Overrepresentation of Internationally Adopted Adolescents in Swedish §12-institutions

ANNA MI RA ELMUND
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Abstract

In order to study internationally adopted delinquents, internationally adopted controls, delinquent controls and an additional group of healthy non-adopted, non-delinquent controls, the following tests were used: WISC/WAIS, TOL, WCST, a questionnaire, I think I am, ISSI, an attachment test, KSP, and SCL-90. In the register study, data were obtained from the registers of The National Board of Health and Welfare and Statistics Sweden and multivariate analyses were performed using logistic regression models. Odds ratios (OR) for different forms of out-of-home care placements were calculated.

It was found that the adopted delinquents had a significantly lower full scale IQ (WISC/WAIS) and significantly lower results on several measurements in the WISC/WAIS compared to the adopted controls. In addition, both groups of adoptees scored low in the WISC/WAIS subscale arithmetics when compared to the population mean. The adopted delinquents clearly had disruptive and infectious relations to their parents which was demonstrated in I think I am, ISSI, the attachment test and the questionnaire. The adopted controls demonstrated good relations to adoptive parents. When personality and self-perception were measured and analyzed in a two-way ANOVA, the results clearly pointed to "delinquency" as the explaining factor to the variance of the results as opposed to "adoption".

Finally, the regression analyses of the register data demonstrated an OR of 3.0 (after adjustments for age and sex) for placements of intercountry adoptees in residential care from age 10 and an OR of 5.1 in model 2 (after adjustments for socio-demographic background variables). More over, higher child age at adoption, origin from Latin America, single parent adoption and maternal age above 35 at birth of the child were identified as significant predictors of out-of-home care from age 10.

Keywords: transnational adoption, international adoption, intercountry adoption, intelligence, adolescent, delinquent, neuropsychological, cognitive, attachment, relations, adoptive parents, personality, self-perception, residential care, foster care

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“... echoes from the past will continue to dwell and remain within me, however not as an enemy but a familiar companion and guidance to the future...”

To Henrik and Joakim
List of Publications

This thesis is based on the following papers, referred in the text by their Roman numerals.

I  Cognitive and neuropsychological functioning in transnationally adopted juvenile delinquents.
   Anna Elmund, Lennart Melin, Anne-Liis von Knorring, Lemm Proos, Torsten Tuvemo
   Acta Paediatrica 93, 1507-1513, 2004

II  Relation problems in internationally adopted juvenile delinquents.
    Anna Elmund, Lennart Melin, Anne-Liis von Knorring, Lemm Proos, Torsten Tuvemo
    Upsala Journal of Medical Sciences (in press 2007)

III Personality and self-perception in internationally adopted juvenile delinquents.
   Anna Elmund, Lennart Melin, Anne-Liis von Knorring, Lemm Proos, Torsten Tuvemo
   (Submitted)

IV  Intercountry adoptees in out-of-home care – a national cohort study.
    Anna Elmund, Frank Lindblad, Bo Vinnerljung, Anders Hjern
    Acta Paediatrica (in press 2007)
CONTENTS

INTRODUCTION ........................................................................................................11

BACKGROUND .......................................................................................................12
  Brief history on international adoption ..........................................................12
  The members of the adoption triad .................................................................12
  Open adoption practice ..................................................................................13
  The psychological consequences of the adoption process from the
  perspective of the child ..................................................................................13
  Grief reactions ...............................................................................................14
  Do international adoptees have more problems than non-adoptees? ..........14
    Mental health problems in international adoptees ....................................15
    Gender differences concerning the presentations of problems ..............16
    Neurological deficits ...............................................................................16
    School problems ....................................................................................17
  Criminality – partly a genetically inherited personality trait? ..............17
  The Adoptive Family Unit ..........................................................................18
    An inverse correlation between high SES of the adoptive parents
    and the well-being of the adoptee ..............................................................18
    Mismatch between adoptee and adoptive parents ................................18
    Dysfunctional relations in the adoptive family .....................................19

AIMS OF THE STUDY ..........................................................................................21

MATERIALS AND METHODS ..............................................................................22
  Participants ....................................................................................................22
  Reasons for placement ..............................................................................23
  Sampling process .......................................................................................24
  Measures .....................................................................................................24
    The Wechsler Intelligence Scale for Children (WISC) and adults
    (WAIS) ..................................................................................................24
    The Wisconsin Card Sorting Test (WCST), computerized version ....25
    The Tower of London test (TOL), computerized version ..................26
    Questionnaire .......................................................................................26
    I think I Am – Family relations .............................................................26
    Family Climate ....................................................................................27
    Attachment Test ..................................................................................27
    The Individual Schedule for Social Interaction ..................................27
The Karolinska Scale of Personality (KSP) ........................................ 28
The Symptom Check List 90 items, revised (SCL-90-R) .................... 28
The register study ................................................................................ 29
Participants .......................................................................................... 29
Outcome variables ............................................................................... 29
Statistical methods ................................................................................ 30
RESULTS ..................................................................................................... 31
Results presented test by test.............................................................. 31
The Wechsler Intelligence Scale for Children and Adults (WISC/WAIS). ................................................................................. 31
Tower of London (TOL) ................................................................. 32
The Wisconsin Card Sorting Test (WCST) ......................................... 33
The questionnaire ............................................................................... 33
I think I am .......................................................................................... 34
Family climate ..................................................................................... 34
Attachment test .................................................................................... 35
Individual Schedule of Social Interaction (ISSI). ................................. 35
Karolinska Scales of Personality (KSP) .............................................. 36
Symptom Check List (SCL) ................................................................. 36
The register study ................................................................................ 36
DISCUSSION............................................................................................... 38
Paper I ...................................................................................................... 38
Full scale IQ, arithmetics and left-handedness ................................... 38
High level of ADHD among the adopted delinquent boys .......... 38
Characteristics of the adoptive family ............................................. 39
Paper II ..................................................................................................... 39
Bad relations between the adopted delinquents and their parents ....... 39
An attributional bias and blame for the problems ......................... 40
Paper III .................................................................................................... 40
Delinquency and not Adoption, the explaining factor in KSP........... 40
The creation of a standard population .............................................. 41
Few results from SCL-90 ................................................................. 41
Ethnical identity .................................................................................. 41
A correlation between “anger” (SCL-90) and the “aggression scale” (KSP). ................................................................. 42
Paper IV ................................................................................................... 42
Summary ............................................................................................ 42
Limitations ........................................................................................... 43
The register study validated the other studies ................................... 43
The number of participants was limited by the study design .......... 44
Other possible limitations ................................................................. 44
Some themes worth considering ...................................................... 45
Abbreviations

AC  Adoptionscentrum
ACID  arithmetics coding information digit repetition
ADAD  adolescent drug abuse diagnosis
ADAT  adequacy of attachment
ADHD  attention deficit hyperactivity deficit syndrom
ADSI  adequacy of social interaction
ANOVA  analysis of variance
ANCOVA  analysis of covariance
AVAT  availability of attachment
AVSI  availability of social interaction
DSM IV  diagnostic and statistical manual of mental disorders, 4th edition
ISSI  individual schedule of social interaction
IQ  intelligence quotient
IVF  in vitro fertilization
KSP  Karolinska scale of personality
LVU  the Swedish law for compulsery juvenile treatment
MIA  the Swedish intercountry adoptions authority
OR  odds ratio
PSI  positive symptom index
SCAD  symbol quest coding arithmetics digit repetition
SCID  Symbol quest coding information digit repetition
SCL-90  symptom check list – 90 items
SES  socio economic status
SIS  National board of institutional care
SPSS  statistical package for the social sciences
TOL  tower of London
SOL  the Swedish law for the protection and treatment of children and adolescents.
WAIS  Wechsler adult intelligence scale
WCST  Wisconsin card sorting test
WISC  Wechsler intelligence scale for children
INTRODUCTION

Internationally adopted adolescents have been overrepresented in Swedish juvenile institutions (§12-hem) at least since 1991 [1, 2]. In 1996, The National Board of Institutional Care (Statens Institutionssstyrelse, SIS) published a report demonstrating that in 1995, the number of internationally adopted youths admitted to the SIS institutions (residential care units) were 2.6 times higher than expected as compared to their prevalence in the general population in Sweden. A few years later (1999) Vinnerljung conducted a register study where he found that international adoptees admitted to residential care were 2.4 times more frequent than expected [2]. The adoptive parents represent a "positively selected group" and the majority of adoptive children profit from an amazing medical and psychological recovery after adoption [3-5]. In spite of this, studies have pointed to different problems, mostly in the interrelational and psychiatric fields [6-9].

The etiology to these difficulties seems to be highly varying and complex and therefore complicated to comprehend and analyse by the help of a singular hypothesis or variable. The present project has used many disciplines with adhering theories and tests in order to analyse and describe the vulnerabilities and conflicts of adopted delinquents and adopted controls. Conflicts which are sometimes unsolvable and leading to out-of-home care.
BACKGROUND

Brief history on international adoption

From the 1960s, due to better social and economic conditions, the legalisation of abortion and the general advancement of women’s rights, the middle-class birth rate in Western countries has rapidly been falling, resulting in an explosion in the number of international adoptions. At large, international adoption today involves somewhere around 30 000 children a year, of whom the vast majority come from the Third World and are adopted into North America, Western Europe and Australia [10]. During the course of its history of almost half a century, the attitudes towards international adoption and its long-term effects have slowly been altered. During the 1950s, 1960s and 1970s, adoption was in general perceived to be a fortunate solution in which children with no parents could be cared for by philanthropic-minded adults, but from the 1980s and 1990s infertility has been the prime factor behind the development of international adoption [11, 12]. As more experience and knowledge has been added throughout the years, the image and conception of adoption has today developed into a more complex, contested and debated societal and global phenomenon, and this regards both important adopting countries like the US and leading supplying countries like Korea [13, 14].

The members of the adoption triad

The pioneering Canadian adoption researcher David Kirk argued that adoption primarily involved three partners, something which he labelled the adoption triad; the adopted child or adoptee, the adopters or adoptive parents, and the biological or birth parents [15] In many countries, children born out of wedlock are given a negatively predetermined and risky start in life, and the single mothers are often counselled that an adoption is in the best interest of the child. The perspective least heard of up until now within the adoption field is the birth parents’, and presumably the birth mothers’. It was not until the 1980s that an interest can be noted in how the birthmothers experienced their loss [16, 17]. Most of these studies derive from Western women who gave up their children for domestic adoption in the 1930s, 1940s and 1950s, and who later underwent therapy. In late 1990s, birthmothers in Korea have also started to voice their experiences, and they
have also given witness to issues of guilt, loss and grief, as well as a will to search for the lost child [18, 19].

