

VOLUME 1

**ATTACHMENT AND THEORY OF MIND
IN YOUNG OFFENDERS**

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ABSTRACT

Attachment and theory of mind are two risk factors that are thought to contribute to the development of conduct problems. However, little is known about the potential link between attachment, theory of mind and antisocial behaviour. Recent theoretical models suggest that insecure attachment hinders the development of mentalising abilities, which, in turn, increases the likelihood of offending (Fonagy, Target, Steele, & Steele, 1997a). This research considers the application of this model to a population of adolescent offenders by comparing a group of young male offenders with a group of non-offending peers on theory of mind and attachment measures.

Empirical support was found for a relationship between attachment, theory of mind and offending. Significant group differences indicated that offenders have higher levels of insecure attachment and poorer theory of mind abilities than non-offenders. Moreover, adolescents who reported more trusting relationships with parents showed lower levels of conduct problems. Further analysis revealed that more secure attachment and better communication with parents were related to superior theory of mind abilities. Ethnicity also seemed to have an impact on attachment, with white participants reporting more secure attachment than individuals from other ethnic groups.

This study highlighted a particular need for further research into theory of mind in adolescence as well as into the relationship between attachment and ethnicity. The results also provide support for treatments with adolescents with conduct problems that use multi-systemic interventions that focus both on family and individual factors.

CHAPTER 1: INTRODUCTION

1.1 OVERVIEW

This research considers attachment and theory of mind in relation to adolescent offending. The Introduction first describes the impact of youth offending upon society, highlighting individual and family factors which put a child at risk of developing conduct problems. It then focuses upon attachment, describing the construct and history, how it manifests during adolescence and the relationship between insecure attachment and externalising behaviour. The concept of theory of mind, its development and relevance to psychological functioning, is then discussed with a particular emphasis on antisocial behaviour. Following this, the proposed relationship between attachment, theory of mind and antisocial behaviour (Fonagy et al., 1997a) is described and the few studies which consider these three constructs together are outlined. Finally the aims and hypotheses of this study are stated.

1.2 YOUTH OFFENDING

1.2.1 Characteristics, definitions and statistics

There are over 200,000 known offenders in the UK between the ages of 10 and 17 (Home Office, 2003). Youth offending often causes long-lasting physical and psychological harm and has a substantial economic impact. There is a limited response to intervention in persistent young offenders, and adverse outcomes are frequent. The Government has recently highlighted youth offending as a priority area to address, and is currently funding a number of incentives to combat the phenomenon.

Delinquency rates are highest during adolescence and decrease gradually after the age of 18. Although antisocial behaviour during adolescence is almost normative,

for most individuals it is petty and likely to be short-lived. There is, however, a sub-group of young offenders which engages in more serious antisocial behaviour. These individuals generally conform to a diagnosis of conduct disorder (DSM-IV, American Psychiatric Association, 1994). Conduct disorder is thought to be the most common childhood disorder, occurring in 5% or more of urban populations (Kazdin, 1995).

Conduct disorder is characterised by a “repetitive and persistent pattern of behaviour in which the basic rights of others and major age-appropriate societal norms or rules are violated” (DSM-IV; American Psychiatric Association, 1994). The diagnostic criteria demand a pattern of three or more specified anti-social behaviours over a period of at least six months, and individuals are classified as having either early-onset or late-onset conduct disorder. The two sub-types show different developmental trajectories and are associated with different risk factors and outcomes.

Adolescent-onset conduct disorder is the more prevalent of the sub-types. Antisocial behaviours begin during adolescence and are characterised by less serious activities (e.g. property crimes as opposed to violent crimes) and a higher rate of desistance than childhood-onset conduct disorder (Moffit, 1993).

Childhood-onset conduct disorder shows externalising behaviours from an early age, with a high degree of continuity throughout childhood, into adolescence and adulthood. The behaviours progress from relatively less serious conduct problems (such as non-compliance) limited to the home setting to more overt conduct

problems (such as aggression) in a number of settings. Within such cases it is important to take a lifespan perspective, as the conduct behaviours originate in childhood and escalate as the child ages. These individuals are of interest to research into aetiology and prevention because they are responsible for a disproportionate amount of crime.

A number of terms have been used to describe individuals who display antisocial behaviours, including delinquency, disruptive behaviour, conduct disorder, oppositional defiant disorder and antisocial behaviour. These reflect the different terminologies used within this area which vary according to type of research, age group, severity of behaviour and measurement. Although a number of terms are used in this paper according to the research being discussed, conduct problems will be used in the main as a 'catch-all' to refer to such behaviours.

Although young offenders have been studied extensively, the National Institute of Mental Health (1993) identified research into conduct disorder in adolescents as a gap in knowledge. This was echoed a decade later by Morrell and Murray (2003), who emphasised the urgent need for a greater understanding of the processes which contribute to the development of disruptive behaviour.

1.2.2 Risk factors

A number of factors have consistently been found to relate to conduct problems. An accumulation of risk factors is associated with earlier presentations of externalising problems and more negative outcomes. This section briefly outlines the main

factors, considering individual factors, family factors and psychosocial factors (see Burke, Loeber, & Birmaher, 2002, for a more detailed review).

Before briefly summarising the risk factors it is important to bear in mind the limitations of such data. Despite broad agreement on the causes of delinquency, most of the research is biased towards Western societies, and very little attention has been paid to explanations for delinquency in collectivist cultural groups (Papageorgiou & Vostanis, 2000; Tyson & Hubert, 2002) or in young female offenders (Jasper, Smith, & Bailey, 1998). Studies are therefore gender and culture biased, focussing mainly on incarcerated Western adolescent males (Steiner, Williams, Benton, Kohler, & Duxbury, 1997).

Individual factors

Burke et al. (2002) summarised the factors intrinsic to the individual which are associated with disruptive behaviour disorders as being male, experiencing birth trauma, genetic make-up and neuroanatomy. Verbal IQ deficits, reading difficulties and temperamental difficulty are also implicated (although this is not apparent within individuals with adolescent-onset conduct problems; Moffit, 1993). At-risk children often have poor executive functioning (Lueger & Gill, 1990) and show high levels of hyperactivity (McArdle, O' Brien, & Kolvin, 1995) and impulsivity, with a tendency to seek out stimulating experiences (Frick, 1998).

Younger children with behavioural problems and adolescent offenders are more likely to have abnormal social cognitions than peers without conduct problems (Dodge & Frame, 1982; Wong & Cornell, 1999), showing a tendency to attribute

hostile intentions to others. In addition they have been found to have deficits in empathy, perspective-taking, moral reasoning and problem-solving (see Smetana, 1990). A deficit in theory of mind (the ability to attribute mental states to oneself and others), which is thought to overlap with empathy and perspective-taking, has also recently been considered as a possible risk factor for the development of antisocial behaviour (Fonagy et al., 1997a).

Family factors

A number of family factors have been implicated in the development of conduct disorder, with many individuals coming from families with high levels of disruption characterised by poor supervision, lack of parental involvement, physically aggressive or inconsistent discipline, parental conflict and child abuse (Farrington, 1995; Henry, Moffit, Robins, Earls, & Silva, 1993; Widom & Mazfield 1996). Conversely “positive parenting” acts as a protective factor to prevent conduct disorder from developing (Petit, Bates, & Dodge, 1997). Inappropriate parental discipline practices are less likely to be found in individuals with adolescent-onset conduct disorder as opposed to early-onset conduct disorder (Capaldi, Patterson, & Bank, 1994).

Attachment to primary caregiver has been postulated to be important in the development of delinquency, with insecure attachments having been found to be particularly prevalent in children with conduct problems (Greenberg & Speltz, 1988). Attachment theory (Bowlby, 1969) shifts the focus from observing parents and children to the representation of their relationship within the child’s mind, allowing

exploration of the relationship between conduct problems and internal working models.

Within the literature which is available, the parent-child relationship as a risk factor in the development of conduct problems has been hampered by variations in its definition and measurement (Greenberg, Speltz, DeKlyen, & Endriga, 1997). Although there are a number of parenting factors related to conduct problems, relationships between parenting and conduct problems must be viewed as reciprocal and dynamic, as there are frequently negative coercive parent-child interactions which can increase delinquency (Patterson, 1986; Sampson & Laub, 1990). Delinquency is therefore not merely an outcome variable but a process which is affected by ongoing parental management (Stewart, Simons, Conger, & Scaramella, 2002).

Being brought up by a criminal parent or having parents who have separated increases the likelihood of offending, as does having siblings who offend and maternal depression.

Psychosocial factors

Psychosocial characteristics of young offenders include a history of being within the care system, having special educational needs (Bullock, Hosie, Little, & Millham, 1990), high levels of mental health problems and substance abuse (Huckle & Williams, 1996). There is often a history of peer rejection (Stormshak, Bierman, Bruschi, Dodge, & Coie, 1999) and association with delinquent friends (Elliott & Menard, 1996).

Other factors include coming from a background of low socio-economic status (McLoyd, 1998), neighbourhood violence (Guerra et al., 1995) and unemployment (Fergusson, Lynskey, & Horwood, 1997). These are however less prevalent in individuals with adolescent-onset conduct disorder (Capaldi et al., 1994).

1.2.3 Summary

There is broad agreement in the literature that the developmental pathway to conduct disorder involves a complex interplay of a number of risk factors from various domains. Despite a clear link between certain child, psychosocial and family variables and conduct problems, there is still a need to better describe the associations, to understand the underlying mechanisms, and to elucidate the specific pathways which are pertinent to the development of antisocial behaviours (Henry et al., 1993).

This research focuses on two of the risk factors mentioned above, attachment and theory of mind, considering in more detail how they may be part of the development trajectory which leads to conduct problems.

1.3 ATTACHMENT

1.3.1 Background

John Bowlby (1969) developed attachment theory to aid the understanding of behavioural problems in childhood. His work stemmed from ethological studies of animal behaviour, which considered certain systems to be instinctual and contribute to the survival of the individual or species. Attachment is viewed as one of these biologically rooted systems. It has been traditionally described as a bond between an

infant and a caregiver (typically mother) which promotes feelings of security. Bowlby felt the process of attachment was one of the primary developmental tasks of a child.

Patterns of attachment, based upon the experiences involved in seeking and retrieving care giving from primary attachment figures, are thought to become internal working models. These are representational states of mind which symbolize the relationship between the self, the attachment figure and the external world (Main, Kaplan & Cassidy, 1985). Attachment relationships are, therefore, thought to persist in the absence of attachment objects and over time. These patterns become self-perpetuating because information which contradicts the internal working models is countered by perceptual and behavioural control mechanisms. Attachment to primary caregiver and the resulting internal working models therefore guide feelings, behaviour, attention, memory and cognitions, and influences an individual's relationships throughout his or her lifetime. Attachment is thought to be a central causal factor in the child's personality development and behavioural adjustment (Bowlby, 1982).

1.3.2 Classification

Based upon the observation of mothers with their twelve month old infants, Ainsworth, Blehar, Waters & Wall (1978) developed a classification system to categorise children according to the security of their attachment relationship with their mother. The conditions in which the mother-child dyad were observed were named the 'strange-situation' and consisted of a structured series of separation and reunion experiences.

The infant's behaviour on separation and reunion was observed, and three common patterns of attachment were derived. These are outlined below:

- (A) Avoidant (also known as dismissing) – the child does not explore prior to separation from the mother, and upon reunion with the mother the child ignores her and looks away. This occurs in around 12% of children, and is classified as an insecure attachment.
- (B) Secure – the child separates from the mother without difficulty and engages in exploration if the situation is associated with minimal stress. If the situation is stressful, he or she will seek contact, but once comforted can return to play. This happens in approximately half of children in a normal sample.
- (C) Ambivalent (also known as resistant or preoccupied) – the child engages in minimal exploratory behaviour and seeks proximity in minimal stress situations prior to separation from the mother. He or she remains unsettled upon reunion and mixes contact-seeking behaviour with resistant behaviour (e.g. kicking). This occurs in around 25% of children and like (A) is classified as an insecure attachment.

In 1986, Main and Solomon extended Ainsworth et al.'s (1978) original categorisation, adding a further insecure attachment pattern. They named this disorganised (D) attachment, in which children are characterised by having no coherent strategy for responding to separation or reunion.

Secure attachments are thought to be beneficial, as they provide the child with a safe base from which he or she can explore and adapt to the environment. Mothers who have secure attachments with their children are characterised by maternal sensitivity, prompt responsiveness to distress, moderate stimulation, non-intrusiveness, synchrony with their child, warmth and involvement.

Insecure attachments are thought to be less adaptive than secure attachments, as the child does not have a stable base from which to explore, and is, therefore, comparatively restricted in his or her development. Mothers of children with insecure attachment patterns tend to be more unresponsive, interfering, rejecting and insensitive in their parenting, and are characterised as having higher levels of anxiety, aggression and suspicion than mothers of children with secure attachment styles.

