, any one of which may include the use of the various strategies.

Analysis by codetype. Due to the possibility that the problem with averaging interfered with ability to detect group differences, it was decided to look at an alternative profile analysis given that profile analysis is more consistent with the clinical use and interpretation of the MMPI-2. Table 26 summarizes the codetypes for the different coping styles within the trauma and no-trauma groups. Within the trauma group the greatest consistency is found within the extratensive sub-group, which had the smallest number of subjects. The majority of profiles with elevations included Scale 8 and these were found in all of the coping style sub-groups. Within the no-trauma group the ambitent sub-group had the greatest number of subjects with elevated profiles, this is unlikely to be significant given that this group had the largest number of subjects and also the largest number of WNL profiles. No pattern of elevated profiles are evidenced by the three no-trauma sub-groups: introversive, extratensive, and ambitent. However this is not surprising in view of the fact that the vast majority of no-trauma subjects had WNL profiles (27 of the 36 participants).

In addition to lack of statistical differences between the groups according to coping style, the above discussion reveals that examination of codetypes within the sub-groups also lacked a consistent pattern of findings. One might argue that limited power impeded detection of significant effects for coping style. Vonesh and Schork (1986) recommend using 11 to 13 subjects per group to detect a two standard deviation difference with 80% power at a .05 significance level when using MANOVA's. The uneven distribution of coping styles resulted in a less than optimal number of subjects per

Table 26

Codetypes for Introversive, Extratensive, and Ambitent Subjects in the Trauma and No-Trauma Groups

Introversive		Extratensive		Ambitent	
Trauma Group					
Codetype	n	Codetype	n	Codetype	n
WNL	2	WNL	2	WNL	1
Spike 9	2	7 - 8	2	Spike 9	1
9 - 8	1			9 - 8	1
8 - 7	1			2 - 8	1
8 - 4	1			8 - 4	1
3 - 8	1			9 - 4	1
2 - 4	1				
9 - 6	1				
No-Trauma Group					
Codetype	n	Codetype	n	Codetype	n
WNL	8	WNL	7	WNL	12
Spike 7	1	Spike 9	1	6 - 9	1
1 - 2	1	6 - 7	1	Spike 9	1
				Spike 7	1
				Spike 0	1
				Spike 1	1

cell. However, examination of effect sizes revealed relatively small effect sizes for EB. The MANOVA for the affective variables showed an effect size of .26 for the interaction between group and EB. However, no single variable accounted for more than 7% of the variance. The interpersonal MANOVA also showed a reasonable effect size (.26) for the main effect of EB, which was largely due to scores on Adj H. This was expected given the tendency for introversives to give more human movement responses. Thus, while coping style does have a small effect on affective and interpersonal functioning, it is likely of less clinical significance than cognitive processing.

Hypothesis IV: Cognitive and Affective Processing

The individual differences in profiles suggest the importance of other variable(s) in determining the particular type of distress. This study identified that level of cognitive processing may be one such variable. In recent years, cognitive processing has been attracting increasing attention as a mediating variable. The current finding that higher levels of cognitive processing in the trauma group were associated with lower levels of distress on the MMPI-2 conflicts with the findings of Leifer et al. (1991) and Shapiro et al. (1990), but it is consistent with the qualitative findings of O'Connell Higgins (1994) and the quantitative findings of Fonagy et al. (1996). O'Connell Higgins (1994) reported that resilience to the effects of severe abuse is "fostered by a probing cognitive and affective approach to one's life circumstances" (p. 156). Fonagy et al. (1996), using the Reflective Self Function Scale of the Adult Attachment Interview, identified that abused subjects who were rated low on ability to reflect on their own and others' mental states were more likely to be diagnosed with Borderline Personality Disorder (BPD) than abused

subjects who were rated high on this metacognitive capacity. One potential reason for the conflicting results is that the former two were studies conducted with children versus adults in the latter two studies. It may be that increased levels of cognitive processing, particularly related to abuse experiences in the home, creates greater conflict for children who are still dependent on their primary care givers. On the surface, this seems to contradict the previous identification of intelligence as a “buffer” to maltreatment in children. However, the cognitive components of the Rorschach have only modest correlations with tests of intellectual ability (Exner, 1993) and *zf* is a measure of a cognitive style rather than ability (Weiner, 1995). Contrasted with the finding in children, in young adults the increase in cognitive processing may inhibit the impulsivity that is characteristic of the MMPI-2 profiles in the distressed trauma subjects. Another potential reason for the difference between children and adults is that, developmentally, children are more egocentric and increased cognitive processing may result in higher levels of self blame.

The finding that no-trauma subjects with higher levels of cognitive processing reported greater levels of distress on the MMPI-2 might be understood within the context of the codetype profiles identified in the no-trauma group. Seven of the nine no-trauma MMPI-2 profiles with an elevated scale occurred in subjects with an adjusted *zf* higher than the group average. Given the elevated no-trauma MMPI-2 profiles tended to be characterized by anxiety and somatic worry higher levels of cognitive processing within this group are likely to enhance these symptoms.

The finding that affective processing accounted for only 5% of the variance in distress level suggests this is not an important mediating variable. This may be related to the measure used, EA, which reflects both openness to affective experiences and development of an inner life. Being open to emotional experiences does not necessarily mean that one copes with or expresses this affect in an appropriate manner. Given the qualitative findings of O'Connell Higgins (1994) indicating an association between affective processing and resilience, post hoc analyses were conducted using variables that are more directly related to affective processing, the sum of colour responses (Sum C) and affective ratio (afr). Similar to the original ANCOVA assessing EA, two more ANCOVA's were performed on Mean CI. The independent variable was group (trauma and no-trauma) in both post hoc analyses. Covariates were adjusted zf and Sum C in one analysis and adjusted zf and Afr in the second. The main effects for Sum C was non-significant but there was a main effect for afr [$F(1, 49) = 6.45, p < .05$]. However, this was judged to be clinically insignificant as the means for both groups fell within the normative range (means .516 and .595 for the no-trauma and trauma groups respectively). Similar to the original analysis, the interaction between group and the affective processing variable approached but did not reach significance. The interaction between group and Sum C yielded $F(1, 49) = 2.73, p = .10$ and the interaction between group and Afr yielded $F(1, 49) = 3.39, p = .07$. Similar to the analysis with EA, these post hoc analyses showed a trend for trauma subjects with higher levels of affective processing to score lower on Mean CI and for affective processing to have minimal relationship to Mean CI in the no-trauma group. The consistency of these findings approaching significance with the three

different measures of affective processing suggests further investigation in this area is warranted. One of the difficulties with the affective variables examined here is their failure to take into account the quality of the affective processing. All assess openness to affective stimuli but do not take into account whether affect is moderated/uncontrolled or if it is accompanied by perceptual accuracy/distortion. An analysis that includes these aspects may be more fruitful.

Relationship of Findings to Attachment Theory

The current findings are consistent with predictions derived from attachment theory. For example, this theory predicts that abused individuals are more likely than non-abused individuals to be insecurely attached and that insecurely attached individuals will experience greater difficulty regulating affect, will tend to distort perceptions of self and others, and will have more interpersonal difficulties. This prediction was supported by a minority (25%) of abused subjects having MMPI-2 profiles that were within normal limits contrasted with 75% of non-abused subjects having normal profiles. Given that attachment was not measured directly one cannot conclude that subjects with elevated profiles are insecurely attached; however, the current findings are suggestive of this possibility. In addition, attachment theory predicts there will be heterogeneity of functioning in abused individuals dependent on particular attachment style. Once again, although attachment style was not assessed, the predicted heterogeneity was present and not accounted for by coping style. Different types of insecure attachment might be helpful in understanding the apparent contradiction in the MMPI-2 scale elevation descriptors discussed earlier. For example, one would expect preoccupied individuals to be more

outgoing (actively in search of attachment) while dismissing individuals would be expected to score highly on scales associated with social isolation. Further research including both the MMPI-2 and a measure of attachment is recommended.

Limitations

It is important to evaluate, not only the findings of a study, but also the validity and reliability of the findings. This section will review some of the major threats to the validity and reliability of the current findings.

Construct validity. According to Yin (1984), construct validity refers to whether the measures used accurately represent the concept being studied. A major threat to the construct validity of this study is the measure of childhood abuse (Briere, 1992b). Although abuse is defined and measured as in previous studies, there remains the problem of some clients repressing or denying memories of abuse. Thus, some subjects assigned to the no-trauma group may have actually experienced childhood trauma. Although this may have occurred, it is unlikely that this was a major problem given the clear group differences in average scores and codetype profiles. One might speculate that the no-trauma case deleted from the analysis due to outlying MMPI-2 scores might have denied or repressed a trauma history given that the elevations were more consistent with those found within the trauma group. However, one cannot rule out psychopathology as not all MMPI-2 elevations are associated with trauma. Some would also argue that some individuals will, for various reasons, construct a history of abuse. This latter difficulty should be less problematic since other studies have found that individuals tend to under-report histories of physical abuse (e.g., Berger et al., 1988) and according to Benjamin

(1982), it is an individual's perception rather than reality that has the most profound impact on behaviour.

Compared with studies such as Berger et al. (1988), a larger proportion of subjects in this study who reported a history of being the recipient of physically abusive acts considered themselves as physically abused. One might speculate that this difference is related to the nature of the sample. That is, these subjects are high functioning, non-clinical subjects who had the intellectual and financial resources to pursue a university education. As such, they might have had greater exposure to individuals or ideas where they may have learned that physical violence is neither normative nor acceptable. In terms of construct validity, it is notable that none of the subjects who fail to report a history of being injured classify themselves as abused. Those who do consider themselves abused report experiencing more types of physical abuse than subjects who do not consider themselves abused. Additionally, the self-assessed abused subjects are more likely than other abused subjects to report more than one type of injury. These findings strongly suggest that denying, fabricating, or repressing memories were not problematic in this sample.

