Karolinska Institutet
Department of Woman and Child Health
Child and Adolescent Psychiatric Unit
Stockholm, Sweden

Post-Traumatic Stress Disorder and Resilience in Children of Traumatised Parents: a Transgenerational Perspective

Atia Taufik Ismail Daud

Karolinska Institutet

Stockholm 2008

Published by Karolinska Institutet. Printed by US-AB Stockholm, Sweden.

ISBN 978-91-7409-012-3

In memory of my parents

ABSTRACT

The main aim of this thesis was to explore the possible association between parents' severe emotional trauma and their children's psychopathology (Transgenerational transmission of parents' traumatic experiences to their children), as well as resiliency factors and the relationship between prolonged traumatisation and personality development.

The association between parental trauma and children's psychopathology was explored by investigating a group of parents with torture experiences, a group without torture experiences, and the children in both groups. The traumatised parents' group consisted of 15 families where either one or both of the parents had a history of torture (30 parents, fathers' mean age 43.5 years, mothers' 38.7 years) and their children in the age group 7–18 years (29 boys, mean age 12, and 16 girls, mean age 11.3 years). The comparison group consisted of 15 families with 26 parents (fathers' mean age 45.8 years, mothers' 38.7 years) and their children in corresponding age groups (15 boys, mean age 11.0 years, and 16 girls, mean age 12.6 years). The Diagnostic Interview for Children and Adolescents (DICA), the Post-Traumatic Symptoms Check List, the Harvard/Uppsala Trauma Questionnaire (H/UTQ) and the Karolinska Scales of Personality (KSP) were used together with the Machover Draw-A-Person test (DAP) to investigate the emotional state of the children. The results showed associations between parental PTSD and the children's maladaptive stress reactions, including symptoms of ADHD and somatisation. The projective method revealed differences between the two groups of children with respect to emotional impairments, such as secure/insecure attachment, depressiveness and aggressiveness, in favour of the comparison group.

The findings regarding possible comorbidity/overlapping between Post-Traumatic Stress Disorder (PTSD-related symptoms) and Attention-Deficit/Hyperactivity Disorder (ADHD-like symptoms) was studied at a later point in time in the children of the same families; 40 children of traumatised parents and 40 children of non-traumatised parents fulfilled the inclusion criteria. The DICA interview, the Post-Traumatic Symptoms Check List, The WISC-III, the Yale Children's Inventory (YCI) and the Strengths and Difficulties Questionnaire (SDQ) were used in that study. The results indicated an overload symptomatology with lowered IQ in the children of traumatised parents where the same child could have both PTSD-related symptoms and an ADHD-like syndrome. The two groups of children were also investigated concerning resilience and vulnerability factors using the 'I Think I AM' (ITIA) questionnaire in addition to the above mentioned methods. The results indicated that adequate self-esteem, high scores on IQ measures and adequate relation to family facilitated the development of resilience.

The impact of prolonged traumatisation or early childhood trauma exposure on personality impairments was examined in four groups of adult men (N=161) with and without trauma exposure, using KSP and H/UTQ with hypothetical regrouping of PTSD symptoms. The results revealed aspects of impairments described in terms of Trauma-Related Disorder with PTSD, or hypothetically *posttraumatic personality disorder,* as a main outcome.

Keywords: PTSD, trauma, cognitive function, IQ, ADHD, resilience, Trauma Related Disorder, posttraumatic personality disorder

ISBN 978-91-7409-012-3

LIST OF PUBLICATIONS

I. Daud, A., Skoglund, E., & Rydelius, P.-A., (2005a). Children in families of torture victims: transgenerational transmission of parents' traumatic experiences to their children. *International Journal of Social Welfare,* **14**: 23-32.

II. Daud, A., Skoglund, E., & Rydelius, P-A., (2005b). The Emotional State of Children of Torture Victims Compared with the Emotional State of Children of Non-traumatized Parents. *Egyptian Journal of Psychiatry*, **24(**2): 171-182.

III. Daud, A. & Rydelius, P.-A., (*Submitted 2008-03-03*). Comorbidity/overlapping between: symptoms of Attention-Deficit/ Hyperactivity Disorder (ADHD) and Post-Traumatic Stress Disorder (PTSD) in relation to IQ among children of traumatized/non-traumatized parents.

IV. Daud, A., af Klinteberg, B. & Rydelius, P.-A., (2008), *Online 28 March*) Resilience and vulnerability among refugee children of traumatized and non-traumatized parents. *Child and Adolescent Psychiatry and Mental Health.*

V. Daud, A., af Klinteberg, B. & Rydelius, P.-A., (2008)*, Online 21 Feb.* Trauma, PTSD and Personality: The Relationship between Prolonged Traumatization and Personality Impairments. *Scandinavian Journal of Caring Sciences.*

CONTENTS

LIST OF ABBREVIATIONS

ADHD	Attention Deficit/Hyperactivity Disorder
DAP	Machover's Draw-A-Person test
DICA-R	Diagnostic Interview for Children and Adolescents-Revised
H/UTQ	Harvard/Uppsala Trauma Questionnaire
ITIA	I Think I am
KSP	The Karolinska Scales of Personality
PTSD	Post-Traumatic Stress Disorder
PTSS	Post-Traumatic Stress Symptoms
PTSS-C	Post-Traumatic Stress Checklist for Children
SDQ	Strengths and Difficulties in Children Questionnaire
WISC-III	Wechsler Intelligence Scale for Children, 3rd edition.
YCI	Yale Children's Inventory

1 INTRODUCTION

During the Lebanon civil war and the prolonged armed conflict between Iraq and Iran in the 1990s, massive waves of Iraqi refugees came to Sweden. It soon became apparent in the daily work at the child and adolescent outpatient clinic in Stockholm, Sweden, that many of the referrals were Arabic-speaking children who were suffering from restlessness, concentration difficulties, and anger and acting-out behaviour. At the same time, it had also been determined that most of the parents of these children were suffering from Post-Traumatic Stress Disorder (PTSD) and were subsequently given treatment at the Swedish Red Cross Centre for Torture Victims. The development of improved diagnostic instruments and several advances in the neuropsychological/ neuropsychiatric sciences encouraged me to adopt a new perspective on these children and their psychological development.

The methodological tradition at the child and adolescent clinic in Stockholm was almost always based on teamwork between the child's/adolescent's therapist and the parent(s') therapist, with weekly conferences concerning the families in question. As clinical psychologist, my being Egyptian was an advantage in working with these families as it helped dispel suspicion and facilitated the process of transference and counter-transference. I was able to work closely with both Lebanese and Iraqi families without generating mistrust.

My interest in the children's psychological development and the vital role families play in that development led me to consider the possibility that those parents' traumatic experiences could be transmitted between generations. A project was thereby initiated which was designed to study refugee children and their parents in a holistic perspective. The project was supported by a grant from the Swedish National Board of Health and Welfare and by economical support from the Stockholm County Council.

The main purpose of this thesis is to describe and explore psychiatric and psychological consequences for refugee children in families where the parents have suffered torture before coming to Sweden.

The following section 2 presents a literature review on children of tortured parents, followed in section 3 by a presentation of the theoretical framework for the study. The concept of trauma, viewed from various theoretical perspectives, and the overlapping of, or similarities between, symptoms of PTSD and ADHD in children are discussed.

Furthermore, a possible link to psychosocial stress theory is also discussed as the hypotheses underlying this theory were proposed to test how emotional stresses in alcoholic families impair the children's well-being. Section 3 concludes with the proposal of *posttraumatic personality disorder* as an outcome of severe and prolonged traumatisation during childhood.

2 A LITERATURE REVIEW ON CHILDREN OF TORTURED PARENTS

A literature search was undertaken using the Internet *PubMed* and *PsycINFO* search motors and with key words such as 'Children of tortured parents, Children of tortured fathers' and 'Children of tortured mothers'. These key words and different combinations of search strategies resulted in only a few references in this field of inquiry.

Cohn et al. (1985), in their study of refugee children whose parents had been subjected to torture, concluded that 'refugee children suffer serious, perhaps lifelong, *sequelae*, psychological as well as social' (p. 438). Of particular interest for the sample of children in this study is Cohn et al.'s conclusion that children in families where the parents have been tortured constitute a vulnerable group with perhaps lifelong problems and difficulty in adapting to life in another culture.

Montgomery et al. (1992), in their study of children of torture victims, found that the children were anxious and depressive, expressed as social isolation and poor self-confidence, and displayed regressive behaviour, such as enuresis, affective outbursts and destructive or dependant behaviour. Furthermore, the children suffered from psychosomatic problems such as headaches, stomach pains and pains in the arms and legs. Also evident were sleep disorders such as difficulty falling asleep, interrupted sleep and walking in one's sleep; difficulties at school such as learning and concentration problems, conflict-seeking behaviour and restlessness; problem behaviour at home such as domineering behaviour, aggressiveness, conflicts with siblings, obstinate behaviour and isolation-seeking (i.e. withdrawal from social contact). Montgomery et al. (1992) found that detachment and indifference seemed to be the strategy the parents of these children used to cope with their experiences of torture. These results of their study are in line with what is known today as PTSD-related symptoms in children.

Ahmed (1999) investigated children's reactions to one of the most horrifying homicidal acts perpetrated against the Kurdish people in Iraq under the former regime. He found an association between this collective trauma and Kurdish children's maladaptive behavioural symptoms, such as PTSD-related symptoms and depressiveness.

The findings of Vaage et al. (2007) lend support to the idea of an overrepresentation of refugee children's diagnoses of psychosocial and PTSD disorders and of neurobiological disorders. The refugee children in their study received twice as many diagnoses of conduct disorder, ADHD and PTSD as the children in their control group. This complicated diagnostic picture, postulated by Vaage et al. (2007), might be a result of the family's accumulative stress experiences.

A main issue in the present thesis is the hypothesised transgenerational transmission of parental traumatic consequences to their children. This idea was investigated by Chrestman (1994), and Danieli (1998). They found an association between the parents' symptomatology and the psychopathological symptoms of their children, which included daydreaming, maladaptive stress symptoms and depressiveness. These children tried to deal with their parents' traumatic experiences by creating fantasies about what their parents might have experienced. The children acted out these *fantasised* parental traumatic experiences in their playing. The idea of primary and secondary traumatisation transmission is based on three factors: i) the severity of the traumatic experiences; ii) the extent to which the individual's schemata have been devastated; and iii) the parents' integration of the traumatic events.

The mechanisms behind the possible transmission of trauma impact from parents to children have been described as follows: 1) *Parents' silence*: family members avoid discussing what happened in an effort to avoid awakening the parents' feelings of aggression; for this reason, the children fantasise about what were the actual events, i.e. they live in a traumatic fantasised world; 2) *Identification*: the children seek their parents' acceptance and recognition by avoiding talking about what happened. Janoff and Bulman (1992), for example, argued that in traumatised families there is an association between the children's guilt feelings and their parents' symptomology; 3) *Over disclosure*: the child tries to protect his/her parents by maintaining total silence and repressing traumatic memories; and 4) *Re-enactment*: the traumatised parents try to retest the validity of the new worldview they have acquired in the aftermath of their traumatic experiences. Munroe et al. (1995) clarified the idea of re-enactment by arguing that not only do traumatised people themselves intentionally re-enact the traumatic experiences, but also people close to the trauma survivors tend to think, feel and behave as if they themselves had also been subjected to traumatic experiences. A possible interpretation of this conceptualisation is that the isomorphic re-enactment produces not only feelings but also parallel thoughts and behaviours. The

transgenerational transmission of the consequences or *sequelae* of trauma occurs not only in a psychological, social and behavioural sense, but also as a psychobiological manifestation. This issue was explored by Yehuda et al. (2007) in their study of the biological patterns of basal cortisol secretion in the offspring of Holocaust survivors with and without parental PTSD. They conclude that these biological patterns differ between children with and children without parental PTSD, and furthermore, that these differences may be related to the mother's responses in the child's early life.

The psychopathology found among children of traumatised parents or among individuals who have severe traumatic experiences indicates that there is an evident comorbidity between anxiety-related syndromes, mainly PTSD, and neuropsychiatric behavioural impairments, mainly ADHD-like symptoms.

In a study of adults suffering from emotional exhaustion syndrome (burn-out), Brattberg (2006) hypothesised that the co-existence of PTSD and ADHD is under-diagnosed in this group of patients as she found many of the symptoms of PTSD and of ADHD represented in the same patients, A conclusion she draws in the study is that there is a significant association between, on the one hand, traumatic life events, PTSD and/or ADHD and, on the other hand, the emotional exhaustion syndrome.

3 TRAUMA CONCEPT: THEORETICAL FRAMEWORK

The concept of trauma as it is used clinically and in research contexts is a result of multidisciplinary approaches, from Freud's work with hysterical patients to Post-Traumatic Stress Disorder. Some of these contributions over time are presented below.

3.1 THE CONTRIBUTION OF PSYCHODYNAMIC THEORY

This section gives a brief overview of the development of the trauma concept, beginning with Sigmund Freud. According to Freud (1917), psychic trauma occurs when an individual is exposed to an acute, overwhelming event resulting in helplessness in the face of life-threatening danger. A prolonged trauma causes an overload of the individual's emotional equilibrium, which, metaphorically, is the individual's protective shield against excessive stimuli or excitation. Freud (1920) described traumatic events as follows: 'We describe as "traumatic" any excitations from outside which are powerful enough to break through the protective shield … Such an event as an external trauma is bound to provoke a disturbance on a large scale in the functioning of the organism's energy…' (p. 29).

In 1956 Kris introduced the concept of strain trauma to refer to the ego's inability to adapt to trauma, becoming instead disorganised and overwhelmed. Then in 1963, Khan introduced the concept of cumulative trauma in childhood, stating: '… cumulative trauma is the result of the breaches in the mother's role as a protective shield over the whole course of the child's development… the breaches in this protective shield's role, as I envisage them, are not traumatic singly… these breaches over the course of time and through the developmental process cumulate silently and invisibly' (p. 290–291). Khan's contribution to the trauma concept was to accentuate the consequences of repeated breakdowns of the child's internal emotional structure, the stability of which rests mainly on the mother's ability to function as a protective shield during the child's early psychological development. The continuity of the traumatic events and the repeated breakdowns in the mother's ability to provide emotional protection aggravate the child's stress reactions. Prolonged stress of this kind can lead to a psychopathological development in the child. Such 'breaches' which extend 'over the course of time and through the developmental process' and which cumulate 'silently and invisibly', along with threatening life events and prolonged traumatisation, may constitute a basic ground for the triggering of underlying

cumulative childhood trauma, thereby having a long-lasting effect on the individual's emotional and cognitive development, even throughout adulthood.

Anna Freud (1967) described traumatic stress as a devastating event that affects the course of ego development. Winnicott (1969) added a dimension to the concept when he defined trauma as 'that event against which an individual has no organised defence so that a confessional state supervenes, followed perhaps by a reorganisation of defences, defences of a more primitive kind than those which were good enough before the occurrence of the trauma' (p. 259). Kohut (1977) linked the trauma concept to loss and anxiety, and deepened the understanding of the impact of traumatic events, especially with respect to the internalisation process, the multifaceted feeling of loss and the fear of 'disintegration anxiety' (p. 104). Trauma, however, not only affects the individual's emotional and cognitive functioning, with reduction and constriction in both domains, there is also a neurological effect, as Buchele (2000) pointed out: 'The experience of traumatisation alters brain chemistry and structure' (p. 179).

3.2 THE CONTRIBUTION OF CRISIS AND DISASTER THEORY

In a pioneering work from the 1980s, Ulf Otto, a Swedish child psychiatrist and military psychiatrist in the Swedish defence forces, investigated the traumatic impact of disasters and war on children's wellbeing. Together with Tom Lundin, Otto outlined the basic concepts of *catastrophes and defence psychiatry* in a handbook published in Lund in 1986. According to crisis and disaster theory as presented by Lundin et al. (1984, 1986, 1996), there is an association between the catastrophe syndrome and the development of an adequate post-traumatic crisis reaction. Furthermore, the theory emphasises the effect of delayed stress reaction as a vulnerability factor in the development of psychopathological impairments. Children's reactions in catastrophe situations include acute anxiety; behavioural maladaptive symptoms, such as restlessness, apathy, withdrawal, depression, irritability; communication disturbances; and impulsivity with aggressive or regressive patterns. According to Lundin et al. (1984), crisis and catastrophe theory seeks to lift forward the salutogenic features in the individual and underlines the importance of early intervention in dealing with people who have been exposed to traumatic events. These findings are in line with Yule et al. (1993) who stressed that better crisis support immediately after the disaster predicted fewer post-traumatic symptoms.