Although initially conceptualised as a psychoanalytic theory, attachment theory has been utilised across different fields of psychology, and is compatible with other orientations of psychology, such as cognitive and behavioural psychology.

1.3.3 The development of attachment beyond the mother-infant dyad

Although attachment theory initially focussed upon the infant and its relationship to its mother, the past decade has seen an increase of interest in how this early relationship influences later psychological development. Attachment no longer refers solely to aspects of the mother-child dyad or to behaviours shown on separation from the mother in early childhood, but extends across the life-span, including intimate relationships and friendships.

Aided by self-report measures, such as the adult attachment interview (AAI; George, Kaplan, & Main, 1985), which can assess attachment beyond infancy, it has been possible to establish that, for a substantial proportion of individuals, the quality of attachment is stable throughout childhood, mid-adolescence and adulthood (Grossman & Grossman, 1991; Hamilton, 2000; Main et al., 1985). Attachment has also been found to be continuous across generations, with maternal and child attachment organisation showing a high degree of correspondence (Fonagy, Steele, & Steele, 1991a).

Many researchers are now focussing upon the relationship between early attachment relationships and the development of psychological disorders. Different classifications of attachment have been related to certain types of psychopathology, with insecure attachment being linked to both externalising and internalising problems (see Belsky & Cassidy, 1994, for a review). Conversely, secure attachments are thought to provide a protective function against an individual developing psychopathology (Rutter, 1988).

Historically, attachment to mother has been the main relationship considered within research. More recently, however, researchers have begun to explore other attachment relationships such as to fathers and peers. As this is a relatively new area of study, the majority of research reviewed in this paper relates to mother-child attachment.

Adolescent attachment

The last decade has seen an increase in the application of attachment theory to

adolescence. Adolescent attachment has been defined as an important long-term relationship which the adolescent has with certain specific persons (Ainsworth, 1972), although, as in childhood, this is generally supposed to be the mother-child relationship. A secure parent-adolescent relationship has been described as an enduring affectionate bond which may be signalled by trust, good communication, and acceptance (Armsden & Greenberg, 1987).

When stress is experienced, attachment patterns are particularly important in determining an individual's behaviour (Bowlby, 1988). Due to pressures of adolescence this may be especially pertinent and, therefore, may be a useful period to examine the implications of different attachment representations on psychological functioning.

During adolescence the individual attempts to become less dependent on primary attachment figures, which leads to a major reorganisation of attachment. Hilburn-Cobb (2002) suggested that this "struggle for independence" may lead to more representations of insecure attachment. Supporting this, Ammaniti, Van IJzendoorn, Speranza and Tambelli, (2000) found that from late childhood to early adolescence there were more dismissing defence mechanisms, which, the authors suggested, indicated avoidant attachment. Although evidence for an increase in insecure attachments in adolescence provides some support for parent-child relationships being relinquished (whilst new attachments to peers are thought to be formed; Elliott & Menard, 1989) some research has highlighted that attachment to parents remains important during this developmental period (Allen & Land, 1996).

Previous experiences of attachment are thought to play a role during adolescence, with secure attachments aiding successful transition, and insecure attachments making things more difficult. In a narrative and meta-analytic review of attachment in adolescence Rice (1990) reported just this: namely, that adolescent development in terms of social and emotional adjustment to different situations is related to attachment, with secure attachment relations predicting healthy adjustment in a number of areas including cognitive development, academic skills, emotional development and interpersonal or social functioning. This was, however, based mainly on studies conducted with European American college students.

A number of studies have found raised levels of insecure attachment in clinical populations, supporting an association between attachment and a range of psychological problems in this developmental period (e.g. Rosenstein & Horowitz, 1996). Researchers have now begun to link specific attachment styles to particular types of psychopathology, although this is in its infancy and systematic relationships between diagnosis and type of security may not be as clear as some of the research suggests (Van Ijzendoorn & Bakerman-Kranenburg, 1996).

Attachment in adolescence seems, therefore, to be related to psychological well-being, with the research indicating secure attachment to be an important protective factor against developing psychological problems in adolescence and implicating insecure attachment in the development of such problems. However little is known about the processes or mechanisms that may account for the relationship between psychopathology and attachment in adolescence (Larose & Bernier, 2001). What is

known about the relationship between attachment and the development of disruptive behaviours is considered below.

1.3.4 Attachment and conduct problems

“Prolonged separation of a child from his mother (or mother-substitute) during the first five years of life stands foremost among the causes of delinquent character development and persistent misbehaviour”.

Bowlby, 1944, page 113

Prior to the development of his attachment theory, Bowlby (1944) presented a study of forty-four young “thieves” (aged between seven and sixteen), providing a detailed exploration of their characters and home lives. He compared the group with 44 control cases (non-thieves, but also referred for being ‘maladjusted’), finding that more of the thieves had suffered, amongst other things, an early separation. From this study Bowlby described what he felt were the aetiological factors in the development of criminal behaviours: possible genetic factors, prolonged separation from mother, ambivalent or hostile parent relationship, child hated by father and recent trauma. The only factor that Bowlby felt was causal in persistent offending was prolonged separation from mother.

Although this study was not specifically framed as attachment, it is clearly related, as it is difficult for a child to form a secure attachment if he or she has a prolonged separation from his or her primary caregiver. Bowlby (1979) later went on to propose more specifically that the disruption of attachment bonds between mother and child is a significant precursor to later deviance. Therefore, for Bowlby,

violence and crime are related to the attachment system. He felt that the crimes were motivated by the desire to engage others in an “emotionally significant exchange”, and saw the young offender’s lack of concern for others as arising from his or her disrupted bonding, allowing the offender to carry out such crimes.

Since Bowlby’s conceptualisation of crime, a number of authors have further considered the development of conduct problems within the context of the attachment relationship. Those of most relevance to this research are considered below.

Greenberg and Speltz (1988) suggested that disruptive behaviours would be more prevalent in children with insecure attachment, serving the function of maximising parental attention. Despite being initially adaptive, this may set up coercive family processes (Patterson, 1986) with behaviours being demanding of the caregiver who in turn would find parenting more difficult. Allen, Moore, Kuperminc and Bell (1998) proposed that this model may extend to adolescence, suggesting that delinquency is a “crude form of attachment behaviour in that it calls out for parental attention. Delinquency may thus serve to heighten the intensity of interactions with attachment figures, albeit in an angry dysfunctional manner” (cited in Allen et al., 2002, page 57).

Greenberg et al. (1997) postulated that insecurely attached children develop internal working models which understand relationships as being angry, mistrusting and chaotic. One mechanism through which insecure attachment may play a causal role in later externalising behaviours is through the acting out of these working models.

This fits well with the attributional bias found in children with aggressive behaviours: i.e. they tend to attribute hostile intent to others, particularly when the social cues are ambiguous (Dodge, Price, Bachorowski, & Newman, 1990). Insecure attachments may thus lead to attributional biases which, in turn, contribute to conduct problems (Dodge, 1991).

Considering different types of insecure attachment and disruptive behaviour, Sroufe (1983) suggested that, although both avoidant and ambivalent children may be more likely to show aggression than secure children, the development of this may be different. Sroufe proposed that avoidant children manifest their frustration of unmet needs (which stem from a rejecting caregiver) by displacement, and ambivalent children have a low-frustration tolerance which leads to aggression. Similarly, Allen et al. (2002) suggested that adolescent delinquency may be more prevalent in avoidant adolescents; that in minimising the importance of attachment relationships they may reject the norms of attachment figures.

Marcus and Betzer (1996) also considered how attachment in adolescence may relate to conduct problems. They suggested that individuals who have a secure attachment with their parents are more likely than insecurely attached peers to accept parental rules and regulations and to consider the parents' reactions when the temptation to commit an antisocial act presents itself.

Furthering an earlier theory which considered the influence of attachment on the development of borderline personality disorder (Fonagy, 1991), Fonagy et al. (1997a) developed a model of the relationship between attachment and disruptive

behaviour based upon the construct of mentalisation (also described by the authors as theory of mind). This is considered in detail in section 1.5, but in brief postulates that the child's capacity to explore the mind of the other and to develop as a thinking and feeling being arises within the context of a secure attachment relationship. Conversely, insecure attachment limits the development of mentalising capacities. Poorer mentalisation may be related to disruptive behaviours for a number of reasons, such as poor understanding of social rules and lack of empathy with the victim. This model does not view insecure attachment as causing conduct problems, but emphasises mentalisation as a mediating factor.

Based upon the aforementioned model Fonagy et al. (1997a) considered why antisocial behaviour increases in adolescence from an attachment perspective. They argued that the consequences of an insecure attachment in early years may be concealed by the parents' physical capacity to control their child. The behaviours may not become apparent until the individual requires internal controls (such as empathy). If they have not developed such internal controls, because of their insecure attachment, they may act out their attachment behaviours (which were previously confined to their parents) onto societal institutions in the form of conduct problems. Thus, a possible developmental pathway to young offending involves externalising behaviours focussed upon the parents in early childhood, but as attachment is reorganised in adolescence this starts to be directed further afield, resulting in antisocial behaviour against society. This fits well with the escalation of externalising behaviours seen in early-onset childhood disorder.

The models outlined above are extensions of Bowlby's (1969) theory, and although

they emphasise different processes which may be involved in a relationship between attachment and conduct problems, they are by no means mutually exclusive.

The theoretical link between attachment and conduct problems has been supported empirically. The majority of such research considers whether there is a connection between conduct problems and attachment rather than the mechanism for this relationship. Most work has been with younger children, although attention to this relationship in adolescence and adulthood is increasing. There is not the scope for a comprehensive review of literature across the lifespan here. Instead, a brief description for each age-group is provided below, with a focus on adolescent offending and attachment.

Childhood

From as early as two years old, attachment has been found to predict peer competence, problem-solving skills and displays of anger (Koshanka, 2001; Matas, Arend, & Sroufe, 1978). In three to six year olds similar trends have emerged, with insecure individuals showing more aggressive, disruptive, assertive, controlling and attention-seeking behaviour than secure individuals (Cohn, 1990; DeKlyen, 1996; Erikson, Sroufe & Egeland, 1985; Greenberg, Speltz, DeKlyen, & Endriga, 1993; Turner, 1991; Vondra, Shaw, Swearingen, Cohen, & Owens, 2001).

Avoidant attachment has most frequently been linked to disruptive behaviour in preschoolers (Pierrehumbert, Miljkovitch, Plancherel, Halfon, & Ansermet, 2000; Renken, Egeland, Marvinney, Mangelsdorf, & Sroufe, 1989; Troy & Sroufe, 1987), although disorganised attachment has also been associated with higher levels of

externalising problems in slightly older children (Lyons-Ruth, 1996; Munson, McMahon & Spieker, 2001).

Children with insecure attachments seem to be over-represented in clinic samples as compared to a normal population. Speltz, Greenberg and DeKlyen (1990) established that only 20% of clinic children with early onset behavioural problems exhibited secure attachments to their parents (as opposed to 73% of controls). Similarly, Greenberg, Kusche and Speltz (1991) found that 80% of pre-school boys with conduct problems showed insecure attachment styles, as compared with matched control cases, in which only 30% had insecure attachment styles.

Adolescence

Despite attachment styles being recognised as related to psychological functioning in adolescence, and offending increasing dramatically during this life stage, research into attachment and antisocial behaviour remains relatively neglected (del Carmen & Huffman, 1996; Nicholson, 2000; Saltaris, 2002). Empirical studies which have been undertaken have, however, shown similar patterns to those found in childhood.

The Minnesota studies, carried out by Sroufe and colleagues since 1983, are a set of longitudinal studies following a high-risk sample from infancy to adolescence considering the relevance of attachment to a number of constructs. These have found that children with disorganised attachment patterns in infancy have higher levels of overall psychopathology, including conduct problems, at the age of seventeen (Carlson, 1998).

Capaldi (1992) considered conduct problems and depressive symptoms in thirteen and fourteen year old boys. She found conduct problems to be associated with a number of adjustment problems, including attachment to parents, with poorer relationships correlated with elevated levels of antisocial behaviour. In a follow-up of the same participants five years later (Capaldi & Stoolmiller, 1999) similar trends emerged.

In a cross-sectional study, Rosenstein and Horowitz (1996) found that adolescents with insecure attachment were more likely to have conduct disorder, substance misuse and self-reported narcissistic, antisocial and paranoid personality than those with secure attachment. Similarly, Allen et al. (1998) found that those adolescents with ambivalent attachment showed higher levels of deviance and lower levels of social competence. However, this was the case only in the presence of additional demographic risk factors. In a recent longitudinal study, Allen et al. (2002) studied 117 moderately at-risk adolescents, finding that ambivalent attachment at the age of sixteen predicted delinquency at the age of eighteen.