Further concerns about construct validity are raised by Cook and Campbell (1979) who address this issue in terms of confounding variables. Four of the applicable threats in this study are: (1) subjects hypothesis guessing and providing the information they believe is desired by the experimenter; (2) evaluation apprehension that results in subjects presenting themselves in a favourable light; (3) experimenter bias; and (4) different levels of constructs may have different meanings. It is possible that hypothesis guessing

contributed to a larger proportion of subjects classifying themselves as physically abused than in previous studies but, as discussed above, it appears this self-classification was justified. In terms of the dependent measures, evaluation apprehension was, to some extent, addressed by use of the Rorschach, which is difficult to fake. In addition, the validity scales on the MMPI-2 provide a check against faking good or bad. Cook and Campbell's (1979) threat of experimenter bias was addressed by the primary investigator being blind to abuse status and by using self-report measures and inter-rater agreement assessments of the projective data. The potential confound of different levels of constructs having different effects or meanings was, in part, addressed by examining the regression slopes associated with cognitive and affective processing. In this study, the finding that higher levels of cognitive processing is associated with lower distress in the trauma group and higher levels of distress in the no-trauma group exemplifies the importance of examining levels of constructs.

External validity. External validity involves the problem of generalizability of the immediate findings to and across subjects, settings, and times (Cook & Campbell, 1979). In this study, major concerns involve subject selection and time. Subjects who agreed to participate in both phases of the study likely differ in important ways from subjects who participated in only one phase. Unfortunately, data were not kept on subjects who were contacted and refused participation in the second part of the study due to other time pressures and/or already having met the required number of experimental credits. However, anecdotally it may be significant that the research assistant originally selected an equal number of subjects who met the criteria for no-trauma history and subjects who met

the criteria for a history of only physical abuse. It may be that some trauma subjects who were high functioning were more organized than others and therefore, either did not need to participate in the study or could not due to other time pressures. Conversely, some of the refusals may have been from individuals who were less organized and more distressed. This study also used relatively high functioning young women, which limits generalizability to other populations such as men, individuals with less education, and other age groups. The limited population is justifiable given the need for subject homogeneity; the dearth of empirical findings in this area; and enhanced comparison with available trauma literature, which has frequently used women and university populations. However, external validity is enhanced by the study being theory driven (Yin, 1984). Specifically, this study has selected variables in light of attachment theory and previous empirical findings on the effect of trauma.

Reliability. Reliability involves demonstrating that if data collection and analysis procedures are repeated, the same results will be found (Yin, 1984). To address this issue, the present study uses measures with demonstrated reliability (i.e., MMPI-2 and Rorschach). Inter-rater agreement was acceptable on the Rorschach measures used. Given that the findings are consistent with theory and previous findings on the impact of trauma, it seems highly likely that similar findings could be replicated.

Conclusions and Clinical Implications

This study provides support for The Comprehensive Model of Trauma Impact (Koverola, 1992) in that it highlights the importance of examining multiple areas of a trauma survivor's functioning, as well as the interactions between the areas. In this study,

higher levels of cognitive processing had a mediating impact on level of distress associated with physical abuse. The examination of the interaction between cognitive functioning and distress provided more information about the impact of trauma than simple examination of mean group differences in distress levels. Having examined the affective, cognitive, and interpersonal realms of functioning, the model would direct us to look at additional areas of behaviour that include moral, sexual, and physical functioning. The model also suggests we examine other contextual variables: age of occurrence of the abuse; when the abuse ended (for some subjects it might be continuing); pre-abuse functioning; and the social contexts of family, community, and society. The importance of these systemic factors is highlighted by Egeland et al.'s (1988) report that a supportive adult relationship during childhood is an important mediating variable.

Clinically, these results are important in that they point to the importance of viewing symptoms reported by these subjects in terms of post-traumatic stress rather than in terms of personality disorder. This is consistent with Herman's (1992) and Briere's (1992a) conceptualization of the impact of trauma. Additionally, the high levels of distress, dysphoria, impulsivity, anger, sense of isolation, and history of family conflict and violence suggest that many of these subjects may be at high risk for suicidal behaviour (Kral & Sakinofsky, 1994). The MMPI-2 profiles and the importance of cognitive processing provide direction to clinical intervention. For example, interventions directed toward the development of cognitive delaying strategies, appropriate expression of anger, and intellectual understanding of self and others' behaviour may be particularly beneficial in the healing process. However, given the individual differences, it is important to tailor

interventions to the individual person. Further, before these recommendations can be extended to other physically abused subjects, these findings need to be broadened to men and other age groups. The sensitivity of the MMPI-2 to individual patterns of distress suggest this might be a useful tool for assessing and investigating differences and similarities between subjects exposed to different types of trauma.

Societally, these results are important in that they point to affective, cognitive, and interpersonal distress being associated with physical punishment within a population that can be considered to be relatively high functioning. Compared with other studies that examine physical abuse in terms of severe maltreatment that results in death, brain injury, or permanent physical disability, the physical abuse reported by these subjects was relatively minor. Given that this “relatively minor” physical abuse is associated with significant distress for many individuals it is important for our society to reduce its use of this form of discipline. Straus (1991; cited in Oats, 1996) estimates that more than 90% of American children between the ages of two and six are physically punished as a method of discipline. These findings provide persuasive empirical evidence to argue that North America follow the example of countries such as Sweden where “...law bans all forms of physical punishment and other injurious or humiliating treatment of children” (Oats, 1996, p. 3). However, as pointed out by Oats (1996), legislation is insufficient and must be accompanied by parent training and attitude change. While hitting a child may temporarily stop undesirable behaviour, teaching, encouraging, rewarding, and showing by example are more effective and less destructive to a child’s development.

In summary, these findings are of considerable significance in that they provide empirical data regarding the long-term functioning of individuals who were physically abused as children, a group neglected by the bulk of the trauma literature. This study also contributes to the growing body of literature documenting that physically abused individuals with higher levels of cognitive processing experience less distress than abused individuals lower on this dimension of functioning. Traumatized individuals are clearly a heterogeneous group in terms of psychological functioning; we are; however, moving toward a clearer understanding of how these individual differences are manifest.

REFERENCES

- Acklin, M.W. (1993). Integrating the Rorschach and the MMPI in clinical assessment: Conceptual and methodological issues. Journal of Personality Assessment, 60, 125-131.
- Acklin, M.W., McDowell, C.J. II, Orndoff, S. (1992). Statistical power and the Rorschach: 1975-1991. Journal of Personality Assessment, 59, 366-379.
- Ainsworth, M.D.S. (1989). Attachments beyond infancy. American Psychologist, 44, 709-716.
- Ainsworth, M.D.S., Blehar, M.C., Waters, E., & Wall, S. (1978). Patterns of attachment: A psychological study of the strange situation. Hillsdale, N.J.: Erlbaum.
- Alexander, P.C. (1992). Application of attachment theory to the study of sexual abuse. Journal of Consulting and Clinical Psychology, 60, 185-195.
- Alter-Reid, K., Gibbs, M.S., Lachenmeyer, J.R., Sigal, J., & Massoth, N.A. (1986). Sexual abuse of children: A review of the empirical findings. Clinical Psychology Review, 6, 249-266.
- American Psychiatric Association (1980). Diagnostic and statistical manual of mental disorders (3rd ed.). Washington: Author.
- American Psychiatric Association (1987). Diagnostic and statistical manual of mental disorders (3rd ed., rev.). Washington: Author.
- American Psychiatric Association (1994). Diagnostic and statistical manual of mental disorders: DSM-IV (4th ed.). Washington: Author.
- Archer, R.P., & Krishnamurthy, R. (1993). Combining the Rorschach and the MMPI in the assessment of adolescents. Journal of Personality Assessment, 60, 132-140.
- Atkinson, L. (1986). The comparative validities of the Rorschach and MMPI: A meta-analysis. Canadian Psychology, 27, 238-247.
- Azar, S.T., & Wolfe, D.A. (1989). Child abuse and neglect. In E. Mash & R. Barkley (Eds.) Treatment of childhood disorders, p. 451-489. New York: Guilford Press.
- Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. Journal of Social and Personal Relationships, 7, 147-178.

- Bartholomew, K., & Horowitz, L.M. (1991). Attachment styles among young adults: a test of a four-category model. Journal of Personality and Social Psychology, 61, 226-244.
- Benjamin, L.S. (1982). Use of Structural Analysis of Social Behavior (SASB) to guide intervention in psychotherapy. In J.C. Anchin & D.J. Kiesler (Eds.) Handbook of Interpersonal Psychotherapy. Toronto: Pergamon.
- Berger, A.M., Knutson, J.F., Mehm, J.G., & Perkins, K.A. (1988). The self-report of punitive childhood experiences of young adults and adolescents. Child Abuse and Neglect, 12, 251-262.
- Blatt, S.J. (1975). The validity of projective techniques and their research and clinical contribution. Journal of Personality Assessment, 39, 327-343.
- Bowlby, J. (1969/1982). Attachment and loss: Vol. 1. Attachment. New York: Basic.
- Bowlby, J. (1973). Attachment and loss: Vol. 2. Separation. New York: Basic.
- Bowlby, J. (1977). The making and breaking of affectional bonds: I. Aetiology and psychopathology in the light of attachment theory. British Journal of Psychiatry, 130, 201-210.
- Bowlby, J. (1980). Attachment and loss: Vol. 3. Loss, sadness and depression. New York: Basic.
- Briere, J.N. (1992a). Child abuse trauma: Theory and treatment of the lasting effects. Newbury Park: Sage Publications.
- Briere, J. (1992b). Methodological issues in the study of sexual abuse effects. Journal of Consulting and Clinical Psychology, 60, 196-203.
- Briere, J., & Runtz, M. (1988). Multivariate correlates of childhood psychological and physical maltreatment among university women. Child Abuse and Neglect, 12, 331-341.
- Browne, A., & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the research. Psychological Bulletin, 99, 66-77.
- Butcher, J.N. (1990). MMPI-2 in psychological treatment. New York: Oxford University Press.