3.3 THE CONTRIBUTION OF ATTACHMENT THEORY

Of special interest in the study of the possible transmission of transgenerational trauma is the work of Bowlby. According to Bowlby (1979), children form an adequate affective relationship with their primary caregivers on the basis of the infant's basic need for protection, comfort and nurturance. What kind of attachment the child forms depends on the quality of the relationship to his or her main caregiver and on the caregiver's psychological state. Ainsworth, Blehar, Waters & Wall (1978), who also worked with attachment theory, developed the 'strange situation' technique to study the relationship between children and their caregivers. They demonstrated three kinds of attachments: secure, insecure (with the subtypes anxious avoidant and anxious resistant) and disorganised. Children with secure attachments feel that their caregivers are emotionally available to them and they generally have better developmental outcomes and lower rates of psychopathology than do children with insecure or disorganised attachments. Secure attachments provide a 'secure base' with the caregiver that fosters safe exploration of the environment and facilitates learning. With an insecure attachment, the child's unsuccessful attempts to maintain a relationship with the emotionally unavailable and ambivalent parent may lead to the child developing the same kind of ambivalent and inaccessible behaviour pattern as the parent's. Disorganised children, who are caught between a desire for nearness and a fear of approaching the parent, tend to remain detached in their way of relating to their parents and others. These children often display disorganised behaviour such as refusing to communicate orally or being highly apprehensive in relation to their parents (Main & Solomon, 1990). Children with disorganised attachment are at risk for developing behavioural and emotional difficulties.

The quality of the attachment influences the child's behaviour and way of relating to others and shapes the child's beliefs, attitudes and worldview. The nature of the child's attachments, whether they are secure, insecure or disorganised, is internalised as the child's internal working model (Bowlby, 1979). This in turn influences the development of complex patterns of self-image, attitudes towards self, expectations about the world and object relations, and regulation of affect (Sroufe, Carlson, Levy & Egeland, 1999). The child's capacity to understand and interpret the behaviour of other people develops through the experience of being understood in the context of a secure attachment. The lack of a secure attachment to one or both parents may be a critical factor in the transgenerational transmission of parents' traumatic experiences.

3.4 THE CONTRIBUTION OF PSYCHOSOCIAL STRESS THEORY

Rydelius (1981, 1983a, 1983b, 1988, 1994) found in a series of longitudinal follow-up studies that psychosocial stress factors in families with parental alcohol and drug abuse and/or violent behaviour have an especially adverse effect on genetically vulnerable boys with impulsiveness as a personality trait. Growing up in such a family puts these children at great risk of developing delinquency tendencies and antisocial behaviour in adolescence. These results suggest that there is a need to investigate further the concordance between poor parenting as an outcome of psychosocial stress factors and self-destructive behaviour on the part of their offspring, described as suicidal ideation with impulsive behaviour patterns during adolescence.

3.5 TRAUMA, PTSD AND THE CHILD'S EMOTIONAL STATE

Children's capacity to express their inner feelings verbally is based on their developmental circumstances, their psychological level of maturation and their family environment. Maltreated children and children in traumatised families have difficulty expressing their feelings in words. Goodenough (1926), Machover (1949) and Koppitz (1968) all used the projective method of drawing as the main instrument in assessing children with emotional disturbances. In this study of the emotional state of children of traumatised parents, we used Bowlby's (1973, 1979, 1988) theoretical framework regarding attachment theory, together with Blomberg and Cleve's (1997) further work on Machover's (1949) 'Draw a Person' (DAP) test in which they adopted a psychodynamic approach to interpreting children's drawings and used follow-up questions. Because of the refugee children's inhibited communication about their feelings, we found that the use of a projective instrument was an important complimentary tool when studying the children.

3.6 TRAUMA AND PTSD: DIAGNOSTIC CONSIDERATIONS IN CHILDREN

At the foundation of the discourse on establishing the diagnosis of PTSD lie the criteria presented in DSM-IV-TR. The following is a direct citation from this manual (p. 426). According to DSM-IV-TR, the criteria for PTSD are as follow:

> '**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 (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 re-experienced in 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 re-enactment 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.

(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) Hyper-vigilance;

(5) Exaggerated startle response.

E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.

F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. *Specify if:* Acute: if duration of symptoms is less than 3 months. Chronic: if duration of symptoms is 3 months or more. *Specify if:* With Delayed Onset: if onset of symptoms is at least 6 months after the stressor.' The DSM-IV-TR criteria for PTSD have some similarities with the work of Freud. As early as 1939, Freud described a number of negative consequences of trauma including recurrent recollection of the occasion of the

trauma and re-experiencing the traumatic event along with defensive reactions characterised by avoidance, inhibition and phobia. These reaction patterns coincide with the established diagnosis of Post-Traumatic Stress Disorder (PTSD) as defined in DSM-IV TR (American Psychiatric Association, 2000).

In more recent research, Osofsky et al. (1995) described children's reactions to exposure to violence and traumatic events as being symptomatic of PTSD symptoms, which include 'avoidance, re-experiencing traumatic events, re-enactment behaviour, traumatic images in play and drawing, psychological numbing, memory disturbances, interference with learning, arousal (both physical and psychological), regressions in language and toileting, difficulties in emotional regulation and generalized fear of being alone' (p. 597). The phenomena of dissociation and denial can be manifested through the child's acting out and aggressive behaviour and/or be internalised and turned against the self in an attempt to protect the psyche. Also learning difficulties and problems concentrating are often associated with severe traumatisation in children.

Scheeringa et al. (1995) presented an alternative set of criteria to DSM-IV-TR for diagnosing PTSD in children. These comprise, first of all, the *re-experiencing criterion***,** which is manifested in post-traumatic play, re-enactment of the trauma, recurrent recollection of the traumatic events, and feelings of distress at exposure to reminders of the traumatic event. For establishing this criterion, only one positive item is required. The second criterion is *numbing*, which is manifested in the constriction of play, social withdrawal, restricted range of affect, and/or loss of previously acquired developmental skills. The third criterion is *increased arousal*, which is established if one of the following items is present: night terror, disturbed sleep, walking in one's sleep, decreased concentration, hyper-vigilance, and an exaggerated startle response. The fourth and last criterion is *new fears and aggression,* which is present if the child manifests fears he or she had not experienced before, such as fear of toileting alone, fear of the dark, and fear of new situations, and if the child demonstrates aggressive behaviour, such as kicking and biting.

3.7 TRAUMA, PTSD AND COGNITIVE FUNCTIONS IN CHILDREN

In addition to increased arousal, traumatic experiences also affect the memory function. Memory has two separate systems – declarative or explicit memory, and non-declarative or implicit memory – both of which are of interest here. Declarative or explicit memory is of particular interest here as it is concerned with the verbal semantic

function for retaining facts and acquired information. It has two subsystems: episodic memory, which is concerned with the individual's earlier experiences; and semantic memory, which is concerned with information transmitted through others. Declarative memory is affected by the emotional content associated with traumatic experiences, which may be a factor in the development of posttraumatic amnesia and the segmental loss of the declarative memory function.

The non-declarative or the implicit memory system, according to Scaer (2001), contains a procedural memory function which is responsible for storing motor and acquired skills, conditioned responses, and emotional associations. Conditioned responses play a dynamic role in the development of a pathological cognitive pattern in individuals confronted with a life-threatening event. Conditioned responses in this case trigger an unconscious survival-based behavioural system. The conditioned response to severe trauma, according to the concept of procedural memory and arousal, may explain in part the mechanisms of '*repetitive and intrusive thoughts about traumatic events'* in PTSD. In the next section we will examine the conceptual similarities between PTSD and ADHD symptoms in children.

3.8 SIMILARITIES BETWEEN DIAGNOSTIC CRITERIA FOR PTSD AND ADHD IN ACCORDANCE WITH DSM-IV-TR

The possible comorbidity between PTSD and other psychiatric syndromes is an interesting issue in psychiatric research. In this concern, we focus on the similarities between PTSD and ADHD as described by Weinstein (2000).

Table 1. Conceptual similarities between ADHD-like and PTSD symptoms (from Weinstein, 2000)

ADHD Category	PTSD Manifestations
Inattention	Acting or feeling as if the traumatic event were recurring Intense psychological distress at exposure to cues resembling an aspect of the trauma; Re-experiencing trauma; Concentration difficulties, Hyper-vigilance about perceived fear stimuli, and Avoidance of stimuli associated with trauma
Hyperactivity/ impulsivity	Acting or feeling as if the traumatic event were recurring; Intense psychological distress at exposure to cues resembling an aspect of the trauma; Inability to appropriately inhibit responses due to hyper-vigilance; Physiological reactivity when exposed to cues that symbolise an aspect of the trauma; and Irritability/outbursts of anger.

In children, the distressful re-experiencing of traumatic events, which include intrusive thoughts, images or perceptions, is aggravated by the child's rich fantasy. This symptom is commonly found in children suffering from PTSD. There is considerable evidence that increased arousal symptoms, such as difficulty in concentrating, restlessness, insomnia, irritability and anger, are common in the acute phase of trauma. These symptoms are also frequently found in persons suffering from ADHD and anxiety disorder. This raises the question of whether there is comorbidity between PTSD and ADHD. The possibility of comorbidity is a complication when seeking a deeper understanding of trauma and establishing a deferential diagnosis. Inattention and hyperactivity present in ADHD have conceptual similarities with PTSD manifestations on the symptom level. In both syndromes, children have difficulty concentrating, are restless and hyperactive. This possible comorbidity causes diagnostic confusion, particularly if ethnic and cultural differences are taken into consideration, and may lead to an inappropriate treatment design that further reduces the child's ability to cope with the traumatic experiences.

To shed further light on the conceptual similarities in the diagnostic features of ADHD-like and PTSD-related symptoms, the work of Ramklint (2002) is an important contribution in that, she distinguishes between a categorical and a dimensional approach to relating to the DSM system. Both approaches are of interest here. While the categorical approach emphasises the biological basis of behaviour, the dimensional approach proceeds from a *normality–abnormality* continuum, i.e. that the clinical symptomatology can be understood as being a continuous spectrum. Ramklint (2002) found that in some cases symptoms of different syndromes could occur in the same individual, although the frequency might vary both between individuals and between syndromes. In the terms of the categorical approach, the diagnostic similarities found between ADHD-like and PTSD-related symptoms would probably be explained as depending on their sharing a common underlying biological factor.

3.9 TRAUMA AND PTSD: RESILIENCE AND VULNERABILITY

The term resilience is derived from the Latin roots *re*, which means *back*, and *salir*, which means to *jump.* The ability to recover is essential in identifying the personal attributes that have a protective function in the face of threatening events. Vulnerability derives from the Latin word *vulnerare*, which means to *wound*. Resilience in this context is defined as a process of positive adaptation in a context of stressful and

prolonged life-threatening events. Resilience is a multidimensional developmental process.

Masten (2001) pointed out how various adaptive systems support the development of resilience. These adaptive systems have several components in common: 1) the child's characteristics, e.g. social competence with adequate cognitive abilities which enable the child to acquire problem-solving skills, adequate emotions, high self-esteem, and characteristics valued by society and the self; 2) the family's characteristics, e.g. stability and continuity in family relations, close warm relationship between parent and child, a generally supportive family environment; 3) the environment's characteristics, e.g. a safe neighbourhood with a low level of violence, an effective school system with well-trained and supportive teachers; and 4) cultural characteristics, e.g. an adequate social welfare system and low acceptance of violence. This perspective shifts the focus from an exclusively person-related approach to also encompass a developmental and an environmental approach that highlights the importance of the quality of family relationships. Marten's view (in Luthar, 2003) integrates biological, environmental and cultural aspects in the development of resilience.

The concept of resilience according to O'Dougherty-Wright and Masten (2006) is related to several other constructs, which are important for a deeper understanding of this contextual approach. These constructs are *risk factors, which refer* to a measurable attribute within an individual or group that may predict negative outcomes (e.g. mental illness of the parent(s) or parental divorce); *cumulative risk*, by which is meant the increased risk that results from the combination of multiple risk factors. When persistent, these severe risk factors have a cumulative effect which accentuates the severity of the multiple risk factors (e.g. children whose parents are torture victims, children's exposure to domestic violence, or physical or sexual abuse*)*; *vulnerability* which refers to the individual's susceptibility to traumatic events with pathological outcomes (e.g. detached children with increased 'anxious' personality traits); protective factors which refers to the environmental component in resiliency, indicated the interaction between the individual attributes and the contextual buffering with positive outcomes in an adversity situations (e.g. secure attachment, continuity and predictability of the child-care giving relationships).

3.10 TRAUMA, PTSD AND PERSONALITY: IS THERE A *POSTTRAUMATIC PERSONALITY DISORDER* ?

Children living under conditions of repeated violence in the family lack the facilitating healthy environment they need if their course of development is to be salutogenic. The child's attempts to manage extreme anxiety and strong impulses may lead to the child developing primitive defences. Early traumatic experiences can affect children's psychological development, decrease their ability to regulate affect and increase the likelihood of their persisting in negative affect such as anger and aggression.

The relationship between childhood trauma and the development of aggressive personality traits has been described in a number of studies. Fonagy et al. (1993) investigated aggression as a defence mechanism against anxiety and psychological distress and argued that a reasonable conceptualisation of aggressive and violent behaviour in adulthood is that it arises as a consequence of extreme early childhood trauma or prolonged traumatisation.

Also Bowlby's (1973) attachment theory throws light on the development of aggression in children. In attachment theory, the primary function of early object-relations is to give the child a sense of security even in insecure environments. Bowlby emphasised that adequate 'self–other representations', or what he termed '*internal working models*,' facilitate the development of secure attachment, which in turn promotes adequate self-esteem, adequate object relations, identity formation and salutogenic features. Attachment type, which, reflects the child's cumulative experience, remains as a central coordinator of interpersonal behaviour throughout the life-course. The child's normal anger response turns into aggression when there is persistent insensitivity; consequently, the child's oppositional response becomes integrated with his or her self-structure, yielding aggression as a main feature of self-assertive behaviour (Bowlby 1973). Aggression/dysfunctional anger as dysfunctional self-assertive behaviour threatens to break apart the attachment bond that is at the root of the anxious attachment.

The association between childhood trauma and PTSD in adults, resulting in personality impairments, has brought to light the phenomenon of *delayed stress reactions, which* could explain some of the ambiguities about the development of PTSD and the consequent personality impairments in adulthood (Eth & Pynoos, 1985). Children's early exposure to traumatic events increases their susceptibility to developing dysfunctional cognitive and emotional behaviour patterns such as

perceptual/memory impairments, underachievement in school, an inability to control impulses, heightened hyper-vigilance, inadequate peer relations, restlessness and aggressiveness. Van der Kolk et al. (1996) confirmed earlier findings regarding the relationship between age at the time of trauma, the nature of the traumatic experience, and clinical dysfunctional outcomes.

Cook et al. (2003) and Gordon (2002) argued that children who display maladaptive behaviour might have experienced prolonged traumatic events occurring in the caregiving system or in the social environment that is supposed to help the child develop a secure base in the attachment. Thus, they conclude, early childhood exposure to traumatic events can be expected to have both an immediate and a long-term outcome. An example of what is meant by prolonged trauma exposure is the occurrence of child maltreatment – including emotional abuse and neglect, sexual abuse, physical abuse and witnessing domestic violence – that is chronic and began in early childhood. Moreover, these early traumatic experiences (e.g. parental neglect, sexual abuse, physical abuse) and the resulting emotional dysregulation in the child, with the loss of a safe base, loss of direction and an inability to detect or respond to danger cues, often lead to subsequent trauma exposure later in life (e.g. physical and sexual abuse) or the individual him-/herself becomes a perpetrator of criminal acts.

Clinical symptomatology as an outcome of exposure to trauma early in life has also been investigated by Dube et al. (Dube, Chapman et al., 2001; Dube, Croft et al., 2001), and by De Bellis et al., (2002). Prolonged traumatic experiences or traumatic stress in childhood is associated with domains of impairment manifested in an internalised domain and an externalised domain. The internalised domain comprises disorders in self-regulation, attachment, anxiety and affect; sexual disorders in adolescence and adulthood; and re-victimisation. The externalised domain comprises addiction, aggression, social helplessness and eating disorders. Furthermore, there is a somatisation domain comprising dissociation, somatoforms and cardiovascular, metabolic and immunological disorders.