A number of further studies have lent support to a relationship between insecure attachment and conduct problems in adolescence (Marcus & Betzer, 1996; Raja, McGee, & Stanton, 1992). Such trends have also been found in research which has measured conduct problems using self-reported involvement in antisocial behaviours (Dekovic, 1999; Jackson & Foshee, 1998; Kenny, Lomax, Brabeck, & Fife, 1998).

A link between insecure attachment and conduct problems has been found across different cultures, such as in African American adolescents, Mexican American

adolescents (Arbona & Power, 2003; Formoso, Gonzales, & Aiken, 2000) and young German adults (Silverberg, Vazsonyi, Schlegel, & Schmidt, 1998), as well as across genders, with female delinquency also being associated with attachment (Jasper et al., 1998).

Adulthood

Limited research has considered attachment and offending in adults. Allen, Hauser and Bourman-Spurrell (1996) found a link between security of attachment to self-reported criminal behaviour and drug abuse in young adulthood. In considering more serious offenders, Van Ijzendoorn et al. (1997) examined the relationship between attachment representations and personality disorders, finding that secure attachment was virtually absent in the sample and that insecure attachment was associated with anti-social personality disorder. Frodi, Dernevik, Sepa, Philipson and Bragesjö (2001) reported similar findings: an over-representation of individuals who had insecure attachment styles in a population of psychopathic criminal offenders. Amongst a sample of 14 not one displayed a secure attachment.

In a pilot study, Levison and Fonagy (1998) (cited in Fonagy et al., 1997a) examined the attachment histories of 22 men in prison and found that there was frequently a dismissing pattern of attachment and a high prevalence of early trauma. They were able to distinguish the type of crime based on attachment style. Those prisoners who were predominantly dismissing were more likely to have committed property crimes, whereas those with preoccupied attachment styles were imprisoned for more serious crimes, such as rape and murder.

Attachment and conduct problems: a straightforward relationship?

“We emphasise the diversity of possible relations between attachment and disruptive behaviour problems and the fact that incorporating attachment theory into research on disruptive behaviour problems does not mean interpreting every disruptive behaviour as attachment related”.

Waters et al., 1993, Page 215

Although the above mentioned research suggests a relationship between insecure attachment and disruptive behaviours throughout the lifespan, there are limitations to viewing this relationship as causal.

A number of studies have not found a significant main effect between insecure attachment and later externalising behaviours (Bates, Maslin, & Frankel, 1985; Bates & Bayles, 1988; Bates, Bayles, Bennett, Ridge, & Brown, 1991; Fagot & Kavanaugh, 1990; Gray, 1997; Loftis, 1997; Nunn, 1998), or suggest that attachment is only weakly related to delinquency (Aseltine, 1995). In a meta-analysis of 12 studies considering disorganised attachment and conduct problems (Van Ijzendoorn & Bakermans-Kranenburg, 1996) effect sizes ranged from .54 to .17, suggesting a complex relationship.

The strength of the relationship between insecure attachment and conduct problems in childhood seem to be influenced by other risk factors found in families (Greenberg et al., 1997). Indeed, those studies failing to find a direct association have generally been drawn from low risk populations. This highlights the simplicity of single-cause models, rather than suggesting that there is no association between attachment and

conduct problems. It may be that such samples are inadequate for addressing this question and provide little value to understanding the potential link (Fagot & Kavanaugh, 1990).

There is also evidence to suggest that insecure attachment processes are not necessary to cause later conduct problems, with some children with such difficulties having secure attachments. For example, Speltz, DeKlyen, Greenberg and Dryden (1995) found that 20% of a sample of children with conduct problems had secure attachments, and Campbell (1990) noted that in some families with high rates of aggression the mother-child relationship appears warm and trusting, possibly indicating secure attachment.

Although attachment insecurity has frequently proved to be a risk factor for the development of antisocial behaviour, it has also been linked with other difficulties such as depression. Its high base rate in the normal population (about 40%) has reduced its predictive value for psychopathology (Green & Goldwyn, 2002). Insecure attachment is therefore very common, and the majority of children with such attachment styles do not develop conduct problems.

Greenberg et al. (1997) pointed out the tautological notion of the link between attachment and conduct problems: some of the behavioural outcomes which differentiate secure and insecure children are part of the criteria for early conduct problems. Furthermore, the disruptive behaviour may cause disorganisation of the attachment system rather than the other way round (as is generally assumed). Other factors, such as life stress, parental psychopathology and parental social support,

affect both disruptive behaviour and attachment. The association may, therefore, be a consequence of one such factor, rather than a specific link between conduct problems and attachment.

Waters et al. (1993) suggested that researchers have been too keen to subsume or explain too much under the attachment construct and that it is better to view attachment as a potentiator of disruptive behaviour, without implying that the problems are themselves attachment behaviours. They argued that it is too early to conclude whether attachment styles have causal or mediating effects on the development of conduct problems. More recently Burke et al. (2002) echoed this point, summarising that there is not as yet strong evidence to support a causal link with attachment.

1.3.5 Summary

This section has considered attachment, outlining the construct, its classification and its development beyond the mother-baby dyad, with a focus upon adolescent attachment. Models of the relationship between attachment and disruptive behaviour have been described, as has literature supporting this link. As the relationship has only been found in high risk populations, it has been argued that insecure attachment does not provide a sufficient explanation in itself for the development of conduct problems, and should be thought of as a risk rather than as a specific causal factor.

Although research has begun to establish associations between antisocial behaviour and insecure attachment, little is known about the mediating variables through which such effects might occur (Cohn, Patterson, & Christopoulos, 1991). Theorists have

started to elaborate upon how a disrupted attachment may lead to antisocial behaviour with a focus on other factors which may mediate this relationship, reconsidering a simplistic link between disrupted attachment and antisocial behaviour. Fonagy et al.'s (1997a) model of attachment and conduct problems, based upon the development of mentalising abilities, may be pertinent to furthering our understanding of this relationship. This theory and its applicability to a group of adolescent offenders is the focus of this research.

1.4 THEORY OF MIND/MENTALISATION

Theory of mind is the second main construct to be explored. Its background, definitions and relevance to psychopathology, in particular conduct problems, are considered in this section.

1.4.1 Background and definitions

Like attachment, the concept of a theory of mind stems from animal behaviour research. Theory of mind was initially defined as follows:

“In saying that an individual has a theory of mind, we mean that the individual imputes mental states to himself and others...A system of inferences of this kind is properly viewed as a theory, first because such states are not directly observable, and second, because the system can be used to make predictions, specifically about the behaviour of other organisms.”

Premack and Woodruff, 1978, page 515

Theory of mind, therefore, refers to the ability to attribute mental states to oneself and to others in an attempt to understand and explain behaviour (Gopnik & Meltzoff, 1997). There is thought to be a cognitive mechanism through which this occurs, allowing representation and inference of others mental states, beliefs and intentions. A theory of mind is thought to enable an individual to make sense of social behaviour and predict people's future actions, aiding social communication and friendship formation. A theory of mind may be a useful way to "outwit" others mentally rather than physically.

For an individual to possess a theory of mind they must be able to acknowledge that people hold beliefs. The false belief task is the "litmus" test of theory of mind acquisition (Wellman, 1988). False beliefs have been split into first and second order beliefs (also known as first and second order representations). To hold a first order belief one must be able to understand that another person can hold a wrong belief about the world. Second order beliefs are those in which one can understand that a person may think something about another person's thoughts which is different from what the other person thinks.

Although often described as such, theory of mind is unlikely to be either present or absent. Instead, individuals with deficits are likely to have them to varying degrees (Frith, Happe, & Siddons, 1994). Previous research viewing theory of mind as an all-or-nothing entity may be related to ceiling effects of the tasks used (Ward, Keenan, & Hudson, 2000). More recently, measures have been developed to assess theory of mind which give results which allow abilities to be conceptualised as lying on a continuum.

1.4.2 Overlapping constructs

There are a number of constructs which have been used interchangeably with theory of mind, including mentalisation, empathy, perspective-taking, emotional understanding, social cognition and reflective functioning. These have evolved from a number of orientations and have been labelled and researched in a variety of ways, making definitions varied. It is at present unclear how and to what degree they are different from theory of mind, and whether the findings from various research methodologies are generalisable or equitable (O'Connor & Hirsh, 1999).

There are a number of definitions of empathy in and of itself. One frequently used definition is “the ability to perceive another person’s point-of-view, experience the emotions of another and behave compassionately” (Fisher & Howells, 1993, page 124). It has been suggested that theory of mind may be a precursor to empathy (Frith, 1989), with the capacity to empathise requiring the ability to represent the mental states of others. Hoffman (1984) suggested that a prerequisite for empathy is that children know the difference between themselves and the other person, and are able to take the perspective of the other. Multi-stage models of empathy, such as that by Marshall, Hudson, Jones and Fernandez (1995) fit with theory of mind being a precursor to empathy. Theory of mind has been differentiated from moral reasoning and perspective-taking abilities in that it is an implicit unconscious mechanism (Frith, Morton, & Leslie, 1991).

Mentalisation was defined by Fonagy and Target (1997) as the ability to “represent behaviour in terms of mental states, or to have a theory of mind” (page 679). More recently, Fonagy (1999a) has defined mentalisation more fully as:

“The capacity for internal experience that is felt to belong to one. It is experience that is truly felt and owned, and carries a sense of personal meaning. It also means appreciating that one’s thoughts and feelings are subjective, a mental state that is subject to modification. It is a primary avenue for understanding that others also have their own modifiable subjectivity. It means being able to step into the shoes of the other and out again; to be able to anticipate that others can understand, to think about and be able to empathise with one. It means being able to be reflective about mental processes”.

It seems apparent from Fonagy and Target’s (1997) definition of mentalisation that they view it as the same as a theory of mind. Indeed Fonagy (1999a) himself noted that the term came about because some authors decided they needed a verb to refer to the active use of theory of mind capacities. However Fonagy’s (1999a) definition of mentalisation seems to have a slightly different focus than Premack and Woodruff’s (1978) original definition of a theory of mind, adding a more affective component, rather than viewing it as a purely cognitive process. This is likely to be a product of different orientations; it is rare that the narratives used in psychoanalysis and behavioural psychology are similar, even when defining the same construct.

Both mentalisation and theory of mind are used throughout this paper and are considered to refer to the same construct. Which term is chosen will depend upon the origins of the particular research which is being discussed. However, it should be acknowledged that the field is far from clear as to how and whether mentalisation

and theory of mind are different, and it will be important to develop more useful working definitions in the future.

The reflective function has also been clearly related to theory of mind and mentalisation, with Fonagy and Target (1997) viewing it as predisposition to understand behaviour in mental states. They defined it as “the developmental acquisition that permits the child to respond not only to other people’s behaviour, but to his conception of their beliefs, feelings, hopes, pretence, plans and so on. Reflective function enables children to ‘read’ people’s minds” (page 679). As with other constructs, it is unclear how this differs from theory of mind and mentalisation, but Fonagy et al. (1997b) suggest that reflective function refers to the psychological processes underlying the capacity to mentalise.

1.4.3 Theory of mind development

There are a number of theories regarding the development of a theory of mind, including the modularity theory (Frith et al., 1991; Hoffman, 1991; Leslie, 1994), theory-theory (Gopnik, 1996) and simulation theory (Harris, 1994), although there is not the scope to discuss these here. Fonagy and Target (1997) argue that current models view theory of mind as an isolated information process using biological mechanisms, focussing upon the level of mechanism rather than content, and therefore not considering the question of emotional investment in theory of mind nor addressing its social origins. Fonagy and Target (1997) have addressed the limitations of previous models, developing a dialogic model of theory of mind development, based upon attachment theory. This is a focus of this research and is outlined in detail in section 1.5.

Normatively, two and three year olds are able to appreciate that others have desires and thoughts and to use mental state language which is accurate (see Wellman, 1991, for a review). It is around the age of three that children start to talk about their own and others' feelings (Bretherton, Fritz, & Zahn-Waxler, 1981). However, it is not until the fourth year that they are able to understand that other people can have a belief which is different from theirs and from reality. More complex mentalistic reasoning involving second order beliefs develops at around six to seven years old, which is close to the normal adult ceiling (Dennett, 1988). Typically, children develop the capacity to understand feelings first, then perceptions, desires, intentions and beliefs. Research is yet to consider changes in, and development of, theory of mind in adolescence.

Although there is an average age at which children develop theory of mind abilities, research has shifted away from pinpointing an exact age at which children can pass false belief tasks and has begun to focus on how individual differences in their social experience impact upon their developing mentalising abilities (Meins, Fernyhough, Russell & Clark-Carter, 1998). Social interaction is thought to be related to the development of theory of mind because it provides contexts in which children are confronted with conflicting views of the world, facilitating their understanding that there are different perspectives (Dunn, 1994). Those social interactions which have been found to be implemented in the development of a theory of mind are outlined below.