- Butcher, J.N., Dahlstrom, W.G., Graham, J.R., Tellegen, A., & Kaemmer, B. (1989). Manual for the restandardized Minnesota Multiphasic Personality Inventory: MMPI-2. An administrative and interpretive guide. Minneapolis: University of Minnesota Press.
- Butcher, J.N., & Tellegen, A. (1978). Common methodological problems in MMPI research. Journal of Consulting and Clinical Psychology, 46, 620-628.
- Cannon, D.S., Bell, W.E., Andrews, R.H., & Finkelstein, A.S. (1987). Correspondence between MMPI PTSD measures and clinical diagnosis. Journal of Personality Assessment, 51, 517-521.
- Carlson, V., Cicchetti, D., Barnett, D., & Braunwald, K. (1989). Disorganized/disoriented attachment relationships in maltreated infants. Developmental Psychology, 25, 525- 531.
- Cassidy, J. (1988). Child-mother attachment and the self in six-year-olds. Child Development, 121-134.
- Cerney, M.S. (1990). The Rorschach and traumatic loss: Can the presence of traumatic loss be detected from the Rorschach? Journal of Personality Assessment, 55, 781-789.
- Cook, T.D., & Campbell, T.D. (1979). Quasi-experimentation: Design analysis issues for field settings. Dallas: Houghton Muffin.
- Crittenden, P.M. (1992). Children's strategies for coping with adverse home environments: An interpretation using attachment theory. Child Abuse and Neglect, 16, 329-343.
- 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 and Neglect, 13, 403-408.
- Demare, D. (1993). Psychological, physical, and sexual childhood maltreatment experiences: Creation of retrospective-report questionnaires for adults and examination of potential long-term psychological consequences of maltreatment. Unpublished Master's thesis. University of Manitoba.
- Duricko, A.J., Norcross, J.C., & Buskirk, R.D. (1989). Correlates of the Egocentricity Index in child and adolescent outpatients. Journal of Personality Assessment, 53, 184-187.

- Egeland, B., Erickson, M.F., Butcher, J.N., & Ben-Porath, Y.S. (1991). MMPI-2 profiles of women at risk for child abuse. Journal of Personality Assessment, 57, 254-263.
- Egeland, B., Jacobvitz, D., & Sroufe, L.A. (1988). Breaking the cycle of abuse. Child Development, 59, 1080-1088.
- Egeland, B., & Sroufe, L.A. (1981). Attachment and early maltreatment. Child Development, 52, 44-52.
- Engels, M.L., Moisan, D., & Harris, R. (1994). MMPI indices of childhood trauma among 110 female outpatients. Journal of Personality Assessment, 63, 135-147.
- Exner, J.E., Jr. (1986a). The Rorschach: A comprehensive system Volume 1: Basic Foundations (2nd ed.). New York: Wiley and Sons.
- Exner, J.E. (1986b). Some Rorschach data comparing schizophrenics with borderline and schizotypal personality disorders. Journal of Personality Assessment, 50, 455-471.
- Exner, J.E., Jr. (1992). R in Rorschach research: A ghost revisited. Journal of Personality Assessment, 58, 245-251.
- Exner, J.E., Jr. (1993). The Rorschach: A comprehensive system Volume 1: Basic Foundations (3rd ed.). New York: Wiley and Sons.
- Exner, J.E., Jr. (Ed.). (1995a). Issues and methods in Rorschach research. Mahwah, N.J.: Lawrence Erlbaum Associates, Publishers.
- Exner, J.E., Jr. (1995b). Introduction. In J.E., Exner, Jr. (Ed.) Issues and methods in Rorschach research. Mahwah, N.J.: Lawrence Erlbaum Associates, Publishers.
- Exner, J.E., Jr. (1996). A comment on "The Comprehensive System for the Rorschach: A critical examination". Psychological Science, 7, 11-13.
- Exner, J.E., Jr., Cohen, J.B., & McGuire, H. (1990). RIAP version 2: Rorschach Interpretation Assistance Program. Asheville, N.C.: Rorschach Workshops.
- Fairbank, J.A., Keane, T.M., & Malloy, P.F. (1983). Some preliminary data on the psychological characteristics of Vietnam veterans with posttraumatic stress disorders. Journal of Consulting and Clinical Psychology, 51, 912-919.

- Famularo, R., Kinscherff, R., & Fenton, T. (1990). Symptom differences in acute and chronic presentation of childhood post-traumatic stress disorder. Child Abuse and Neglect, 14, 439-444.
- Feeney, J.A., & Noller, P. (1990). Attachment style as a predictor of adult romantic relationships. Journal of Personality and Social Psychology, 58, 281-291.
- Finkelhor, D. (1990). Early and long-term effects of child sexual abuse: An update. Professional Psychology: Research and Practice, 21, 325-330.
- Finkelhor, D., & Browne, A. (1985). The traumatic impact of child sexual abuse: A conceptualization. American Journal of Orthopsychiatry, 55, 530-541.
- Fonagy, P., Leigh, T., Steele, M., Steele, H., Kennedy, R., Mattoon, G., Target, M., & Gerber, A. (1996). The relation of attachment status, psychiatric classification, and response to psychotherapy. Journal of Consulting and Clinical Psychology, 64, 22-31.
- Gelardo, M.S., & Sanford, E.E. (1987). Child abuse and neglect: A review of the literature. School Psychology Review, 16, 137-155.
- Graham, J.R., Watts, D., & Timbrook, R.E. (1991). Detecting fake-good and fake-bad MMPI-2 profiles. Journal of Personality Assessment, 57, 264-277.
- Green, A.H. (1988). Child maltreatment and its victims: A comparison of physical and sexual abuse. Psychiatric Clinics of North America, 11, 591-610.
- Greene, R.L. (1991). The MMPI-2/MMPI: An interpretive manual. Toronto: Allyn & Bacon.
- Greene, R., Brown, R., Jr., & PAR Staff (1990). MMPI-2 Adult Interpretive System. Psychological Assessment Resources, Inc.
- Greenwald, E., & Leitenberg, H. (1990). Posttraumatic stress disorder in a nonclinical and nonstudent sample of adult women sexually abused as children. Journal of Interpersonal Violence, 5, 217-228.
- Hartman, W.L., Clark, M.E., Morgan, M.K., Dunn, V.K., Fine, A.D., Perry, G.G., Jr., & Winsch, D.L. (1990). Rorschach structure of a hospitalized sample of Vietnam veterans with PTSD. Journal of Personality Assessment, 54, 149-159.

- Hathaway, S.R., & McKinley, J.C. (1989). Manual for administration and scoring MMPI-2: Minnesota Multiphasic Personality Inventory - 2. Minneapolis: University of Minnesota Press.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. Journal of Personality and Social Psychology, 52, 511-524.
- Herman, J.L. (1986). Histories of violence in an outpatient population: An exploratory study. American Journal of Orthopsychiatry, 56, 137-141.
- Herman, J.L. (1992). Trauma and recovery: The aftermath of violence -- from domestic abuse to political terror. U.S.A.: Basic Books.
- Hillary, B. E., & Schare, M.L. (1993). Sexually and physically abused adolescents: An empirical search for PTSD. Journal of Clinical Psychology, 49, 161-165.
- Holaday, M., Armsworth, M.W., Swank, P.R., & Vincent, K.R. (1992). Rorschach Responding in traumatized children and adolescents. Journal of Traumatic Stress, 5, 119-129.
- Horvanitz, C.A., & Kozora, E. (1989). Life stress and clinically elevated MMPI scales: Gender differences in the moderating influence of coping. Journal of Clinical Psychology, 45, 766-777.
- Hyer, L., Fallon, J.H. Jr., Harrison, W.E., & Boudewyns, P.A. (1987). MMPI overreporting by Vietnam combat veterans. Journal of Clinical Psychology, 43, 79-83.
- Iverson, T.J., & Segal, M. (1990). Characteristics of the children. (Chapter 4). Child abuse and neglect: An information and reference guide. New York: Garland Publishing.
- Jacobson, A., & Richardson, B. (1987). Assault experiences of 100 psychiatric inpatients: Evidence of the need for routine inquiry. American Journal of Psychiatry, 144, 908-913.
- Jaffe, P.G., Wolfe, D.A., & Wilson, S.K. (1990). Children of battered women. Newbury Park, CC: Sage Publications.
- Janoff-Bulman, R. (1979). Characterological versus behavioral self-blame: Inquiries into depression and rape. Journal of Personality and Social Psychology, 37, 1798 - 1809.