Open adoption practice
In recent years, there has been growing interest and concern about certain aspects of the routines of traditional Western adoptions, meaning that the link between birth and adoptive families is more or less completely cut off. Among others, there have been associations like Concerned United Birthparents in the US, who are striving for birthparents rights; i.e. initially to keep their infants and further on, possibilities to search for and grieve their relinquished children and support each other. Voices have been raised for revisions of adoption practices that encourage greater amount of contact between biological parents, adoptive parents and adoptees, a so-called open adoption practice [20]. In the case of foster placements and domestic adoptions, “open adoption” guidelines have been followed for decades. Since it is in the best interest of the child to once in a while meet with his/her biological parents, these principles are applied no matter in how “bad shape” the biological parents are. If the child is permanently separated from the biological parents, the child is worried and concerned with the welfare of his biological parents, which can become an obstacle in the attachment to the new parents [21].

The psychological consequences of the adoption process from the perspective of the child
In the process of adoption, the infant or child undergoes an immense change when loosing the first and well-known environment. An infant is reassured by his or her mother’s voice and heartbeat and already during the first week after delivery, the child can distinguish the scent of the mother from other women [22]. The attachment is built up by the mothers’ adequate responses to her infant’s needs and signals and the infant can slowly begin to perceive the environment as predictable and safe. From this safe haven, the infant can later on start to explore the surrounding world [23]. The attachment pattern once received has importance for the ability to engage in all sorts of relations and contacts [24]. When the infant experiences one or several ruptures with different caregivers, this implies constantly new interactions where the child might perceive the environment and himself/herself as incoherent and unpredictable. Some time later on, internationally adopted infants and children are in addition challenged with a totally new outer environment including a new language, other scents, a place to live and new caregivers [25].
Grief reactions
The experience of loss and grief has often been underestimated in adoption and unrecognized by mental health professionals. Because many of the children have been infants at the time of adoption and too young to have formed attachment relations, it has been assumed that the separations have gone practically unnoticed by the child [26]. Beginning in the late eighties, adoption theorists talk about “overt” and “covert” grief reactions where the overt reaction concerns primarily the older child who has already established an attachment and where the grief must be assumed to be more traumatic and painful in a conscious way, while the covert grief reactions are associated with early adoptions (before 1 year of age) and represent a more subtle expression of grief, emerging slowly over the years as the child cognitive maturation permits a deeper understanding of the consequences of adoption [27].

Do international adoptees have more problems than non-adoptees?
The comparison between adoptees and foster care children is not often an aim of Swedish social science research. A reason for this is probably that the foster care family and the adoptive family are considered to be quite different family constellations. The only exception is the longitudinal studies of Bohman et al where outcomes of national adoption and foster care were compared [28]. When comparing internationally adopted adolescents with foster care adolescents it was obvious that these two groups came from quite different family contexts. In the adoptive group there was rarely a neglectful home environment and more often psychiatric problems. Furthermore, the children themselves were the problem or were considered to be the problem. As for the foster care children, they significantly more often were in child welfare interventions due to adverse home conditions and the parents were considered to be the problem [2]. However, a British study [29] found that psychiatric diagnoses were often found in all groups of out-of-home care patients and therefore this should not be attributed a significant marker of international adoptees. Instead, the reason why adoptees more often receive an individual and psychiatric diagnose could be explained by the fact that many adoptees come from an educated middle class where contacts with treatment facilities more easily or readily are undertaken.

The most frequently employed explanatory model is that the adoptive parents more often and sooner apply for help; they have a lower threshold in applying for clinical interventions. Equally important is the level of problems where adoptees do in fact report a higher level of problems symptoms than non-adoptees. Conclusively, adoptive parents apply for help
more often but the adoptees also exhibit a higher level of problems [30, 31]. Another study by Miller et al has clarified this discussion by statistically analyzing the distribution of data from a large national school survey. The distributional analysis of problem behaviour suggested that a much larger proportion of adopted adolescents compared to the controls were at risk of having serious problems but function at the same level as the general population when it comes to moderate problems. Hereby, in any studies on international adoptees, an effort to reach and include dropouts should be an important aim [32, 33].

Mental health problems in international adoptees.

Adoption in most cases offers improved medical, psychological and educational conditions for orphans and studies have elicited institutionalized childrens’ amazing recovery from deprivation [4, 34] and the vast majority of adopted children are well adjusted despite of potential deficient biological family backgrounds [35]. Nevertheless, several studies have found mental health problems in internationally adopted adolescents [8, 36-38] and especially in male adoptees [39-41]. In 2002, a large Swedish epidemiological study [6] including over 11 000 international adoptees enlightened many questions as to if internationally adoptees do or do not have more problems compared to the majority population. Hjern et al [6] found significantly higher rates of suicide, suicide attempts, admission to psychiatric hospital care, unemployment and criminality among young internationally adopted adults. Yet another interesting finding in this study was that the adoptees’ native continent had a greater predictive value for the outcome than age on arrival in Sweden. Based on the same material, focusing on the health of young internationally adopted adults, Lindblad et al found that internationally adopted young men and women to a significantly higher degree were still living with their parents, were not married and did not have children compared to the general population peers [42]. Moreover, long periods of support from social welfare and unemployment were also more common among adoptees and a significantly higher level of internationally adopted men did not live with their children compared to the general population [42].

A Dutch epidemiological and longitudinal series of studies [9, 33, 37, 41] found that a relatively high age on arrival into the adoptive home later on, at the age of 12- to 15-years, was associated with delinquent and uncommunicative syndromes in boys and cruel, depressed and schizoid syndromes in girls. A prevalence rate of 28% for psychiatric disorders such as conduct disorders, antisocial behaviours, poor relationships and problems of affect was obtained [9, 37].
Gender differences concerning the presentations of problem

There also seem to be gender differences. Internationally adopted boys are often mentioned to have a greater risk for developing overactivity and aggressive syndromes [40, 41]. Adoptive parents reported more behavioural problems for boys than girls [40] and a large US school survey showed that adoption influenced males more than females [43]. This is supported by the finding that adopted men at the age of 33 years had more difficulties concerning employment and social support than adopted women [39]. Furthermore, a Canadian study using bivariate statistical methods showed that international adoption was a significant marker for both psychiatric disorder i.e. hyperactivity and poor school performance in boys 4 -16 years, a correlation which was not found for adopted girls [44]. In contrast, some studies have elicited girls’ elevated risks for adjustment problems. The adopted girls did well in school but adoption was a significant marker for substance use in these girls at 12 - 16 years of age. Multivariate analyses demonstrated that adoption in females seems to predict substance use [44]. In a Swedish epidemiological study, internationally adopted girls were found to be at risk for suicide attempts, truancy, having had unpleasant sexual encounters and contact with illegal drugs [45]. The meta-analysis by Bimmel et al [8] focusing on problem behaviour in internationally adopted adolescents, found anxiety, depression, withdrawal, schizoid and delinquent behaviours in girls as opposed to boys.

Neurological deficits

If we assume that intellectual performance have some relation to the general state of wellbeing, it is interesting to notice that US studies have shown that in 60% of foster children at least one medical condition is present and in 20% at least three [46]. Since our probands’ origins, i.e. their first months of life, could be similar to the conditions of the American foster children, it might be of value to consider the impact these medical deficits have had for the development of their cognitive abilities. Post adoption, as adolescents, the internationally adopted delinquents of the present study, often had had many years of foster placements or admission to residential care before they end up in juvenile custody. This implies living under risky, hazardous and stressful conditions, sometimes with limited access to medical care. Anxiety and ADHD seem to be common in this group (Paper I, III). The etiology of these conditions have been found in a complex web of risk factors related to family dysfunction, traumas, separations, fœtal exposure to substance abuse, malnutrition, infections, traumatic injury and hereditary vulnerabilities [47].

ADHD in the general population is more frequent among boys than girls [48]. ADHD has a pervasive effect on the individual which becomes aggravated with age as concerns the cognitive and interpersonal areas [49].
One important problem with ADHD is its complex etiology where biological and psychological components co-vary and that many of the symptoms mentioned in the DSM IV, are also valid for other psychiatric disorders. Some researchers have argued that given the high co-morbidity of ADHD with other behavior disorders such as conduct disorder, depression and anxiety [50], results that point to a higher prevalence of ADHD among internationally adoptees may indeed indicate a general level of disruptive behavior in international adoptees rather than a specific ADHD diagnosis [51]. ADHD is a pervasive chronic disorder and equally a strong predictor of antisocial personality disorder and criminality in early and mid-adult life where lower IQ and reading problems are the most evident mediating factors [52].

School problems
Generally, studies have demonstrated that international adoptees have small to moderately higher level of academic problems compared to non-adoptees [35, 53]. Also, when international adoptees were compared with non-related siblings, the adoptees reported to a much lower level that they believed the parents were satisfied with their academic achievements [54]. Some internationally adopted children seem to have scholastic difficulties due to hyperactivity and concentration problems [9, 41, 55]. It has primarily been in the school situation that the language problems of international adoptees are revealed and most of the time, the difficulties concern the acquisition of abstract conceptions which hinders the use of the language as a tool for thinking and analyzing [56-58]. The degree of linguistic problems is often related to the age on arrival in the adoptive home. Further on, the language problems are often co-existant with aggression and attention seeking behaviour [56-58]. In other studies of internationally adopted children and children from the general population it has been confirmed that adoptive children are at about the same level except for mathematics where they performed lower [55].

Criminality – partly a genetically inherited personality trait?
In the present study, some of the subjects are admitted to institutional care due to criminality. Delinquent adolescents have a high risk of antisocial behaviour and criminality in adulthood as well as development into cluster B personality disorders such as borderline, histrionic and antisocial personality disorders [52, 59-61]. Aggressive behaviour is reported to be more frequent among the internationally adopted delinquents [1]. As criminality appears to
have a genetic component, Rutter et al [62, 63] noted that the genetic influence on conduct problems as evidenced in adoption studies is stronger for the prediction of adult criminality than for juvenile offending. Thus, most childhood disruptive behaviour does not persist into adulthood. There are probably different predictors for the common and transitory adolescent behaviour problems as opposed to the more stable adult disorders [62, 63]. And for the prediction of adult conduct problems, the genetic correlation was strongest when combined with environmental risk factors such as adverse adoptee home environment or multiple temporary placements or institutionalization [64-66].