Dunn and colleagues carried out a number of home-observation studies in which the development of children's mental states was found to be correlated within the social

world of the family. In one such study they showed that perspective-taking abilities in six year olds were predicted by the extent to which feelings were discussed in their families at the age of three (Dunn, Brown, & Beardsall, 1991). Parental talk about emotions and their own emotional response to their children's affect have also been found to predict emotional understanding (Denham & Kochanoff, 2002).

Meins, Fernyhough, Wainwright, Das Gupta, Fradley and Tukey (2002) considered the relationship between social interaction during infancy and children's subsequent theory of mind development. They observed 57 mother-child dyads in free-play at six months, measuring the mother's use of mental state language. At four years the children were given a battery of theory of mind tests. Findings showed that mother's use of mental state comments predicted overall theory of mind performance. It therefore seems important for the caregiver to demonstrate that he or she thinks of the child as an intentional being whose behaviour is driven by thoughts, feelings, beliefs and desires (Fonagy et al., 1991b).

Other factors found to relate to the acquisition of theory of mind include parents actively engaging the child in pretend play (Vygotsky, 1967, cited in Murray, Woolgar, Briers, & Hipwell, 1999), the number of adults and older children with whom the children have contact (Lewis et al., 1996), with the existence of more siblings specifically lowering the age at which children pass false belief tasks (Perner, Ruffman, & Leekam, 1994). In more recent research, however, this finding has not been replicated; Carlson and Moses (2001) and Cutting and Dunn (1999) found no relation between the number of older siblings and theory of mind performance.

In terms of factors which hinder the development of a theory of mind there is accumulating evidence that maltreatment impairs the child's reflective capacities (Fonagy, 1999b). Ward et al. (2000) suggested that this was because abusive or neglectful environments present the child with a restricted range of information of mental states and they are, therefore, not able to evolve and evaluate theories about mental state information to which they have not been subject. In support of this, Beeghly and Cicchetti (1994) found that abused pre-schoolers used internal state words significantly less than controls, and when they did they seemed to be using them without understanding their full meaning. Similarly, Fonagy et al. (Menninger study cited in Fonagy, 1999b) found that five to eight year old children who had been physically and sexually abused had difficulties with second order belief tasks.

Although there is increasing evidence that the development of a theory of mind is related to a child's social experience, it is unclear exactly how it develops, of what it consists, and how it relates to social behaviour. Research has generally been correlational in design (Guajardo & Watson, 2002), meaning that researchers remain cautious of making strong causal links between social experience and development of theory of mind (Meins et al., 2002). It is also important to consider that the link between certain types of environment and theory of mind performance may reflect the child's ability to use mental state language rather than the fact that they have actually developed a theory of mind.

1.4.4 Theory of mind and psychological functioning

The utility of a theory of mind has been borne out in data. Bosacki and Astington (1999) found that there were positive associations between theory of mind and peer

ratings of social-interaction skills in pre-adolescence. Links between theory of mind ability and teacher ratings of social-emotional skills and peer ratings of popularity (Lalonde & Chandler, 1995) have also been found. Furthermore, Rubin, Hymel, Mills and Rose-Krasnor (1991) found that children who lack the ability to take another's perspective are not able to integrate fully into social groups and are at risk of peer rejection (which in itself is a factor which contributes to externalising and/or internalising disorders).

There is sparse research into theory of mind and its relation to psychopathology (Ward et al., 2000). Nevertheless, some groups have been considered, including autism and Asperger's syndrome, borderline personality disorder, schizophrenia, psychopathy and conduct disorder.

Within psychology the majority of research into theory of mind has been with individuals with autism. A deficit in theory of mind was put forward as the core impairment of the disorder (Baron-Cohen, Leslie, & Frith, 1985) and proposed to account for the social difficulties which this group have. Mentalising deficits have been found in individuals both with autism and with Asperger's syndrome in a number of studies (Baron-Cohen, Jolliffe, Mortimore, & Robertson, 1997; Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001a; Roeyers, Buysse, Ponnet, & Pichal, 2001) and have been found to mirror real-life problems of social insight (Frith et al., 1994).

Despite the frequently found link between theory of mind deficits and social difficulties in autism, research into theory of mind in other groups of people with

social problems is in its infancy. So far a systematic test of mentalising in groups with well-known social impairment is missing (Frith & Happe, 1994).

Borderline personality disorder and associated difficulties, such as concrete thinking, primitive defences and excessive projection, have been linked to a difficulty in understanding that others have minds (Fonagy, 1991). Some empirical support for a theory of mind deficit in a group of women with borderline personality disorder has been found (Stokes, 2001). Fonagy et al. (1996) also reported that individuals with borderline personality disorder show lower levels of awareness of mental states than controls. However, in a recent paper the association between borderline personality disorder and theory of mind was not found (Malins, 2003), making conclusions supporting a link rather premature.

Frith (1992) suggested that individuals with schizophrenia have deficits in theory of mind. Some authors have found support for her theory (Corcoran, Mercer, & Frith, 1995; Frith & Corcoran, 1996; Langdon et al., 1997), whilst others have not (Murphy, 1998). Like in borderline personality disorder, it is therefore not, as yet, clear whether there are mentalising deficits in people with schizophrenia.

Theory of mind has only recently been considered in a forensic context, although related constructs such as empathy have been researched with offending populations for years. This is discussed in the following section.

1.4.5 Theory of mind and offending

If the acquisition of a theory of mind is related to positive social development, deficits in mentalisation could be associated with antisocial behaviour. The inability to take on perspectives of others may be linked to offending, as the understanding and development of moral standards are thought to arise from the ability to put oneself into another person's position and to feel with him or her. The failure to reflect on and take the mental and emotional lives of others into account may, therefore, increase the probability that an individual will infringe social norms.

Fonagy (1991) postulated that individuals with a reduced capacity to mentalise are less likely to inhibit aggression, as the victim is not represented as having feelings or thoughts. In later papers, Fonagy and colleagues (Fonagy et al., 1997a & b) specified a number of ways in which mentalisation deficits may lead to criminal behaviour:

1. Those with a poor capacity for mentalisation will not only have difficulties envisioning others mental states, but also a less well-established sense of their own identity, making them feel less responsible for their actions.
2. Poorer mentalisation may mean that individuals find it difficult to anticipate the consequences of an action on the mind of a victim. They may disregard or misrepresent the psychological consequences of a hostile act on others.
3. Devaluing the victim may be more likely in individuals with a poor theory of mind. Such devaluation would enable them to treat others like physical objects.

4. Mentalisation difficulties may result in a fluidity of the mental representational system within which ideas may be reconstructed and reinterpreted. Thus antisocial conduct may be reconstrued as acceptable.
5. Violence may be a solution to a psychological limitation, with individuals with a poor capacity for mentalisation experiencing ideas and feelings in physical rather than mental terms: i.e. because of the lack of capacity to think about mental states such individuals may manage thoughts, beliefs and desires in the physical domain.

In addition, it may be that, because individuals with theory of mind deficits have such difficulties reading emotions, they find it easier to understand angry responses which are characterised by extreme and clear cues. They may, therefore, be more likely to provoke such interactions through their own antisocial behaviour in order to make sense of the intentions of others.

There is limited research which considers theory of mind and offending. This is first outlined, following which studies considering offending, empathy and perspective-taking are briefly discussed.

In 1998, Hughes, Dunn and White found some evidence for theory of mind deficits in “hard-to-manage” pre-school children. The authors compared a group of five year old children with conduct problems with a group of children without such problems. A number of theory of mind measures were administered, within which significant differences were found between-groups in respect of a couple of tasks. From this, the authors concluded that there was “a modest effect in support of the hypothesis

that disruptive preschoolers show both a delay in their understanding of mind, and an uneven profile of performance across different story contexts” (page 991).

Happe and Frith (1996) considered theory of mind in children with conduct disorder. They administered simple false belief tasks to 18 children with conduct disorder, comparing their performance with that of 8 normally developing children (aged six to twelve). They did not find the false belief task measures able to discriminate children with conduct disorder from normal controls, inferring that children with conduct disorder do not lack a theory of mind. These measures were, however, simple and only required first order theory of mind.

The authors devised further measures, based upon behaviours displayed by the children. They found differences between the two groups, with the children with conduct disorder showing more social impairments in behaviours which were thought to presuppose a well-functioning theory of mind. Furthermore, they found that the children with conduct disorder showed a *better* mentalising ability (than the controls) upon items of an antisocial nature. From this they suggested that the group of children with conduct disorder may have an “intact but skewed theory of mind... a theory of nasty minds” (page 395). They also found social impairments in behaviours which presuppose a well-functioning theory of mind. Given the small sample size in this study, Happe and Frith’s conclusions seem somewhat unreliable.

In 2000, Ward et al. proposed a model to explain sex offending, the central tenet of which was a deficit in inferring other mental states. They argued that many of the factors present in the developmental histories of sexual offenders have the potential

to lead to dysfunction in their theory of mind. Haut, Baillie, Olley and Lindsay (2000) found some evidence to support this model, with sex offenders performing significantly worse on theory of mind tasks as compared to non-offending individuals with learning disabilities. As with many other theory of mind studies, this was a small sample (11 sex offenders), limiting conclusions which can be drawn.

Murphy (1998) looked at theory of mind in offenders with schizophrenia, finding that, compared to a group of offenders with personality disorder, the schizophrenia sample was more impaired in second order beliefs, although there were no significant differences in general between the two groups. Although the author suggested that this confirmed that offenders with schizophrenia do not have deficits in theory of mind, it may have been that both groups had deficits in theory of mind, and a non-offending population would have been more useful as a control group.

On considering theory of mind in the psychopath, Blair et al. (1996) compared 25 psychopaths with 25 non-psychopathic criminals, finding no difference between them in respect of theory of mind tasks. They concluded that the psychopath does not have a theory of mind deficit. However, this study used measures (Happe's, 1994, advanced test of theory of mind) with ceiling effects, meaning both groups passed most of the tasks. In addition, the two groups studied were both offenders, meaning that they could have both had theory of mind deficits. The authors did not compare the psychopath or the non-psychopathic offenders with a non-offending population, meaning that their conclusion may have been somewhat premature.

In a similar study, Richell et al. (2002) compared 19 psychopaths with 18 incarcerated non-psychopaths and a normal population mean (based on previously established norms of the “Reading the mind in the Eyes test”; Baron-Cohen et al., 1997). They concluded that there were no generalised deficits in theory of mind in either psychopaths or incarcerated non-psychopaths.

A great deal of research has considered constructs related to theory of mind (such as empathy, perspective-taking, moral reasoning and emotional recognition) in offenders. Although this has included different types of offenders, the majority of this research has looked at sexual offenders, possibly due to the interpersonal nature of their crime. Due to this bias the following brief review is skewed to such a population.

Moral reasoning and perspective-taking abilities in delinquents have been found to be at a lower level than that of normal controls (Campagna & Harter, 1975; Chandler, 1973; see Smetana, 1990, for a review). Sexual offenders and people with antisocial personality disorder have also been found to lack perspective-taking skills (Blair, 1992; Hanson & Scott, 1995).

Hudson et al. (1993) conducted a study examining sex offender’s emotional recognition skills. They found that, when looking at slides of facial expressions, sex offenders found emotional recognition more difficult than non-sex offenders, particularly with regard to fear (which was frequently labelled as surprise). They concluded that sex offenders were less accurate than other prisoners and community controls in identifying emotions. Similarly, Moriarty, Stough, Tidmarsh, Eger and

Dennison (2001) and Savitsky and Czyzewski (1978) found that adolescent offenders have difficulties in labelling their own and the emotional states of others as compared to non-offending adolescents.

Lack of empathy appears to function as a risk factor for antisocial behaviour, and a large body of research has provided evidence for a link between deficits in empathy and aggressive behaviour (Marshall & Maric, 1996; Miller & Eisenberg, 1988; Pithers, 1999). In a recent review of empathy and antisocial behaviour Eisenberg (2000) concluded that the link between the two is modest and that moderating factors must be considered. Lennon and Eisenberg (1987) found that empathy develops throughout the lifespan, with the exception of puberty. This may be related to the increase in offending during adolescence.

With regard to empathy in sex offenders, Marshall, Jones, Hudson and McDonald (1993) suggested that, although this population may have some deficits in empathy, this may be restricted to empathy for their victims, rather than general deficits of empathy. Similarly, Geer, Estupinan and Manguno-Mire (2000) highlighted that some research indicates that sex offenders are capable of being empathic, and that global research into empathy may obscure state-like and intra-individual differences in empathy in sex offenders. They concluded that there is not as yet clear cut evidence for deficits of empathy within this population.

Despite comprehensive theories, there does not yet seem to be compelling evidence that offenders have a theory of mind deficit. However, much research has

documented perspective-taking difficulties, and a relationship, albeit small, has been found between empathy and offending.