A possible explanation for the association found between early trauma, anxiety and the inability to inhibit aggression is that individuals who experienced childhood trauma become limited in their capacity to understand and interpret other people's behaviour, and that developmental psychopathology characterised by violence/ aggression or avoidance are associated with this limitation. From this perspective, anxiety symptoms with dysfunctional self-regulation and reinforced cumulative trauma

effects may also explain, at least in part, the association between trauma exposure, anxiety and aggression found in what is hypothesised in this thesis as indicating the presence of *posttraumatic personality disorder*. This personality disorder is hypothesised as being characterised by 1) internalised symptoms with increased somatic and psychic anxiety and avoidance, 2) externalised symptoms including dysfunctional self-regulation, and 3) somatisation.

4 AIMS OF THE PRESENT THESIS

In psychic trauma theory, psychopathology develops from early childhood to adulthood based on the multidimensional interaction between several theoretical approaches. These constitute the contextual framework of a hypothesised transgenerational transmission of the effects of parents' traumatic experiences to their children.

The principal aim of this thesis was to investigate the association between parental trauma and the children's symptomatology. This entailed examining the emotional state of children of traumatised parents, describing the similarities and possible comorbidity between the children's cognitive functions, determining the mechanisms behind the children's resilience and vulnerability and, lastly, investigating the effects of early traumatisation or prolonged exposure to traumatic events on the personality.
The principal aim of the thesis can then be divided into five specific aims:

1. To investigate the possible transgenerational transmission of parents' traumatic experiences to their children and the association between parental trauma and the children's psychopathology.
2. To examine the emotional state of children of traumatised parents in terms of the operationalised variables denoted as: adequate/inadequate perception/ apperception, secure/insecure attachment, object relation, self-image and salutogenic features including prosociality, depressiveness and aggressiveness.
3. To describe Attention-Deficit/Hyperactivity Disorder (ADHD-like) and Post-Traumatic Stress Disorder (PTSD) in relation to cognitive functions in children of traumatised parents, and to study the similarities and possible comorbidity between the two syndromes and the problems which therefore arise in establishing a differential diagnosis?
4. To determine the possible dispositional and environmental indicators of resilience and vulnerability in those refugee children in the study who did not develop PTSD/PTSS despite a history of parental PTSD/PTSS.
5. To explore whether traumatisation in early childhood and, likewise, trauma exposure or prolonged traumatisation in adulthood, with the subsequent development of posttraumatic stress disorder, is a risk factor in developing what is termed in the thesis *posttraumatic personality disorder* as an impairment of the personality.

5 METHODS

These five aims were investigated in a series of studies, described in detail in papers I, II, III, IV and V and more in summary in this section.

5.1 OVERALL DESIGN OF THE STUDY

In the overall design of the project, three inclusion criteria were chosen for the parents in the test group, i.e. the traumatised parents group: i) having experienced prolonged torture for at least one month prior to coming to Sweden as refugees; ii) living in the greater Stockholm area for at least two years prior to participating in the study; and iii) having children between 6–17 years of age. Criteria ii and iii also applied to the comparison group, i.e. the non-traumatised parents group, but the parents in this group had not been subjected to torture or violence before coming to Sweden as refugees. The inclusion criteria for the children in both groups were: i) age between 6–17 years; ii) enrolled in the regular Swedish school.

The issues under investigation were divided into five separate studies, presented as follows:

Study I – Exploring the association between parents' traumatic experiences and their children's psychopathology: Parents from 15 Iraqi refugee families (n=30, fathers' mean age 43.5 years, mothers' 38.7 years) were recruited through the Swedish Red Cross Centre for Torture Victims and examined using a semi-clinical interview, the Karolinska Scales of Personality (KSP) and the Harvard/Uppsala Trauma Questionnaire (H/UTQ). The children in these families, 29 boys (mean age 12.0 years) and 16 girls (mean age 11.3 years) were examined and assessed using the Diagnostic Interview for Children and Adolescents according to DSM-IV (DICA-IV).

A comparison group of 15 Arab refugee families from Egypt, Syria and Morocco (n=26, fathers' mean age 45.8 years, mothers' 38.7 years), with 31 children, 15 boys (mean age 11.0 years) and 16 girls (mean age 12.6 years), were recruited from their national associations/societies in the greater Stockholm area and assessed using the same instruments.

Study II – Examining the emotional state of children of traumatised parents and testing the hypothesis that these children suffer from emotional problems: Children from the samples described in Study I were examined using the Machover Draw-A-Person test (DAP) and the WISC-III IQ-test. The IQ-test was used to control for the children's intellectual capacities as low IQ is known to be a risk factor for emotional

problems. The DAP testing was conducted during home visits, while the assessments of IQ were carried out at the children's respective schools.

Study III – Exploring the overlapping or possible comorbidity between Attention-Deficit/Hyperactivity Disorder (ADHD-like) and Post-Traumatic Stress Disorder (PTSD) and investigating the children's cognitive functions as expressed in terms of IQ. By the time this study was in the planning stage, the age distribution of the two samples of children in the earlier studies had changed. The oldest children in both groups were now 18 years of age or older while younger siblings had entered preschool/school and now fulfilled the criteria for inclusion. In study III there were now 40 children in the traumatised parents group (mean age 12.1, SD 2.1) and 40 children in the non-traumatised parents group (mean age 12.5 and SD 2.2) who met the inclusion criteria. The diagnostic and assessment instruments used in this study were the DSM-IV-TR criteria according to the DICA-interviews, the Post-Traumatic Symptoms Checklist, the Wechsler Intelligence Scale third version (WISC-III), teacher ratings on the (the Strengths and Difficulties Questionnaire (SDQ), and teacher ratings on the Yale Children's Inventory (YCI).

Study IV – Exploring the children's resiliency and vulnerability: The 80 children in study IV are the same children as those in study III. The 40 children in the traumatised parents group (mean age 12.1, SD 2.1) and the 40 children in the non-traumatised parents group (mean age 12.5, SD 2.2) were examined using the DICA-R, the Post-Traumatic Symptoms Checklist, the Wechsler Intelligence Scale third version (WISC-III), the I Think I Am (ITIA) test, teacher ratings on the SDQ, and teacher ratings on the YCI.

Study V – Exploring the hypothesised relationship between traumatisation in early childhood/prolonged traumatisation in adulthood and PTSD: Four groups of men were compared in this study: 1) a group of traumatised Swedish male prisoners (n=42, mean age 33.8, SD 7.9); 2) a comparison group of Swedish men (n=52, mean age 39.3, SD 5.5); 3) a group consisting of the 15 Iraqi fathers in the traumatised parents group plus 21 male Iraqi refugees who had also suffered prolonged torture before coming to Sweden and who were recruited through the Swedish Red Cross Centre for Torture Victims (n=36, mean age 43.9, SD 8.7); and 4) a group consisting of the 11 fathers in the non-traumatised parents group plus 20 non-traumatised Arab refugees who recruited through contacts with national associations in Sweden (n=31, mean age 41.8,

SD 8.9). The four groups were compared using the Karolinska Scales of Personality (KSP) and the Harvard/Uppsala Trauma Questionnaire (H/UTQ).

5.2 PARTICIPANTS: THE PARENTS

The test group in the first four studies consists of a homogenous population group of refugee families from Iraq and their children, 6–17 years old, currently living in Stockholm, Sweden. In studies I, II, III and IV, this group of parents, who have documented torture experiences in their native country prior to coming to Sweden, are compared with another group of refugee families from the Middle East without torture experiences. The first group is denoted in the four studies as the traumatised parents group, and the second group as the non-traumatised parents group. The children of both groups were investigated simultaneously with their parents, as reported in papers I, II, III and IV. In study V, the fathers in both parent groups plus an additional sample of Iraqi and Arab men, were compared with a group of Swedish men who were incarcerated in a forensic psychiatric institution, denoted in the study as the Swedish traumatised group, and with a comparison group of 52 Swedish men used in an earlier study by af Klinteberg (1990).

The inclusion criteria for the traumatised parents group in studies I, II, III, and IV were: 1) at least one parent in the family had documented torture experiences of at least one month's duration prior to coming to Sweden; 2) the children in these families were between 6 and 17 years old and were enrolled in the regular Swedish school system; and 3) the families had resided in the greater Stockholm area for at least two years prior to the start of the project. Criteria 2 and 3 were the same for the non-traumatised parents group. The inclusion criterion for the Swedish traumatised group was that they had experienced traumatic events before the age of fourteen.

The traumatised parents group in the first four studies consisted of 15 refugee Iraqi families (n=30 adults). The fathers' mean age was 43.5 years and mothers' 38.7 years. These 15 families were recruited through the Swedish Red Cross Centre for Torture Victims. The non-traumatised parents group (comparison group) consisted of 15 Arab refugee families from Egypt, Syria and Morocco (n=26 adults). The fathers' mean age was 45.8 years and the mothers' 38.7 years. These 15 families were recruited from local chapters of their national associations in the greater Stockholm's area. The subjects in all five studies (I–V) were asked to participate either as test group or as comparison group. All subjects voluntarily gave their informed consent to participate in

the studies. They were informed that their identities were to be confidential throughout the whole date treatment and presentation of results.

5.3 PARTICIPANTS: THE CHILDREN

In the first two studies (papers I and II), the 45 children in the traumatised parents group were between the ages of 6 and 17 years (29 boys with mean age 12.0 years and 16 girls with mean age 11.3 years). The 31 children in non-traumatised parents group were also between the ages aged 6 and 17 years (15 boys with mean age 11.0 years and 16 girls mean age was 12.6 years). In studies III and IV (papers III and IV), the age range for inclusion was somewhat more narrow, 7–16 years, because in the traumatised parents group the oldest children from the previous two studies now exceeded the criterion age range which thereby excluded them from continued study, while a few younger children (born in Sweden) entered the age range. In all, this reduced the number of children in the traumatised parents group from 45 to 40.

In the non-traumatised parents group, instead, the number of children increased; younger children (born in Sweden) had now entered the age range for inclusion, which increased the number of children in this group from 31 to 40. Thus, in studies III and IV there were 40 children in both the traumatised parents group (n=40, mean age 12.1, SD 2.1) and in the non-traumatised parents group (n=40, mean age 12.5 and SD 2.2). All 80 children in studies III and IV were born in Sweden. Their participation was in accordance with their parents' voluntary informed consent. The matching criteria for the test and comparison groups were ethnicity and Arabic language.

5.4 DESIGN OF THE FIVE STUDIES

The project as a whole comprised five studies that explored the consequences for parents who had experienced severely traumatic events and the reactions of their children, within a transgenerational framework. The design of the project was based on investigating the parents and their children simultaneously in a series of multiphase measurements, including the personality structure of the parents; the symptomatology of the parents and their children; examining the children's IQ; and exploring the comorbidity between PTSD and ADHD-like symptoms.

Study I explored the association between parental traumatic experiences and their children's psychopathology. **Study II** explored the children's emotional state. In both studies, data collection was through home visits which had an average duration of 20

hours per family and study. Studies **III** and **IV** focused on the children's cognitive functions expressed as IQ. The two studies also explored the possible comorbidity or overlapping between PTSD-related symptoms and ADHD-like symptoms, and investigated resiliency and vulnerability of the children in the traumatised parents group.

In the last **study, V,** the focus of inquiry was on the long-term effects of prolonged trauma exposure or early childhood traumatic experiences on personality. Could prolonged traumatic experiences or exposure to trauma early in childhood have a maladaptive effect on the personality? Investigation of this issue required a sample consisting of individuals with prolonged traumatic experiences and individuals with exposure to trauma during early childhood.

As none of the children in the first four studies had any reported experiences of trauma in early childhood, a sample was collected of persons with documented traumatic experiences prior to the age of fourteen, i.e. before the final formation of the personality. This sample consisted of 42 Swedish men (mean age 33.8, SD=7.9) who, at the time of study V, were incarcerated in a forensic institution for psychiatric patients. This group is denoted in the study as the Swedish traumatised group. They were compared, first of all, with a group of 52 Swedish men who had been investigated upon in an earlier study by af Klinteberg (1990), denoted in the study as the Swedish non-traumatised group; and then with the fathers in both the traumatised and the non-traumatised parents groups and additional samples of Iraqi and Arab men with and without torture experiences prior to coming to Sweden.

In studies I and II, data collection was carried out using the following diagnostic instruments for assessing children and parents, respectively: for the children, the Diagnostic Interview for Children and Adolescents (DICA) and Machover Draw-A-Person test (DAP); for the parents, a semi-clinical interview; the Karolinska Scales of Personality (KSP) and the Harvard/Uppsala Trauma Questionnaire (H/UTQ). The assessment of the children and parents were made simultaneously by the first and second authors of papers I and II.

In studies III and IV, which focused on the children's cognitive functions expressed as IQ, the diagnostic instruments used were the Wechsler Intelligence Scale 3rd version (WISC-III) administrated in both the Arabic and Swedish languages; the 'I Think I Am' Questionnaire (ITIA), and teacher ratings on the Strengths and Difficulties Questionnaire (SDQ) and the Yale Children's Inventory (YCI). The WISC-III IQ

assessments and the teacher ratings were carried out at the children's respective schools.

In study V, the diagnostic instruments used were the Karolinska Scales of Personality (KSP) and Harvard/Uppsala Trauma Questionnaire (H/UTQ). In study V an additional adult sample was used. The ambition was to determine if prolonged traumatic experiences or exposure to trauma early in childhood could have a maladaptive effect on the personality? Investigation of this issue required a sample consisting of individuals with exposure to trauma during early childhood. As none of the 80 children in the other four studies had a reported history of having experienced traumatic events in early childhood, a sample was collected of persons with documented traumatic experiences prior to the age of fourteen, i.e. before the final pre-formation of the personality. This sample consisted of 42 Swedish men (mean age 33.8, SD=7.9) who, at the time of study V, were incarcerated in a forensic institution for psychiatric patients. This group is denoted in study V as the Swedish traumatised group. They were compared with a group of 52 Swedish men who had figured in the af Klinteberg (1990).

5.5 MEASUREMENTS

To summarise: in order to determine the presence of psychopathology, both parent groups were assessed by means of the semi-structured clinical interview. The Harvard/Uppsala Trauma Questionnaire (H/UTQ) was used to determine the presence of PTSD and traumatic severity. The Karolinska Scales of Personality (KSP) was used to shed light on the parents' personality traits. The children were assessed at the same time as their parents, using for this purpose the Diagnostic Interview for Children and Adolescents-Revised (DICA-R) and the Post-Traumatic Symptom Checklist (PTSS) to ascertain any psychopathology. The Machover Draw-A-Person (DAP) test was used to illuminate the children's emotional state, while the Wechsler Intelligence Scales (WISC-III) was used to shed light on the children's cognitive functions. Three additional instruments used in the studies were the 'I Think I Am' (ITIA) Questionnaire, and teacher ratings on the YCI and the SDQ were used to highlight the children's behavioural patterns in a different social milieu than the home.

The following is a more detailed description of the instruments used in the respective studies. Some of the diagnostic instruments are well-known in research contexts; others may be rather unfamiliar and require further clarification.

The Karolinska Scales of Personality (KSP) is a psychological instrument consisting of 135 items with 15 subscales based on the assumption that neurobiological mechanisms underlie personality vulnerability. Four of the scales relate to anxiety proneness: Somatic Anxiety, Psychic Anxiety, Muscular Tension and Psychasthenia; three scales relate to impairment of inhibition functions: Impulsiveness, Monotony Avoidance and Socialisation; and six scales relate to hostility and aggression: Verbal Aggression, Indirect Aggression, Irritability, Suspicion, Guilt, and Inhibition of Aggression. The KSP also includes the Detachment scale, which refers to social withdrawal and, lastly, the Social Desirability scale, which refers to confirmatory control functions.

The Harvard/Uppsala Trauma Questionnaire (H/UTQ) is a cross-cultural instrument – also here administrated in a Swedish version supplemented by an Arabic version – is used to measure traumatic events and posttraumatic symptomatology in adults. Section 1 measures the total trauma score; section 2 records if the subjects have experienced, witnessed or heard about terrifying events; section 3 makes it possible to determine PTSD diagnosis or some of the PTSD-like symptoms; and section 4 measures interpersonal impairments. Inter-rater reliability and Cronbach's coefficient alpha for the traumatic events computed to .93 and .90, and to .98 and .96 for trauma-related symptoms. All four groups in the study showed inter-rater reliability and a Cronbach's alpha of over .80. The H/UTQ was used to assess experiences of specific traumatic events that are purported as having the potential to elicit posttraumatic stress symptoms.

The PTSS-C, to evaluate PTSD and PTSS (Post-Traumatic Stress Symptoms) among the children the Post-Traumatic Symptoms Check List was used together with the DICA-interviews. The PTSS-C was developed in Uppsala, Sweden by Ahmad A et al. when studying traumatised children from Iraqi Kurdistan who survived the military operation 'Anfal' and Kurdistan refugee children living in Sweden. The psychometric properties of the instrument have been found to be satisfactory (Ahmad et al, 2000, 2007) and the instrument was of special value for this study due to its use in cross-cultural studies.