As mentioned above, concerning the consequences of delinquency in general, a common theory about adolescence-onset of delinquent behaviour (and in contrast to childhood-onset antisocial/delinquent behaviour) is that during adolescence there is a peak in criminality and conduct problems which later in life decreases [67]. However, other findings suggest that a substantial amount of these antisocial behaviours persist into adulthood and early delinquent behaviour is predictive of adult antisocial personality disorder in a life-course-persistent manner [60, 61]. A somewhat alternative explanation – to that of genetically based criminality and delinquency – is that the adverse behaviour of the international adoptees in their adolescence can be explained by a clearly sound and adequate grief process due to separations and trauma in early life [26, 27].

The Adoptive Family Unit

An inverse correlation between high SES of the adoptive parents and the well-being of the adoptee

There seems to exist an inverse correlation between socioeconomic status of the adoptive parents and the mental health of the adoptee. This phenomenon is opposite to all previous findings in the area of child and adolescent mental health and studies suggest that children placed in adoptive families with higher socioeconomic status have more problems than those placed in families with a lower socioeconomic status [6, 41, 68].

Mismatch between adoptee and adoptive parents

“Goodness-of-fit” theories in general contain the idea of an optimal matching. Applied in the field of psychology and onto the family, this implies that the match between child and parent is of prime importance to optimise the development of that child. If this match is far too inadequate, problems arise. These compatibility problems probably have a higher
occurrence in adoptive families, as they are less similar than in biological families [69]. “Goodness-of-fit” was investigated in a Swedish study on international adoption (without comparison groups) but no compatibility problems were found [70]. Both personality and IQ scores are less compatible in adoptive families compared to biological families [71, 72]. Personality traits and temperament are partly genetically inherited and parent-offspring similarity concerning personality can be an important factor as for the well-being of adolescents [73]. Within the adoptive family, parent and child are different genetically, which may lead to specific challenges and eventually complicate the attachment process between parent and child [74]. The process of a safe and sound attachment can not be overestimated and it seems to have a larger effect on social and cognitive development than other factors such as sex and temperament [75]. Children can also be more or less easy to care for due to their temperament and it is crucial for the child how his or her parents adjust to the child’s temperament. It is always the responsibility of the parents that the process of attachment is proceeding in a satisfactory way. If there is obstacles in the process of attachment, in order to solve these, parents often have to deal with their own histories of attachment [21].

Dysfunctional relations in the adoptive family

Recently, adoption studies have been focusing also on the adoptive parents to look for weaknesses in the relation between the adoptive children and their parents. The ability of adult attachment, measured with an attachment scale during pregnancy, have been shown to be able to predict the attachment between mother and child at one year of age [76]. Some studies have focused on the adoptive mother and her ability for normal attachment behaviour [40, 75, 77-79]. Stams et al measured “maternal sensitivity”, i.e. the mother’s ability to perceive and correctly interpret the child’s behaviour and signals, and found that in the transition from early to middle childhood, the maternal sensitivity of adoptive mothers decreased compared to biological mothers. A discussion follows about whether this is due to the deviant genetic disposition of the child, i.e. temperament, appearance and cognitive skills, which becomes apparent in early adolescence and that a lack of identification causes the adoptive mother to withdraw [40]. Hereby, as the area of search also includes the adoptive parents, the number of preventive and remedial interventions is increased.

The background to our involvement in this project is that the staff at the SIS-institutions, who were working with the adoptee delinquents, since their start in the early eighties, were profoundly confused by the behaviour of the adoptees. In comparison to the Swedish and immigrated delinquents the adoptees were more violent and psychologically difficult to reach. They often responded in a “black or white behaviour” and the interval between
these contrasts could be shockingly short. In the mid 1990s, "The centre for growth and development of adopted children", at the Department for Womens’ and Childrens’ Health, Uppsala University, was contacted by SIS and MIA who requested an investigation of the adopted delinquent group. The wish for a broad perspective including a neuropsychological approach was explicit [1].
AIMS OF THE STUDY

The overall aim of this study was to investigate possible differences between the internationally adopted delinquents and controls concerning various aspects:

I  To describe and analyze cognitive and neuropsychological functions of adopted delinquents and adopted non-delinquent controls.

II To investigate possible differences in the social and relational area between the adopted delinquents and adopted controls. Test variables dealing with relations from different tests were applied.

III To study the personality and self-perception of the adopted delinquents, adopted non-delinquent controls, delinquent controls and non-adopted, non-delinquent controls.

IV To describe the frequency of out-of-home care in a national cohort of international adoptees compared to their population peers.
MATERIALS AND METHODS

Participants

In papers I-II, the proband group comprised 20 adopted delinquents who were compared with 21 adopted controls whereas in paper III, two additional control groups were applied; a delinquent control group (Swedish and immigrant adolescent delinquents, n=19) and a group of healthy controls from a study on depression (n=50+183). For more information on these groups, see table 1. below. Paper IV is based on a different material than papers I-III and includes two groups: non-European adoptees and a control group representing the general population.

Table 1. Study groups in papers I-III.

<table>
<thead>
<tr>
<th>Groups 1-5</th>
<th>N</th>
<th>Age (Standard Deviation)</th>
<th>Sex</th>
<th>Age on arrival</th>
<th>Boys</th>
<th>Girls</th>
<th>Europe</th>
<th>South America</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adopted delinquents*</td>
<td>20</td>
<td>15.7 (2.0)</td>
<td>15.7</td>
<td>13</td>
<td>7</td>
<td>3</td>
<td>7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2. Adopted controls</td>
<td>21</td>
<td>15.4 (2.5)</td>
<td>15.4</td>
<td>12</td>
<td>9</td>
<td>1</td>
<td>12</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>3. Non-adopted, Delinquent controls</td>
<td>19</td>
<td>16.9 (1.4)</td>
<td>16.9</td>
<td>13</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>4. Non-adopted, non-delinquent controls (boys)</td>
<td>50</td>
<td>16.4 (0.7)</td>
<td>16.4</td>
<td>50</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>5. Non-adopted, non-delinquent controls (girls)</td>
<td>183</td>
<td>16.4 (0.6)</td>
<td>16.4</td>
<td>0</td>
<td>183</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>293</td>
<td>16.2 (1.3)</td>
<td>16.2</td>
<td>88</td>
<td>205</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

* Probands
Reasons for placement

The adopted delinquents (the probands, N=20) were admitted to institutional care for juvenile delinquents according to the Swedish laws for compulsory care and treatment of delinquent youths (LVU or SoL) mainly for treatment because of antisocial behaviour and acute crisis in the family. The delinquent controls (N=19) were admitted mainly due to school problems, drug abuse and environmental problems.

For more detailed information on reasons for placement, see figure 1. The initial plan was to match all subjects regarding age, gender and country of origin. As this was sometimes difficult to arrange, the matching is not perfect. For a period of two years (2000-2002) we interviewed as many recently admitted adoptees as possible.

Figure 1. Reasons for placements of delinquents in papers I-III.
Sampling process

Adopted controls (n=21) were internationally adopted adolescents living with their adoptive family and selected with the assistance of Adoptionscentrum (AC), Sweden’s largest adoption agency. AC used their documents of membership to retrieve a number of subjects matched for age, gender and country of origin. From a sample of one to three names, one individual was contacted. Initially, the aim was to match all subjects in the adopted control group with the adopted delinquent group. As this was difficult to execute in reality (due to lack of matched subjects), some controls differed from the probands. The adopted controls were interviewed and tested in the cities where they lived. The delinquent control group included Swedish delinquents and immigrant delinquents (n=19) and those subjects were interviewed and tested at the same institutions, at the same time as the adopted delinquents. One institution, Folåsa, has specialized care for international adoptees, therefore, many of the participants in the study were tested at this institution (n=14). The remaining subjects were tested at six other institutions. Initially we tried to match the Swedish delinquents and the immigrant delinquents regarding sex and age, but as many potential subjects of these latter control groups refused to participate in the study, we had to accept the subjects willing to participate despite appropriate matching conditions.

In paper III and only regarding the results of KSP, additional control groups of boys (n=50) and girls (n=183) was used. These control groups consisted of non-delinquent, non-adopted boys and girls aged 16-17 years and earlier employed in a Swedish epidemiological study on adolescent depression. The 233 subjects used in this study were healthy, non-depressed controls in the depression study [80].

Paper IV is based on material from registers of the National Board of Health and Welfare and Statistics Sweden. This material includes Non-European adoptees (n=16 522) and majority population peers (n=1 026 523).

Measures

The Wechsler Intelligence Scale for Children (WISC) and adults (WAIS)

WISC and WAIS were used to measure intellectual performance and IQ. The Wechsler scales cover verbal, perceptual and organizational skills. In addition, the Wechsler scales have a large reference material and due to the widespread usage of this test, a high comparison value is gained. The results from the WISC/WAIS subtests are delivered in raw test scores which by the
help of standardized tables for ages from 4-18, are transformed into scale scores. These scale scores are graded from 1-19 with a mean of 10 and a standard deviation of 3. The scale scores of the subtests are standardized according to age which allows direct comparisons between a subject and the subject’s age group. An individual test profile is formed and studied. WISC/WAIS have 3 scales to measure IQ: IQ full scale, IQ verbal scale (information, similarities, arithmetic, vocabulary, comprehension, digit span) and IQ performance scale (picture completion, coding, picture arrangement, block design, object assembly, symbol search and mazes). For more detailed information see the manuals [81, 82].

Associated with but not mediated by ADHD is the prevalence of an irregular profile (a profile that repeatedly differs more than 4 scale scores compared to the subjects mean score on the subtests) in the WISC and WAIS [49]. Since left-handedness is mainly inherited genetically but can also originate due to perinatal brain damage or injury to the left hemisphere before the age of six years, left-handedness is a measure of interest to this study [83]. WISC/WAIS also have information on diagnostic profiles which can be predictive of neurological deficits and other cognitive symptoms. These profiles are the SCAD (symbol search, coding, arithmetics and digit span), SCID (symbol search, coding, information and digit span) and ACID (arithmetics, coding, information and digit span). These profiles differ in sensitivity for a diversity of diagnoses within the neuropsychological area [81, 82].