1.4.6 Summary

This section has considered theory of mind in terms of its development and relationship to psychological functioning. A child's family environment is clearly important in the development of mentalising abilities, with active constructive parental involvement seeming to help the child infer what others are feeling and thinking. Conversely, abusive and neglectful environments have been found to hinder the development of a theory of mind. The next section focuses more specifically upon the influence of early attachment relationships on mentalising abilities.

Possible reasons for a relationship between mentalisation and conduct problems have been described, and related research considered. Although extensive evidence is lacking, some studies have found support for such a relationship.

1.5 THE RELATIONSHIP BETWEEN ATTACHMENT AND THEORY OF MIND

1.5.1 Models of attachment and mentalisation

It has been shown that social factors affect the development of a theory of mind. Although these are not all within the context of the attachment relationship, some theorists have suggested that this relationship determines theory of mind development. Stemming from Ainsworth, Bell and Stayton's (1971) work, a number of authors have focussed upon the interpersonal context of attachment to primary caregiver as the most important relationship in the internalisation of the perspectives

of others, and hence the development of a theory of mind. Within such models mentalising abilities are seen as dependent upon the child's past experiences of others minds.

Ainsworth et al. (1971) made connections between attachment and theory of mind, suggesting that some mothers are "capable of perceiving things from the child's point of view" (page 43). Via this ability to 'tune in' to the child's mental state the mother can present a number of different perspectives on reality (by pretence or talking about the mental states of others) in a way that can be easily assimilated. Such children, therefore, have an increased opportunity for active engagement in their own mental states and those of others, and will develop a superior ability to infer the emotions of others (Meins et al., 1998). Mothers who are able to do this are more likely to have secure attachments with their children.

Fonagy, Steele, Steele, Moran and Higgitt (1991b) built on earlier work, detailing how the development of the ability to mentalise can be seen as related to attachment processes. Similar to Ainsworth et al. (1971) they developed a model to explain the relationship between attachment and the development of theory of mind, arguing that the child depends upon his or her attachment figure to discover their own subjectivity, from which the understanding of the subjectivity of others develops. Attachment relationships are, therefore, thought to provide a forum to develop the ability to internalise the perspectives of others.

Fonagy et al. (1991b) further consider the mechanisms by which mentalisation may develop in the context of an attachment relationship. When the mother mirrors a

child's emotion the child gets to know what it is feeling, and internalises this. Through this not only can the child gain meaning of its own affect states and its relation to behaviour, but it is in turn able to develop an understanding of what others are feeling. The authors therefore suggest that the awareness of mental states in the self is linked with the awareness of mental states in others'.

It has been postulated that within secure relationships the caregiver views the child as a mentalising individual and is more likely to correctly mirror and interpret the child's behaviour with reference to its mental states. Meins et al. (2002) coined this ability "mother's mind-mindedness". Mothers of securely attached children have been found to be more likely to use mental states in describing the behaviour of others (Fonagy et al., 1991a), lending some tentative support to this hypothesis. Once the child has internalised its own feelings it is thought that the secure attachment allows it an opportunity to explore the caregiver's mind and learn about the feelings of others (Fonagy, Target, & Gergely, 2000).

On the other hand, insecure attachments may restrict the child's opportunities to learn about the emotional world. Without access to relationships in which a child can see itself as an intentional being, it cannot explore the mind of the others. If the mirroring is too close or too remote from the child's experience, the child may be impaired in the acquisition of theory of mind. Specific attachment styles may give rise to these different mirroring reactions. A dismissing mother may find it difficult to mirror the child's distress because of painful experiences which this evokes for her, whereas a preoccupied caregiver may amplify the emotional state so much that it

is difficult for the child to understand and organise its emotions. This may lead to the development of limited and hostile internal working models.

Fonagy et al. (1991b) view the failure to develop mentalising capacities within the context of insecure attachment as functional in some ways. By refusing to think of its caregiver's thoughts the child saves itself from thinking that the person who is supposedly available to keep it safe is actually thinking about harming it. However, by avoiding thinking about mental states the child disrupts the acquisition of a theory of mind.

It is likely that the relationship between mentalisation and attachment is dynamic, in that it is not only attachment that leads to the acquisition of a theory of mind, but better mentalising abilities relate to the development of secure attachments. Indeed, superior mentalising abilities in the caregiver have been found to promote and maintain attachment security and to enhance self control and affect regulation. Furthermore, in mothers with high levels of social stress, those with a higher reflective function have been found to be more likely to have securely attached children (Fonagy et al., 1991a). Mentalisation can therefore be seen as a protective function, reducing the likelihood of attachment insecurity being transmitted from parent to child. Therefore the reflective caregiver increases the likelihood of a secure attachment with his or her child, which in turn is thought to facilitate the development of theory of mind.

1.5.2 Empirical evidence

Meins et al. (1998) reported that, compared to 83% of securely attached four year olds, only 33% of insecurely attached peers passed a false belief test, highlighting that children who had been securely attached in infancy performed better on theory of mind tasks at the age of four. They concluded that from mid-way through the third year of life securely attached children are better able to recognise and act upon the alternative perspectives of another person. Such trends have been found even when controls were made for age, verbal mental age and social maturity (Fonagy, Redfern, & Charman, 1997c).

Main's (1991) research into meta-cognition also showed that six year olds who had been securely attached in infancy were more likely than those who were insecurely attached to acknowledge that other people could not read their thoughts and to realise that a particular situation could give rise to different emotional responses in different people. Similarly, Moss, Gosselin, Parent, Rousseau, and Dumont (1997) reported that attachment security with mother is a good predictor of meta-cognitive capacity. DeRosnay and Harris (2002), on considering the attachment and emotional understanding of three to six year olds, found that this link existed even in contexts where the emotional understanding task had no clear link to attachment. From this they inferred that secure attachment does not simply promote the understanding of emotion in contexts related to attachment, but enables mentalisation in general.

Fonagy, Steele, Steele and Holder (1997d) looked at the relationship between security of attachment to mother and father and children's performance in tests of theory of mind at five years. As was the case in Meins et al.'s study (1998), the

majority (82%) of those securely attached to their mothers at twelve months passed on the belief-desire reasoning task, whereas only 54% of those who had been classified as insecure passed. Similar trends were found when considering attachment to father and in second order false belief tasks.

Steele, Steele, Croft and Fonagy (1999) considered the relationship between infant-mother attachment and children's understanding of mixed emotions at the age of six. This longitudinal study found that insecure attachment was related to a less advanced understanding of mixed emotions at six years than in those children with a secure attachment. This correlation was present even after controlling for variations in the children's age at time of testing, as well as for child and parent skills. It was concluded that secure attachment may provide a psychosocial basis for acquiring an organised understanding of emotion and mind, finding support for Fonagy et al's (1991b) model of the development of mentalisation. These results provide compelling evidence of a link between theory of mind and attachment.

Studies in adolescence considering attachment and theory of mind are rare. Humfress, O'Connor, Slaughter, Target and Fonagy (2002) examined the degree of overlap between theory of mind and attachment in 70 early adolescents (mean age 12.6 years). They found that adolescents who were rated as showing less attachment coherence (and interpreted as showing a dismissing/avoidant style of attachment) performed worse on theory of mind tasks (vignettes of stories developed in which the child must explain the main characters' behaviour; Happe, 1994).

The above mentioned studies indicate that from infancy to adolescence attachment and theory of mind are correlated, supporting a relationship between theory of mind and attachment security. In contrast, Meins et al. (2002) failed to replicate their previous findings of a link between security of attachment in infancy and children's theory of mind at the age of four.

Both attachment and theory of mind may be mediated by verbal intelligence and not directly related. Indeed verbal IQ and theory of mind performance have frequently been found to be correlated (Meins et al., 2002; Happe, 1995; Jenkins & Astington, 1996; Cutting & Dunn, 1999). However, in the aforementioned research by Humphress et al. (2002) the association between mentalising and attachment was partly but not completely mediated by verbal intelligence. In addition, many theory of mind measures are based upon verbal ability, which may obscure an actual relationship between mentalisation and attachment.

Meins et al. (2002) state that it is not obvious how relevant behaviourally based observations of attachment in infancy relate to theory of mind performances later in life. However, as attachment theory posits, attachment relationships give rise to internal working models which would be relevant for theory of mind acquisition and in themselves are thought to correlate with behaviourally based observations.

Attachment status should not be viewed as the only predictor of theory of mind status. It may be that factors other than attachment may explain a child's theory of mind development, with secure mothers proving to be more skilled at providing children with informal teaching about the mind or more likely to engage in types of

interaction which are related to a superior theory of mind. Other close figures in the child's life (such as siblings) may have an additional influence. Fonagy (2000) also highlighted that factors beyond attachment may contribute to difficulties in theory of mind, such as biological factors in children with autism.

1.5.3 Summary

Fonagy et al.'s (1991b) model postulates that mentalisation develops in the context of early attachment relationships, with insecure attachment hindering the development of a theory of mind and secure attachments promoting it. The theory is compelling, and a number of studies have provided empirical support. However, not all studies have found such a relationship and the majority of the research is from childhood. In addition, verbal IQ, which is often relied on in theory of mind measures, may be a mediating factor in this relationship.

1.6 ATTACHMENT, THEORY OF MIND AND OFFENDING

1.6.1 Models of attachment, theory of mind and offending

“The connections between an early separation, the development of an Affectionless Character and a tendency to chronic stealing are clear”

Bowlby, 1944, pg. 111

In Bowlby's (1944) study of juvenile thieves he suggested that prolonged separation was particularly apparent in those children who were characterised by “affectionless” (defined as a lack of normal affection, shame or sense of responsibility) personalities. He felt that the lack of warm and continuous child care to which they had been subjected had created an absence of concern for others. Although not made explicit

in his original paper, this could be interpreted as Bowlby linking disrupted attachment, lack of empathy and offending.

Fonagy (1991) and Fonagy, Moran and Target (1993) utilised their model of attachment and mentalisation to understand how abuse in childhood may lead to aggression. They proposed that because the child's capacity for mentalisation is jeopardised (due to its poor attachments) its psychological self remains fragile and it does not gain insight into human intentionality. The child may therefore resort to controlling its subjective state by what the authors refer to as "physical experiences", such as substance abuse, physical violence and crime.

Furthering preliminary ideas, Fonagy et al. (1997a) wrote a comprehensive paper highlighting the relationship between violence and attachment. They suggested that secure attachment "facilitates the development of mental capacities that both reduce the motivation for criminal behaviour and inhibit the individual's potential to commit acts of aggression" (page 154). Thus, crimes are thought to be committed by individuals with poor mentalising abilities which stem from their lack of access to an attachment figure. If this is the case, both attachment and theory of mind will be related to conduct problems, with attachment, as a precursor to mentalisation, accounting for the differences in theory of mind seen between offenders and non-offenders.

Ward et al. (2000) proposed a model specific to sex offenders, similar to Fonagy et al.'s model (1997a) of violent offenders, with theory of mind deficits as the central tenet (as outlined in section 1.4.5). They proposed that there may be marked

attachment difficulties in sex offenders due to the nature of their crimes. Although the influence of attachment was not made as explicit as in Fonagy et al.'s (1997a) model, the authors did comment that theory of mind deficits and problems with intimacy in sex offenders may arise from poor attachment relationships.

1.6.2 Empirical evidence

Throughout the development of their theories Fonagy and colleagues have provided case illustrations to ground their ideas (e.g. Fonagy & Target, 1995). However, very little empirical research has considered attachment, theory of mind and offending together.

In a study most relevant to this, Campbell (1998) compared a sample of 20 adolescent offenders with a comparison group of 15 non-offending adolescents on attachment and mentalisation measures. Almost all the offending adolescents showed insecure attachment and deficits in mentalisation. She found that within both groups levels of self-reported delinquency were significantly related to attachment to parents (as measured by the AAI and Inventory of Parent and Peer Attachments; IPPA; Armsden and Greenberg, 1987), with high levels of delinquency being related to poorer communication with, and lower trust of, parents. In addition, there were significant differences across groups, with the offenders demonstrating more insecure attachments than the non-offenders.

Campbell (1998) measured mentalisation using a reflective function section of the AAI rather than a specific theory of mind task. She did not find any correlation between self-reported delinquency and reflective functioning, nor any difference

between the offenders and non-offenders on reflective functioning, although the offenders did exhibit a non-significant trend towards lower reflective functioning. She explained this by the fact that all scores, across both groups, were low in reflective functioning.

As described in section 1.3.4, Levison and Fonagy (1998) compared a group of 22 prisoners with a psychiatric control group and a normal control group. They found that the prisoners had significantly lower ratings on the ability to mentalise and fewer secure attachments than the normal control group. In addition, those with more violent offences had poorer reflective functioning, which, the authors inferred indicated an inferior theory of mind as compared to individuals who committed non-violent crimes.