The *Wechsler Intelligence Scales, Third version* (WISC-III) was administrated in both the Arabic and Swedish languages.

The revised version of the *Diagnostic Interview for Children and Adolescents,* DICA-R (Reich, Leacock, & Shanfeld, 1995) is a semi-structured clinical interview schedule used to assess the presence of PTSD-related symptoms among the children.

Draw-A-Person (DAP), in which the child is asked to draw a human figure has been evaluated and further developed in five phases: i) the Goodenough Drawing test (Harris, 1963) estimates the child's developmental quotient. A higher score indicates a higher developmental level; ii) Machover test (1949) assesses the child's self-image based on the assumption that an adequate self-image is indicative of good psychological well-being. A high score indicates an adequate self-image; iii) Koppitz's scale of emotional indicators (Koppitz 1968, Lie 1981) consists of 30 signs in the figure drawing which are assumed to reflect the child's 'emotional indicators'. The presence of a large number of inadequate signs is an indication of emotional distress and a high risk for psychological impairment; iv) Blomberg and Cleve (1997) interpreted the human figure drawing according to a psychodynamic approach based on the object-relation theory. They also introduced a series of follow-up questions related to the drawn human figure; and lastly, v) Daud et al., (2005) integrated the DAP human figure with a series of follow-up items, and developed a scoring system based on attachment theory encompassing indicators of secure/insecure attachment, self-image, object relation, salutogenic features, depressiveness and aggressiveness. (Appendix 2)

The DAP as a projective method is widely used in Sweden as a clinical instrument in addition to the other diagnostic instruments used in assessing children and adolescents. Naturally, the DAP instrument needs further in-depth study to test its validity in different cultural groups and settings.

'I Think I am' ITIA questionnaire (1985) was developed in Sweden. It is divided into five subscales to explore the following dimensions of the self-esteem concept in children: physiological characteristics, talents, psychological well-being, relation to family and relation to others. A high score indicates adequate self-esteem.

The *demographic data:* Gender, age, the familial socioeconomic status were taken into consideration when required by scientific rigour.

5.6 ETHICAL APPROVAL

The human ethical research committee North at the Karolinska Hospital approved the studies (Dnr 97-295). Informed consent was given by each participants; children under the age of 12-years by their parents.

5.7 STATISTICAL METHODS

The factor analysis method with varimax rotation was used to investigate the underlying structures in the KSP and H/UTQ for studies I and V. Adjusted residuals were used as a measure of predicted values. One-way analysis of variance (ANOVA) with post-hoc tests was used to test the mean differences between groups; proportional differences were tested by the chi-square test or, when applicable, the Fisher Exact test. Continuous variables were compared between groups using Student's t-test since the group sizes were relatively large with satisfying normal distributions. The Chi-square was used to test the associations between two discrete variables. The association between variables was further tested and summarised using Pearson's Correlations coefficients. These statistical methods are summarised in Table 2.

Table 2: Summary of the assessments methods and statistical analysis for parents and children in both the traumatised and the non-traumatised parents groups and for the two Swedish groups of traumatised and non-traumatised men

Study	Assessments and instruments	Statistics
I	Karolinska Scales of Personality (KSP) Semi-structured interview Harvard/Uppsala Trauma Questionnaire (H/UTQ) Diagnostic Interview for Children & Adolescents (DICA)	Factor analysis with varimax rotation Student's t-test Pearson's Chi-square test/Fisher exact test
II	Wechsler Intelligence Scales (WISC-III) Machover's Draw-A-Person (DAP)	Post-hoc tests Pearson's Chi-square test/Fisher exact test
III	Diagnostic Interview for Children & Adolescents (DICA) Wechsler Intelligence Scales (WISC-III) Post-Traumatic Symptoms Checklist (PTSS-C)	Adjusted Residuals and $\chi 2$ Post-hoc test Pearson's Chi-square test/Fisher Exact test
IV	Wechsler Intelligence Scales (WISC-III) Diagnostic Interview for Children & Adolescents (DICA) Post-Traumatic Symptoms Checklist (PTSS-C) I Think I Am (ITIA) Yale Children's Inventory (YCI) Strengths and Difficulties Questionnaire (SDQ)	Post-hoc tests Pearson's Chi-square test/Fisher Exact test F-ratio One-way ANOVA with post-hoc test Student's t-test Student's t-test
V	Karolinska Scales of Personality (KSP) Harvard/Uppsala Trauma Questionnaire (H/UTQ)	Factor analysis with varimax rotation One-way ANOVA with post-hoc test

6 RESULTS

Studies I, II, III and IV (reported in papers I, II, III and IV) investigated the direct effects of traumatic events on the parents and the indirect effects on their children. In the test group, an association was found between the parents' symptomology and their children's maladaptive symptoms; furthermore, there were significant differences in the emotional state of the children in the two groups; furthermore, an overload of both PTSD-related symptoms and ADHD-like symptoms correlated with a low score on the WISC-III IQ test.

Study V investigated the impact of prolonged traumatisation or exposure to trauma in early childhood on personality development. A main result of the study was that a constellation of personality impairments, denoted in the study as *posttraumatic personality disorder*, was a likely outcome of early or prolonged traumatisation.

6.1 RESULTS OF STUDY I

The main aim of study I concerned the hypothesised association between parental traumatic experiences and the psychopathology of the children. There was, however, a methodological problem in connection with investigating this issue, i.e. the lack of knowledge regarding the parents premorbidity with respect to their personality strengths and difficulties prior to their being subjected to torture. As reported above, the test group consisting of traumatised parents was investigated using the KSP and H/UTQ versions for parents. The results for parental traumatic severity, i.e. *the magnitude of experienced traumatic events as measured by the H/UTQ,* indicated that there was an overload of this component among the parents in the test group. Table 1:I below presents the three factors that explained most of the variance, denoted as Factor 1 which explained 38.9 of the variance with an eigenvalue of 5.84; Factor 2 which explained 17.4 of the variance with an eigenvalue of 2.61; and Factor 3 which explained 12.4 of the variance with an eigenvalue of 1.86.

Table1:I. Principal Components Analysis for traumatic severity according to the items in the Harvard/Uppsala Trauma Questionnaire with varimax rotation with factor loading >1

Traumatic categories	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communalities
Forced separation	0.96					**0.71**
Imprisonment	0.74					**0.81**
Near-death experiences	0.72					**0.66**
Catastrophes		0.72				**0.60**
Other (persecution, flight)		0.83				**0.39**
Kept hostage			0.80			**0.89**
Torture			0.94			**0.62**
Forced isolation		0.73				**0.79**
Brainwashing			0.64			**0.71**
Disappearances			0.58			**0.73**
Kidnapping				0.94		**0.88**
Robbery				0.86		**0.85**
Forced police custody				0.54		**0.61**
Homicide					0.88	**0.78**
Rape/Sexual torture					0.71	**0.64**
Eigenvalues	**5.84**	**2.61**	**1.86**	**1.46**	**1.10**	
Explained variation (%)	**38.9**	**17.4**	**12.4**	**9.7**	**7.3**	

A comparison between the parents and children in the test group showed a number of similarities between the parents' symptomatology and the children's maladaptive symptoms, which in the children were expressed as PTSD-related symptoms and ADHD-like symptoms, with flashbacks that resembled psychotic symptoms and with increased psychosocial, stress factors. In both parents and children in this group, there were two clusters of impairments, one internalised and one externalised. In the parents, the internalised cluster was comprised of PTSD with anxiety, depression, flashbacks and somatisation, and the externalised cluster was comprised of dysfunctional affect regulation and impaired interpersonal relations. In the children, the internalised cluster was comprised of maladaptive symptoms such as 'depressiveness' and PTSD-related symptoms, while the externalised cluster was comprised of ADHD-like symptoms. Table 2:I summarises these findings.

Table2:I. Comparison between children and parents in the traumatised parents group concerning five diagnoses elicited by DICA for children and H/UTQ for parents, Chi-square analysis was used. (Children n=45; parents n=30)

Diagnosis[1]/Symptoms[2]	Child %	n=45	Father %	n=15	Mother %	n=15	p-value
Maladaptive behaviour	97.8	44	20	3	20	3	c > f, m**
Post-Traumatic Stress Disorder	48.9	22	100	15	93.3	14	n. s
Anxiety	68.9	31	86.7	13	86.7	13	n. s
Somatisation (SOMAT)	46.7	21	86.7	13	86.7	13	n. s
Psychosocial Stress Factors (PSS)	73.3	33	53.3	8	40.0	6	c > m*

[1]Diagnosis refers to the parents, who fulfilled the diagnosis criteria according to DSM-IV.

[2] Symptoms refers to DICA symptoms in the children, who displayed some symptoms but not enough to establish all the diagnosis criteria according to DSM-IV. c = child, f = father, m = mother. *p<0.05; ** p<0.001

Furthermore, compared with the children in the comparison group, the children in the test group displayed more PTSD-related symptoms, more ADHD-like symptoms, had more maladaptive problems with depressiveness, greater anxiety, greater somatisation and more psychosocial stress factors (PSS). Table 3:I summarises these findings.

Table 3:I. Comparison of DICA results for the 45 children in the test group (traumatised parents group) and the 31 children in the comparison group (non-traumatised parents group)

Diagnosis[1]/Symptoms[2]	Traumatised group n=45		Control group n=31		t-value	p-value
	M	SD	M	SD		
Post-Traumatic Stress Disorder (PTSD)	7.4	7.6	1.4	3.4	4.70	P<.001
Attention Deficit/Hyperactivity Disorder (ADHD)	6.7	4.1	3.1	3.2	4.20	P<.001
Maladaptive problems with Depressiveness	15.5	6.2	10.7	6.5	3.20	P<.001
Anxiety	9.3	6.3	5.2	4.0	3.50	P<.001
Somatisation (SOMAT)	5.0	5.2	1.4	2.5	3.90	P<.001
Psychosocial stress (PSS)	7.6	4.1	2.2	2.1	7.70	P<.001

[1] Diagnosis: i.e. the child fulfilled the criteria for the diagnosis according to DSM-IV.

[2] DICA symptoms: i.e. the child displayed some of the symptoms but not enough to establish all the diagnosis criteria according to DSM-IV.

6.2 RESULTS OF STUDY II

The aim was to explore the children's emotional state. Our clinical experiences pointed to a diagnostic problem with respect to the children in the traumatised parents group that they were unable to give adequate verbally expression to their inner feelings. For this reason, a projective method was used as a complimentary instrument for exploring the emotional state of the children in both the traumatised and non-traumatised parents

groups. This study II (reported in paper II) was based on Bowlby's attachment theory and the projective method used was Machover's Draw-A-Person (DAP) test with follow-up questions in which the children were asked to talk about their drawing (Appendixes 1 and 2). The results are summarised in Table 1:II.

Table 1:II. Comparison between children in the traumatised group and comparison group with respect to the Machover DAP test

Machover DAP variables	Traumatised group n= 40				Comparison group n =32				$\chi 2$	P
	n +	(%)	n-	(%)	n +	(%)	n-	(%)		
Perception (+) Apperception (-)	25	62	15	38	18	56	14	44	0.3	n.s
Secure(+)Insecure attachment(-)	12	30	28	70	22	69	10	31	10.7	*p*<.01**
Object Relations	35	88	5	12	31	97	1	3	2.0	n.s
Self-Image	37	93	3	7	31	97	1	3	0.6	n.s
Salutogenic feature. prosociality	29	73	11	27	31	97	1	3	7.6	*P*<.01**
Depressiveness	13	33	27	67	19	59	13	41	5.2	*P*<.05*
Aggressiveness	39	98	1	2	28	88	4	13	2.8	*P*<.05*

Notes. Fisher's exact test was used when applicable p<05; ** Attachment and salutogenic features with prosociality have significant differences p < .01;* Depressiveness and Aggressiveness showed significant differences p < .05.Children in both groups seem to have adequate Object Relations and an adequate Self-Image.

In Table 1 Fisher's Exact test was used where applicable p<05. Secure/insecure attachment and salutogenic features with prosociality showed significant differences (p<.01). Depressiveness and Aggressiveness showed significant differences (p<.05). The majority of children in both groups appeared to have adequate object relations and an adequate self-image.

The results of study II are based on the DAP figure drawings and the children's responses to the follow-up questions. The composite scores that were obtained facilitated the comparison of the children in the two groups. The greatest difference between the two groups of children concerned the secure/insecure attachment variable, where 70% of the children in the test group showed insecure attachment compared with 31% of the children in the comparison group (p<.01). Furthermore, although the majority of children in both groups showed adequate object relations and adequate self-image, 12% of the children in test group showed signs of negative object relations compared with only 3% of the children in the comparison group, and 7% of the children in the test group showed signs of a negative self-image compared with 3% of the children in the comparison group. A further difference found between the two groups was that in the test group 29 (72%) of the 40 children had adequate prosociality,

whereas 31 (97%) of the 32 children in the comparison group had salutogenic features with adequate prosociality, with a significant difference of p<.01.

Concerning the depressiveness variable, the values were 67% for the children in the test group and 41% for the children in the comparison group, with a significant difference of p<.05. With respect to expressing grief, the values were 33% for the test group children and 59% for the comparison group children, with a significant difference of p<.05. Ninety-eight per cent of the children in the test group scored high on the aggressiveness variable compared with 88% of the children in the comparison group, with a significant difference of p<.05. The aggressiveness variable showed significant differences (p<.05) between the two groups. Also the Full Scale IQ differed between the two groups in favour of the children in the non-traumatised parents group (p<. 001).

Only a small difference was found between the children in the two groups with respect to Perception/Apperception: 25 (62.5%) of the 40 children in the test group displayed adequate perception compared with 18 (59%) of the 32 children in the comparison group.

6.3 RESULTS OF STUDY III

The aim was to clarify the comorbidity/overlapping between neuropsychiatric dysfunctional behaviour expressed as ADHD-like or PTSD-related symptoms. A further aim was to investigate the impact of parental trauma on children's cognitive functions as it was hypothesised that the children in the traumatised parents group who scored low on the WISC-III IQ test would display both ADHD-like and PTSD-related symptoms more often than did the children in the non-traumatised parents group who were on a similar IQ level.

6.3.1 PTSD-related symptoms, ADHD-like symptoms, ODD and CD in the children

Thirteen boys (65%) and six girls (30%) in the test group (traumatised parents group) were found to have a DSM-IV-TR diagnosis of ADHD compared with only one boy (5%) and two girls (10%) in the comparison group. A further difference was that 12 of 13 boys and 5 of 6 girls with traumatised parents and diagnosed as having ADHD were also diagnosed as having PTSD, a finding that did not appear in the comparison group. As shown in Table 2, seven children (18%) from the test group, compared with 36 children (90%) from the comparison group, had neither ADHD nor PTSD.

Of the 19 children in the test group who fulfilled the DSM-IV-TR criteria for ADHD-like symptoms, one child also met the criteria for ODD while a second child met the criteria for both ODD and CD. Among the 14 children who did not meet the criteria for ADHD, one had ODD and the other CD. The nine children in the test group without either ADHD-like or PTSD-related symptoms had neither ODD nor CD. None of the children in the comparison group met the criteria for ODD or CD.

6.3.2 Parents' PTSD diagnosis and their children's PTSD-related and ADHD-like symptoms

The results indicated an association between parents' PTSD diagnosis and their children's PTSD-related and ADHD-like symptoms. The children in the test group (with traumatised parents) displayed both ADHD-like and PTSD-related symptoms more frequently than did the children in the comparison group (with non-traumatised parents). The boys in the test group showed more ADHD-like symptoms than did the girls in that group, but the girls displayed more PTSD-like symptoms than the boys (Table1:III).

Table 1:III. The Adjusted Residuals concerning parents' PTSD diagnosis and their children's PTSD-related symptoms and ADHD-like symptoms

		At least one parent with PTSD		Total
		No	yes	
Children with PTSD-related and ADHD-like symptoms	n	0	14	14
	% in at least one parent with PTSD	0%	28%	17.5%
	Adjusted Residual	-3.2	3.2	—
Children with only ADHD-like symptoms	n	2	5	7
	% in at least one parent with PTSD	6.7%	10%	8.8%
	Adjusted Residual	-0.5	.5	—
Children with only PTSD-related symptoms	n	1	10	11
	% in at least one parent with PTSD	3.3%	20%	13.8%
	Adjusted Residual	-2.1	2.1	—
Children with no PTSD- or ADHD-like symptoms	n	27	21	48
	% in at least one parent with PTSD	90%	42%	60%
	Adjusted Residual	4.2	-4.2	—
Total	n	30	50	80
	% in at least one parent with PTSD	100%	100%	100%

An Adjusted Residual of >2 or <-2 indicates a significant relationship between parents' PTSD and their children's ADHD-like and PTSD-related symptoms. This table is based on $\chi 2 = 19.6$*; *df* 3; p<.001. * = 3 cells (37.5%) have an expected n of less than 5. The minimum expected n is 2.6.