The Wisconsin Card Sorting Test (WCST), computerized version

The WCST was originally developed as a measure of abstract reasoning and the ability to shift cognitive strategies in response to changing environmental contingencies among adult populations [84]. The test has gained widespread use clinically because it has been reported to have a specific sensitivity to brain dysfunction in the frontal lobes. To accomplish the test task, the child is requested to discover the principle according to which a set of cards are sorted. A formation of cards on the computer screen depicts geometric designs with different colours, forms and numbers; the correct sorting principle is one of these. However, this sorting principle is continuously altered by the computer, leaving for the child to analyse the outcomes of the computer’s responses to his/her moves in "right" or "wrong" and hereby discover the new sorting principle. The results are presented as number of correct categories, perseveration and failure to maintain set.
The Tower of London test (TOL), computerized version

In the computerized version of TOL, the child is presented with a pegboard with three balls positioned on one of the three pegs at the centre of the computer screen and a task-specification box, depicting the goal state, in the upper right-hand corner of the computer screen. The balls are repositioned by dragging a ball directly from one peg to another in order to reach the goal position indicated by the task-specification box. As in the manual version, only the uppermost ball can be moved and each peg has an upper-limit of the number of balls that it can store (3 balls). The child is presented with 16 problems of increasing difficulty. The variables measured in the TOL are: *Planning time or latency* (time it takes before the child makes the first move), *number of moves required, scores, errors, (i.e. moves against the rules)* and *total time* needed to solve every item. The TOL is among the most frequently used as a measure of planning and problem solving [85].

Questionnaire

In order to cover all questions to be answered, a fully structured questionnaire with an additional six open-ended questions was created for this study. The adopted adolescents answered a 84-item questionnaire, divided into seven areas: *health, family situation, school, friends & spare time, alcohol & drugs, criminality* and *adoption*. About 30 items from the questionnaire were taken directly from the Adolescent Drug Abuse Diagnosis (ADAD) interview [86]; a fully structured interview administered at registration of all youths admitted into the institutions of SIS (The national board of institutional care). The other items were specific for the adoptive situation. In a similar way, the adoptive parents answered a shortened version of the adolescent’s questionnaire (34 items), which was sent to them by mail.

Most descriptive data are presented only for the adopted delinquent group. For the adopted control group, too few questionnaires were received to make valid statistical evaluations. In the first paper though, we used data from ADAD items focusing on school problems comparing adopted delinquents (n=20) with adopted controls (n=13). In paper II and III, we used only questionnaires of the adopted delinquents; items concerning the adolescents’ relations with their parents (paper II) and diagnoses and ethnical identity (paper III).

I think I Am – Family relations

“I think I Am” is a Swedish self-estimation questionnaire for school-aged children and adolescents of 7-16 years of age [87]. The test consists of 72 items divided into different subscales measuring various aspects of self
concept, i.e. the individual’s attitudes towards: physical appearance, abilities, psychological well-being, family relations, relations to other people and a total score. As the focus in the present paper was on relations, only the results of family relations, relations to other people and total score were presented. The theoretical basis of the method is presented by Ouvinen-Birgerstam [88].

Family Climate
KSP is a frequently used personality inventory that has been used in numerous studies [89, 90]. KSP consists of 135 statements to be answered according to how well they apply: not at all, not especially, pretty well, exactly. "Family climate" is a concept borrowed from Olsson et al [80] and derived from the Karolinska scale of personality (KSP), [80] in order to evaluate the perceived family climate. "Family climate" consists of six of the original 135 statements and concerns central family themes (Appendix 1, Paper II). The first three of the family statements were framed positively and scored 1-4. The next three were negative and the scoring was reversed. The sum of these scores was used as a measure of perceived family climate with a theoretical range of 6-24.

Attachment Test
The Attachment test (Appendix 2, Paper II) is a self-report measurement originally developed to assess adult romantic attachment styles [91] and was later translated to correspond to attachment behaviour between children/adolescents and their parents [92]. An individual’s result of the attachment test can be divided into four clusters: secure, dismissing, fearful or preoccupied [91]. After analysis and because there were too few subjects in one cluster, the four clusters were combined into two clusters: securely attached and not securely attached. As a complement, the outcomes anxiety in attachment and avoidance in attachment were also measured.

The Individual Schedule for Social Interaction
The Individual Schedule for Social Interaction (ISSI) was developed for adults [93]. The Swedish ISSI questionnaire for self-evaluation in population studies was constructed by Undén and Orth-Gomer [94] and has been used with Swedish adolescents [80, 95]. The schedule is composed of four subscales: AVSI – availability of social interaction; ADSI – adequacy of social interaction; AVAT – availability of attachment; and ADAT – adequacy of attachment. The score range is 0-9, based on nine items for each subscale, except AVAT, which has a range of 0-5 and five items. Each item is given a value of zero or one and the values are added within each
subscale, the maximum score being 30. As an objective, the total score should be at least 20 as to indicate a well functioning social context.

The Karolinska Scale of Personality (KSP)
KSP is a self-report personality questionnaire, developed for measuring dimensions of personality traits, preferentially those believed to have a biological basis [89]. KSP, has been used in numerous studies on depressive disorder and suicide [90] and has been used to investigate personality disorders in adolescents [96]. KSP consists of 135 statements to be answered in how well they apply: not at all, not especially, pretty well, exactly. These 135 statements form 15 subscales. On all scales, except socialization which is reversed, high scores indicate greater problems. The 15 subscales are classified into the following six comprehensive scales which are later applied in the statistical analyses: 1) psychopathy scale: impulsiveness, monotony avoidance, socialization [97]; 2) aggressivity-related scale: verbal aggression, indirect aggression and irritability [97]; 3) hostility-related scale: guilt and suspicion [97]; 4) cognitive social anxiety-related scale: psychic anxiety, psychastenia and inhibition of aggression [98]; 5) nervous tension and distress-related scale: somatic anxiety and muscular tension [98] and 6) detachment-related scale (social withdrawal) [99]. The validity and reliability of the KSP are well documented [99].

The Symptom Check List 90 items, revised (SCL-90-R)
SCL-90 is a widely used measure that contains 90 items referring to expressions of psychosomatic and emotional distress. The results are presented as one total score and nine diagnostic subscales. Furthermore, there are three additional indexes analyzing the overall test result. The SCL-90 has been shown to be a useful screening tool for identifying non-psychotic anxiety and depression symptoms [100, 101]. Patients with a clinical score ought to be interviewed subsequently by a psychiatrist to verify the diagnosis according to DSM IV-R criteria. The individual tested with SCL-90 is asked to give information on the degree of somatic and psychic symptoms in the previous seven days. For more information see the manual [102].
The register study

Participants
The Swedish national registers are based on the individually unique ten-digit personal identification number that all Swedish residents receive at birth or immigration. Individuals can be identified through this personal identification number in different registers and members of the same birth family can be identified and linked together. In the register study (paper IV), registers held by Statistics Sweden and by the National Board of Health and Welfare are used. Participants in the study consist of all residents in Sweden born between 1973 and 1984 who were identified by the Public Housing and Census of 1990 (Statistics Sweden). This population was linked to information about biological and adoptive parents in the Multi-Generation Register (Statistics Sweden, 2004) and date of death or immigration and country of birth from the Register of the Total Population (Statistics Sweden). Two study groups were selected: (1) Intercountry adoptees defined as individuals born outside Europe, who were adopted before the age of seven years by a single mother or a couple born in Sweden, comprising 16 522 individuals and (2) General population defined as Swedish-born residents with two Swedish-born parents, comprising 1 026 523 individuals.

Outcome variables
Three variables were created: (1) Placement in out-of-home care before 10 years of age (care in this age group almost exclusively is caused by factors in the environment of the child rather than the behaviour of the child) [103]. (2) Placements in residential care for severely antisocial youth after the tenth birthday and (3) placement in foster care after 10 years of age (Reasons for placement in this category are a mixture of behaviour problems, and abuse/neglect.). Year of birth of the adoptive or biological mother and sex and year of birth of the study subjects was obtained from the Swedish Register of the Total Population (Statistics Sweden). Socio-economic variables were created with information on the head of the household from the Public Housing and Census of 1990 (Statistics Sweden) and the Swedish Social Welfare Register of 1990 (National Board of Health and Welfare). Registers on the three forms of out-of-home care (National Board of Health of Welfare) were linked to socio-demographic information on the two study groups (registers mentioned above).
Statistical methods

Comparisons of the groups were made with one-way ANCOVA:s (Paper I) and post hoc tests. As age of arrival in Sweden has been shown to be of importance for the outcome, and the groups differed slightly in that variable, data in the first article are presented adjusted for age of arrival in Sweden. Analyses of differences between variances in Papers I-III have been performed using Levene’s test [104]. As post hoc test Games-Howell’s test has been used (Papers I-III). Comparisons of single items in the questionnaire (Paper I) were made with Fisher’s exact test. In Paper II, bivariate correlation analyses were performed (Spearman’s rho, 2-tailed). In Paper III, comparisons between groups were made with two-way ANOVAS. As for Paper IV, multivariate analyses were conducted using unconditional logistic regression. Placement in out-of-home care before 10 years of age, residential care after 10 years of age, and foster care after 10 years of age were entered as dependent variables in the whole study population. “Birth year” was entered as a continuous variable in the regression models since care within the child welfare system tended to increase in a linear fashion with year of birth (Paper IV). Socio-demographic variables were entered as dichotomised categories and Model 1 was adjusted for sex and year of birth only, while socio-economic determinants were added in Model 2 (Paper IV). The significance level was set to p<0.05 and the SPSS software package, version 12.0, were used in all statistical analyses.
RESULTS

Results presented test by test

The Wechsler Intelligence Scale for Children and Adults (WISC/WAIS).

The results of WISC/WAIS on intellectual performance demonstrated significantly lower scores in several variables for the probands, i.e. the adopted delinquents, compared to the control group (Table 2.) Many IQ and factor index measurements except for two (performance organisation and symbol quest) revealed significant differences between the groups where the probands continuously scored lower than the control group.