- Jones, J.C., & Barlow, D.H. (1990). The etiology of posttraumatic stress disorder. Clinical Psychology Review, 10, 299-328.
- Judge gets grandma to whip offender. (1996, September 25). The New York Times, p. A11.
- Kaser-Boyd, N. (1993). Rorschach of women who commit homicide. Journal of Personality Assessment, 60, 458-470.
- Keane, T.M., Malloy, P.F., & Fairbank, J.A. (1984). Empirical development of an MMPI subscale for the assessment of combat-related posttraumatic stress disorder. Journal of Consulting and Clinical Psychology, 52, 888-891.
- Kempe, C.H., Silverman, F.N., Steele, B.F., Droegemueller, W., & Silver, H.K. (1985). The battered-child syndrome. Child Abuse and Neglect, 9, 143-154.
- 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.
- Khan, F.I., Welch, T.L., & Zillmer, E.A. (1993). MMPI-2 profiles of battered women in transition. Journal of Personality Assessment, 60, 100-111.
- Kinzie, J.D. (1989). Post-traumatic stress disorder. In H.I. Kaplan & B.J. Sadock (Eds.) Comprehensive textbook of psychiatry. Baltimore: Williams & Wilkins.
- 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.
- Koverola, C. (1992). Psychological effects of child sexual abuse. In A.H. Heger & S.J. Emans (Eds.) Evaluation of the sexually abused child. Boston: Oxford University Press.
- Koverola, C. (1995). Post traumatic stress disorder. In H. Ammerman & M. Hersen (Eds.) Handbook of child behavior therapy in the psychiatric setting. New York: John Wiley & Sons.
- Kral, M.J., & Sakinofsky, I. (1994). Clinical model for suicide risk assessment. Death Studies, 18, 311-326.

- Leifer, M., Shapiro, J.P., Martone, M.W., & Kassem, L. (1991). Rorschach assessment of psychological functioning in sexually abused girls. Journal of Personality Assessment, 56, 14-28.
- Lindberg, F.H., & Distad, L.J. (1985). Post-traumatic stress disorders in women who experienced childhood incest. Child Abuse and Neglect, 9, 329-334.
- Lipovsky, J.A., Finch, A.J., & Belter, R.W. (1989). Assessment of depression in adolescents: Objective and projective measures. Journal of Personality Assessment, 53, 449-458.
- Litz, B.T., Penk, W.E., Walsh, S., Hyer, L., Blake, D.D., Marx, B., Keane, T.M., & Bitman, D. (1991). Similarities and differences between MMPI and MMPI-2 applications to the assessment of posttraumatic stress disorder. Journal of Personality Assessment, 57, 238-253.
- Lovitt, R. (1993). A strategy for integrating a normal MMPI-2 and dysfunctional Rorschach in a severely compromised patient. Journal of Personality Assessment, 60 (1), 141-147.
- Main, M., & Cassidy, J. (1988). Categories of response to reunion with the parent at age 6: Predictable from infant attachment classifications and stable over a 1-month period. Developmental Psychology, 24, 415-426.
- Malinosky-Rummell, R., & Hansen, D.J. (1993). Long-term consequences of childhood physical abuse. Psychological Bulletin, 114, 68-79.
- Martin, J. A., & Elmer, E. (1992). Battered children grown up: A follow-up study of individuals severely maltreated as children. Child Abuse and Neglect, 16, 75-87.
- McCaffrey, R.J., Hickling, E.J., & Marrazo, M.J. (1989). Civilian-related post-traumatic stress disorder: Assessment-related issues. Journal of Clinical Psychology, 45, 72-76.
- McGuire, H., Kinder, B.N., & Curtiss, G. (1995). Some special issues in data analysis. In J.E. Exner, Jr. (Ed.) Issues and Methods in Rorschach Research. Mahwah, N.J.: Lawrence Erlbaum Associates, Publishers.
- Meisner, S. (1988). Susceptibility of Rorschach distress correlates to malingering. Journal of Personality Assessment, 52, 564-571.
- Milner, J.S., Robertson, K.R., & Rogers, D.L. (1990). Childhood history of abuse and adult child abuse potential. Journal of Family Violence, 5, 15-34.

- Moody, D.R., & Kish, G.B. (1989). Clinical meaning of the Keane PTSD scale. Journal of Clinical Psychology, 45, 542-546.
- Nash, M.R., Zivney, O.A., & Hulsey, T. (1993). Characteristics of sexual abuse associated with greater psychological impairment among children. Child Abuse and Neglect, 17, 401-407.
- Neimark, E.D. (1975). Intellectual development during adolescence. In F.D. Horowitz (Ed.), review of Child Development Research, (Vol. 4). Chicago: University of Chicago Press.
- Oats, R.K. (1996). The spectrum of child abuse: Assessment, treatment, and prevention. New York: Brunner/Mazel.
- O'Connell Higgins, G. (1994). Resilient Adults: Overcoming a Cruel Past. San Francisco: Jossey-Bass.
- Orr, S.P., Claiborn, J.M., Altman, B., Forgue, D.F., deJong, J.B., Pitman, R.K., & Hertz, L.R. (1990). Psychometric profile of posttraumatic stress disorder, anxious, and healthy Vietnam veterans: Correlations with psychophysiologic responses. Journal of Consulting and Clinical Psychology, 58, 329-335.
- Owens T.H. (1984). Personality traits of female psychotherapy patients with a history of incest: A research note. Journal of Personality Assessment, 48, 606-608.
- Parker, K. (1983). A meta-analysis of the reliability and validity of the Rorschach. Journal of Personality Assessment, 47, 227-231.
- Peake, A. (1987). An evaluation of group work for sexually abused adolescent girls and boys. Education and Child Psychology, 4, 189-203.
- Proulx, J., Koverola, C., Fedorowicz, A., & Kral, M. (1995). Coping strategies as predictors of distress in survivors of single and multiple sexual victimization and nonvictimized controls. Journal of Applied Social Psychology, 25, 1464-1483.
- Roberts, W.R., Penk, W.E., Gearing, M.L., Robinowitz, R., Dolan, M.P., & Patterson, E.T. (1982). Interpersonal problems of Vietnam combat veterans with symptoms of posttraumatic stress disorder. Journal of Abnormal Psychology, 91, 444-450.
- Schubarth, G., & Lanhan, J. (1991). The application of attribution theory in group psychotherapy with child sexual abuse survivors. Paper presented at the Canadian Psychological Association Convention, Calgary, Alberta.

- Scott, R.L., & Stone, D.A. (1986). MMPI measures of psychological disturbance in adolescent and adult victims of father-daughter incest. Journal of Clinical Psychology, 42, 251-259.
- Shapiro, J.P., Leifer, M., Martone, M.W., & Kassem, L. (1990). Multimethod assessment of depression in sexually abused girls. Journal of Personality Assessment, 55, 234-248.
- Shengold, L.L. (1979). Child abuse and deprivation: Soul murder. Journal of the American Psychoanalytic Association, 27, 533-559.
- Sinclair, D. (1985). Understanding wife assault: A training manual for counsellors and advocates. Toronto: Ontario Government Bookstore.
- Sperling, M.B., Berman, W.H., & Fagen, G. (1992). Classification of adult attachment: An integrative taxonomy from attachment and psychoanalytic theories. Journal of Personality Assessment, 59, 239-247.
- Straus, M.A., & Gelles, R.J. (1986). Societal change and change in family violence from 1975 to 1985 as revealed by two national surveys. Journal of Marriage and the Family, 48, 465-479.
- Strupp, H.H. (1990). Forward. In J.N. Butcher MMPI-2 in psychological treatment. New York: Oxford University Press.
- Swanson, G.S., Blount, J., & Bruno, R. (1990). Comprehensive system Rorschach data on Vietnam combat veterans. Journal of Personality Assessment, 54, 160-169.
- Sweeney, J.A., Clarkin, J.F., & Fitzgibbon, M.L. (1987). Current practice of psychological Assessment. Professional Psychology: Research and Practice, 18, 377-380.
- Tabachnick, B.G., & Fidell, L.S. (1996). Using Multivariate Statistics (3rd Ed.). New York: Harper Collins College Publishers.
- Terr, L.C. (1991). Childhood traumas: An outline and overview. American Journal of Psychiatry, 148, 10-20.
- van Dalen, A. (1989). The emotional consequences of physical child abuse. Clinical Social Work Journal, 17, 383-394.
- Viglione, D.J., Jr. (1990). Severe disturbance or trauma-induced adaptive reaction: A Rorschach child case study. Journal of Personality Assessment, 55, 280-295.

- Vonesh, E.F., & Schork, M.A. (1986). Sample sizes in the multivariate analysis of measures. *Biometrics*, 42, 601-610.
- Wachtel, A. (1988). The impact of child sexual abuse in developmental perspective: a model and literature review. Ottawa: National Clearinghouse on Family Violence.
- Webb, C., & King, H.E. (1985). An objection to Owens' article on incest victims. *Journal of Personality Assessment*, 49, 535.
- Weber, C.A., Meloy, J.R., & Gacono, C.B. (1992). A Rorschach study of attachment and anxiety in inpatient conduct-disordered and dysthymic adolescents. *Journal of Personality Assessment*, 58, 16-26.
- Wenar, C., & Curtis, K.M. (1991). The validity of the Rorschach for assessing cognitive and affective changes. *Journal of Personality Assessment*, 57, 291-308.
- Weiner, I.B. (1991). Editors note: Interscorer agreement in Rorschach research. *Journal of Personality Assessment*, 56, 1.
- Weiner, I.B. (1993). Clinical considerations in the conjoint use of the Rorschach and the MMPI. *Journal of Personality Assessment*, 60, 148-152.
- Weiner, I.B. (1995). Variable selection in Rorschach research. In J.E. Exner, Jr. (Ed.) Issues and methods in Rorschach research. Mahwah, N.J.: Lawrence Erlbaum Associates, Publishers.
- West, M., Sheldon, A., & Reiffer, L. (1987). An approach to the delineation of adult attachment: Scale development and reliability. *Journal of Nervous and Mental Disease*, 175, 738-741.
- Wolfe, V.V., Gentile, C., & Wolfe, D.A. (1989). The impact of sexual abuse on children: A PTSD formulation. *Behavior Therapy*, 20, 215-228.
- Wood, J.M., Nezworski, T., & Stejskal, W.J. (1996). The Comprehensive System for the Rorschach: A critical examination. *Psychological Science*, 7, 3 - 10.
- Yin, R.K. (1984). Case study research: Design and methods. Beverly Hills: Sage.
- Zivney, O.A., Nash, M.R., & Hulsey, T.L. (1988). Sexual abuse in early versus late childhood: Differing patterns of pathology as revealed on the Rorschach. *Psychotherapy*, 25, 99-106.