6.3.4 Cognitive functions expressed as IQ in relation to PTSD-related and ADHD-like symptoms

An association was found between the three hypothetical IQ levels (IQ<84; IQ 85–94; IQ>95) and symptoms related to PTSD and ADHD in the whole sample of children

(Table 4). Children with a large magnitude of ADHD-like and PTSD-related symptoms scored IQ≤84 (n=10, 71.4%), whereas children who scored IQ≥95 had neither ADHD-like nor PTSD-related symptoms (n=37, 77.1%). The total χ^2 for all 80 children was 31.1 (p<. 001). This finding is presented in Table2:III

Table 2:III. Cross-tabulation of the hypothetical levels of WISC Full-Scale IQ, and DICA symptoms concerning the comorbidity of ADHD and PTSD (n=80)

IQ levels and DICA symptoms		Children's PTSD-related and ADHD-like symptoms				
		PTSD-related and ADHD-like	ADHD only	PTSD only	Non PTSD Non ADHD	Total
IQ<84	n	10	3	7	4	24
	*Adjusted Residual	3.7	.8	2.6	–5.2	
IQ 85-94	n	1	2	1	7	11
	*Adjusted Residual	–. 8	1.2	–. 5	.3	
IQ>95	n	3	2	3	37	45
	*Adjusted Residual	–2.9	–1.5	–2.1	4.6	
Total	N	14	7	11	48	80

*An Adjusted Residual of >2 or <-2 indicates a significant relation between IQ's hypothetical levels and DICA symptoms with respect to ADHD and PTSD. This table is based on $\chi 2 = 31.1$; $p<.001$.
Cross-tabulation presented with Adjusted Residuals.

Children with no PTSD-related or ADHD-like symptoms and who had an IQ score of >95 had an Adjusted Residual of 4.6, which is less than the Adjusted Residual -5.2 for those children who scored IQ<84. This finding confirms the hypothesis that IQ levels and DICA symptoms (for both ADHD-like and PTSD-related symptoms) are dependent variables (χ $\eta\iota^2$ (31.1; p<0.001). Furthermore, an Adjusted Residual value of 4.6 at the IQ>95 level and –5.2 value at the IQ<84 level shows that these two cells comprise the most significant χ $\eta\iota^2$ value.

The results of the DICA showed significant differences between the two children's groups with respect to ADHD-like symptoms at the 95% significance level and PTSD-related symptoms at the 99% level. Furthermore, the SDQ hyperactivity scale was significant at the 95% level in favour of the children in the comparison group. Also, the results of the YCI attention scale had a higher significance at the 99% level in favour of the children in the comparison group. With respect to the WISC-III indexes, the results indicated a significant correlation (p<.05) between Freedom from distractibility, which represents the functions of memory and attention, and PTSD-related symptoms, as well as a significant correlation (p<.05) between, on the one hand, Verbal comprehension, Perceptual organisation and Processing speed (p<.001), and on the other hand, ADHD-like symptoms (Table 3:III).

Table 3:III. Comparison of cognitive functions according to WISC-III indexes and DICA symptoms, SDQ and YCI scores between the children of traumatised parents (test group, n=40) and the children of non-traumatised parents (comparison' group, n=40)

Cognitive Functions /Tests	Test group n=40		Comparison Group n=40		t- values	P	η^2
WISC-III Indexes	M	SD	M	SD			
Verbal comprehension (VC)	86.3	(15.0)	106.8	(12.4)	6.7	< .001**	.36
Perceptual organisation (PO)	84.4	(15.0)	98.8	(14.0)	4.4	< .001**	.20
Freedom from distractibility	86.0	(17.3)	97.0	(13.6)	3.1	< .05 *	.11
Processing Speed (PS)	89.4	(22.29)	106.4	(14.6)	4.0	< .001**	.17
DICA symptoms							
Post-Traumatic Stress symptoms	12.0	(7.4)	.35	(2.0)	9.6	< .001**	.54
Attention Deficit/Hyperactivity	5.4	(4.7)	3.0	(4.3)	2.4	< .05*	.07
Teacher Ratings							
SDQ Attention	2.9	(2.2)	2.0	(2.2)	2.0	n.s	.04
SDQ Hyperactivity	4.5	(2.9)	3.2	(2.6)	2.1	< .05*	.05
YCI Attention	.70	(.46)	.15	(.36)	5.9	< .001**	.31
YCI totally	.60	(.50)	.13	(.33)	5.1	< .001**	.24

*Hyperactivity in all measurements was significant at the 95% level. η^2 (according to Cohen, 1983) indicates effect size. The results showed a significant correlation (p<.001) between the groups for all cognitive functions.** WISC-III indexes: VC, PO, PS, PTSD-related symptoms and YCI were significant at the 99% level.

6.4 RESULTS OF STUDY IV

The aim was to investigate factors of resilience and vulnerability within refugee children. A main result in study III was that nine of the children in the traumatised parents group did not develop PTSD-related symptoms. This finding raised the question of the possible existence of salutogenic features and resilience in this overloaded group of refugee children. This issue was investigated in-depth in study IV using self-esteem as a marker for resilience, and PTSD-related symptoms as indicators of vulnerability.

When these nine children were compared with the 31 children in the test group who displayed PTDS-related symptoms, they had significantly higher scores when tested for *emotionality* (p<.01), *peer relations* (p<.001), *prosocial behaviour* (p<.05) and *total score* (p<.001). The children without PTSD-related symptoms also tended to have higher scores on the sub-scales *psychological wellbeing* (p<0.05), *total score* (p<0.05), and *relation to family* (p<0.06). Table 1:IV summarises these findings.

Table 1:IV. Mean raw scores (M) and standard deviations (SD) for resilience according to ITIA and SDQ variables in the children in the traumatised parents group with PTSD-related symptoms (n=31) and those without PTSD-related symptoms (n=9)

Resilience according to ITIA and SDQ variables	Children of traumatised parents				*t*-values	*p*
	PTSD-related symptoms		Non PTSD-related symptoms			
	M	SD	M	SD		
ITIA Psychological wellbeing	9.0	8.1	13.8	7.9	1.4	<.05
ITIA Relation to family	16.8	7.1	20.0	7.4	1.9	<.06
ITIA Total score	69.8	29.7	80.2	30.8	1.4	<.05
SDQ Prosocial behaviour	6.4	3.1	8.0	1.7	2.1	<.05
SDQ Emotionality	4.4	2.1	1.6	1.6	4.2	<.01
SDQ Peer problems	3.7	1.9	1.1	1.2	5.0	<.001
SDQ Total Impairment score	16.7	6.3	6.0	4.2	5.9	<.001

Note: PTSD-related symptoms = children in the traumatised parents group with PTSD-related symptoms; Non PTSD-related symptoms = children in the non-traumatised parents group without PTSD-related symptoms.

6.5 RESULTS OF STUDY V

The aim was to investigate the effect of prolonged traumatisation or early childhood traumatisation on the personality; i.e. the aspects of personality impairment that were direct consequences of the prolonged traumatic events. The Karolinska Scales of Personality was used to identify the structure of the subjects' personalities. A factor analysis with varimax rotation was performed for the KSP scales. This yielded three components for the whole sample, denoted as follows: (F1) Internalised Anxiety Domain (including positive loading for Somatic Anxiety, Muscular Tension, Psychic Anxiety, Psychasthenia, Inhibition of Aggression, Guilt, and Suspicion); (F2) Externalised Behaviour Domain (including positive loading for Impulsiveness, Indirect Aggression, Verbal Aggression, and Irritability); and (F3) Avoidance Domain with social withdrawal features (including positive loading for Detachment). The subjects (N=161) were divided into four groups. Group A consisted of 36 traumatised male refugees (including the 15 fathers in the traumatised parents group); Group B consisted of 31 non-traumatised male refugees (including the 14 fathers in the non-traumatised parents group); Group C consisted of 42 traumatised Swedish male prisoners, i.e. with early childhood traumatisation, and Group D consisted of a Swedish comparison group of 52 men used in an earlier study by af Klinteberg (1990). (Table 1:V)

Table 1:V. Mean T-scores (M) and standard deviations (SD) in a group of males (N=161): A) Traumatised refugees group, n=36; B) Non-traumatised refugees group, n=31; C) Swedish traumatised group, n= 42; and D) Swedish Comparison group, n=52, according to the Karolinska Scales of Personality (KSP). *F* ratio for one-way ANOVAs (*df* 3.157) and significant *t* (5 per cent) of group comparisons

KSP domains	Study groups										
	A		B		C		D				*Post-hoc test*
	M	SD	M	SD	M	SD	M	SD	*F*	*p*	*P*<.05
Internalised/Anxiety											
Somatic Anxiety	81.4	16.3	52.4	14.0	63.8	16.8	45.9	8.0	51.1	<.001	A>C>B>D
Muscular Tension	91.4	19.4	57.3	20.2	65.6	17.5	47.2	7.7	55.3	<.001	A>C,B>D
Psychic Anxiety	75.5	12.2	55.7	12.8	60.8	13.9	43.8	9.4	50.8	<.001	A>C,B>D
Psychasthenia	80.1	17.7	60.6	14.5	60.0	17.3	44.1	9.9	42.1	<.001	A>B,C>D
Inhib. of Aggression	61.0	9.1	54.2	9.0	50.5	11.0	48.3	9.6	13.2	<.001	A>B>C,D
Guilt	66.5	10.5	55.8	11.5	55.3	11.8	46.8	7.5	26.2	<.001	A>B,C>D
Suspicion	62.7	10.4	52.3	11.6	58.6	12.9	45.0	7.0	24.2	<.001	A>C,B>D
Externalised Domain											
Impulsiveness	60.6	9.9	52.1	9.2	58.0	11.2	46.9	13.8	12.6	<.001	A,C>B,D
Indirect Aggression	60.0	8.7	52.9	7.2	56.1	10.5	47.7	7.8	15.6	<.001	A>C,B>D
Verbal Aggression	56.0	14.1	45.7	8.9	54.1	9.5	44.9	7.8	12.7	<.001	A,C>B,D
Irritability	55.6	13.0	42.4	13.1	58.8	14.4	43.5	9.7	18.0	<.001	C,A>D,B
Avoidance Domain											
Detachment	58.5	6.4	51.8	7.5	53.7	12.1	45.4	11.1	13.1	<.001	A>C,B>D

Note: Scheffé has been used as Post-hoc method. These samples were matched in ethnicity and gender (Swedish-*Non-Swedish and male subjects).*

Furthermore, subject groups (A, B, C) were investigated concerning the presence of PTSD using the Harvard/Uppsala Trauma Questionnaire (H/UTQ). Regrouping the PTSD criteria according to DSM-IV-TR and applying the result to the H/UTQ resulted in three clusters of impairments: i) emotional impairment as a consequence of the re-enactment of trauma, expressed as internalised behaviours; ii) cognitive dysfunctions, hyperarousal-related state, avoidance/withdrawal tendencies expressed as symptoms of attention disturbance; and iii) maladaptive behaviour, encompassing hyperactivity and impulsivity symptoms (Table 2:V). The hyperactivity symptoms included acting or feeling as if the traumatic events were recurring and intense psychological distress at exposure to cues resembling aspects of the trauma. The impulsivity symptoms included irritability, aggressive behaviour and hyper-vigilance to perceived fear stimuli.

Table 2:V. Mean scores (M) and standard deviations (SD) of two groups of traumatised men (A + C, n= 78) in comparison with a group of non-traumatised men (B, n=31), with reference to PTSD-regrouped symptoms. F ratio for one-way ANOVAs (*df* 2.106) and significant *t* (5%) for between-group comparisons

PTSD-regrouped symptoms	Study groups						F	p	Post-hoc p<.05
	A (n=36)		B (n=31)		C (n=42)				
	M	SD	M	SD	M	SD			
Traumatic severity	20.1	5.4	5.7	5.3	10.8	4.5	67.9	<.001	A>C>B
Emotional impairments	10.5	3.6	.5	.1	7.5	3.7	87.7	<.001	A>C>B
Cognitive dysfunctions	8.2	2.4	.4	.8	5.8	2.6	113.5	<.001	A>C>B
Maladaptive behaviour	7.1	2.5	.3	.9	5.4	2.6	79.9	<.001	A>C>B

The results showed that the men in group C with prolonged traumatisation or early childhood trauma scored significantly higher on traumatic severity and hyperactivity (p<. 001) than the men in group B without such childhood experiences. Further, personality traits with respect to the Externalised Behaviour Domain, i.e. impulsiveness, indirect aggression and verbal aggression, showed significantly higher scores for group C than for group B (p<. 001), although less than the scores for Group A. Lastly, group C scored higher on Irritability than group B did. This could indicate that prolonged traumatisation or early childhood trauma shapes the personality in a pathological manner, which in this thesis is hypothesised as posttraumatic personality disorder. These findings are summarised in Table 2: V.

7 DISCUSSION

7.1 GENERAL DISCUSSION OF THE MAIN FINDINGS

In relation to the aims of the study, the main findings can be summarised as follows:

i) In the traumatised parents group, an association was found between the parents' symptomatology of PTSD and similar symptoms in their children, indicating a transgenerational transmission of symptoms from parents to children.

ii) The use and interpretation of projective methods, such as DAP, were found to give an in-depth and comprehensive understanding of the impact of the overloaded environment that constituted the *everyday reality* of the children in the traumatised parents group.

iii) The findings indicate that the same child can be given both a diagnosis of PTSD and of AD/HD.

iv) Resilience was related to personality factors indicative of a capacity to develop good relations to parents, family members and peers

v) Early severe traumatisation in childhood and prolonged traumatisation later in life were related to i) increased somatic and psychic anxiety; ii) emotional dysregulation; and iii) somatisation; i.e. a pattern of personality impairments that could be called *posttraumatic personality disorder.*

In the traumatised parents group, the association found between the parents' symptoms and the children's impairments with maladaptive behavioural symptoms of different kinds, ranging from PTSD/PTSS to symptoms conforming to the symptoms of ADHD, such as restlessness, concentration difficulties and hyperactivity, are supported by other authors. Montgomery et al. (1992), Yule et al. (1993), Chrestman (1994), Danieli (1998) and more recently Gathje et al. (2008) have reported similar findings, including PTSD-related symptoms, as, in a way Ahmad et al. (2001b) and Sundelin-Wahlsten et al. (2001a, 2001b) did in their investigations of refugee children who came to Sweden from Kurdistan, Iraq, after having survived ethnic homicide and the 'Anfal' operation. Of special interest are the findings of Yehuda et al. (2007a, 2007b, 2008a, 2008b) in their investigations of the biological patterns of basal cortisol secretion in the offspring of Holocaust survivors with and without parental PTSD and survivors from the 9/11 World Trade Centre catastrophe. Their findings indicate that transgenerational transmission of PTSD includes biological factors where epigenetic mechanisms may be involved (Yehuda et al, 2008a).

The use and interpretation of projective methods to include contributions of psychodynamic and attachment theories indicated that the children's insecure attachment was a result of a disrupted relationship between child and parents. This finding concurs with the findings of Ainsworth, Blehar and Waters in an early study from 1978. The child's perception/apperception of the parent's behaviour is a main factor in the development of *ambivalent attachment patterns* in the child or, as denoted in this study, secure/insecure attachment. Children with insecure attachment often attempt to cope by disconnecting themselves from their parents, teachers or other important persons in their lives. This may result in aversive consequences early in life and thereby constitute the a possible basis for developing personality impairments; i.e. the child is at risk of developing a severe type of disturbance termed in the literature as *disorganised attachment* (Cassidy & Mohr, 2001; Cicchetti & Toth, 1995; Lyons-Ruth & Jacobovitz, 1999; Maunder & Hunter, 2001). The internal working models, hypothesised in attachment theory, that children and adolescents with disorganised attachments form are primitive, rigid and extreme (Lyons-Ruth & Jacobovitz, 1999). The working model can be one of helplessness, with aggression as the main defence mechanism; or one of anger and feeling that the self is under constant threat; or one of perverse need for control with blaming, rejection, intrusiveness, hostility, violent behaviour; one of somatisation. The main functions that are impaired in children with a disorganised attachment pattern are affect regulation, stress management, prosocial concern for others and interpersonal relationships (Fonagy, 1993).