Table 2. Comparisons were made with one-way ANCOVA:s adjusted for age on arrival in Sweden.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Delinquent adoptees mean ± SD (N=18)</th>
<th>Control adoptees mean ± SD (N=21)</th>
<th>F- value</th>
<th>Df (1, 36)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQ full scale</td>
<td>85.4±15.8</td>
<td>98.6±10.1</td>
<td>9.86</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td>IQ verbal</td>
<td>85.8±14.8</td>
<td>97.4±9.2</td>
<td>8.24</td>
<td>0.011</td>
<td></td>
</tr>
<tr>
<td>IQ performance</td>
<td>88.6±17.9</td>
<td>99.1±12.8</td>
<td>4.54</td>
<td>0.044</td>
<td></td>
</tr>
<tr>
<td>Verbal understanding</td>
<td>90.4±16.6</td>
<td>100.8±9.0</td>
<td>5.20</td>
<td>0.050</td>
<td></td>
</tr>
<tr>
<td>Performance organization</td>
<td>91.2±17.9</td>
<td>101.2±12.0</td>
<td>3.84</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>82.9±15.4</td>
<td>96.3±13.0</td>
<td>7.78</td>
<td>0.017</td>
<td></td>
</tr>
<tr>
<td>Attention</td>
<td>81.4±15.6</td>
<td>89.2±8.6</td>
<td>3.28</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Arithmetics</td>
<td>5.3±1.7</td>
<td>7.5±2.2</td>
<td>12.04</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>
On the measurement *full scale IQ*, the probands had a mean value of 85 while the control group had a mean close to 100. Though the values are adjusted for age on arrival in Sweden, the differences remained highly significant.

In *Arithmetics*, the probands performed significantly lower (5.3±1.7) than the controls (7.5±2.2) despite the fact that the control group performed much lower scores than the population mean (M=10.0). In all other variables except for arithmetics, the control group scored very close to the population mean.

*Irregular profiles.* The WISC and WAIS profiles of the delinquents are clearly more disruptive and irregular than those of the control group. 14 adopted delinquents and 8 adopted controls had irregular profiles ($x^2=4.70$, $p<0.05$).

*Gender differences:* Gender differences were computed on $n=13$ boys and $n=7$ girls in the adopted delinquent group and on $n=12$ boys and $n=9$ girls in the adopted control group. Although the numbers were small, no gender differences were found, neither in adopted delinquents nor in adopted controls.

*Left-handedness.* Among the adopted delinquents 6 individuals (30%) were left-handed. Among the adopted controls 3 individuals (14%) were left-handed.

*Diagnostic profiles:* No significant differences were found between the groups.

**Tower of London (TOL)**

Adopted delinquents needed significantly longer time to complete the easy tasks (Time 1) than did the controls; 16.2±8.9 s compared to 11.0±5.4 s ($p<0.05$). In all other variables in the TOL (Time 2, Total score, Errors and Total time), the probands were less successful but the differences were not statistically significant.
The Wisconsin Card Sorting Test (WCST)

The WCST could not establish any statistically significant differences between the adopted delinquents and the adopted control group.

The questionnaire

The parents’ questionnaire (parents to adoptive delinquents n= 15, parents to adoptive controls n=11) evidenced several diagnoses prevalent in the group: 6 ADHD diagnoses (5 in the delinquent group and 1 in the control group, all boys), 1 post traumatic stress syndrome, 1 dyslexia, 1 autism, 1 developmentally delayed, and 3 with general psychological problems. The parents could also help establish the exact age of arrival. As for parental education there were no differences in the two groups: 40% had university education, 40% college education and 20% had high school education. The families of the delinquent adoptees had moved in average 2.5 times.

In the adolescents’ questionnaire (adopted delinquents n=20, adopted controls n=13), we were informed that there were many differences between the adopted delinquents and the adopted controls in how they had experienced their overall school situation. The nature of the test items were either of more objective kind (latest grades, problems with mathematics) or based on self-perception (a feeling of failure in school etc, Table 2, Paper I).

As for the results of the questionnaire presented in paper II (only data from the adopted delinquents and their parents are presented): There were four divorces and the families had moved in average twice (M=1.7). On average, the adolescents had two placements outside the family before the current placement at a juvenile institution and 70% of the adopted delinquents were the eldest sibling in their adoptive family. Concerning some items there was concordance in how parents and adolescents answered: As for the question if they considered the adoptee/parent to be their “real” child or parent they answered in a similar way (Table 2a, Paper II). Also in answering the question if they thought there is a difference between an adoptive and biological family, they answered in a similar way (Table 2c, Paper II). As for the attribution of the problems, there was a large discord between adoptees and parents and they in fact blamed each other for the development of the severe problems (Table 2b, Paper II). A considerable number of adolescents responded that they had been abused (Table 2d, Paper II).

The adopted delinquents were asked about their ethnical identity (adopted delinquents, n=20): 10% felt totally Swedish, 15% felt Swedish most of the time but sometimes as an immigrant/foreigner, 40% felt that they had equally two ethnical identities, 20% most of the time felt as an immigrant/foreigner and 15% always felt as an immigrant/foreigner. When asked which country they called home: 70% referred to their country of
origin, 5% had a more neutral relationship to their country of origin, 20% were not so interested in their country of origin and 5% felt that Sweden was their only “country of origin”. The last item about ethnical identity was how they would handle a provocative exclamation about their appearance: 25% were not the least offended, 10% felt offended but made an effort not to show it, 10% would get angry and shout at the person and 55% would get very provoked and possibly use violence. As for smoking, 10% never smoked, 20% were smoking occasionally, 20% were smoking on several occasions in a week and 50% were chronic smokers (Paper III).

I think I am

For information on test results and degrees of freedom (df), see Table III, Paper II. In a t-test, the adopted delinquents scored lower than the adopted controls (p<0.001) on the variable family relations. Also on the variable other relations, the adopted delinquents scored lower than the adopted controls (p<0.05). Concerning overall self image i.e. the total sum of test scores, there was a significant difference (p<0.001) between the adopted delinquents, who scored lower, and the adopted controls. A negative correlation was found between “age on arrival” and the perceived functioning of family relations – raw scores (p<0.001).

Family climate

As for perceived "family climate” (from KSP) the adopted delinquents scored lower than the adopted controls (p<0.001), i.e. the adopted delinquent experienced their adoptive family climate more negatively than the adopted controls. The adopted delinquents were at the same level as the delinquent controls.
Attachment test

In the outcome *avoidance in attachment*, significant differences were found between the groups (p<0.002): the adopted delinquents representing the higher level of *avoidance in attachment* (Paper II, Figure 4). In the outcome *anxiety in attachment*, there were significant differences between the adopted delinquents and the adopted controls (p<0.01), where the adopted delinquents had more “anxiety” than the adopted controls. There were no significant differences between the groups as for the variable *securely attached*.

Individual Schedule of Social Interaction (ISSI).

For the variable *availability of social interaction* (AVSI), the adopted delinquents considered themselves as having less social interactions than the adopted controls (p<0.05). For *adequacy of attachment relations* (ADAT), the adopted delinquents scored higher, i.e. in a more positive way, although not significantly higher, compared to the adopted controls.
Karolinska Scales of Personality (KSP)

As for analyses of KSP, groups 1-5 (Table 1.) are applied in a two-way ANOVA in order to investigate if “delinquency” and/or “adoption” had any effect on sex comprehensive scales in the KSP (for more detailed information, see Paper III, Table 3). Boys’ and girls’ analyses were made separately. As for the boys’ analyses, “delinquency” had an effect on three of the six scales: the psychopathy scale \( (p<0.001) \), the aggression scale \( (p<0.001) \), the hostility scale \( (p<0.05) \). Being adopted had a moderate effect on the psychopathy scale \( (p<0.05) \). As for the girls’ analysis, “delinquency” had an effect on the psychopathy scale \( (p<0.001) \), the aggression scale \( (p<0.001) \) and the nervous tension and distress scale \( (p<0.001) \). “Adoption” did not have an effect on any of the girls’ scales. The coherent effect sizes to the significant outcomes are estimated to be large (Paper III, Table 3).

Symptom Check List (SCL)

In the analyses of the SCL, only three groups of participants are employed: adopted delinquents, adopted controls and delinquent controls. The only two variables which differed significantly between the groups was anger and PSI, (positive symptom index, i.e. the depth of the problems experienced; the mean of all non-zero answers) and these differences occurred between the adopted delinquents and the adopted controls. As for “anger”, the adopted delinquents expressed more anger than the adopted controls \( (p<0.05) \) and concerning the PSI, the adopted delinquents reported a deeper level of their problem symptoms compared to the adopted controls \( (p<0.01) \)(Figure 2, Paper III).

The register study

The results from the register study (Paper IV) demonstrated that the large majority of the intercountry adoptees were adopted before their second birthday and they were more often female \( (57\%) \). Most children were adopted from South and East Asia (See Table 2, Paper IV). There were 378 single parent adoptions \( (2.3\%) \). Single parent adopters often had a high SES, they tended to live predominately in big cities and the age of the women who were single parent adopters was generally higher compared to the women adopting as a couple. In addition, single parent adopters more often received elderly children and children coming from Africa.

The families of the intercountry adoptees more often had a high SES, less often received social welfare benefits and were less often single parent households compared to the general population (Table 1, Paper IV). The outcomes of out-of-home care were more common for children in single parent households and/or a disadvantaged socioeconomic situation as
measured by SES and social welfare benefits received (Table 1, Paper IV). For both the international adoptees and the general population peers, the mean age at entry into care was 5.7 years for care before 10 years of age, 13.7 for foster care after 10 years of age, 15.7 years of age for placements in residential care after 10 years of age.

In the logistic regression models and after adjustment for socio-economic confounders in Model 2, the OR:s for intercountry adoptees were: 5.1, for placement in residential care from 10 years of age and 3.0 for placement in foster care from 10 years of age, and for care entry up to 10 years of age, the OR was at the same level as the majority population peers. In addition, higher age at adoption (OR for 4-6 years was 3.7), an origin in Latin America (OR 2.2) as well as an origin in Africa or the Middle East (OR 3.3) were identified as significant predictors for different forms of out-of-home care from 10 years of age (Table 5, Paper IV). Single parent adoptions (OR 2.3) and a maternal age above 35 at the birth of the child (OR 1.3) were both identified as significant predictors of care.
DISCUSSION

Paper I

Full scale IQ, arithmetics and left-handedness
The main finding of paper I was a substantially reduced full scale IQ of the internationally adopted delinquents compared to the internationally adopted controls and this reduction of intellectual capacity was found for many measurements in the WISC/WAIS. The control group performed on the same level as the population mean except for arithmetics, where they also scored low. The mean full scale IQ for the adopted delinquents were at the same level as those pupils who need extra support in school. In arithmetics, both adoptive groups demonstrated problems; delinquents to a higher degree than the control group. This is also confirmed by the results from the questionnaire where both groups had experienced difficulties in mathematics. Among the adopted delinquents 6 individuals (30%) were left-handed. Among the adopted controls 3 individuals (14%) were left-handed. Even if the material is small, we can conclude that the incidence of left-handedness was larger than expected, especially in the delinquent group. In the general Swedish population the prevalence is 8-9%. As for the test WCST, we achieved no findings, nor differences between the groups. The test results evidenced no extreme heights or lows and the two groups performed at almost exactly the same level. There is one possibility though, that the WCST was not an adequate choice of test for this specific group or that WCST cannot discriminate different brain injuries in an effective way (see discussion paper I).