1.6.3 Summary

This section has considered the proposed relationship between attachment, mentalisation and offending. Over the last decade, Fonagy and colleagues have extended previous theories to suggest that some antisocial behaviour can be explicated by poor mentalisation, which they believe stems from insecure attachment relationships. Only a couple of studies have as yet studied these ideas, and although they lend some support to the model, clear evidence is still lacking.

1.7 CONCLUDING COMMENTS

1.7.1 Rationale for Study

The literature outlined above posits that attachment and theory of mind are two important constructs in understanding the development of conduct problems. Models

drawn upon suggest that a disrupted attachment and poor theory of mind are interrelated and may lead to an increase in conduct problems. With the exception of a couple of studies, most research to date has considered *either* attachment *or* theory of mind in relation to offending, and has not specifically addressed whether attachment and theory of mind are impaired in young offenders, as Fonagy et al.'s (1997a) model would suppose.

As far as the author is aware, Campbell's (1998) research is the only piece of work which has directly compared a group of delinquents with a group of non-delinquents on both mentalisation and attachment measures. This study was, however, hampered by an over-representation of insecure attachments and mentalisation deficits in the whole sample. Furthermore, Campbell's mentalisation abilities were measured by a section of the AAI. Using a specific test of theory of mind would allow consideration of theory of mind as separate from attachment.

Consequently, little is known about the potential link between attachment, mentalising ability and offending behaviour. The present research attempts to further past research and to fill this gap in the literature. By measuring both constructs simultaneously, an investigation of their relationship to antisocial behaviour as well as to each other can be conducted. This study therefore considers attachment and conduct problems in delinquent and non-delinquent youths with a particular emphasis on the role that theory of mind may play in this relationship.

Given the importance that theory of mind and attachment status hold during adolescence, as well as the high level of antisocial behaviour during this age group, a group of young offenders seem a particularly important group to consider.

1.7.2 Hypotheses

Based upon the literature above, drawing particularly on Fonagy et al.'s (1997a) model of crime, attachment and mentalisation, the following hypotheses were devised:

1. There will be a relationship between insecure attachment and conduct problems.
 - a) Individuals in the offending group will have significantly more insecure attachments than those in the non-offending group.
 - b) Regardless of group membership, higher self-report of delinquency will be associated with more insecure attachment.

2. There will be a relationship between an impairment in theory of mind and conduct problems.
 - a) Individuals in the offending group will have a more impaired theory of mind compared with those in the non-offending group.
 - b) Regardless of group membership, higher self-report of delinquency will be associated with poorer theory of mind abilities.

3. There will be a significant relationship between attachment and theory of mind, irrespective of group membership, with more insecure attachment being associated with a more impaired theory of mind.

4. There will be a significant relationship between attachment, theory of mind and offending, with attachment accounting for group differences in theory of mind.

CHAPTER 2: METHOD

2.1 OVERVIEW

This chapter firstly describes the participants involved in the research, considering the power needed, sampling method, exclusion and inclusion criteria and demographic details. The procedure and measures used are then outlined and the Method section ends with an overview of the analysis used.

2.2 PARTICIPANTS

2.2.1 Power analysis

The number of participants needed in this research was determined by a power analysis based upon research by Capaldi (1992). Administering the same attachment measure as used in this study (the Inventory of Parent and Peer Attachment (IPPA); Armsden & Greenberg, 1987), the author found a significant difference in attachment status, between boys with conduct disorder and a normal control group, with insecure attachments being more prevalent in the conduct disorder group. The power analysis employed was based on the average effect size of the two groups in Capaldi's study, namely boys with conduct disorder with and without comorbid depression (.59). Using this estimate, a minimum of 34 participants is needed in each group in the present study to have an 80% power to detect this effect size at $\alpha = .05$.

2.2.2 Sampling method

Overall 59 adolescent boys aged fourteen to sixteen participated in this study. Of these, 21 were in the offending group and 38 in the non-offending group.

The group of offenders was taking part in a larger study considering the utility of multi-systemic therapy (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998) in such populations. The data used in this research came from the overall battery of assessments which was undertaken at the beginning of the MST research. Both recruitment of and data collection on the offending group were carried out by researchers involved in the MST.

Participants in the non-offending group came from an all-boy comprehensive school in South London. Information sheets and consent forms were given to the class teachers of all the boys in the school aged between fourteen and sixteen, who in turn handed them to the pupils. The boys were asked to take them home, discuss them with their parents/guardians and to return the signed consent forms to their teacher by a specific date if they wished to take part. The class teacher then passed them on to the author.

Initially 350 information sheets and consent forms were distributed; however, only 7 were returned by the deadline. Due to the small uptake, the process was changed somewhat. Instead, the author went into the school to describe the study to each class. Each participant was also entered into a raffle, in which one pupil would win £30 worth of sports or music vouchers. Simplified information sheets and consent forms (displayed in appendices B1 and B2) were then handed to those pupils interested, who then obtained the consent of their parents/guardians consent and returned the consent forms to their class teacher. Of 150 given out, 38 were returned (a response rate of 25%). All of these individuals took part in the research.

2.2.3 Inclusion and exclusion criteria

The young offenders were selected to be involved in the MST if they fulfilled the following criteria:

1. They received a community order of at least six months duration, or were on licence in the community following imprisonment for at least six months as part of a detention and training order or under section 91.
2. They had had a warning, reprimand, and/or conviction on at least three occasions in the eighteen months prior to being brought before court for the most recent offence.
3. They were not a sex offender.
4. Substance misuse was not the sole presenting issue.
5. They were not psychotic at referral.
6. Their home situation did not contradict the use of MST.

As offending is not unusual in adolescence, some of the participants in the non-offending group had infringed the law at some point. Such individuals were allowed to be involved in the study provided they had not been arrested or prosecuted and did not show a significant and persistent pattern of antisocial behaviour. This was determined by self-report of delinquency, as measured by the Self-Report of Youth Behaviour (SRYB) (Olweus, 1989) which is outlined in section 2.5.4 and displayed in appendix C2.

2.2.4 Demographic details

Tables 1 to 4 describe the participants' demographic details as measured by the Family, Education, Occupation and Ethnicity questionnaire (FEO), which is described in section 2.5.5 and displayed in appendix C3.

Table 1: Demographic details: Family constitution

	Offenders		Non-offenders		Total	
	(n=21)		(n=38)		(n=59)	
	n	%	n	%	n	%
Living with single-parent	12	57.1	16	42.1	28	47.4
Living with two parents (biological)	3	14.3	19	50.0	22	37.3
Living with two parents (1 biol., 1 step)	4	19.0	3	7.9	7	11.9
Living with relatives	1	4.8	0	0	1	1.7
In care	1	4.8	0	0	1	1.7

As shown in Table 1, a higher percentage of the non-offenders were living in two parent families, the majority with both biological parents. Of the offending group, those individuals living with two parents were more likely to be living with one biological and one step parent than with both biological parents. Unlike the non-offenders, the majority of the offenders were living with a single-parent.

Table 2: Demographic details: Parents' qualifications

	Offenders		Non-offenders		Total	
	(n=21)		(n=38)		(n=59)	
	n	%	n	%	n	%
No educational qualifications	8	38.1	4	10.5	12	20.3
GCSE/O-Levels	8	38.1	19	50	27	45.8
A'-Levels	2	9.5	7	18.4	9	15.2
University	1	4.8	8	21	9	15.2
Vocational qualifications	8	38.1	23	60.5	31	52.5
Unknown	2	9.5	0	0	2	3.4

Note: In two-parent families, the highest level of qualification of both partners was scored. If an individual had a number of educational qualifications the highest level was reported.

Table 3: Demographic details: Employment status of parents

	Offenders (n=21)		Non-offenders (n=38)		Total (n=59)	
	n	%	n	%	n	%
Unemployed	8	38.1	7	18.4	15	25.4
Manual worker	4	19.0	11	20.9	15	25.4
Professional/white collar	7	33.3	20	52.6	27	45.8
Unknown	2	9.5	0	0	2	3.4

Note: In two-parent families, the family was registered as employed if one of the parents had a job.

Table 4: Demographic details: Ethnicity of participants

	Offenders (n=21)		Non-offenders (n=38)		Total (n=59)	
	n	%	n	%	n	%
White	9	42.8	21	55.3	30	50.8
Black	7	33.3	10	26.3	17	28.8
Asian	0	0	3	7.9	3	5.1
Mixed	4	19.0	3	7.9	7	11.9
Other	1	4.8	1	2.6	2	3.4

Table 2 indicates that a larger percentage of the non-offenders' parents had educational qualifications and vocational qualifications than the parents of the offenders. As shown in Table 3, there are a higher percentage of unemployed parents in the offending group and more professionals in the non-offending group. Table 4 highlights a mix of ethnicity across both groups, although the majority of participants were White.

2.3 ETHICS

Ethical permission was sought and agreed by the Ethics Committee local to the school involved (see appendix A1). An addendum was sent to the Ethics Committee involved in the MST research to ensure that data from the offending population could be used in this study.

2.4 PROCEDURE

Following return of the consent sheets each participant in the non-offending group was assigned a 45-minute time slot, during which the measures described in section 2.5 were administered. All of the interviews were carried out at the school by the same female interviewer (the author), with only the interviewer and participant present. This was within the normal school day, and participants were informed of their interview time on the same morning by their form teacher (memos were sent with the registers). The participants who were not at school, who could not easily miss the lesson, or who did not complete all measures within 45 minutes were re-assigned a future time-slot.

All participants within the non-offending group completed all of the measures. One participant's verbal IQ was, however, not included in analysis due to his first language being Korean, and his English limited. In addition, some participants did not know details of a number of demographic variables, such as parents' qualifications and occupations contained in the FEO. Parents were therefore contacted by the author by telephone to collect this data.

Within the offending group, following informed consent, participants were administered a test battery, which included the measures used in this study. This took around two hours and was carried out, in one or two sessions, by counselling psychologists who were trained in administering the measures. A number of the young offenders did not carry out the sub-tests of the WISC-III^{UK} (Weschler, 1992) due to external circumstances, such as being in custody before the second session in which the cognitive functioning was normally measured. In total, two Verbal IQ and

five Performance IQ results were missing. In addition, one individual refused to carry out the theory of mind measure.

2.5 MEASURES¹

2.5.1 Attachment: Inventory of Parent and Peer Attachment (IPPA) (Armsden & Greenberg, 1987)

This self-report measure assesses adolescents' perceptions of their relationships with parents and peers. The theoretical framework on which the IPPA is based is attachment theory, with the questionnaire designed "to tap the internal working model of attachment by assessing the positive, affective/cognitive experience of trust in the accessibility and responsiveness of attachment figures, and the negative affective/cognitive experiences of anger and/or hopelessness resulting from unresponsive or inconsistently responsive attachment figures" (Armsden & Greenberg, 1987, page 1).

Items focus on the psychological availability of the caregiver and his or her ability to facilitate regulation of affect under conditions of stress. As described below the IPPA assesses three distinct but overlapping dimensions, derived through factor analysis:

1. Degree of mutual trust. Trust refers to felt security in the knowledge that attachment figures understand and are sensitive and responsive to the adolescent's emotional needs. There are ten items measuring trust, one example being "my parents respect my feelings".

¹ All measures using questionnaire formats are displayed in appendix C.

2. Quality of communication. Communication refers to the extent and quality of verbal communication with attachment figures. This dimension is also measured on ten questions, one such example being “I feel it is no use letting my feelings show around my parents”.
3. Degree of anger and alienation. Alienation refers to anger towards, or emotional detachment from, attachment figures. This construct is measured with seven questions. An example is “I get upset a lot more than my parents know”.

These dimensions can be aggregated to yield a composite index of security versus insecurity with respect to parents, with quality of attachment to parents scored as the sum of trust and communication subscales plus the alienation subscale score after it has been reverse scored. Secure attachments are, therefore, characterised by high scores on communication and trust subscales and low levels of reported alienation, whereas insecure attachments are marked by the opposite profile (Vivona, 2000).

In considering the reliability of the IPPA Armsden and Greenberg (1987) found internal consistency to be high, with Crobach’s alpha between .83 and .93 for the parent sub-scales. Three week test-retest reliability of the IPPA for the global score is reported as .93 (Armsden & Greenberg, 1987).

To date research using this instrument has focussed upon the relationship between attachment and psychological functioning. It has been used with clinical (Formoso, et al., 2000) and non-clinical (Armsden, 1986; Armsden & Greenberg, 1987) populations of adolescents.

This study uses the original parent attachment version which does not separate attachment to mother from attachment to father. Participants were told to rate consistently throughout for the parent they felt most attached to. The IPPA also contains a measure of attachment to peers. The peer rating scale was not administered here, as this research was only considering attachment to parents.