Appendix A

DESCRIPTION OF MMPI-2 AND RORSCHACH VARIABLES

Consistent with usage in this study the following MMPI-2 and Rorschach variables are categorized as measures of affective, cognitive, interpersonal or general distress. These categories are followed by descriptions of the coping style, affective processing, and cognitive processing variables. Each variable is identified as to its source. The MMPI-2 descriptions have been extracted from Butcher (1990) and Greene (1991). The Rorschach descriptions have been extracted from Exner, (1986a).

AFFECTIVE VARIABLES

Afr (Rorschach) Affective Ratio	Affective ratio is the proportion of responses to the last three cards. Reflects receptivity to emotionally toned stimuli. Average range is .50 to .80. < .50 is associated with affective constriction; > .80 is associated with over-responsiveness to affective stimuli.
S (Rorschach) Space Responses	Use of white space in a response. Related to opposition or negativism. Four or more suggests dissatisfaction and difficulty handling anger.
Scale 2 (MMPI-2) Depression	57 items reflecting somatic and psychological symptoms of depression. Elevated scores suggestive of depression.
Scale 7 (MMPI-2) Psychasthenia	48 items related to anxiety, irrational fears, indecisiveness and low self-esteem. High scores are associated with tension, anxiety, self-doubt, and neurotic anxiety.
Scale 9 (MMPI-2) Mania	45 items reflecting expansiveness, egotism, irritability, lack of inhibition and control, amorality, and excitement. Low scores suggest low morale and energy; high scorers tend to be overactive, expansive, energetic, unrealistic, and impulsive.

COGNITIVE VARIABLES

Lambda (Rorschach)	The proportion of pure form responses on the record. High scores (> 1.2) reflects a simplistic approach that ignores or avoids the complexity of the stimuli. Low scores indicate more complex attention to the inkblots and may be related to inefficient use of resources due to psychological turmoil, intellectual striving, or a tendency to overincorporate stimuli in an attempt to avoid error or failure.
X-% (Rorschach) Perceptual Meditational Distortion	Perceptual Meditational Distortion, the percentage of responses that disregard blot contours and violate reality. Scores > 15% raises concern about perceptual distortion.
Scale 1 (MMPI-2) Hypochondriasis	32 items reflecting bodily complaints and overconcern with physical health. High scores suggestive of excessive concern with physical health.
Scale 3 (MMPI-2) Hysteria	60 items reflecting physical problems and social facility. Elevations suggest tendency to develop physical symptoms under stress and use of repression.
Scale 8 (MMPI-2) Schizophrenia	78 items related to social alienation, isolation, bizarre feelings and sensations, and general inadequacy. High scores suggestive of unconventionality, alienation, social distance, and self-doubt.

INTERPERSONAL VARIABLES

T (Rorschach) Texture Responses	Texture responses in which the shading features are described as tactual. Greater than one T suggests emotional loss and increased emotional or dependency needs while no T is related to interpersonal guardedness or distancing.
H (Rorschach) Whole Human Figure Content	Whole human figure. View of social environment based on real experience. Absence shows lack of interest in others and/or interpersonal detachment.
COP (Rorschach) Cooperative Movement Responses	Cooperative movement responses involving two or more objects engaged in a clearly positive or cooperative interaction. Higher scores reflective of openness to and expectation of positive interactions. Those with higher scores (3 or more) are likely to be regarded as likable and outgoing.
Scale 4 (MMPI-2) Psychopathic Deviate	50 items characteristic of antisocial personality disorders. High scorers externalize blame, are manipulative and aggressive in relationships, lack deep affect, and use intellectualization.
Scale 6 (MMPI-2) Paranoia	40 items reflective of paranoid thinking and behaviour, suspicious and mistrusting tendencies. High scorers tend to externalize blame, use projection, are mistrusting and suspicious of others, and are interpersonally guarded.
Scale 0 (MMPI-2) Social Introversion	69 items related to uneasiness in social situations, social insecurity, self-depreciation, denial of impulses, and interpersonal withdrawal. High scorers tend to be socially withdrawn, unassertive, overcontrolled, and submissive.

GENERALIZED DISTRESS VARIABLES

PK (MMPI-2) Post Traumatic Stress Disorder — Keane	46 items that have distinguished combat veterans with PTSD from psychiatric controls. Elevations are associated with general psychological maladjustment and dysphoric feelings.
PS (MMPI-2) Post Traumatic Stress Disorder — Schlenger	60 items that have distinguished veterans with PTSD from veterans with no psychiatric diagnosis. Elevations are associated with general psychological maladjustment and dysphoric feelings.
Mean CI (MMPI-2) Mean Clinical Score	The average T-Score from Scales 1, 2, 3, 4, 6, 7, 8, 9, and 0.

Coping Style (Rorschach)

Erlebnistypus (EB). Human movement minues the sum of weighted colour.

Classifies coping style as one of the following:

- 1) Introversive - tends to meet basic needs through inner life, considers alternatives prior to taking action, and keeps feelings at a peripheral level during problem solving.
- 2) Extratensive - tends to meet basic needs through interaction with the world, merges thinking and feeling in problem solving, and engages in trial and error activity.
- 3) Ambitent - inconsistent use of either of the above styles.

Affective Processing (Rorschach)

EA (Experience Actual) - the sum of Human Movement Responses and weighted color responses. Assesses openness to affective experiences and the development of an inner life. Higher scores reflect the development of more inner life and affective experiences.

Cognitive Processing (Rorschach)

Zf (Organizational Activity) - assesses the extent to which an individual is open to the complexity of stimuli and engages in organization of this information. A low Zf indicates reluctance to tackle complexity while a high score indicates intellectual striving or need to deal with the stimulus field in a more careful and precise manner.

Appendix B

Background Information Sheet

1. Age: ____ Years
2. Gender: F ____ M ____
3. Ethnicity
- | | |
|------------|------|
| Caucasian | ____ |
| Negro | ____ |
| Asian | ____ |
| Hispanic | ____ |
| Aboriginal | ____ |
| Other | ____ |
4. Socio-economic status of your family:
- | | |
|-----------|------|
| < 15,000 | ____ |
| 15-25,000 | ____ |
| 25-35,000 | ____ |
| 35-45,000 | ____ |
| 45-55,000 | ____ |
| > 55,000 | ____ |
5. Living Arrangements:
- | | | | |
|----------------|------|--------------|------|
| With parent(s) | ____ | residence | ____ |
| alone | ____ | with partner | ____ |
| room/housemate | ____ | other | ____ |
6. Marital Status :
- | | | | |
|------------|------|----------|------|
| single | ____ | engaged | ____ |
| cohabiting | ____ | married | ____ |
| separated | ____ | divorced | ____ |
7. Are your parents:
- | | | | |
|-----------------|------|-----------|------|
| living together | ____ | separated | ____ |
| divorced | ____ | other | ____ |
8. Are you currently involved in an intimate relationship?
- Yes ____ No ____
9. If you answered yes above, how long have you been involved in this relationship?
- | | | | |
|-------------|------|-------------------|------|
| < 6 months | ____ | 6 months - 1 year | ____ |
| 1 - 2 years | ____ | 2 - 3 years | ____ |
| 3 - 4 years | ____ | > 4 years | ____ |
10. If you are not presently in a relationship, but have previously been involved in one, what is the longest period of time you were involved?
- | | | | |
|-------------|------|-------------------|------|
| < 6 months | ____ | 6 months - 1 year | ____ |
| 1 - 2 years | ____ | 2 - 3 years | ____ |
| 3 - 4 years | ____ | > 4 years | ____ |

Appendix B con't

11. How many intimate relationships have you been involved in?

12. Which is most important to you right now?

Success in your relationships _____

Your accomplishments _____

13. Have you decided what you want to do with your life?

Yes _____ No _____

14. Do you feel that you have been through a critical decision-making period deciding what you want to do with your life?

Yes _____ No _____

If you answered YES to Question 8 above:

15. Did this decision-making process create conflict with your parents?

Yes _____ No _____

If you answered YES to Question 9:

16. Was this conflict upsetting to you?

Yes _____ No _____

17. Have you made a commitment to particular beliefs (e.g., religious, ideological, moral) that are important to you?

Yes _____ No _____

Appendix C

FAMILY CONFLICT QUESTIONNAIRE

Almost everyone gets into conflicts with other people in their family and sometimes these lead to physical blows or violent behaviour. Please answer the following questions about your experiences **BEFORE YOU WERE AGE 17**, with your parents, stepparents, or guardians.

Please use the following scale to indicate how often each of the listed behaviours occurred.