High level of ADHD among the adopted delinquent boys
In our sample we had 6 adopted adolescent boys diagnosed with ADHD. 5/13 delinquent boys, 1/12 control boys and none of the 16 adopted girls. The rate of ADHD in delinquent adopted boys was higher than expected since in the general population the rate of the combined type is about 2% [105]. There is reason to be careful with the indicated rates of so called “fashion diagnoses” (depending on the novelty of a specific diagnose, the incidence during some years can be abnormally high) like ADHD in small
populations like this. The diagnoses may have been delivered after a thorough investigation but also after a limited contact with the patient. Despite this, the high percentage of ADHD needs to be considered since this is independently a sign of the severity of the problems in this group [49]. Moreover, and as mentioned earlier, problems with arithmetics were found in both groups. In a recent study, neuropsychological functioning was most impaired in ADHD with combined arithmetic and reading disability. The data indicated that co-morbid learning disability, especially arithmetic disability, significantly increases the severity of executive impairment in ADHD [106].

Characteristics of the adoptive family
There were four divorces in the sample (20%). Adoptive families generally have a lower level of divorces compared to the general population. Cederblad et al showed that 16% of international adoptees under 18 years of age have experienced their parents divorcing [107]. This level is to be compared to that of adolescents from the majority population where about 30% have experienced a parental divorce before the age of 18 [108]. In the present study, the level of divorces in adoptive families with institutionalized adolescents was hypothesized to be somewhat higher. As for moving to another house, the families of delinquent adoptees had moved in average 2.5 times which was a relatively high level compared to another Swedish study with 208 adoptive families where the average move was 0.6 [107]. In the present study 40% of the adoptive parents were university educated (there were no differences between the adoptive groups). In the general population about 22% has a university education [42].

Paper II

Bad relations between the adopted delinquents and their parents
The main results of paper II show that the adopted delinquents have difficulties in handling their family relations. In both of the measures family relations (I think I Am) and family climate (KSP), the adopted delinquents experienced their relations to their families and especially their parents as functioning significantly less well than the adopted controls. Measuring the outcome anxiety in attachment and avoidance in attachment, the adopted delinquents had the more negative result compared to the adopted controls.
An attributional bias and blame for the problems

There was a clear attributional bias in which the parents and adolescents “blamed” each other for the problems. It was only one parent who was willing to take on responsibility for the arisen problems (Paper III). This circumstance must be considered of importance and even deviating from what is normally the case when there are serious family problems. We ask ourselves if parents generally are not more willing to take on some of the responsibility for the problems. The adolescents may be immature and angry with their parents because of involuntary placement at the institution and therefore have difficulty in taking responsibility for the emergence of problems. As for the parents, it was remarkable that only one parent took full responsibility for the problems. Instead they were convinced that their children were solely responsible.

Adoptive parents are well above average concerning educational level [42, 107] whereas their children (the delinquents) have an average IQ of 85, as demonstrated in paper I. This is only one example of differences that might exist between the adopted delinquent group and their parents and there may exist a risk that these differences of “goodness-of-fit” might cause some difficulties in the relations between adoptees and their parents. Conclusively, these attribution differences validated the bad relations between adoptive parents and adolescents as measured in the tests. The occurrence of former and actual physical and emotional abuse reported by the adopted delinquents was relatively frequent and needs to be taken seriously.

Paper III

Delinquency and not Adoption, the explaining factor in KSP

The main results of Paper III was that in the Karolinska Scales of Personality, KSP, the two delinquent groups: the adopted delinquents and the delinquent control group scored generally at the same level and the adopted controls scored in a similar way as the non-adopted, non-delinquent controls. While being delinquent had a large effect on the psychopathy scale, the aggression scale, the hostility scale and the nervous tension and distress scale, being adopted had almost no effect at all. It is of interest that “delinquency” accounted for almost all effect on the scales of KSP and not “adoption”. Being adopted only had a minor effect on the nervous tension and distress scale (girls’ analysis). This result surprised us since we suspected that the status of being adopted would have at least some explanatory effect on some of the KSP scales. Could it be possible that a history of delinquency make such a persistent and deep imprint compared to
having a history of adoption? That the often long and devastating road to juvenile delinquency is forming a young individual in a more general, evident and irreversible way.

The creation of a standard population

One limitation with the KSP analyses is that we created a standard population with 50 adolescent boys and 183 adolescent girls participating in a study on depression [80] as healthy controls. It can be argued that these 233 individuals represent a too small number to be considered a normal population but as KSP is standardized only on adult populations [99], this possibility appeared an adequate choice. The results of KSP were compared to a Swedish dissertation of male delinquents in secure units [109], and we found that the results of our delinquents and the delinquents in that study had very similar profiles. The only difference was that the profiles of the male delinquents from the other study were slightly “worse”. We could hereby validate our KSP results in a meaningful way.

Few results from SCL-90

As for the results of SCL-90, only anger and the positive symptom index (PSI), differed significantly between the groups. The results of SCL-90 imply a possibility that the choice of this test was not appropriate for this particular population. We have reason to believe that the SCL-90 might have presented a far too clinical and psychiatric terminology to these young people. Thus, they had difficulty in identifying with the test items. The SCL-90 was used in other adoptions studies in Sweden and also here no significant results were obtained [3]. After performing factor analysis on the SCL, Clark & Friedman found out that the scale “depression” explained 37% of the total variance. In addition, at an overall level, SCL-90 seemed to contain a single “discomfort scale” and patients with depression, anxiety and schizophrenia did not obtain differentiated SCL symptom profiles even after categorisation according to symptom intensity [110].

Ethnical identity

In the questionnaire (Paper III), when the adopted delinquents were asked what country they referred to as their “home country”, 70% answered their country of origin and only 5% considered Sweden their only “home country”. What these high levels of feelings of ”foreignship” mean is difficult to know exactly. Irhammar (1997) discusses the possibility that an adherence to an ethnical minority group might represent a general feeling of alienation and inability to integrate in the Swedish society. This is a hypotheses based on the fact that the group who were the most non-Swedish,
also had low results on test variables measuring psychological well-being [70]. As for the results of the present study, it is risky, though, to jump to conclusions. The adopted delinquents in our study have a variety of problem behaviours, each of them often severe enough to lead to a placement in a juvenile institution. Since we do not know the causal relations between adhering to a non-Swedish ethnical identification and delinquency, we cannot explain the high levels of non-Swedish ethnical identity in our study. Possibly, the adherence to a non-Swedish ethnical group was a positive and constructive choice which brought about acceptance and equity in an ethnical community and thereby reducing a sense of isolation and alienation which already existed.

A correlation between ”anger” (SCL-90) and the “aggression scale” (KSP).

In the questionnaire (Paper III), the subjects were asked about a situation where they were provoked about their appearance and as much as 55% of the adopted delinquents answered they would possibly resort to violence if they would get angry enough. This is a high percentage and as we found a positive correlation between the subscale ”anger” (SCL-90) and the “aggression scale” (KSP), this validates our findings. Another important aspect of this aggressive behaviour is that comments on appearance evidently seem to be potentially sensitive to the adoptees. As supposedly superficial and ignorant remarks from strangers can make adoptees resort to violence poses questions about the underlying structures of and reasons for this fury.

The level of smokers in Swedish population peers is 5% for boys and 13% for girls [111]. The level of smoking among these adopted delinquent adolescent is alarmingly high (only 10% did not smoke at all whereas 50% were chronic smokers) which in itself must be considered a health problem (From the questionnaire).

Paper IV

Summary

Paper IV of this dissertation has performed gender and SES adjusted analyses of different forms of out-of-home care in whole national cohorts of intercountry adoptees (n=16 522) and the majority population peers (n=1 026 523). The results showed that high age at adoption and an origin in Latin America were significant predictors for out-of-home care from 10
years of age. In addition, after adjustments for socio-economic factors had been made, a five-fold increased risk for residential care in the adoptee group was demonstrated. In the intercountry adoptee group, there were two parental factors significantly increasing the risk for institutional care: Single parent adoptions (OR 2.3) and high (>35 years at birth of child) maternal age (OR 1.3). As for single parent adopters, they form a group with special characteristics: They (the adoptive mothers) are older, more often live in big cities and they generally have a higher SES. Further on, an interesting finding was that single parent adopters more often receive elderly children and children coming from the continent of Africa. This is important since this means that single parent adopters potentially are more heavily burdened compared to parents adopting as a couple. Firstly, adopting as a single parent may be considered, in certain periods, to be more demanding. Even more so since the single parent adopters (mothers) in general are older. Secondly, if the child is older at the time of the adoption, this implies additional risks of emotional, cognitive and behavioural problems.

Limitations
Register studies always have inherent methodological limitations and due to the construction of the Swedish child welfare register, we do not have data on actual reasons for placement in care. This fact prevents us from establishing any causal relations, e.g. the relationship between background factors and placement in care for neglect, abuse, family conflicts and behavioural problems.

The register study validated the other studies
The criterion for admission in "residential care” in Sweden is mostly persistent antisocial behaviour problems within the adolescent. As for foster care before 10 years of age, the reason for care entry is most often due to parental factors and as for foster care from 10 years of age, the reasons for care entry are more of a mix. As a consequence, the three care entry group may well be qualitatively different. In Papers I-III, we speak only about adolescents placed in residential care and their controls, since we have not performed studies on out-of-home care before 10 years of age and foster care after 10 years of age. As for the delinquent international adoptees, Paper IV demonstrated similar results compared to these of papers I-III. In SIS institutions (residential care), the overrepresentation of international adoptees is about 2.5. This was validated in Paper IV, where the OR for residential care was 2.9 (Model 1) which is very much at the same level as in Papers I-III. In Paper IV when adjustments had been made for SES factors (Model 2), the OR rose to 5.1. Also the importance of age on arrival was validated in the register study.
The number of participants was limited by the study design

As the aim of the study was to address the question of over representation of delinquency of international adoptees in the Swedish juvenile institutions, this study (the overall main study) included psychological, somatic, psychiatric and sociological perspectives. The tests representing these perspectives are numerous and time consuming and therefore, as a consequence, the number of participants was limited. Further on, the data collection procedure of the present study involved a large amount of travelling. Since all data were collected either at the institutions where the adopted delinquents occasionally lived or in the different cities all over Sweden where the adopted controls lived, the efforts in time and cost for this data collection were substantial. All this travelling implicated some rigorous planning, each journey bringing about many phone calls to present the project to the management and staff at the institutions, contacting hotels and travelling agencies and finally to make appointments with the delinquents, delinquent controls and adoptive families outside the institutions. Even after the adolescents had been contacted and scheduled there were often incidents at the institutions (running away, drug use, sudden changes in the placement proceedings) which sabotaged all the planning. The PhD-student who did the interviews travelled to the various institutions and lived there during the days of testing. The total time of the testing of each adolescent reached 7 hours and had to be divided into two days. All this together makes every subject in the present study very valuable. The relatively small number of participants in this study can be explained by the data collection procedure and by the large number of tests administered.