Prolonged or early insecure attachment/deprivation that results in a disorganised pattern of attachment may lead to maladaptive symptoms and/or PTSD-related symptoms as well as personality disorders (Herman, Perry & van der Kolk, 1989; Main, 1995) and a syndrome with inattention/overactivity which is impossible to differentiate from AD/HD.

The similarities between PTSD and AD/HD are described in the DSM-IV-Tr manual, and were recently described by Michael Rutter et al. in their investigation of Romanian orphanage children who were adopted by Western families (Stevens et al., 2008). These recent findings by Michael Rutter's group are further supported by the earlier findings by De Bellis et al. using both neuropsychological tests and MR-studies in children with and without PTSD (Beers et al., 2002; de Bellis et al., 2002a, 2002b, 2005a, 2005b, 2006). Their findings point to neuropsychological similarities between PTSD and AD/HD and those PTSD-related symptoms can lead in turn to

neurobiological changes in the brain. Schore (2001) presented the hypothesis that insecure attachment with PTSD-related symptoms as an outcome interferes with the development of neural connections in critical areas of the brain (e.g. the left and right hemispheres of the orbital prefrontal cortex and their connective pathways).

Resilience in children refers to the ability to deal with stress and traumatic events. In part, resilience reflects a personality factor that indicates an ability to maintain adequate self-control/self-esteem. Although not directly investigated in this study, the results from study II using the Machover DAP test indicated that children who have a 'secure attachment' to their caregiver and who show 'prosociality' as a personality feature, i.e. factors that are possible expressions of 'adequate self-control/self-esteem', less often developed PTSD/PTSS-symptoms than other children who do not have a secure attachment to their caregiver. In a similar way, as possible indicators of adequate self-control/self-esteem, the SDQ variables adequate 'emotionality' and 'prosocial behaviour', and the capacity to develop good 'peer relations', as well as the ITIA variables adequate 'psychological wellbeing' and good 'relation to the family', were also related to an outcome with no PTSD in children from tortured parents. Although this group of children without PTSD/PTSS from the traumatised families was small in number, they also scored higher on the WISC-III test measuring IQ. Taken together, these findings support the idea that high IQ and factors related to adequate self-control/self-esteem are constitutional factors of resilience, which, despite lack of supportive environmental factors, may help children to maintain good mental health. Impaired self-control or self-esteem, on the other hand, and according to Strayhorn (2002), can lead to maladaptive behaviour such as hyperactivity and attention deficit, impulse disorders such as gambling and substance abuse, and oppositional and conduct disorders.

The findings related to early childhood traumatisation/prolonged traumatisation later in life and a pattern of symptoms characterised by: i) increased somatic and psychic anxiety; ii) emotional dysregulation; and iii) somatisation give rise to the hypothesis that there is a pattern of personality impairments related to trauma to which the term posttraumatic *personality disorder* is proposed.

In support of this hypothesis, Maunder and Hunter (2001) concluded that a pattern of insecure attachment based on prolonged traumatisation or trauma exposure in early childhood could lead to a lifelong risk of both physical disease and psychosocial behavioural dysfunction. This risk is manifested in three possible life trajectories in

which impairments in behavioural and psychosocial systems that constitute the essential features of disorganised attachment are accentuated: 1) increased susceptibility to stress (e.g. difficulty focusing attention and modulating arousal); 2) emotional dysregulation (e.g. feeling or acting overwhelmed by intense or numbed emotions); and 3) detachment or intrusive help-seeking and dependency (e.g. social isolation). The developmental impairments resulting from an insecure attachment bond include increased vulnerability to dysfunctional affect regulation and decreased ability to inhibit aggression.

The results of the present study, namely that prolonged traumatisation or trauma exposure in early childhood is associated with increased risk for internalised symptoms such as depression and anxiety, are in line with the results found by Maunder and Hunter (2001), but also by Lynch & Cicchetti, 1998. Furthermore, as Bolger et al. (2003) found, increased symptoms of emotional and behavioural dysfunctional self-regulation could also predict externalised symptoms in adulthood, such as hostility and aggressive behaviour.

In summary, a main finding in the series of studies that comprise the present thesis is that, in comparison with the children of non-traumatised parents, the children with traumatised parents displayed numerous symptoms that appear in anxiety-related syndromes, such as PTSD, or in neuropsychiatric syndromes, such as ADHD. Furthermore, the children suffered from emotional vulnerability, which constitutes a basis for maladjustment and behavioural problems. Also, according to the reports of their teachers, they suffered from mild learning difficulties. The children's school problems are quite likely consequences of their emotional impairment, concentration difficulties and hyperactivity. The results also show that many of the children in the traumatised parents group scored low on the WISC-III IQ test. These children developed their symptomatology as a result of an accumulation of risk factors associated with their parents' traumatisation. The list of impairments is long: emotional problems, PTSD-related symptoms, ADHD-like symptoms, intrusive or aggressive behaviour and dysfunctional IQ with mild learning difficulties. Finally, the findings provide an opportunity to discuss possible steps towards developing an integrated trauma theory.

7.2 TOWARDS AN INTEGRATED TRAUMA THEORY

It was apparent that the refugee children of traumatised parents met the diagnostic criteria for PTSD-related and ADHD-like symptoms and for anxiety disorder and that they had a lowered IQ and experienced learning difficulties in school. This overload of problems and symptoms in this group of children indicates that they are at high risk of developing an impaired pattern of personality that will follow them into adulthood.

These children were found to suffer from both internalised symptoms, such as depressiveness with the risk of acquiring new fears in connection with regressive behaviour, and externalised symptoms such as aggressiveness and hyperactivity. Furthermore, they frequently displayed an indifferent attitude in the school setting. Their object relations were characterised by intrusiveness, a desire for immediate gratification, mistrust of others and mood fluctuations. Their behavioural patterns were based on impulsivity, concentration difficulties and hyperactivity. Their academic performance was only moderate or at a relatively low level of ambition and they made little academic progress in comparison with the refugee children in the non-traumatised parents group.

These observations/findings lend support to the hypothesis that PTSD-related symptoms and ADHD-like symptoms can occur simultaneously in the child. The issue of comorbidity/overlapping of different symptoms are associated with a hypothetical constellation of symptoms often called Trauma Related Disorder (TRD), which may lead to PTSD as exemplified in the study of Somalia refugee adolescents (Ellis et al., 2008).

7.3 HYPOTHETICAL *POSTTRAUMATIC PERSONALITY DISORDER* AS A FINAL OUTCOME OF PROLONGED AND SEVERE TRAUMATISATION

PTSD as an outcome of a hypothetical TRD may constitute a lifelong impairment as a consequence of trauma. The mechanisms behind the traumatisation process and the transgenerational transmission of parental trauma to their children may be associated with three persistent determinants that create the basic ground for eventual later personality impairments, affecting the children's attachment style and creating the preconditions for chronic PTSD. The magnitude and intensity of the traumatic events may constitute a moderating factor that increases or decreases the transgenerational transmission of parental trauma to the child through the 'shaping' of the child's brain throughout the long period of brain maturation that has been impaired by traumatic

stress up until the end of brain maturation at the age of 25 years. The recent results from Judith Rapoport's group (Shaw et al., 2007) using prospective MR-studies on children with ADHD vs. controls show a slow but normal brain maturation in children with ADHD. Their studies on brain development trajectories (see Shaw et al., 2008) and the recent results from Michael Rutter and his group (Rutter et al., 2007) who investigated Romania orphan children indicate that there are intrinsic mechanisms from nature and nurture which explain why prolonged deprivation could lead to both an ADHD-like syndrome and to a quasi-autistic clinical picture despite later good emotional support (Roy et al., 2004; Rutter et al., 2007; Stevens et al., 2008).

Trauma Related Disorder (TRD) has the following determinants: i) a cognitive determinant; ii) a neurobiological determinant, and iii) a psychosocial determinant.

i) The cognitive determinant: According to Ehlers et al. (2000), there are two different trajectories in the development of persistent PTSD. The first is based on differences in how the individual perceives the trauma; the second is based on individual differences in the perception of a recurrent sense of threat, denoted in the study as traumatic memory trajectory, which is re-enforced by intrusive and re-experienced symptoms and arousal symptoms such as sleeping disturbances, and by anxiety, impaired emotional responses and somatisation.

Two fundamental assumptions in the individual form the basis of the cognitive determinant: 1) an external component characterised by the assumption that the world is 'unsafe'; and 2) an internal component characterised by the assumption that as a person one is incompetent and lacks value, i.e. a low self-esteem. An often debated issue in understanding the persistence of PTSD mechanisms is the idea of traumatic memory. It is very difficult to intentionally retrieve a complete memory of traumatic events, but intrusive memories are involuntarily triggered with a re-experiencing of some parts of the traumatic event or events. This re-experiencing includes sensory impressions, retrieved as if the event were happening in the here and now. These sensory impressions activate in turn the emotions that originally accompanied the traumatic events. The sensory impressions have physiological sensations and emotional attributes that were initially associated with the origin traumatic events. Traumatic memories are characterised by disintegration of the individual's grasp of time and place. This might explain, at least in part, the problematic relationship between the intentionally retrieved memories of traumatic events and the involuntarily re-experiencing of the events through the intrusive and involuntary triggering of similar

stimuli. This constitutes severe impairments characterised by intrusive recollections and flashbacks, irritability and depressiveness, concentration difficulties and numbing, arousal (sleep disturbances with nightmares) and avoidance, which are all common symptoms in PTSD patients.

ii) The neurobiological determinant: In this connection, PTSD and brain function were investigated in a number of studies (Goodman et al., 1995; De Bellis et al., 2002a, 2002b, 2006; Kuntsi et al., 2004; Castellanos et al., 2007). One of the main postulates in the literature refers to the dysfunctionalilty of Hippocampus, the principal function of which is to integrate or bind together different aspects of memory of an event to a specific time, place and context. Hippocampus is responsible for the memory function under stressful life events, and is also responsible for the inhibition of fear responses. A finding in the literature is that PTSD patients have a small volume of Hippocampus. A high comorbidity was found between PTSD and ADHD (Stevens, 2007). In the ADHD patients, it was observed that the superior cerebella vermis had decreased in volume, which persisted regardless of clinical outcome. For those children with ADHD who had a poor clinical prognosis, the volume of the right and left inferior-posterior cerebella lobes continued to decrease. This neurobiological development continued into adolescence.

Goodman et al. (1995) argued that hyperactive behaviour disturbs learning and lowers the individual's performance on IQ tests; or rather, it may be that low IQ increases the risk of hyperactivity through its connection with low self-esteem. Low IQ and inattention/overactivity (I/O) could also be 'markers' of some common underlying risk factors such as variations in brain development, individual genetic makeup or shared environmental adversity (e.g. Goodman et al., 1995; Kuntsi et al. 2004). The concept of cognitive dysfunction as a dominant feature in the psychopathology of ADHD focuses on the role of neurocognitive processes, for example working memory, inhibition of aggression, and self-control. These processes help the child to develop and maintain adequate problem-solving strategies in order to achieve continued progress in their cognitive development (Castellanos et al., 2006).

A recent meta-analysis by Willcutt et al. (2005) in a control group study demonstrated significant differences in such domains as inhibition, vigilance, spatial working memory, and planning skills (perceptual organisation), all of which are independent of IQ, scholastic achievement or comorbid disorders.

The comorbidity or overlapping between inattention and overactivity (I/O) was investigated by Zeanah et al. (2005), Chisholm (1998), Rutter et al. (2007a), and Roy et al. 2004). An outcome of this research is the finding of comorbidity between PTSD and ADHD-like symptoms.

iii) The psychosocial determinant: Prolonged or early childhood exposure to traumatic environments such as growing up in a vulnerable family atmosphere with severe psychosocial stress factors caused by e.g. parental alcoholism (Rydelius, 1981, 1984), or living under conditions of prolonged emotional exhaustion (Brattberg, 2006) or suffering from prolonged deprivation (Stevens et al., 2008).

Psychosocial stress refers to physical, psychological or social phenomena in the individual's near environment that can bring about psychological, neurobiological or social changes, usually of a damaging, maladaptive or undesirable nature. Bartley et al. (1998) showed that there is a direct pathway between psychosocial stress and illness which can lead to the development of somatic disease; but they also showed that there is an indirect pathway as well in which psychosocial stress is manifested in health-damaging behaviours. The model that had been developed within the framework of the theory encompasses both external factors, i.e. environmental factors such as the individual's social network and socioeconomic status; and internal factors, such as the individual's coping strategies, self-esteem as a resiliency factor, internal working model and subjective interpretation of the perceived stressors. The effect of psychosocial stress on the individual depends on this interplay between the intensity of environmental demands or stressors and the availability of positive external and internal factors. In the absence of adequate coping strategies and/or a supportive social environment, psychosocial stress can result in maladaptive, behavioural and cognitive responses. Repeated and prolonged stress has a cumulative effect, especially if the individual has suffered trauma earlier in life that continue to be a source of stress (Turner et al., 1995).

In summary, in many cases, among persons suffering from prolonged and severe emotional trauma from early childhood, the personality seems to change in a maladaptive manner. The view of this thesis is that such an outcome should hypothetically be called *posttraumatic personality disorder*.

8 LIMITATIONS

The hypotheses put forward regarding parental transmission of PTSD to their children and the children's reactions were supported by the current results and by the results from other research groups. Nonetheless, the findings presented here should be interpreted with care. The sample size (15 traumatised families and 15 control families) was small and the children examined included groups of siblings.

The proposal of Posttraumatic Personality Disorder as an outcome from prolonged and severe emotional trauma in vulnerable individuals is based on clinical experiences. Although supported by the results found in study 5, the study should be considered of an exploratory nature and should be further investigated.

9 DIAGNOSTIC AND CLINICAL CONSIDERATIONS

Refugee children of traumatised parents constitute a challenge for several professional categories. Rydelius et al. (2006) have devised a comprehensive model for diagnosing these children. The model encompasses, first of all, a holistic approach in which both the family's past history in the country of origin and the difficulties confronting the family in the new country are examined; and secondly, a process-oriented transgenerational approach in assessing the family, which includes:

1) An anamnesis with evidence-based information;
2) Psychiatric investigation of both the children and their parents;
3) Somatic investigations of both the children and their parents;
4) Psychological assessment of the children, IQ, perception, attachment style.
5) Pedagogical report on the children's strengths and difficulties, competences.
6) Investigation of the family's social network, constellation, parental capacity.
7) Observations in different social milieu; and lastly
8) Establishment of a psychiatric diagnosis of the child.

The focus should be on the child, with emphasis on the child's relation to:

- The family (including such aspects as country of origin, ethnicity, language, religion and family constellation);
- The parents (psychiatric status, torture and other traumatic experiences, functional level, copings strategies);
- Siblings (psychiatric status, sibling-parent relationship, sibling-sibling relationship);
- The child (premorbidity, stress factors both in the country of origin and in the new country, heredity, current problems, cognitive functioning, behaviour, neuropsychiatric aspects, coping strategies).

The main results presented in this thesis constitute challenges for the professionals within the psychiatric and mental health services meeting with immigrants and their children. A comprehensive understanding of the mechanisms explaining symptoms among traumatised children and their parents means that all refugees coming from areas with conflicts and civil war should be offered mental health examinations including screening for PTSD. Adequate treatments methods must be developed focusing both on individuals, parents and children to avoid posttraumatic personality disorders as long-term consequences of severe psychological trauma suffered in the home-land. Special concern must be directed towards the similarities between PTSD and AD/HD in children to avoid misinterpretation of the symptoms and to offer these children adequate treatment.

10 ACKNOWLEDGEMENTS

There are a number of people who have enriched both my personal and professional life in Sweden. Arriving in Sweden as a young man of 20 years, I had the good fortune to meet many warm-hearted, enthusiastic and helpful people, both in Symgehamn, at the University and later in my professional life which is now crowned by this dissertation. I wish to express my deepest gratitude to all of you, but especially:

Professor Per-Anders Rydelius, Karolinska Institutet, my Principal Supervisor. Thank you for your generosity, patience, encouragement and endless support. Thank you for your untiring efforts to enhance my scientific knowledge and enrich my way of thinking. Thank you for your encouragement and enthusiasm about my engagement with refugee children and for your steady interest in how my clinical work with them was faring. And thank you for always being available and for helping me to formulate and bring to completion this research project. My gratitude has no bounds.

Erling Skoglund, Child and Adolescent Psychiatrist and Head Doctor of the Stockholm Child Guidance Clinics when the project started, my helpful friend and co-author of the two first articles.