2.5.2 Theory of mind: Children's Version of the Reading the Mind in the Eyes Test (Revised) (Baron-Cohen, Wheelwright, Spong, Scahill, & Lawson, 2001b)

This task has been adapted for children from an adult version (Baron-Cohen et al., 1997). It comprises 1 practice item and 28 test items in the form of photographs of pairs of male and female Caucasian eyes (from midway along the nose to just above the eyebrow), each of which is surrounded by four words describing a feeling or mental state. The 'target' word was selected by a panel of male and female raters as an accurate estimate of the individual's mental state in the photograph, whilst the other three words comprise a foil word (the semantic opposite of the target word) and two unrelated mental state words.

The participant is asked to pick the one word which he or she thinks best describes the individual's mental state based on the expression of the individual's eyes. If he or she picks the correct word the assumption is that the participant is able to understand that the eyes represent mental states and what they reflect. The Reading the Mind in the Eyes test, therefore, involves theory of mind skills in the sense that the subject has to understand mental state terms and match them to parts of faces. Some of the mental states are basic and others more complex. A lower score equates with a poorer ability to infer other people's states of mind.

Figure 1: Example of an item on the Eyes test



Baron-Cohen et al., (2001b) described the Reading the Mind in the Eyes Test as a “pure mind-reading task” in that it can detect subtle differences in the ability to detect mental states and is independent of general intelligence. It has been found to be independent from recognising gender from the eye region of the face and from recognising basic emotions from the whole face (Baron-Cohen et al., 1997). Baron-Cohen (1995) felt this task was superior to past theory of mind measures which may reach ceiling effects or be too dependent on other factors, such as verbal IQ.

There is not as yet a version of Reading the Mind in the Eyes test which has been normed on adolescents. The child version (which has limited norms for six to twelve year olds) was felt to be more appropriate than the adult version to use in this research because the participants were closer in age to participants in the child version and young offenders often have emotional and intellectual difficulties.

2.5.3 Cognitive functioning: Weschler Intelligence Scale for Children, Third edition (WISC-III^{UK}) (Weschler, 1992)

Cognitive functioning was measured to determine the equivalence of the two groups and control for verbal IQ, given its reported influence on theory of mind functioning. To provide an estimate of general cognitive functioning two sub-tests were taken from this widely used standardised measure. Considering verbal IQ, the Vocabulary sub-test, in which the participant is asked to describe the meaning of increasingly difficult words, was administered. The Vocabulary sub-test was chosen as it is the most reliable subtest of the WISC-III^{UK} and provides an index of verbal ability. Block Design, which measures visuo-spatial construction and organisation involving two and three dimensional space, was used to estimate performance IQ.

2.5.4 Level of offending: Self-Report of Youth Behaviour (SRYB) (Olweus, 1989)

The SRYB is a 23-item instrument designed to measure the prevalence and incidence of antisocial behaviour in pre-adolescent and adolescent children. It considers general antisocial behaviour in terms of vandalism, theft, burglary and fraud and school-related antisocial behaviours, such as truancy and arguments with teachers. The respondents are asked whether they have ever engaged in such behaviour and to write down how many times they have done so in the past six months. Statistical analyses in this study report two subscales: “SRYB yes ever”, which measures the total of antisocial behaviours the respondents have ever performed, and “SRYB yes recently”, a measure of the number of times they have carried out the behaviours in the past six months.

2.5.5 Demographic profiles: Family Education, Occupation and Ethnicity (FEO)

Participants completed the FEO, a questionnaire which asks about their family constitution, their ethnicity and their parents' occupational and academic qualifications. The questions were based upon a review of the 2001 Census.

2.6 ANALYSIS

The data was analysed quantitatively. Statistics were computed using SPSS version 11.5 for Windows (SPSS Inc., 2002). Parametric tests, namely Chi-squared, t-tests and analysis of covariance (ANCOVA) were carried out.

CHAPTER 3: RESULTS

3.1 OVERVIEW

This chapter is divided into five sections. Firstly, preliminary analyses, which consider issues of normality, group differences on control variables and correlations between variables, are described. The remaining sections are structured according to the hypothesis presented at the end of the Introduction. Firstly, attachment and theory of mind are examined in relation to offending, following which the relationship between attachment and theory of mind is considered. Finally, the relationship between all three constructs is explored.

3.2 PRELIMINARY ANALYSIS

3.2.1 Data screening

The data was inspected for issues of normality of distribution before analysis was undertaken. Tests for skewness and kurtosis showed that most of the variables were normally distributed, both within-groups and across the whole-sample. No outliers were found in the data. As reported below, the variable which was not normally distributed was removed. It was therefore felt that parametric tests were appropriate to use for the analyses.

The one variable which was not normally distributed was marriage (a categorical variable which considered whether parents were married or unmarried), which showed a significant kurtosis (2.776) within the offending group. This was because the majority of individuals in this group had unmarried parents. As this was a descriptive categorical variable, consistent with past literature, it was felt that transformation was not appropriate. It was decided to remove this variable from the

analyses for three main reasons. Firstly, it was not normally distributed. Secondly, correlations between this and the main psychological variables may be spurious, given the small number (3) in the married category. Thirdly, the variable family constitution, which considered whether the participant lived with one or two parents, was felt to be a more appropriate and similar variable, providing a better understanding of the participant's background.

As described in the Method chapter, some of the cognitive functioning data from the offenders was missing. The resulting smaller sample size should therefore be borne in mind when considering analyses with such variables.

3.2.2 Group differences on control variables

Chi-squared tests were carried out on categorical background variables in order to investigate differences between the offenders and non-offenders and to determine how well the two groups were matched. Some of these variables were recoded from the original FEO grouping to reduce the number of categories. However, in one case, the frequency in cells was still low and standard Chi-squared values were not reliable. In this instance Fisher's exact value is reported. The descriptive demographic data has already been outlined in the Method chapter.

Only two individuals in the entire sample were not living with at least one parent, with one participant being in foster care and the other living with relatives. Both participants were in the offending group. Due to the small number of individuals in these categories they were not included in the χ^2 analysis of family constitution. Results of these analyses are shown in Table 5.

Table 5: Differences in demographic data between-groups

	χ^2	(df)	p
Family constitution (living with one parent/two parents)	5.182	(1)	.023
Parents' employment status (employed/unemployed)	3.664	(1)	.056
Parents' vocational qualifications (qual./no qual.)	1.733	(1)	.188
Parents' education (university/school/no qualifications)	8.807	(1)	.004#
Ethnicity (white, other)	.833	(1)	.361

Note: For participants from two-parent families the highest level of educational and vocational qualification was recorded. In addition, they were scored as employed if only one of the parents was working. # Fisher's exact value.

Consistent with literature outlined in the Introduction, the above analyses show the offenders to be significantly more likely to come from a single-parent family with fewer educational qualifications and more unemployment than the participants in the non-offending group. No significant differences in ethnicity or vocational qualifications of parents were found across the groups.

A t-test was carried out to consider group differences in cognitive functioning. Results are displayed in Table 6.

Table 6: Differences in cognitive functioning between-groups

	Offending group			Non-offending group			t	p	
	n	Mean	(sd)	n	Mean	(sd)			(df)
VIQ	18	6.05	(3.20)	37	9.81	(1.86)	-4.601	(22.7)	.0001
PIQ	16	6.25	(2.51)	38	9.36	(2.90)	-3.736	(52)	.0001

As predicted by past research, there was a difference in cognitive functioning between-groups, with offenders performing significantly worse on verbal IQ and performance IQ measures than the non-offending group.

3.2.3 Offending behaviour

Table 7 shows differences in the self-report of delinquency between the two groups. As described in the Method section, “SRYB yes ever” is a measure of the total number of delinquent behaviours endorsed as ever occurring, and “SRYB yes recently” provides a frequency of the same delinquent behaviours within the last six months.

Table 7: Differences in self-report of offending between-groups

	Offending group (n=21)		Non-offending group (n=38)		T	p
	Mean	(sd)	Mean	(sd)		
SRYB yes ever	12.24	(4.929)	8.05	(4.337)	3.381	(57) .01
SRYB yes recently	9.24	(5.440)	7.24	(4.103)	1.594	(57) .116

There was a significant difference between the offenders and non-offenders on “SRYB yes ever”, indicating that, as expected, the offenders had more of a history of delinquent behaviours than the non-offenders. No significant difference was found on “SRYB yes recently”, suggesting that, over the last 6 months, frequency of delinquent behaviours that are measured by SRYB did not differ between groups.

Within the offending group, data regarding offending behaviour was missing in 7 cases. In the remaining 14 individuals the number of charges ranged from 1 to 10, with the average being 5 charges. 4 individuals showed offending prior to the age of thirteen, whereas the others were characterised by adolescent onset offending (from the age of fourteen). Offence type varied: 3 individuals were charged for violent offences and 6 for non-violent behaviour. The remaining 5 participants showed ‘versatile’ offending, which was characterised by both violent and non-violent behaviour.

3.2.4 Relationships between variables

Within-group and whole-sample (offending and non-offending groups together) correlations between all of the main psychological variables are presented in Tables 8 and 9. Appendix D shows correlations across all variables measured in the study.

IPPA alienation is reverse scored, so a higher score relates to lower levels of alienation from parents. For the other attachment sub-scales a higher score relates to higher levels of communication and trust with parents. IPPA total is a composite of all three scores, with higher scores thought to relate to more secure attachment to parents. On the Eyes test, higher scores relate to better theory of mind abilities, and higher scores on both SRYB scales indicate a wider repertoire and higher level of delinquent behaviours.

Table 8: Within-group correlations across the main psychological variables

	Eyes	IPPA total	IPPA trust	IPPA comm.	IPPA alien.	SRYB Yes ever	SRYB yes rec.
Eyes	---	.228	.116	.406*	.058	-.199	-.290
IPPA total	.532*	---	.911**	.885**	.839**	-.478**	-.511**
IPPA trust	.407	.912**	---	.745**	.661**	-.463**	-.474**
IPPA comm.	.641**	.896**	.693**	---	.568**	-.492**	-.558**
IPPA alien.	.101	.692**	.589**	.416	---	-.298	-.306
SRYB yes ever	-.385	-.428	-.327	-.456*	-.252	---	.930**
SRYB yes rec.	-.310	-.342	-.342	-.307	-.178	.733**	---

Notes: *Top right portion (italics) indicates non-offending group*, bottom left portion (non-italics) indicates offending group. **Bold indicates a significant correlation (* < .05 level, ** < .01)**

Table 9: Whole-sample correlations across the main psychological variables

	IPPA total	IPPA trust	IPPA comm.	IPPA alien.	SRYB yes ever	SRYB yes rec.
Eyes	.420**	.345**	.553**	.098	-.356**	-.344**
IPPA total	---	.912**	.889**	.750**	-.520**	-.463**
IPPA trust	---	---	.722**	.575**	-.502**	-.446**
IPPA comm.	---	---	---	.480**	-.504**	-.446**
IPPA alien.	---	---	---	---	-.286*	-.262*
SRYB yes ever	---	---	---	---	---	.834**
SRYB yes rec.	---	---	---	---	---	---

Bold indicates a significant correlation (* < .05 level, ** < .01)

As shown in Tables 8 and 9, the IPPA total and subscales are significantly correlated with each other in both groups as well as across the sample as a whole. The one exception is in the offending group, in which the IPPA communication is not correlated with IPPA alienation. The two self-report of delinquency scales, “SRYB yes ever” and “SRYB yes recently”, are also correlated significantly with each other in both groups, as well as across the sample as a whole. Correlations between attachment, theory of mind and self-report of delinquency are discussed in more detail in relation to specific hypotheses in the following sections.

Although not directly related to the main hypotheses, it is interesting to note the significant correlations between control variables, both within and between-groups. Within the non-offending group parents’ education was correlated with family constitution, with a lower level of education being significantly correlated with living with one parent ($r = -.356, p < .05$). In the same group there was a significant correlation between parents’ employment status and educational qualifications ($r = .348, p < .05$), with unemployed parents having lower levels of education.

In the offending group measures of performance and verbal IQ were significantly correlated ($r = .712, p < .01$). Surprisingly similar correlations were not found within the non-offending group. No other significant correlations between background variables were apparent within the offending group.

Whole-sample analyses revealed correlations between measures of performance and verbal IQ ($r = .538, p < .01$), parents' employment and parents' educational status ($r = -.295, p < .05$) and family constitution and parents' education ($r = -.295, p < .05$) in the same direction as was found in the non-offending group. In addition, significant correlations between family constitution and parents' employment ($r = -.297, p < .05$) and parents' education and performance IQ were found ($r = -.328, p < .05$). Single-parent families had higher levels of unemployment and higher levels of parental education were related to better performance on block design.

3.2.5 Covariates

As the groups were not matched on a number of variables, it was important to determine whether these had an effect on the main constructs being explored. Correlations were therefore calculated across all measures to determine whether there were covariates which needed to be included in the main analyses.

The majority of background variables were not significantly correlated with the dependent variables. However, as shown in Table 10, a couple of the demographic variables were significantly correlated with attachment.