Other possible limitations

One institution, Folåsa, has specialized care for international adoptees. Therefore, many of the participants in the present study were tested at this institution. The remaining subjects were tested at five other institutions (Eknäs, Granhults behandlingshem, Högantorp ungdomshem, Långnässkolan and Lövsta skolhem). Initially we tried to match the delinquent control group (Swedish delinquents and immigrant delinquents) regarding sex and age, but as many potential subjects of these latter control groups refused to participate in the study, we had to accept the subjects willing to participate despite appropriate matching conditions. Also, the fact that the delinquents were taken into custody involuntarily ought to be mentioned briefly. This circumstance of “imprisonment” and involuntary separations from their families of most probably affected their cognitive functioning, how they performed on personality tests and how they answered...
questions about their parents and families. Nevertheless, the pathway to delinquency is often quite long and their cognitive ability, different aspects of personality issues and the relations to parents and family had probably been problematic long before the time of the testing.

Some themes worth considering

A high average age on arrival to Sweden
The average age on arrival in our study is relatively high (2 years in the delinquent group) and while age on arrival indirectly constitutes a potential sign of severity it is not age in itself that constitutes the risk but the possibilities during that time that the child has undergone neglect, abuse and deprivation. As the duration in institutions with severe deprivation is the first factor related to attachment disorders, the duration in institutions before arrival at the adoptive parents appears a more accurate measurement than the age on arrival. The child has therefore adapted defence mechanisms and coping strategies which are brought into the relationship with the new caretakers [112, 113] and institutional children are often deprived of the ability to develop a selective attachment [112]. Correlations between attachment disorder and the duration of the children’s exposure to severe deprivation have been found. However, not all children exposed to severe deprivation develop an attachment disorder [112, 113].

An effective way of studying attachment problems related to international adoption would perhaps be to investigate every individual case, focusing on the duration and severity of the stay in institutions before arrival in the adoptive countries. Other factors which might contribute to the attachment process are the level of problem behaviour of the child, the intelligence of the child and the level of parental stress [114]. An older age on arrival appears to contribute to some disability to attach to the adoptive parents. The adoptive child might carry a history of separations, possible neglect and abuse. The adoptive parents might on their part have difficulty attaching to an older child, which may be traumatised, sad or angry. The adoptive parents might also interfere with a normal attachment process due to their specific traumas, grief and inabilities to attach [40, 75, 77-79, 115].

The trauma of infertility – a life-course persistent dilemma
In western society, there are expectations of child conceiving at a proper age and infertility appears to affect at the women hardest, even if the man is the infertile partner in the couple. For the woman, infertility affects all domains in her life, whereas for the man, he is affected only in the private sphere and
bases his identity in most part on his profession and his hobbies [116]. The grief of not being able to conceive a child does not only include the loss of the child itself, but the loss of a general meaning with life, the loss of genetic continuity and the loss of a “ticket” to adulthood [117]. Many infertile couples describe the crisis of infertility as an intensely painful and solitary experience, in many cases the worst they have ever encountered [117, 118]. During the treatment of assisted fertilization, often initiated after diagnosed infertility, the prevalence of depression is high [119]. As the period between the attempts to in vitro fertilize (IVF) and the decision to adopt is often short (within a year), questions arise as to whether the adoptive parents have had enough time to work through the loss of a biological child [118]. If a grieving process has not been fully accomplished, this may well jeopardize the important attachment process with the adoptive child. For an optimal functioning of all members of the adoptive family, this is an area which needs to be taken seriously and further explored and evaluated. Professional help ought, of course, be readily provided to childless couples during the finalization phase of the medical treatments, where the decision to adopt is made.

Specific challenges for the adoptive family

In general, there seems to exist a need to add other clarifying understandings to fully comprehend the symptoms manifested by international adoptees. As Brodzinsky has pointed out, the acting out of international adoptees during the adolescent years may be seen primarily as an adequate process of grieving what has long been lost [26, 27]. Brodzinsky also claims that being an adoptive family poses unique adoption related challenges on both adoptees and adoptive parents [26, 27]. The life cycle of the adoptive family consists of some tasks that a “biological family” do not have to encounter. Among these tasks are, dealing with infertility as a traumatic and painful insight, coping with intrusive home studies and preparing for the transition to adoptive parenthood and the stigma associated with this form of parenting. Moreover, while the child is an infant, at the same time, the adoptive parents need to prepare themselves for discussing the adoption with their child; creating a family environment that supports the child’s exploration of adoption issues and helping their child cope with loss associated with the adoption process. Some years later, when the adoptee moves into adolescence and adulthood, the adoptive parent needs to be available, possibly to support their child’s plans to search for birth family.

These specific “adoptive family tasks” constitute additional challenges that interact with and complicate more universal tasks of family life [26, 27]. If the family in addition experiences death, divorce or other separations or bereavements this becomes a triple challenge for the adoptive family. One of Brodzinsky’s most prominent statements is that of the role of grief in the
lives of adoptees. The concept of adoption is according to him above all inherently considered with grief. Brodzinsky suggests that what is often called pathogenic in the adopted child’s behaviour is the frequently misinterpreted manifestations of adaptive grief reactions [27]. Normally the divorce rates are lower in adoptive families compared to the general population [107]. This may be an indication of middle or upper middle class marital habits – especially if the couple were married after 30 years of age - where divorce rates are lower than compared to the general population [105]. This information fits well onto the adoptive parents as a group and if a divorce would take place in adoptive families, this event deviates, so to speak, from the majority of adoptive families and from the middle/upper middle class to which adoptive families often belong. Consequently, the divorce may become a second stigma (the adoption being the first) for the family, important to bear in mind in understanding the dynamics of the whole adoptive family in this particular familial and cultural context.

What consequences does the experience of delinquency have for the internationally adopted adolescent delinquent?

The general theory about adolescence-onset of delinquent behaviour (and in contrast to childhood-onset antisocial behaviour) is that during adolescence there is a peak which later in life decreases. Criminality appears to have a genetic component and Rutter et al. (1990) noted that the genetic influence on conduct problems as evidenced in adoption studies is stronger for the prediction of adult criminality than for juvenile offending. Thus, most childhood disruptive behaviour does not persist into adulthood. There are probably different predictors for the common and transitory behaviour problems as opposed to the more stable adult disorders [62, 63]. And for the prediction of adult conduct problems, genetic influence was most pronounced when combined with environmental risk factors such as adverse adoptee home environment or multiple temporary placements or institutionalization [64]. However, other findings suggest that a substantial amount of these “adolescence-limited” antisocial behaviours persist into adulthood and that early delinquent behaviour is predictive of adult antisocial personality disorder in a life-course-persistent manner [60, 61]. This is also in line with studies on the post-treatment period of juvenile delinquents, indicating a quite pessimistic future for ex-juveniles with high levels of unemployment, criminality and incidences of mental health problems [67].

What mechanisms are in use to make international adoptees resort to delinquency? Most criminal adolescents with family and school problems do
not end up in juvenile institutions, which is realistically the last solution in a long row of interventions. The low performance in the cognitive area probably has part in a succession of failures educationally, psychologically and socially; thereby forming a complex causality, difficult to interpret in an exact way. A substantial under achievement when compared to the population mean in this group might contribute to the understanding of why some adopted adolescents resort to delinquency. Our findings on the arithmetical problems also in the adopted controls indicate a need for further studies in a larger population of adoptees in general where these findings may be related to data on early growth and development, i.e. signs of malnutrition.

We had a high level of ADHD in our material. Because ADHD is a devastating condition affecting many domains in the children’s lives, it is not too difficult to foresee that a long term consequence of ADHD can include delinquency and later in life adult criminality and antisocial behaviour. Another big issue that raises many questions is why there is prevalence of violence in the delinquent adoptive families. Both on behalf of the adoptive parents (the adopted delinquents reported high levels of physical and psychic abuse in the questionnaire, Paper III) and on behalf of international adoptees who use violence on their parents (an important reason for their placements in institutions)?

A ”strength and resilience” approach as a reaction to the problem oriented perspective

In recent theories about the trajectories of behaviour problems in international adoptees, there is a change of focus from the problem orientated perspective to the strength and resilience perspective [120, 121]. What are the reasons to why some adoptees function remarkably well despite histories of great deprivation and bereavement? Some of these adoptees have obviously had some individual abilities that have helped them cope in these difficult situations. A conclusion of studies on stress and adversities is that there are large individual differences in the response and since many genetic effects are indirect, they are open to modifications from the right types of interventions [121]. Some caution ought to be important here in order not to place guilt and responsibility on the shoulders of international adoptees with histories of immense trauma and neglect and so to speak ”blame” them for not having had individual strength and resiliency to oppose the negative consequences of such negative experiences.

Resilience, strengths and positive coping strategies are important but still, attachment difficulties are quite long-lived and the whole family has to fight a battle with the distrust and hostility within adoptive children with histories
of abuse and neglect resulting from depriving institutional care. Steele et al [122] found that children develop sets of more positive representations in competition with the former negative representations. The new do not simply replace the old ones which for many years remain active and vulnerable to triggering events. The adoptive parents have to provide competing models which disconfirm the old ones and only with patience, empathy and insight, these adopted children with attachment problems will *slowly* recover [122].

In the interface between recovery and the building of an attachment relation, the contributions of the adoptive parents are very important. Not only as for their expectations about the adopted child but also in respect to their own attachment histories, vulnerabilities and unresolved conflicts. Attachment is a mutual process; the adoptees own history being interwoven with that of the adoptive parents and adoptive grandparents. The parents’ own representations of their childhoods must never be underestimated as these entail *the transmission of internal working models*, passed on from one generation to the next [123].