Professor Britt af Klinteberg. Thank you for your constant support, enthusiasm and help, always in an encouraging and delightful way. You were steadfast in encouraging me to engage in and then to complete this project. Your knowledge of and interest in the situation of refugee children led to fruitful discussions that have been of great benefit to the research project. You, too, have always been available, virtually at moment's notice, throughout what has proved to be such a very long process.

Associate Professor Jan-Olov Larsson**,** Karolinska Institutet, Thank you Jan-Olov for your supportive attitude and helpful discussions

Hans Arinell, Uppsala University, Thank you for your valuable advice on statistics, for your support and availability. You showed great patience with my ignorance in statistical matters.

Associate Professor David Titelman, my tutor in Suicide Prevention**,** special course. Thank you David for tutoring me in a course that I have had much use of in the project. Our discussions have been very enlightening.

Associate Professor Susanne Leidström*,* Uppsala University, my tutor in courses in the Psychotherapy Program. Thank you for your constant encouragement and for finding ways to resolve many of the problems that arose in the course of the project.

Sten Lundqvist, Chief psychologist and Head of the Child and Adolescent Outpatient Clinic, Special Division, Stockholm. Thank you for all your support and encouragement in both my clinical work and in my research. Thank you for believing in me as the only non-European psychologist in your clinic.

Dr. Margareta Carlberg, tutor and supervisor of Psychotherapy courses, Stockholm. Thank you for encouraging me to dare to develop further my own clinical perspective.

Psychoanalyst PhLic. Eve Suurve Råstrand, my tutor and supervisor in Psychotherapy courses. Thank you for your constant interest in my work and research, and for your many insights concerning the situation of refugees in Sweden. You have always been an optimistic supporter of my endeavors.

Gunilla Nilsson, Karolinska Institutet. Thank you for all your assistance in the many practical aspects of putting together a doctoral thesis.

Noella Bickham, Stockholm University. Thank you for your always helpful advice on language usage, for our many discussions about the sense and meanings of words. Thank you for your valuable reflections, your sensitivity in understanding the thoughts I wanted to convey, and your care in editing the manuscript. And thank you for always being on call. Without your help, this dissertation would have never seen the light.

Dr Orsolya Hoffmann, Chief psychiatrist at the Criminal Care Board, Northern Stockholm, and ***Dr Nadia Eriksson,*** Chief psychiatrist with the Methadone Project, Stockholm. Thank you both for your support and many helpful discussions.

Warm thanks to ***Anna-Carin Mårtensson*** and ***Carina Persson,*** nurses at the Österåker Prison, for encouragement and invaluable discussion during my work at the prison.

Warm thanks also to my colleagues at BUP, Stockholm, and at Schools, Stockholm, for your many insights and helpful discussions; also to ***Kerstin Malmberg, Annelie Törnblom, Margret Nisell, Maria Öjmyr-Joelsson, Laura Horowitz, Bettina Friedrichs*** and ***Tobias Edbom***.

In addition to my friends and colleagues in Sweden, I have had a good deal of support and encouragement from friends and colleagues in Egypt, among them, ***Professor Kadry Hefni***, ***Professor Elhami Abdelaziz*** at Ain Shams University, ***Professor Nabil Abdelrahman***, ***Professor Amira Seif El Din*** at Alexandria University, my brother ***Associate Professor Mohammed Taufik*** at Alazhar University, and my other brother ***Taufik Ismail*** living in Egypt. Thank you all. You have never doubted the feasibility of my completing this research project and have been supportive all the way.

I would also like to express my deepest gratitude to His Excellency, the Ambassador of Arab Republic of Egypt in Stockholm, ***Dr Samah Soutohi,*** for His sympathetic interest in the welfare of fellow Egyptians abroad.

Special thanks to my wife ***Mona*** and our children ***Sarah-Noor, Marwa-Liv***, ***Taufik***, ***Mohamed-Samy*** and little ***Selma***. Thank you for being so understanding, so patient, and for putting up for so long with a husband and father who was always working.

And most of all, thanks to all the children and parents who participated in the study. I hope that your participation has in some measure helped to lighten your life.

This study was supported in part by the Swedish National Board of Health and Welfare and by financial support from the Stockholm County Council.

11 REFERENCES

Almqvist, K. & Brandell, M. (1997). Refugee children in Sweden: Post-Traumatic stress disorder in Iranian preschool children exposed to organized violence. *Child Abuse & Neglect,* **4**: 351-4366.

Ahmad, A. (1999). *Childhood Trauma and Posttraumatic Stress Disorder: A Developmental and Cross-Cultural Approach.* Acta Universitatis Upsaliensis. Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine 874.

Ahmad, A., Sundelin-Wahlsten, V., Sofi, MA., Qahar, J.A., & von Knorring, A.L. (2000a). Reliability and validity of a child-specific cross-cultural instrument for assessing posttraumatic stress disorder. *European journal of Child and Adolescents Psychiatry*, **9**(4): 285-294.

Ahmad, A., Sofi, MA., Sundelin-Wahlsten, V. & von Knorring, A.L. (2000b).Posttraumatic stress disorder in children after the military operation 'Anfal' in Iraqi Kurdistan. *European journal of Child and Adolescents Psychiatry*; **9**(4): 235-243.

Ahmad, A., Abdul-Majeed, A., Siddiq, A., Jabar, F., Qahar, J., Rasheed, J. & von Knorring, A.-L. (2007). Reporting Questionnaire for Children as a Screening Instrument for Child Mental Health Problems in Iraqi Kurdistan. *Transcultural Psychiatry,* **44**(1): 5-26.

Ainsworth, M.D.S., Blehar, M.C., Waters, E. & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation.* Hillsdale, NJ: Erlbaum.

Allodi, F. (1980). The psychiatric effects of political persecution and torture in children and families of victims. *Canada's Mental Health,* **28**, 8–10.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (IV-edition, Text Revised). Washington, DC: American Psychiatric Association.

Bartley, M., Blane, D., & Smith, G.D. (1998). *The Sociology of Health Inequalities*. Oxford: Blackwell Publishers.

Beers, S.R. & De Bellis, M.D.(2002). Neuropsychological function in children with maltreatment-related posttraumatic stress disorder. *American Journal of Psychiatry,* **159**(3): 483-486.

Blomberg, B. & Cleve, E. (1997). Machover's test Handbok med utvecklingsteoretiska perspektiv [The Machover test: Handbook with developmental theory perspectives]. Stockholm: Psykologiförlaget.

Bolger, E.K. & Patterson J.C. (2003). Sequelae of Child Maltreatment. In S.S. Luthar (Ed.), *Resilience and Vulnerability Adaption in the Context of Childhood Adversities.* Cambridge, NY: Cambridge University Press.

Bowlby, J. (1973). *Attachment and loss, Vol. 2: Separation Anxiety and anger.* London: Hogarth Press and Institute of Psycho-Analysis.

Bowlby, J. (1979). *The making and breaking of affectional bonds.* London: Tavistock.

Bowlby, J. (1988). *A secure base.* London: Routledge.

Brattberg, G. (2006). PTSD and ADHD: underlying factors in many cases of burnout. *Stress and Health*, **22**: 305–313. Published online in Wiley InterScience DOI: 10.1002/smi.1112

Buchele, B.J. (2000). Group psychotherapy for survivors of sexual and physical abuse. In R.H. Klein & V.L. Schermer (Eds.), *Group psychotherapy for psychological trauma.* New York: Guilford.

Cassidy, J. & Mohr, J.J. (2001). Unsolvable fear, trauma, and psychopathology: Theory, research, and clinical considerations related to disorganized attachment across the life span. *Clinical Psychology: Science & Practice,* **8**: 275-298.

Chrestman, K.R. (1994). *Secondary traumatization in therapist working with survivors of Trauma.* Unpublished doctoral dissertation, Nova University, Fort Lauderdale, Florida.

Cicchetti, D. & Toth, S. (1995). A developmental psychopathology perspective on child abuse and neglect. *Journal of the American Academy of Child and Adolescent Psychiatry*, **34**: 541-564.

Cohn, J., Holzer, K., Koch, L. & Severin, B. (1981). Torture of children: An investigation of Chilean immigrant children in Denmark. Preliminary Report. *Child Abuse & Neglect,* **5**: 201-203.

Cohn, J., Danielsen, L., Kristiensen, I., Holzer, M., Koch, I., Severin, B., Thögersen, S. & Aalund, O. (1985). A study of Chilean refugee in Denmark. *The Lancet,* **2:** 437-438.

Cook, A., Henderson, M. & Jentoft, K. (2003). *Out of the Office and into the community*. Presented at The Boston Trauma Conference, Boston, MA.

Danieli, Y., ed. (1998). *International handbook of multigenerational legacies of trauma*. New York: Plenum.

Daud, A., Skoglund, E. & Rydelius, P.-A. (2005a).Children in families of torture victims: Transgenerational transmission of parents' traumatic experiences to their children. *International Journal of Social Welfare,* **14**: 23-32

Daud, A., Skoglund, E.v& Rydelius, P.-A.(2005b). The emotional state of Children of Torture Victims Compared with the Emotional State of Children of Non-traumatised Parents. *Egyptian Journal of Psychiatry,* **24**(2): 171-182.

Daud, A., af Klinteberg, B. & Rydelius, P.-A. (2008). Trauma, PTSD and Personality: the relationship between prolonged traumatization and personality impairments. *Scandinavian Journal of Caring Sciences,* 2008; 21 Feb. *Online.*

Daud, A., af Klinteberg, B. & Rydelius, P.-A. (2008). Resilience and vulnerability among refugee children of traumatized and non-traumatized parents. *Child and Adolescent Psychiatry and Mental Health. 28 March Online.*

Daud, A. & Rydelius, P.-A. (Submitted 2008-03-03). Comorbidity/overlapping between: symptoms of Attention-Deficit/Hyperactivity Disorder (ADHD) and Post-Traumatic Stress Disorder (PTSD), in relation to IQ among children of traumatized/non-traumatized parents.

DeBellis, M.D., Keshavan, M.S. & Shifflett, H. (2002a). Brain structures in paediatric maltreatment-related posttraumatic stress disorder: A sociodemographically matched study. *Biological Psychiatry,* **52**: 1066-1078.

De Bellis, M.D., Keshavan, M.S., Shifflett, H., Iyengar, S., Beers, S.R., Hall, J. & Moritz, G. (2002b).Brain structures in paediatric maltreatment-related posttraumatic stress disorder: a sociodemographically matched study. *Biological Psychiatry*, **1; 52**(11): 1066-1078

De Bellis, M.D. & Van Dillen, T. (2005a). Childhood post-traumatic stress disorder: an overview. *Child and Adolescents Psychiatric Clinic of North America*, **14(4):** 745-772, ix. Review.

De Bellis MD. (2005b). The psychobiology of neglect. *Child Maltreatment*, **10**(2): 150-172. Review.

De Bellis, M.D. & Kuchibhatla, M. (2006). Cerebellar volumes in paediatric maltreatment related posttraumatic stress disorder. *Biological Psychiatry*, **1:60**(7): 697-703. Epub Aug 24, 2006.

Dube, S.R., Anda, R.F., Felitti, V.J., Chapman, D.P., Williamson, D.F. & Giles, W.H. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: Findings from the adverse childhood experiences study. *JAMA: Journal of the American Medical Association,* **286**: 3089-3096.

Dube, S.R., Anda, R.F., Felitti, V.J., Croft, J.B., Edwards, V.J. & Giles, W.H. (2001). Growing up with parental alcohol abuse: Exposure to childhood abuse, neglect, and household dysfunction. *Child Abuse & Neglect,* **25**: 1627-1640.

Ellis BH, Macdonald HZ, Lincoln AK, Cabral HJ. (2008). Mental health of Somali adolescent refugees: The role of trauma, stress, and perceived discrimination. *Consultant Clinical Psychology,*: **76(2):**184-93

Eriksson, N-G. & Lundin, T. (1996). Early Traumatic Stress Reactions among Swedish Survivors of the rn/s Estonia Disaster. *British Journal of Psychiatry,* **169**: 713-716

Eth, S. & Pynoos, R.S. (1985). Developmental Persopective on Psychic Trauma in Childhood. In C.R. Figly (Ed.), *Trauma and Its Wake, Vol. I, The Study and Treatment of Post-Traumatic Stress Disorder.* New-York: Brunner/Mazel.

van der Kolk, B.A., Pelcovitz, D., Roth, S., et al. (1996). Dissociation, somatization, and affect dysregulation: the complexity of adaptation to trauma. *American Journal of Psychiatry*, **153**: 83–93.

Fonagy, P., Moran, G. &Target, M. (1993). Aggression and the Psychological self. *The International Journal of Psycho-Analysis*, **74**: 471-485.

Freud, A. (1967). *Comments on trauma: psychic trauma.* In S. Furst (Ed.), *Psychic Trauma* (pp 235–246). New York: Basic Books.
Freud, S. (1917). Introductory lectures on psychoanalysis XVII. In J. Strachey (Ed.), *Standard Edition 16*. London: Hogarth Press.
Freud, S. (1920/1981). Beyond the pleasure principle. *Standard Edition 18*. London: Hogarth Press.
Freud, S. (1939). Moses and Monotheism. In J. Strachey (Ed.), *Standard edition,* 23, London: Hogarth Press.
Gathje, R., Lewandowski, L. & Gordon, M. (2008). the Role of Impairment in the Diagnosis of ADHD. *Journal of Attention Disorders,* **11**(5): 529-537.
Goodenough, F.L. (1926). *Measurements of intelligence by drawings*. New York: World Book.
Goodman, R., Simonoff, E. & Stevenson, J. (1995). The impact of child IQ, parent IQ and sibling IQ on child behavioural deviance scores. *Journal of Child Psychology and Psychiatry*, **36**: 409-425.
Gordon, H.W. (2002). Early environmental stress and biological vulnerability to drug abuse. *Psychoneuroendocrinology,* **27**(1-2): 115-126, *Special Issue: Stress and drug abuse.*
Harris, D.B. (1963). *Children's drawings as measurement of intellectual maturity*. New York: Harcourt, Brace & World Inc.
Herman, J.L., Perry, J.C. & van der Kolk, B.A. (1989). Childhood trauma in Borderline Personality Disorder. *American Journal of Psychiatry,* **146**: 490-495.
Khan, M.M.R. (1963).The concept of cumulative trauma. *Psychoanalytic Study of the Child*, **18:** 286–306.
Kohut, H. (1977). *The restoration of the self*. New York: International Universities Press.
Koppitz, E.M. (1968). *Psychological Evaluations of Children's Human Figure Drawings*. London: Grune & Stratton.
Kris, E. (1956). The recovery of childhood memories in psychoanalysis. *Psychoanalytic study of the child,* **11**: 54-88
Lie, N (1981). Young Law-Breakers. A Prospective Longitudinal Study.*Acta Paediatrica Scand*, Suppl. 288
Lundin, T. (1984). Long-term Outcome of Bereavement. *British Journal of Psychiatry,* **145**: 424-428.
Lundin, T. Mårdberg, B. & Otto, U. (1993). Chernobyl: Nuclear threat as disaster. In: Wilson, D.P. & Raphael, B., *International Handbook of traumatic stress syndromes*. New York: Plenum Press.
Lundin, T. & Otto, U. (1989). Stress reactions among Swedish health care personnel in UNIFIL, South Lebanon 1982-84. *Stress Medicine,* **5**: 237-246.
Lundin, T. & Otto, U. (1992). Swedish UN-soldiers in Cyprus, UNFICYP. Their psychological and social situation. *Psychotherapy and psychosomatic,* **57**: 187-193.
Lundin, M. & Otto, U. (2001). *Traumatolog, Bedömning, bemötande och behandling and stresstillstånd* [Traumatology, Assessment, and Treatment of Stress-related Conditions]. Lund, Sweden: Studentlitteratur.
Luthar, S.S., Cicchetti, D. & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development,* **71**: 543-562.
Lynch, M. & Cicchetti, D. (1998). An ecological-transactional analysis of children and context: the longitudinal interplay among child maltreatment, community violence, and children's symptomatology. *Development and Psychopathology*, **10**: 235-257.
Lyons-Ruth, K. & Jacobovitz, D. (1999). Attachment disorganization: Unresolved loss, relational violence, and lapses in behavioral and attentional strategies. In J. Cassidy & P.R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical application* (pp. 520-554). New York: Guilford Press.
Machover, K. (1949) *Personality projection in the drawing of the human figure* Springfield, Illinois: Thomas.
Main, M. & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the strange situation. In M.T. Greenberg, D. Cicchetti & E.M. Cummings (Eds.). *Attachment in the preschool years: Theory, research and intervention* (pp. 121–160). Chicago: University of Chicago Press.