- 1 = never
- 2 = once or twice
- 3 = 3-10 times
- 4 = 11-20 times
- 5 = more than 20 times

1. How often did your parents, stepparents or guardians:

- a) Hit or slap you really hard _____
- b) Beat or kick you _____
- c) Push, throw, or knock you down _____
- d) Hit you with an object _____
- e) Pull your hair _____
- f) Burn or scald you _____
- g) Scratch or dig fingernails into you _____
- h) Twist or pull your leg or arm _____

If you answered "never" to all of the above, please go on to the next questionnaire.

2. If you answered "yes" to any of the above, please indicate if the following people were involved at any point in time: (check all that apply).

- a) mother _____
- b) father _____
- c) stepmother _____
- d) stepfather _____
- e) other adult relative or guardian _____

Appendix C con't.

3. If you experienced any of the above behaviours, did they ever result in the following: (check all that apply)
- a) bruises or scratches _____
 - b) cuts _____
 - c) injuries requiring medical treatment _____
 - d) other injury _____
4. Did any of the following people ever hit you or beat you before you were 17? (Check all that apply)
- a) brother or sister _____
 - b) other child or adolescent _____
 - c) other adult non-family member _____
5. Do you feel that you were physically abused as a child?
- Yes _____ No _____

Appendix D

History of Unwanted Sexual Contact Questionnaire

In the past decade it has become more widely acknowledged that most individuals have a variety of sexual experiences during childhood. Relatively little is known about how these events affect people later in life. In this project we are studying people's perceptions of unwanted sexual experiences.

A) Please answer the questions on the following pages about any unwanted sexual experiences that occurred when you were AGE 16 OR YOUNGER with someone at least 5 years older than yourself. If you had more than one such experience (for instance, if the experiences occurred at different times in your life, or with different people), please put each experience on a separate page.

1) Type of experience	How often did this occur?	How old were you at the time?	How long did this go on? (weeks, months, years?)
	1 = never 2 = 1-2 times 3 = 3-10 times 4 = 11-20 times 5 = more than 20 times		
a) Sexual kissing	_____	_____	_____
b) Fondling of buttocks, thighs, breasts, or genitals	_____	_____	_____
c) Insertion of fingers or any objects in the vagina or anus	_____	_____	_____
d) Oral sex	_____	_____	_____
e) Anal intercourse	_____	_____	_____
f) Attempted vaginal intercourse	_____	_____	_____
g) Completed vaginal intercourse	_____	_____	_____

2) Please indicate below what relationship the other person was to you (if more than one person was involved, check all that apply), and indicate the person's gender, and their age at the time of the incident.

Relationship	Gender	Age
a) biological parent _____	M _____ F _____	_____
b) step parent _____	M _____ F _____	_____
c) sister or brother _____	M _____ F _____	_____
d) other relative _____	M _____ F _____	_____
e) friend _____	M _____ F _____	_____
f) stranger _____	M _____ F _____	_____
g) other (specify) _____	M _____ F _____	_____

3) Were you ever: (check all that apply)

a) threatened _____	b) convinced to participate _____
c) physically forced _____	d) physically hurt _____

4) Reflecting on the above incidents, would you describe them as: (Please circle a number)

positive 1...2...3...4...5...6...7 negative

B) Please answer the questions on the following pages about any unwanted sexual experiences that occurred when you were AGE 16 OR YOUNGER with someone LESS THAN 5 YEARS OLDER than yourself. If you had more than one such experience (for instance, if the experiences occurred at different times in your life, or with different people), please put each experience on a separate page.

1) Type of experience	How often did this occur? 1 = never 2 = 1-2 times 3 = 3-10 times 4 = 11-20 times 5 = more than 20 times	How old were you at the time?	How long did this go on? (weeks, months, years?)
a) Sexual kissing	_____	_____	_____
b) Fondling of buttocks, thighs, breasts, or genitals	_____	_____	_____
c) Insertion of fingers or any objects in the vagina or anus	_____	_____	_____
d) Oral sex	_____	_____	_____
e) Anal intercourse	_____	_____	_____
f) Attempted vaginal intercourse	_____	_____	_____
g) Completed vaginal intercourse	_____	_____	_____

2) Please indicate below what relationship the other person was to you (if more than one person was involved, check all that apply), and indicate the person's gender, and their age at the time of the incident.

Relationship	Gender	Age
a) biological parent _____	M _____ F _____	_____
b) step parent _____	M _____ F _____	_____
c) sister or brother _____	M _____ F _____	_____
d) other relative _____	M _____ F _____	_____
e) friend _____	M _____ F _____	_____
f) stranger _____	M _____ F _____	_____
g) other (specify) _____	M _____ F _____	_____

3) Were you ever: (check all that apply)

a) threatened _____	b) convinced to participate _____
c) physically forced _____	d) physically hurt _____

4) Reflecting on the above incidents, would you describe them as: (Please circle a number)

positive 1...2...3...4...5...6...7 negative

C) Please answer the questions on the following pages about any unwanted sexual experiences that occurred when you were AGE 17 OR OLDER. If you had more than one such experience (for instance, if the experiences occurred at different times in your life, or with different people), please put each experience on a separate page.

1) Type of experience	How often did this occur? 1 = never 2 = 1-2 times 3 = 3-10 times 4 = 11-20 times 5 = more than 20 times	How old were you at the time?	How long did this go on? (weeks, months, years?)
a) Sexual kissing	_____	_____	_____
b) Fondling of buttocks, thighs, breasts, or genitals	_____	_____	_____
c) Insertion of fingers or any objects in the vagina or anus	_____	_____	_____
d) Oral sex	_____	_____	_____
e) Anal intercourse	_____	_____	_____
f) Attempted vaginal intercourse	_____	_____	_____
g) Completed vaginal intercourse	_____	_____	_____

2) Please indicate below what relationship the other person was to you (if more than one person was involved, check all that apply), and indicate the person's gender, and their age at the time of the incident.

Relationship	Gender	Age
a) biological parent _____	M _____ F _____	_____
b) step parent _____	M _____ F _____	_____
c) sister or brother _____	M _____ F _____	_____
d) other relative _____	M _____ F _____	_____
e) friend _____	M _____ F _____	_____
f) stranger _____	M _____ F _____	_____
g) other (specify) _____	M _____ F _____	_____

3) Were you ever: (check all that apply)

a) threatened _____	b) convinced to participate _____
c) physically forced _____	d) physically hurt _____

4) Reflecting on the above incidents, would you describe them as: (Please circle a number)

positive 1...2...3...4...5...6...7 negative

Appendix E**Interest in Follow-up Study**

NO. _____

PLEASE DETACH THIS PAGE AND HAND IN SEPARATELY

We will be conducting a follow-up to the present study. It will involve approximately 3 hours of psychological testing. This testing will be administered on an individual basis. You will receive an additional 3 hours of experimental credit for participation. If you wish to volunteer for this follow-up study, please write your name and phone number below and one of our researchers will contact you.

NAME: _____

PHONE #: _____

Appendix F**CONSENT FORM**

This is a study examining the relationship between different life events and performance on standard psychological tests. Should you agree to participate in this study you will be asked to complete two psychological tests, the MMPI-2 and the Rorschach. The completion of these measures will take approximately 3 hours for which you will receive 3 experimental credits. You may withdraw your consent at anytime without penalty. All responses will be kept strictly confidential.

Your signature below indicates your consent to participate in the study.

Signature

Appendix G

FEEDBACK SHEET

The purpose of the study you have just participated in, is to examine psychological characteristics associated with a history of childhood maltreatment. According to Attachment Theory (Bowlby), children's relationships with caregivers have a profound impact on later development. Secure attachment has been associated with psychological health while insecure attachment styles have been associated with a variety of difficulties. This study is particularly concerned with affective, cognitive, and interpersonal functioning. In children, maltreatment by parents has been associated with several styles of insecure attachment. However, the impact of insecure attachment with a caregiver is moderated by secure attachment to another caregiver or supportive adult in the child's life.

In psychological assessment, two main techniques are objective and projective testing. Objective assessment uses structured paper and pencil methodology while projective assessment is less structured. These techniques provide two different sources of information about an individual's psychological functioning. The MMPI-2 is an objective technique and the Rorschach is a projective technique. This study will examine the differences and similarities in data produced by these two tests.

At the completion of the study, a general summary of the results will be available at Room 105 Fletcher Argue.

Please be assured that your responses will be kept strictly confidential. If any of the issues brought up in the study have caused you distress and you wish to seek counselling, we encourage you to contact either the Student Counselling Services at 474-8592 or the Psychological Services Centre at 474-9222. Both facilities are on campus and free of charge.

Your participation in this study was greatly appreciated.

Thank you.

Appendix H

TRAUMA SEQUELAE

People sometimes have life experiences that are extremely stressful and disturbing. We are interested in knowing more about how these experiences affect people. Examples of the types of experiences we are studying are:

- (a) being involved in a disaster such as a plane crash, fire, or flood,
- (b) experiencing a serious threat to your life or health, such as sexual or physical abuse or assault, having a life-threatening operation, or being seriously injured in an accident,
- (c) experiencing a serious threat to the life or health of someone close to you (e.g., kidnapping, suicide),
- (d) seeing another person who was seriously injured or dead.

If you have had any of these kinds of experiences during your life, please list each experience below, give a brief description, and give your age at the time of the experience.

If you have not had an experience like this in your life, please turn to the next questionnaire.

	Experience	Age
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

If you listed more than one experience, please answer the following questions with regard to the experience you found most traumatic, and circle the number of the experience in the list above.

1. Do you have recurring memories of the experience?

Yes _____ No _____

2. Do memories of the experience intrude on your life?

Yes _____ No _____

3. Do these memories distress you?

Yes _____ No _____

4. Do you have recurrent dreams about the experience?

Yes _____ No _____

If yes, are these dreams upsetting?