**Discrimination and prejudices, a reality for Scandinavian international adoptees.**

For international and interracial adoption, cultural differences and appearance differences between parents and children may complicate the process of reciprocal identification. Within the adoptive family the racial identity is not shared [124] and the adoptive family must take into account the cultural conceptions about a deviant appearance which exists in western societies where internationally adoptees are placed. These prejudices have an effect not only on the adoptee but on the whole family - and the relations within the family - which is a part of society and different social systems. A recent investigation by the Swedish government, the department of integration, has shown that there exists a systematic ethnic discrimination, throughout the whole society which deeply affects all immigrants including internationally adoptees [125]. The report states that discrimination is perceived in the Swedish school system, in media and the legal system. There is also discrimination on the labour market, which is demonstrated also in previous research where internationally adoptees to a significantly higher degree have difficulties finding employment [42]. If the racism in the Scandinavian countries increases in the future, the many international adoptees will be driven into a marginal position and will have to face all the social and psychological problems that such position entails [12]. Internationally adopted adolescents and young adults are already forced to adapt to the existing discrimination and prevailing values in the Scandinavian society and research demonstrates that it is very important for
internationally adopted teenagers to identify themselves as Swedish or Norwegian [70, 126]. It was also clear that these adoptees that identified themselves as mainly Swedish and Norwegian had fewer psychological problems [70, 126]. Further on, there exist differences according to the continent of origin of the adoptees [125].

Ethnocultural competence on behalf of the adoptive parents.
Studies have demonstrated that ethnocultural competence in the adoptive parents is helpful for the adoptees and is associated with a lower degree of adjustment problems and higher degrees of self esteem and ethnical pride [127]. The adoptive parents can make a significant difference in their attitudes towards the childrens’ ethnical origin by learning about the culture, visit the country of origin and most of all demonstrating a positive attitude towards the childrens’ ethnical adherences [128]. This could serve as a protective factor in situations of discrimination for which the adoptees are often badly prepared [127], which is in line with our findings. In immigrant families the children more frequently have coping strategies to handle discrimination and do have more support in their families to handle for example a prejudiced exclamation [127]. Also, there is the discussion of the consequences of transracial adoption for the possibility of identification and attachment [129-133].

An ethnical identity development model
As for identity development, the most frequently cited model for a stepwise achievement of an ethno racial identity is Phinney’s using a three step model ranges the ethno racial identity of minority group adolescents [134, 135]. She bases her theories and empirical work upon Marcia’s (1966) model for ego development. Also Irhammar (1997) has used this model on the identity development of international adoptees [70]. Adopted adolescents risk an identity development called “foreclosure”, “moratorium” or “diffusion” where they don’t understand or recognize their own “ethnoraciality” or they just adopt their adoptive parents’ white status. There are many conflicts to be resolved during the adolescence period. A racial identity different from that of the parents can very well be a factor that further complicates the process of going into adulthood and forming a more final identity [134, 135]. The development of racial or ethnic identity, so called “ethnoracial” development, is an important component of the process of overall identity development where a successful ethno racial identity achievement is an important part of a positive self-concept and if not so, there is a risk that Erikson’s negative identity is applied. Furthermore, it is stated that preschool and young school aged children often demonstrate a white bias in their attitudes and preferences [133].
Good parental relations, the most eminent protective factor

In some adoptive families where all solutions have been tried and where the adolescent uses violence on the adoptive parents the situation is beyond all control. This represents a severe and tragic situation which requires professional support and interventions. The explanations to this behaviour are probably very complex. The adverse development may have started very early, beginning with the “mismatch” between the adoptee and the adoptive parents (the adoptee and the adoptive parents were too different concerning temperament, interests etc.) or this sad trajectory may have developed by unfortunate events of the adoptive family (divorces, repeated changes of residence, bereavements, and specific vulnerabilities of the adoptee or the adoptive parents) that may have contributed to a lowered efficacy of the family’s coping abilities.

In our study, as we have investigated how the adopted delinquents and the adopted control group experience their relationships with their parents and found severe problems as to how the adopted delinquents relate to their parents, we assume that something must have gone very wrong at an early stage. Since the strongest protective factor for children and adolescents in the face of many mental disorders are solid and trustful parental relationships, it is difficult to know in what way and to what degree the bad relations are affecting the cognitive and psychological functions of the adopted child and adolescent [105].

Some studies have noted an association between high SES of the adoptive parents and low academic ability and mental problems in the adoptees [6, 41, 68]. Despite, the high level of resources in middle class and upper middle class families, this could be an important signal as to these adoptees do not get the support and understanding they are in need of.

International adoptees in research

Rejection or recognition of the problems in this group.

Some authors have pointed to the fact that it is only a small proportion of international adoptees that have serious problems but in these cases the problems were immense [32, 37, 136]. In the media debates, voices that want to foster a more positive view of international adoption seem to claim that most adoptees cope very well in the different domains of life and that since the percentage that is having serious problems is small, this minor subgroup is almost negligible and, in a way, do not belong to the rest of the group at all. Most researchers in the field of international adoption have
probably heard these objections, starting with ‘most international adoptees are doing well’... The question is how well they are doing and if the ‘normal’ adoptees do not as well have some of the same vulnerabilities as the adoptees who end up in delinquency. The former group, though, have managed to avoid environments and situations that could worsen these vulnerabilities and instead found constructive strategies and social bonds that have protected them from ‘falling through’. In some studies this trend can be seen; in epidemiological studies where all adoptees within a region or whole birth cohorts are studied, international adoptees frequently deviate in some specific aspects (acting out, affect and over activity problems) compared to the general population peers [35]. That is to say, the whole group of international adoptees generally is somewhat less well functioning than the control group of population peers especially if the results are adjusted for socio-demographic background variables.

To what groups should the international adoptees be compared in research?

It is also important to discuss what groups international adoptees should be compared to in research. Should they be compared to immigrants, the general population, the same social group from the general population or to the children who stayed at the orphanages in the countries of origin? All these comparisons are of course possible and bring out different and complementary information when applied. I believe that it is essential to recognize that adjustment for socioeconomic factors ought to be very important as for the group of international adoptees. When the adopted children grow up they learn to identify themselves and compare themselves to the surrounding society, which is with the same social group as they are adopted into. The present peer group and the siblings (adoptive or biological to parents) are inevitably the individuals the adoptees compare themselves with and hereby form self beliefs and self efficacy values. If they are not able to live up the expectations and demands of their adoptive family, relatives, friends and neighbourhood, this could very well set the foundations to a future development of feelings of insufficiency and alienation. The question is interesting and utmost important for the adoptees themselves and the adoptive families since these questions shred light on how the adoptees are looked upon in a given societal context.
Some concluding comments

Being an adoptive family may from time to time pose specific challenges for the family, and in some instances these conflicts may be too difficult to solve alone, and a need for specific help from the professional community may be necessary. In the initial period, when the child has first arrived, it is of great importance that a satisfactory attachment can be established between the adoptive child and the new parents. In most cases, the process of attachment is successful, but in some cases the adoptive family may profit from some assistance. Within the domain of Swedish adoption politics, this should be a prioritized and future goal. As for today, professional expertise is far from being available to all adoptive families in need of professional assistance.

Poor family relations may probably contribute essentially to the adopted adolescents’ well-being, but may not alone be responsible for the delinquency. These causal relations need to be further studied. This is also valid for questions regarding what is the contribution of the adoptive child/adolescent and what is the contribution of the adoptive parents for the poor relations. All family events take place in a context where all members influence the other members, and different family factors work to compensate, reinforce, worsen or alleviate each other. In modern ecological or system based family theory, the causes and effects of different approaches and actions are interwoven and continuously changing [21, 137]. Perhaps in the near future, not only the ‘problematic child or adolescent’ will be tested and investigated, but the whole adoptive family including the adopters will be observed in order to have a more accurate understanding of the origins of the problems [128, 138].

There is a need to put forward the importance of longitudinal studies as opposed to cross sectional study designs where there is a possibility to monitor processes and changes over time and in relation to various life cycle transitions. Longitudinal studies would answer not only questions to what causal connections exist concerning adjustments difficulties in international adoptees, but also to clarify and map factors of vulnerabilities and of resilience of the adoptee and the adoptive family.

This study hereby hope to contribute to the assembled knowledge on the adolescence of international adoptees, and to provide help with directing post-adoption services as well as pre-adoption services in an effective way through different channels in adoption organisations, schools, clinical settings and residential care institutions. We also hope that this knowledge in a few years becomes common knowledge resulting in a deeper understanding and tolerance for the many complicating factors associated with international adoptees and their adoptive families. These specific adopted related challenges are present not only in the adolescent years of the adoptee, but are also substituting a life companion through-out the many life cycles, from the time of the adoption to death.
Especially Brodzinsky [26, 27] has focused on the theme of “loss” as intrinsically connected to all members in the adoption triad: the adoptee, the adoptive parents and the birth parents. To recognize, accept and work through this loss would probably be a constructive first step on the pathway to approach problems with some dignity. Although coming to a loving and caring adoptive family in a Western country is a fortunate chance to a better life in many ways, it must be considered an atrocity to be abandoned by the biological parents as a child and subsequently be sent hundreds of miles away from his or her country of origin. This fact ought to be born in mind and never forgotten. In the light of this knowledge, many of the mental loops of the international adoptee would probably be better understood.
Conclusions

The main conclusions are as follows:

- The adopted delinquents had a significantly lower “full scale IQ” and significantly lower results on several measurements in the WISC /WAIS compared to the adopted controls.

- Both groups of adoptees scored low in the WISC/WAIS subscale “arithmetics” when compared to the population mean.

- The tests I think I am, ISSI and the Attachment test evidenced bad relations between the adopted delinquents and the adoptive parents compared to adopted controls.

- The adopted delinquents and their parents blamed each other for the problems and the adopted delinquents reported physical and emotional abuse.

- In the KSP, “delinquency” as opposed to “adoption” had an effect on the 6 comprehensive scales.

- After adjustments for socio-demographic background variables, the OR:s for placements of intercountry adoptees in residential care from age 10 were 5.1 and 3.0 for placements in foster care from age 10.

- A higher age of the child at adoption, origin from Latin America, single parent adoption and a maternal age above 35 at birth of the child were identified as significant predictors of out-of-home care after 10 years of age.

- International adoptees emerge as a risk group for placements in out-of-home care – and especially in residential care - during adolescence.
The planning and organization of efficient post-adoption services designs need to be considered in the light of the results of these studies.
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