Masten, A.S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist,* **56**(3): 227-238.

Masten, A.S. & Powell, J.L. (2003). A resilience framework for research policy, and practice. In S.S. Luthar (Ed.), *Resilience and Vulnerability. Adaption in the context of childhood adversities* (pp.1-25). New York: Cambridge University Press.

Maunder, R.G. & Hunter, J.J. (2001). Attachment and psychosomatic medicine: Developmental contributions to stress and disease. *Psychosomatic Medicine,* **63**: 556-567.

Montgomery, E., Krogh, Y., Jacobsen, A. & Lukman, B. (1992). Children of torture victims: Reactions and coping. *Journal of Child Abuse & Neglect,* **16**: 797-805.

Munroe, J., Shay, J., Fisher, L., Makary, C., Rapperport, K., Zimering, R. (1995). Preventing compassion fatigue: A team treatment model. In C.R. Figley (Ed.), *Compassion Fatigue: Coping with Secondary Traumatic Stress Disorder in Those Who Treat the Traumatized* (pp.209-231). New York: Brunner/Mazel.

O'Dougherty-Wright, M. & Masten, A.S. (2006). Resilience Processes in Development, Fostering Positive Adaptation in the Context of Adversity. In S. Goldstein & R.B. Brooks (Eds.), *Handbook of Resilience in Children*. New York: Springer Science & Business Media, Inc.

Osofsky, J.D., Cohen, G. & Drell, M. (1995). The effects of Trauma on Young Children: A Case of 2-Year-Old Twins. *The International Journal of Psycho-analysis,* **76**: 595-607.

Otto, U., Bliding, Å. & Lundin, T. (1986). *Katastrof- och försvarspsykiatri* [Catastrophic and Defence Psychiatry]. Lund: Studentlitteratur.

Pynoos R.S., Kinzie J.D. & Gordon M.A. (2001). Children, adolescents, and families exposed to torture and related trauma. In E.T. Gerrity, T.M. Keane & F. Tuma, *The Mental Health Consequences of Torture* (pp. 211-225). New York: Kluwer Academic/ Plenum Publishers.

Ramklint, M. (2002).*Influence of Child and Adolescent Psychopathology on Adult Personality Disorders*. PhD Thesis (1163), Uppsala University, Sweden.

Rapoport, J.L. & Lenroot, R. (2007). Cerebellar development and clinical outcome in attention deficit hyperactivity disorder. *American Journal of Psychiatry,* **164**(4): 547-551.

Rydelius P.-A. (1981). Children of alcoholic fathers, their social adjustment and their Health status over 20 Years. *Acta Paediatrica Scandinavica*. Suppl. 286.

Rydelius P.-A. (1983a). Alcohol abusing teenage boys: testing a hypothesis on relationship between alcohol abuse and social background factors, criminality and personality in teenage boys. *Acta Psychiatrica Scandinavica, 68*: 368-380.

Rydelius P.-A. (1983b). Alcohol abusing teenage boys: testing a hypothesis on alcohol abuse and Personality factors, using a personality inventory. *Acta Psychiatrica Scandinavica,* **68**: 381-385.

Rydelius P.-A. (1988). The development of antisocial behaviour and sudden violent death. *Acta Psychiatrica Scandinavica,* **77**: 398-403.

Rydelius P.-A. (1994). Children of alcoholic parents: at risk to experience violence and to develop violent behaviour. In: C. Chiland & J.G. Young (Eds.). *Children and Violence* (pp.72-90). London: Jason Aronson Inc.

Rydelius P.-A (2006). *Rapport om de s.k. apatiska barnen. Att förstå bakgrunden till deras reaktionsmönster. Att utreda och behandla dem* [Report on so-called apathetic children: understanding their background, reaction patterns. Investigation and Treatment]. Research Report No 25. Stockholm: Karolinska Institutet.

Rutter, M., Kreppner, J., Croft, C., Murin, M., Colvert, E., Beckett, C., et al. (2007).Early adolescent outcomes of institutionally deprived and non-deprived adoptees III. Quasi-autism. *Journal of Child Psychology and Psychiatry,* **48(12):**1200-7

Roy, P., Rutter, M. & Pickles, A. (2004). Institutional care: Associations between overactivity and lack of selectivity in social relationships. *Journal of Child Psychology & Psychiatry & Allied Disciplines,* **45**: 866–873.

Scaer, R. (2001). *The body bears the burden: trauma, dissociation and disease.* New York: The Haworth Medical Press.

Scheeringa, M.S, Zeanah, C.H., Drell, M.J. & Laurieu, J.A. (1995). Two approaches to the diagnosis of post-traumatic stress disorder in infancy and early childhood. *Journal of the American Academy of Child and Adolescent Psychiatry,* **34**: 191-200.

Schore, A. (2001). The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal,* **22**: 201-269.

Schore, A.N. (2002). Advances in neuropsychoanalysis, attachment theory, and trauma research: Implications for self psychology. *Psychoanalytic Inquiry, Special Issue: Self-regulation: Issues of attention and attachment,* **22**: 433-484.

Shaw, P., Eckstrand, K., Sharp, W., Blumenthal, J., Lerch, J.P., Greenstein, D., Clasen, L., Evans, A., Giedd, J., Rapoport, J.L. (2007). Attention-deficit/hyperactivity disorder is characterized by a delay in cortical maturation. *Proceedings from the National Academy of Sciences U S A,* **104**(49): 19649-19654

Shaw, P., Kabani, N.J., Lerch, J.P., Eckstrand, K., Lenroot, R., Gogtay, N., Greenstein, D., Clasen, L., Evans, A., Rapoport, J.L., Giedd, J.N., Wise, S.P. (2008). Neurodevelopmental trajectories of the human cerebral cortex. *Journal of Neuroscience*, **28**(14): 3586-3594.

Scheeringa, M.S, Zeanah, C.H., Drell, M.J. & Laurieu, J.A. (1995). Two approaches to the diagnosis of post-traumatic stress disorder in infancy and early childhood. *Journal of the American Academy of Child and Adolescent Psychiatry,* **34**: 191-200.

Schore, A. (2001). The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal,* **22**: 201-269.

Schore, A.N. (2002). Advances in neuropsychoanalysis, attachment theory, and trauma research: Implications for self psychology. *Psychoanalytic Inquiry, Special Issue: Self-regulation: Issues of attention and attachment,* **22**: 433-484.

Sroufe, L., Carlson, E., Levy, A. & Egeland, B. (1999). Implications of attachment theory for developmental psychopathology. *Development & Psychopathology,* **11**(1): 1-13.

Stevens, SE, Sonuga-Barke, E.J., Kreppner, J.M., Beckett, C., Castle, J., Colvert, E., Groothues, C., Hawkins, A.& Rutter, M. (2008). Inattention/Overactivity following early severe institutional deprivation: presentation and associations in early adolescence. *Journal of Abnormal Child Psychology*, **36**(3): 385-398.

Strayhorn, J.M. Jr. (2002a). Self-control: Theory and research. *Journal of American Academy of Child and Adolescents Psychiatry,* **41**(1): 7-16.

Sundelin-Wahlsten, V., Ahmad, A., & von Knorring, A.L. (2001a). Traumatic experiences and posttraumatic stress reactions in children and their parents from Kurdistan and Sweden. *Nordic Journal of Psychiatry*, **55**(6): 395-400.

Sundelin-Wahlsten, V., Ahmad, A. & von Knorring, A.L. (2001b). Traumatic experiences and post-traumatic stress reactions in children from Kurdistan and Sweden. *Acta Paediatrica*, **90**(5): 563-568

Turner, R.J., Blair, W. & Lloyd, D. (1995). The Epidemiology of Social Stress. *American Sociological Review*, **60**: 104-125.

Vaage, A.B., Garlöv, I., Hauf, E. & Thomsen, P.H. (2007). Psychiatric Symptoms and Service Utilization among Refugee Children Referred to a Child Psychiatry Department: A Retrospective Comparative Case Note Study. *Transcultural psychiatry,* **44**(3): 440-458.

Werner A.A & Smith A.E. (1992). *High risk children from birth to adulthood.* Ithaca, NY: Cornell University Press.

Winnicott, D.W. (1969). The mother–infant experience of mutuality, In C. Winnicott, R. Shepherd & M. Davis (Eds.). *Psycho–Analytic explorations*. Cambridge, MA: Harvard University.

Wyman, P.A. (2003). Emerging perspectives on context specificity of children's adaption and resilience: In S.S. Luthar (Ed.), *Resilience and Vulnerability: Adaption in the context of childhood adversities* (pp. 293-317). New York: Cambridge University Press.

Wyman, P.A., Sandler, I., Wolchik, S. & Nelson, K. (2000). Resilience as cumulative competence promotion and stress protection: Theory and intervention. In D. Cicchetti & J. Rappaport (Eds.). *The promotion of wellness in children and adolescents* (pp. 133-184). Washington, DC: Child Welfare League of America.

Yehuda, R. & Flory, J.D. (2007a). Differentiating biological correlates of risk, PTSD, and resilience following trauma exposure. *Journal of Traumatic Stress*, **20**(4): 435-447.

Yehud, R., Teicher, M.H., Seckl, J.R., Grossman, R.A., Morris, A. & Bierer, L.M. (2007). Parental Posttraumatic Stress Disorder as a Vulnerability Factor for Low Cortisol Trait in Offspring of Holocaust Survivors. *Archives of General Psychiatry,* **64**(9): 1040-1048.

Yehuda, R. & Bierer, LM.(2008a) Transgenerational transmission of cortisol and PTSD risk. *Progressive Brain Research*, **167:** 121-35. Review.

Yehuda, R., Bell, A., Bierer, L.M. & Schmeidler, J. (2008b). Maternal, not paternal, PTSD is related to increased risk for PTSD in offspring of Holocaust survivors. *Journal of Psychiatric Research*, Feb 15.

Yule, W., Williams, R., & Andrews, B. (1993). Crisis support in the aftermath of disaster: A longitudinal perspective. *British Journal of Clinical Psychology,* **32**: 177-185.

APPENDIX 1

MACHOVER FOLLOW-UP QUESTIONS (FROM BLOMBERG & CLEVE, 1997)

Follow-up questions used when asking the children to comment on their figure drawings:

1. What is he/she doing?
2. How old is he/she?
3. Does he/she have a family?
4. Who are included in his/her family?
5. What kind of work does he/she (the drawing) have? Or wants to be when he/she grows up?)
6. Is he/she smart and capable?
7. What is he/she good at doing?
8. Is he/she healthy?
9. Does he/she have a pleasant appearance?
10. What are his/her best physical attributes?
11. What are his/her worst physical attributes?
12. Is he/she happy about something? What about? Is he/she usually happy? About what?
13. Is he/she unhappy about something? About what?
14. Is he/she angry about something? About what?

Is he/she usually angry about something? About what?

15. What are his/her good traits?
16. What bad habits do the he/ she has?
17. Does he/she (the figure in the drawing) have any friends?
18. Does he/she have a best friend? What is this best friend like?
19. Does he/she have a lot of friends? Are they older or younger?
20. What do other people say about him/ her?
21. What does he/she think about his/her family?
22. What does he/she think about school?
23. How much time does he/she spend with friends?
24. What does he/she think the most funny?
25. Does he/she want to get married?
26. What age does he/she want to be when he/she gets married?
27. What kind of person does he/she want to marry?
28. What are his/her three great wishes?

APPENDIX 2

THE MACHOVER'S DRAW-A- PERSON (DAP) TEST, SCORING SYSTEM

Name: ……....Date of Birth…….…….....Grade…..

	I ATTACHMENT TYPES			
	1. Perception/ Apperception (Max 5 points)	+	-	
D	Abnormal attributes (Things, which does not suite the drawings).			
Q1	What is he/she doing? (The answer of the child must reflect some dynamic feature e.g. walk dancing. etc.).			
Q2	The child's age in relations to her/his answer) with deviation ± 2 years			
Q25	Does he/she want to get married?			
Q26	What age does he/she want to be when he/she gets married? Does the child have a realistic understanding about marriage? Use Your own judgment.			
	Sum of the scores of the variables	+	-	Sum=
	2. Secure/insecure Attachment(total points 13)	+	−	Sum=
D	Did the child draw eyes?			
D	Hands?			
D	Feet?			
D	Figure's placement(in the middle or not)			
D	Figure's symmetry (scores +) /asymmetry(scores −)			
D	Figure's grounding			
D	Abnormal attributes			
D	Surroundings details adequate /inadequate for the drawings.			
Q3	Does he/she have a family?			
Q4	Whose includes in his/her family?			
Q13	Is he/she unhappy about something? About what?			
Q14	Is he/she angry about something? About what? Is he/she usually angry about something? About what?			
Q21	What does he/she think about his/her family?			
	Sum of the scores of the variables	+	-	Sum=
	3. Object Relation (total point=11)			
D	Figure's size			
D	Figure's placement			
D	Whole figure's symmetry/asymmetry			
Q 17	Does he/she (the figure in the drawing) have any friends?			
Q 18	Does he/she have a best friend? What is this best friend like?			
Q 19	Does he/she have a lot of friends? Are they older or younger?			
Q 21	What does he/she think about his/her family?			
Q 22	What does he/she think about school?			
Q 23	How much time does he/she spend with friends?			
Q 25	Does he/she want to get married?			
Q 27	What kind of person does he/she want to marry?	+	-	Sum=

	II. SELF-IMAGE (TOTAL 14 POINTS)	+	–	
D	Figure's placement			
D	Figure's size			
D	Symmetry/asymmetry			
D	The holistic quality of the figure's drawing.			
Q 5	What kind of work does he/she (the figure in the drawing) have? What does he/she want to be when he/she grows up?			
Q 6	Is he/she smart and capable?			
Q 7	What is he/she good at doing?			
Q 8	Is he/she healthy?			
Q 9	Does he/she have a pleasant appearance?			
Q 10	What are his/her best physical attributes?			
Q 11	What are his/her worst physical attributes?			
Q 15	What are his/her good traits?			
Q 16	What bad habits do the he/ she has?			
Q 20	What do other people say about him/her? (several positive features must exist)			
	Sum of the scores of the variables			**Sum=**
	III. ANALYSIS WITH SPECIAL CONSIDERATION FOR THE FOLLOWING:			
	1. Salutogenic features with Prosociality (total 13 points)	+		
D	Figure's placement			
D	Figure's symmetry/asymmetry			
D	Fingers			
D	Feet			
Q.1	What is he/she doing?			
Q.5	What kind of work does he/she (the figure in the drawing) have? (What does he/she want to be when he/she grows up?)			
Q.17	Does he/she (the figure in the drawing) have any friends?			
Q.18	Does he/she have a best friend? What is this best friend like?			
Q.19	Does he/she have a lot of friends? Are they older or younger?			
Q.21	What does he/she think about his/her family?			
Q.23	How much time does he/she spend with friends?			
Q.25	Does he/she want to get married**?**			
Q.28	What are his/her three great wishes?			
	Sum of the scores of the variables	+	–	**Sum=**

	2. Depressiveness (total 12 points)	+	–	
D	Figure's placement (in the middle or not)			
D	Figure's size			
D	Facial expression ?			
D	Mouth (what does it look's like?)			
D	Ears (not present indicates depressiveness and Vs).			
D	Arms (short arms in relation to the figure indicate depressiveness)			
D	Hands (hidden hands scores as indicating depressiveness)			
D	Fingers (in what way the child drawing fingers?)			
D	Feet shape (using possibility in relation to figure size).			
Q 12	Is he/she happy about something? What about? Is he/she usually happy about something? About what? (to be expressed in the answers to the follow-up questions.).			
Q 13	Is he/she unhappy about something? About what? (to be expressed in the answers to the follow-up questions)			
Q 24	What does he/she think is the most fun? (to be expressed in the answers to the follow-up questions)	+	–	Sum=
	3. Aggressiveness (total 6 points)	+	–	
D	Teeth			
D	Hands			
D	Fingers			
D	Aggressive attributes (presence or not)			
D	Shadowing (presence or not)			
Q 14	Is he/she angry about something? About what? Is he/she usually angry about something? About what? (If *Yes*, score = +)			
	Sum of the total scores of the variables	**+**	**-**	Sum=
I.1	Perception (+)/Apperception (-)			
I.2	Secure/Insecure Attachment			
I.3	Object Relations			
II.	Self-Image			
III.1	Salutogenic features with prosociality			
III.2	Depressiveness			
III.3	Aggressiveness			

D = Figure drawing

Q= Follow-up question