Yes _____ No _____

5. Have you ever had a sense of reliving the experience? (For example, have you acted or felt as though the experience were recurring? Include any experiences that happened upon awakening or when intoxicated.)

Yes _____ No _____

6. Have you experienced flashbacks (e.g., replaying of vivid memories of the experience)?

Yes _____ No _____

7. Have you experienced perceptual illusions (i.e., mistaken perceptions; for example, you thought you saw your abuser on the street, but it couldn't have been him/her)?

Yes _____ No _____

8. Have you experienced hallucinations (i.e., hearing or seeing things that aren't there)?

Yes _____ No _____

9. Do you feel distressed or upset when you are reminded of the experience? (For example, does the anniversary of the experience upset you?)

Yes _____ No _____

10. Do you have any other symbolic reminders of the experience? (E.g., objects, music, words, or phrases which trigger memories of the experience?)

Yes _____ No _____

In reference to questions 1 to 10, please answer the following:

- (a) How long have any of the above been occurring?

Less than 1 month _____ more than 1 month _____

- (b) How soon after the experience did they begin to occur?

less than 6 months _____ more than 6 months _____

11. Do you deliberately avoid thoughts or feelings that remind you of the experience?

Yes _____ No _____

12. Do you deliberately avoid activities or situations that remind you of the experience?

Yes _____ No _____

13. Do you find that you have trouble remembering certain aspects of the experience?

Yes _____ No _____

14. Are you much less interested in things that used to be important to you (e.g., sports, hobbies, social activities)?

Yes _____ No _____

15. Do you feel distant or cut off from others?

Yes _____ No _____

16. Do you feel emotionally numb? (For example, are you no longer able to feel strongly about things or have loving feelings for people?)

Yes _____ No _____

17. Do you feel pessimistic about your future?

Yes _____ No _____

In reference to questions 11 to 17, please answer the following:

(a) How long have any of the above been occurring?

Less than 1 month _____ more than 1 month _____

(b) How soon after the experience did they begin to occur?

less than 6 months _____ more than 6 months _____

Appendix I

Analysis of Subjects Experiencing Other Trauma

Sexual Abuse. Subjects were classified as sexually abused if they reported unwanted sexual experiences that occurred before age 17 with someone at least five years older than the subject. The reported frequency of the different types of sexually abusive behaviour are summarized in Table 27. On average, these subjects reported experiencing 2.6 different types of sexually abusive behaviour. The majority of reported perpetrators were known to the subject (84.4%) and seven subjects reported more than one perpetrator (28%). Of the known perpetrators, 48.1% were male relatives (father, 7.4%; brother, 11.1%; step-father, 3.7%; grandfather, 3.7%; male cousin, 7.4%; uncle, 11.1%; and other male relative, 3.7%) and 51.9% were other known males (neighbour, 11.1%; acquaintance, 11.1%; friend, 7.4%; boyfriend, 11.1%; friend of parents, 7.4%; and babysitter, 3.7%). The remaining five perpetrators were identified as a male stranger (9.4% of total perpetrators) or as "Other male" (6.3%). None of the reported perpetrators were women. Sixteen (64%) of these subjects reported that threat or force were used in the assaults. In addition, of these subjects who reported childhood sexual assault, seven (28%) reported peer sexual assault (perpetrator was less than five years older than the subject) prior to the age of 17 and nine (36%) reported sexual assaults after the age of 17.

Other Trauma. Based on subjects' responses to a trauma questionnaire (see Appendix H) administered as part of the larger studies, 13 of those who did not report childhood physical or sexual abuse were classified as experiencing other traumata

Table 27

Number of Subjects Reporting Each Type of Sexually Abusive Behaviour During Childhood

	<u>Frequency</u>				<u>Total N</u>	<u>Percentage</u>
	<u>1-2</u>	<u>3-10</u>	<u>11-20</u>	<u>≥20</u>		
Fondling buttocks, thighs, breasts or genitals	10	3	4	4	21	84%
Sexual kissing	6	4	1	4	15	60%
Attempted vaginal intercourse	5	1	0	2	8	32%
Insertion of objects in vagina or anus	0	3	1	2	6	25%
Oral sex	0	1	1	3	5	20%
Completed vaginal intercourse	1	0	2	1	4	16%
Anal intercourse	0	0	0	1	1	4%

which resulted in at least one of the major post-traumatic symptoms of re-experiencing, avoidance or numbing, or increased arousal. The majority of these subjects reported experiencing a personal threat to their own or a family member's life or death of a family member or close friend. One had experienced a natural disaster and one witnessed a decapitation.

Means and standard deviations of each group's scores on each variable are reported in Table 28. To determine if the trauma sub-groups significantly differed from each other, multiple t-tests were performed using the physical abuse sub-group as the standard. The hazard of detecting a difference by chance alone due to the multiple tests was considered an asset in this situation in that the sub-groups could more easily be identified as different from each other. None of the t-tests between the physical abuse sub-group and the physical and sexual abuse sub-group were significant suggesting these sub-groups could be collapsed. Between the physical abuse sub-group and the sexual abuse sub-group only one t-test was significant, Afr ($t = 2.92, p < .05$). Given that 19 comparisons were conducted between these two groups, this one difference could have occurred by chance alone and therefore was not considered significant. Between the physical abuse and other trauma sub-groups there were significant differences on 7 of the 19 t-tests (Afr, Scale 7, Scale 8, Scale 4, MeanCI, PK, and PS. This number of differences was considered significant enough to exclude the other trauma sub-group from further analyses. Therefore, the trauma group consisted of three sub-groups: physical abuse, sexual abuse, and physical and sexual abuse.

Figure 10 plots the MMPI-2 Scores for the no-trauma and trauma sub-groups. As

Table 28

Means and Standard Deviations on Affective, Cognitive, Interpersonal, and Generalized distress Variables for Trauma Sub-groups

	No Trauma	Px Abuse	Sx Abuse	Px & Sx Abuse	Other Trauma
Affective					
Afr	0.516 (0.239)	0.700 (0.025)	0.423 (0.117)	0.531 (0.252)	0.465 (0.148)
Log Afr	-0.753 (0.425)	-0.415 (0.370)	-.898 (0.296)	-0.729 (0.449)	-0.808 (0.305)
S	3.051 (2.282)	5.500 (3.960)	3.009 (1.954)	3.538 (1.506)	3.182 (2.040)
Adj S	0.126 (0.080)	0.176 (0.093)	0.117 (0.071)	0.162 (0.063)	0.140 (0.069)
Scale 2	45.829 (7.842)	57.750 (13.025)	49.583 (10.917)	55.917 (15.400)	46.846 (6.731)
Scale 7	52.629 (8.489)	62.250 (17.019)	51.250 (10.955)	56.083 (15.180)	49.154 (10.463)
Scale 9	53.029 (8.566)	64.375 (22.148)	53.917 (9.737)	64.083 (9.949)	53.692 (11.383)
Cognitive					
Lamda	0.606 (0.365)	0.475 (0.302)	0.422 (0.217)	0.601 (0.407)	0.593 (0.577)
Sq Lam	0.747 (0.221)	0.665 (0.193)	0.631 (0.159)	0.735 (0.256)	0.723 (0.279)
X-%	0.222 (0.100)	0.236 (0.131)	0.259 (0.081)	0.208 (0.079)	0.188 (0.091)
Scale 1	49.943 (8.110)	52.375 (9.709)	50.167 (8.558)	53.833 (9.223)	47.769 (10.925)

Scale 3	48.657 (7.787)	50.500 (9.547)	50.167 (13.079)	54.833 (11.614)	49.846 (8.934)
Scale 8	51.383 (6.571)	66.125 (19.932)	55.417 (12.660)	63.167 (14.522)	49.077 (7.522)
Interper- sonal					
T	0.538 (0.720)	0.500 (0.535)	0.833 (1.030)	0.385 (0.506)	1.000 (1.183)
H	2.692 (1.490)	5.395 (4.069)	3.500 (2.355)	2.615 (1.660)	2.455 (1.968)
Adj H	0.111 (0.060)	0.167 (0.097)	0.143 (0.083)	0.123 (0.077)	0.119 (0.108)
COP	1.103 (1.071)	1.500 (1.512)	1.667 (1.155)	1.154 (1.281)	1.182 (1.601)
Scale 4	47.857 (6.504)	63.250 (14.945)	54.500 (9.877)	62.000 (12.891)	48.231 (11.454)
Scale 6	48.143 (10.469)	58.375 (17.254)	53.083 (10.405)	53.417 (12.852)	52.308 (11.280)
Scale 0	45.486 (9.457)	50.375 (13.917)	49.000 (9.194)	50.583 (11.131)	43.462 (5.395)
General Distress					
Mean CI	49.213 (4.206)	58.375 (11.387)	51.898 (8.004)	57.102 (9.267)	48.821 (6.371)
PK	50.114 (7.888)	64.000 (14.967)	55.500 (11.996)	63.583 (16.228)	51.538 (9.369)
PS	50.886 (7.995)	64.000 (13.805)	56.250 (11.702)	62.667 (14.550)	50.615 (9.097)

Note. Px = Physical, Sx = Sexual.

can be seen in this figure, with the exception of L, F, and K, the no-trauma group scored lower than the trauma sub-groups. Of the trauma sub-groups, the sexual abuse sub-groups was most similar to the no-trauma group and the physical abuse sub-group scored highest with the combined physical and sexual abuse sub-group scoring between these other two trauma sub-groups.

Table 29 shows average zf and EA scores for the trauma and no-trauma sub-groups. Table 30 shows the proportion of subjects in each group classified as introversive, extratensive and ambitent. The difference between the groups was not significant ($\chi^2 = 1.214$, $p > .05$).

Group Comparisons

A series of 2 (trauma group) X 3 (EB style) between subjects multivariate analyses of variance (MANOVA's) were performed on affective, cognitive, interpersonal, and generalized distress dependent variables. The results of these analyses are summarized in Tables 31 through 34. These results are virtually identical to those found for the more limited group of trauma subjects.

Since T is a categorical variable it was analyzed separately using chi-square analysis of the six group by coping style cells and was found to be not significant..

A one-way analysis of covariance (ANCOVA) was performed on MeanCI with the independent variable group (trauma and no-trauma). Covariates were adj zf and adj EA (cognitive and affective processing). While Mean CI did not vary significantly with Adj zf, the interaction between Adj zf and trauma group was significant $F(1, 61) = 17.26$, $p < .01$ indicating a differential effect of cognitive processing depending on group.

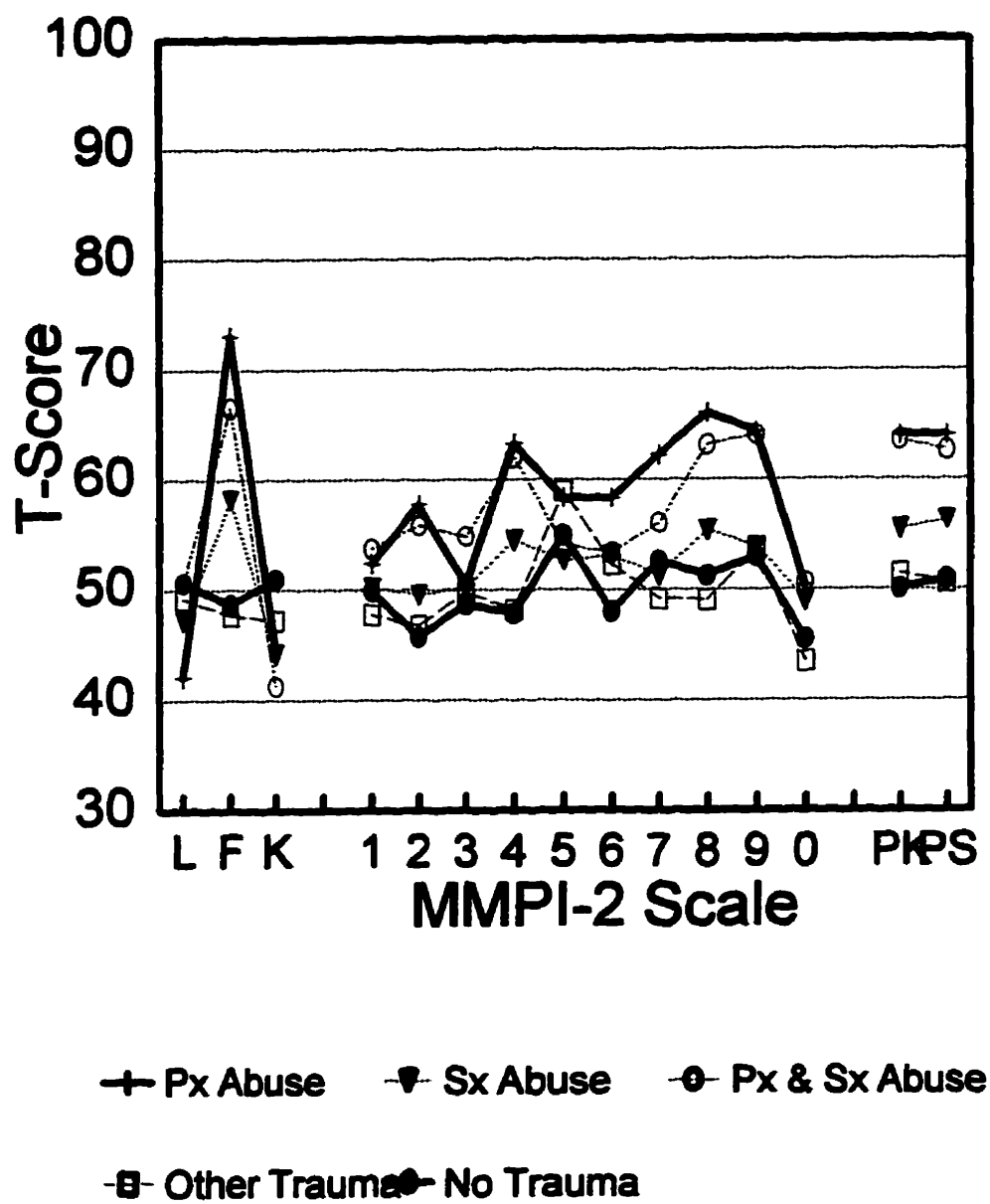


Figure 10. MMPI-2 T-Scores for Trauma Sub-groups.

Table 29

Means and Standard Deviations on zf and EA for the Extended Trauma and No-Trauma Groups

Variable	No-trauma	Trauma
zf	14.897 (6.597)	15.667 (5.447)
Adjusted zf	0.614 (0.172)	0.651 (0.174)
EA	8.282 (4.683)	9.864 (5.011)
Adjusted EA	0.330 (0.113)	0.400 (0.139)

Table 30

Percentage of Subjects Classified as Introversive, Extratensive and Ambitent

EB Style	No-trauma	Trauma
Introversive	45.5%	33.3%
Extratensive	18.2%	25.6%
Ambitent	36.4%	41.0%

Table 31

MANOVA of Affective Variables for the Extended Trauma and No-Trauma Groups

Dependent	Effect	F*	df	p
Multivariate	GR*	3.68	5, 57	< .01
	EB*	0.19	10, 114	ns
	GR X EB	0.82	10, 114	ns
Scale 2	GR	7.47	1, 61	< .01
	EB	0.03	2, 61	ns
	GR X EB	0.08	2, 61	ns
Scale 7	GR	1.15	1, 61	ns
	EB	0.20	2, 61	ns
	GR X EB	0.92	2, 61	ns
Scale 9	GR	4.45	1, 61	< .05
	EB	0.00	2, 61	ns
	GR X EB	1.04	2, 61	ns
LogAfr	GR	0.61	1, 61	ns
	EB	0.39	2, 61	ns
	GR X EB	0.58	2, 61	ns
Adjusted S	GR	1.45	1, 61	ns
	EB	0.22	2, 61	ns
	GR X EB	0.45	2, 61	ns

Note. GR = Group, EB = Erlebnistypus, Multivariate F = Wilks' Lambda, Univariate F = Type III SS.

Table 32

MANOVA of Cognitive Variables for the Extended Trauma and No-Trauma Subgroups

Dependent	Effect	F*	df	p
Multivariate	GR*	2.08	5, 57	ns
	EB*	0.23	10, 114	ns
	GR X EB	1.04	10, 114	ns
Scale 1	GR	1.04	1, 61	ns
	EB	0.15	2, 61	ns
	GR X EB	0.06	2, 61	ns
Scale 3	GR	1.43	1, 61	ns
	EB	0.04	2, 61	ns
	GR X EB	0.27	2, 61	ns
Scale 8	GR	9.30	1, 61	< .01
	EB	0.08	2, 61	ns
	GR X EB	1.21	2, 61	ns
Sq Lam	GR	0.56	1, 61	ns
	EB	0.12	2, 61	ns
	GR X EB	0.47	2, 61	ns
X-%	GR	0.02	1, 61	ns
	EB	0.56	2, 61	ns
	GR X EB	2.21	2, 61	ns

Note. GR = Group, EB = Erlebnistypus, Multivariate F = Wilks' Lambda, Univariate F = Type III SS.

Table 33

MANOVA of Interpersonal Variables for the Extended Trauma and No-Trauma Groups

Dependent	Effect	F*	df	p
Multivariate	GR*	4.21	5, 57	< .01
	EB*	1.76	10, 114	ns
	GR X EB	0.49	10, 114	ns
Scale 4	GR	19.90	1, 61	< .01
	EB	0.03	2, 61	ns
	GR X EB	0.06	2, 61	ns
Scale 6	GR	4.88	1, 61	< .05
	EB	0.75	2, 61	ns
	GR X EB	0.20	2, 61	ns
Scale 0	GR	0.09	1, 61	ns
	EB	0.98	2, 61	ns
	GR X EB	0.36	2, 61	ns
COP	GR	0.24	1, 61	ns
	EB	0.95	2, 61	ns
	GR X EB	0.90	2, 61	ns
Adjusted H	GR	1.38	1, 61	ns
	EB	8.49	2, 61	< .01
	GR X EB	1.29	2, 61	ns

Note. GR = Group, EB = Erlebnistypus, Multivariate F = Wilks' Lambda, Univariate F = Type III SS.

Table 34

MANOVA of Generalized Distress Variables for the Extended Trauma and No-Trauma Groups

Dependent	Effect	F*	df	p
Multivariate	GR*	4.61	3, 59	< .01
	EB*	0.81	6, 118	ns
	GR X EB	0.55	6, 118	ns
MeanCI	GR	10.35	1, 61	< .01
	EB	0.01	2, 61	ns
	GR X EB	0.31	2, 61	ns
PK	GR	14.20	1, 61	< .01
	EB	0.86	2, 61	ns
	GR X EB	0.63	2, 61	ns
PS	GR	12.83	1, 61	< .01
	EB	0.59	2, 61	ns
	GR X EB	0.44	2, 61	ns

Note. GR = Group, EB = Erlebnistypus, Multivariate F = Wilks' Lambda, Univariate F = Type III SS.