Table 10: Correlations between demographic and dependent variables

	Ethnicity		Parents' employment status
	Non-offenders	Whole-sample	Non-offenders
IPPA total	-.497**	-.365**	.285
IPPA trust	-.519**	-.432**	.320*
IPPA communication	-.377*	-.140	.365*
IPPA alienation	-.420**	-.410**	.056

Bold indicates a significant correlation (* < .05, ** < .01)

Table 10 shows that within the non-offending group, as well as across the whole-sample, ethnicity is correlated with attachment (other than IPPA communication in the whole-sample), with White participants showing higher levels of attachment security than participants from other ethnic backgrounds. In the non-offending group a significant correlation between employment status and IPPA trust and IPPA communication were also found, indicating higher levels of trust and communication with parents in the participants whose parents were not employed.

No significant correlations between background variables and dependent variables were found in the offending group. Within the whole-sample IPPA trust was related to family constitution ($r = .267, p < .05$), with participants with single-parents reporting lower levels of trust. This was not used as a covariate in the analyses, as it was not found within-groups.

As significant correlations between some of the independent variables and the dependent variables were found, it was necessary to control for the effect of these variables in the main analyses. This is in order to reduce error variance in the dependent variables and to correct for the effect of any group differences. Analysis

of covariance (ANCOVA) was therefore used to test hypotheses in which independent variables were correlated with the main dependent variables. Where there are no covariates t-tests were used.

3.2.6 Summary

Preliminary analyses showed differences between the two groups on a number of variables, with offenders performing significantly worse on measures of verbal and performance IQ and reporting higher levels of delinquency than the non-offending group. They were also significantly different from the non-offenders on demographic variables, being more likely to come from single-parent families, with lower levels of employment and education.

A number of significant correlations were found both within-groups and within the sample as a whole. The majority of IPPA measures were related to each other, as were the subscales of self-report of delinquency. Verbal and performance IQ measures were significantly correlated with each other across the sample as a whole and within the offending group. Within the non-offending group single-parents had fewer educational qualifications. In the same group and across the sample as a whole a relationship between parental unemployment and lower levels of education was found. Across the whole-sample further significant correlations were found; single-parent families had higher levels of unemployment and fewer educational qualifications.

On considering relationships between background and main variables it became apparent that ethnicity and employment were correlated with the attachment

measures. White participants showed more secure attachments, better communication and trust with parents, as well as less alienation to parents than participants from other ethnic backgrounds. In terms of employment, participants with unemployed parents reported higher levels of trust and communication in their relationships with their parents. Ethnicity and employment were therefore identified as covariates which needed to be included in analyses in which attachment is the dependent variable.

3.3 ATTACHMENT AND CONDUCT PROBLEMS

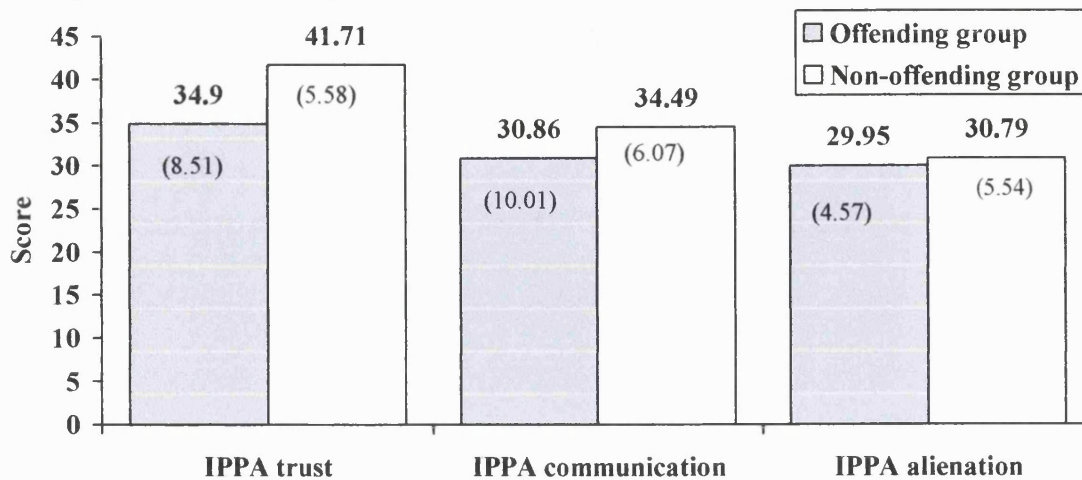
3.3.1 Restatement of hypotheses

Hypothesis 1 in section 1.7.2 of the Introduction proposed that there will be a relationship between insecure attachment and conduct problems. More specifically, individuals in the offending group were expected to have significantly more insecure attachments than those in the non-offending group (hypothesis 1.a). In addition, regardless of group membership, higher self-report of delinquency was expected to be associated with more insecure attachments (hypothesis 1.b).

3.3.2 Between-group analysis

To consider hypothesis 1.a, the two groups were compared on attachment measures. The IPPA total, which is a composite of the three measures displayed in Figure 2, had a mean of 97.51 (s.d. = 19.90) in the offending group. The mean score in the non-offending group was 106.89 (s.d. = 15.12). Non-offenders therefore scored higher on all measures of attachment. The mean scores and standard deviations of the IPPA subscales are shown in Figure 2.

Figure 2: Mean scores for attachment subscales



Note: The means are displayed above each column and standard deviations within columns (in brackets).

In order to test hypothesis 1.a, a number of ANCOVAs were carried out. Due to the significant correlations between ethnicity and all measures of attachment in the non-offending group, ethnicity was included as a covariate. Employment, which correlated with IPPA trust and IPPA communication in the non-offending group, was included as a covariate in analyses involving these two sub-scales.

ANCOVA assumes homogeneity of regression: that the strength of the relationship between the dependent variables and the covariate is the same in the two groups being compared. Although the correlations were different across the two groups (covariates were only found in the non-offending group), no significant interactions between-group and covariates were found, meaning that the assumption of homogeneity of regression was met and it was appropriate to carry out such analyses.

A one-way between-groups ANCOVA was conducted to compare attachment, as measured by IPPA total, in offenders and non-offenders. The independent variable was group and dependent variable IPPA total. Ethnicity was used as a covariate.

The analysis showed that there was a significant main effect of group after controlling for ethnicity ($F(1,55)= 5.161, p = .027$). There was also an independent effect of ethnicity on attachment ($F(1,55)= 5.533, p = .022$), but it did not account for group differences in attachment ($F(1,55)= 1.090, p = .301$).

A similar analysis was run to consider group differences in IPPA trust. As before, ethnicity was used as a covariate. In addition, employment was added to the analysis as a covariate due to its correlation with IPPA trust (as shown in Table 10). There was a significant main effect of group after controlling for ethnicity and employment ($F(1,49)= 11.814, p=.001$). Ethnicity had an independent effect on IPPA trust ($F(1,49)=9.121, p= .004$), although employment did not ($F(1,49)= .371, p= .545$). Neither ethnicity ($F(1,49)=.088, p = .768$) nor employment ($F(1,49)= 3.250, p= .078$) accounted for group differences in IPPA trust.

In considering IPPA communication a third one-way between-groups ANCOVA was run, again using ethnicity and employment as covariates. IPPA communication was not significantly different between-groups after controlling for the effects of ethnicity and employment ($F(1,49)= 2.675, p = .108$). In addition, neither ethnicity ($F(1,49)=.334, p = .566$) nor employment ($F(1, 49)= .566, p = .322$) had an independent effect on IPPA communication.

IPPA alienation was next considered, in which the only covariate was ethnicity. There were no significant group differences in IPPA alienation ($F(1,55)= .070, p = .0793$) when ethnicity was controlled for. There was, however, a significant main effect of ethnicity on IPPA alienation ($F(1,55)= 9.054, p= .004$), with white

participants scoring significantly higher than other ethnic groups, indicating lower levels of alienation from parents.

3.3.3 Whole-sample analysis

In addition to considering attachment between-groups, the relationship between self-report of delinquency and attachment was looked at within the sample as a whole. Based on hypothesis 1.b, it was predicted that, regardless of group membership, higher self-report of delinquency would be associated with more insecure attachment. It was felt appropriate to collapse the two groups into one population on this variable for the following reasons: Firstly, although there were differences in offending behaviours between-groups (as illustrated in Table 7), the variable was normally distributed within the whole-sample. Secondly, there were variations in self-report of delinquency within the non-offending group, probably because the SRYB included measures of school-related delinquency and minor delinquency in addition to more serious illegal behaviours.

The correlation between self-report of delinquency and attachment was therefore calculated. Significant correlations between all of the attachment measures and self-report of delinquency were found (shown in Table 9 in section 3.2.4). This suggests that there is a relationship between self-reported delinquency and attachment, regardless of group. Higher levels of delinquency were related to more insecure attachment, lower levels of communication with, and trust of, parents and higher feelings of alienation from parents. These findings support hypothesis 1.b.

Similar trends were seen within the non-offending group, although there was no significant correlation between self-report of delinquency and IPPA alienation. In

the offending group fewer correlations were seen, with the only correlation between self-report of delinquency being found with IPPA communication (see Table 8 in section 3.2.4 for exact figures).

3.4 THEORY OF MIND AND CONDUCT PROBLEMS

3.4.1 Restatement of hypotheses

Hypothesis 2 proposed that there will be a relationship between an impairment in theory of mind and conduct problems. Individuals in the offending group were expected to have a more impaired theory of mind compared with those in the non-offending group (hypothesis 2.a). Furthermore, regardless of group membership, higher self-report of delinquency was expected to be associated with poorer theory of mind abilities (hypothesis 2.b).

3.4.2 Between-group analysis

As shown in Table 11, a t-test was carried out to consider group differences in theory of mind abilities.

Table 11: Differences between-groups on Eyes test

	Offending group (n=20)		Non-offending group (n=38)		t	P
	Mean	(sd)	Mean	(sd)		
Eyes test	17.50	(4.02)	19.61	(3.349)	-2.122	56 .038

Note: As specified in section 2.4, one participant in the offending group refused to carry out the Eyes test.

There was a significant difference between the offenders and non-offenders on theory of mind abilities, with non-offenders performing worse on the Eyes test, supporting hypothesis 2.a.

3.4.3 Whole-sample analysis

As predicted, there was a significant correlation across the whole-sample between self-reported delinquency and theory of mind, with lower scores on the Eyes test being related to both “SRYB yes ever” ($r = -.356$, $p = .006$) and “SRYB yes recently” ($r = -.344$, $p = .008$). A higher self-report of delinquency was therefore associated with poorer theory of mind abilities, supporting hypothesis 2.b. As displayed in Table 8, within-group correlations between self-report of delinquency and theory of mind yielded no significant results.

3.5 THE RELATIONSHIP BETWEEN ATTACHMENT AND THEORY OF MIND

3.5.1. Restatement of hypothesis

Hypothesis 3 proposed that there will be a significant relationship between attachment and theory of mind, irrespective of group membership, with more insecure attachment being associated with a more impaired theory of mind.

3.5.2 Whole-sample analysis

Correlations were performed to consider hypothesis 3. As already reported in Tables 8 and 9, there was a significant relationship between attachment and theory of mind in the whole-sample on all measures of attachment apart from IPPA alienation. This suggests that more insecure attachment, less trusting relationships and poorer communication with parents are related to a more impaired theory of mind, supporting hypothesis 3.

3.5.3 Within-group analysis

Within the offending group the Eyes test was correlated with total IPPA ($r=.532$, $p = .016$) as well as IPPA communication ($r =.641$, $p = .002$). There was only one significant correlation within the non-offending group, namely between IPPA communication and the Eyes test ($r=.406$, $p = .011$).

3.6 ATTACHMENT, THEORY OF MIND AND OFFENDING

Hypothesis 4 postulated that there will be a significant relationship between attachment, theory of mind and offending, with attachment accounting for group differences in theory of mind. ANCOVAs were performed in order to consider hypothesis 4, with theory of mind as the dependent variable, group as the independent variable and attachment as the covariates, thus allowing attachment to be controlled for.

The two attachment scales considered were IPPA total and IPPA trust, as these were found to be significantly different between the two groups (see section 3.3.2). Linearity, multi-collinearity, normality and homogeneity of regression were all checked for and assumptions of ANCOVA were met. Results are displayed in Table 12.

Table 12: ANCOVAs of Eyes test, with attachment as covariate

	Source of variance	Sum of Squares	(df)	Mean Square	F	p
	Group	13.387	(1)	13.387	1.179	.284
IPPA total	IPPA total	92.884	(1)	92.884	8.119	.006
	Error	629.195	(55)	11.440		
	Total	780.155	(57)			

	Source of variance	Sum of Squares	(df)	Mean Square	F	p
	Group	11.921	(1)	11.921	.971	.329
IPPA trust	IPPA trust	46.498	(1)	46.498	3.785	.057
	Error	675.581	(55)	12.283		
	Total	780.155	(57)			

Before attachment was controlled for, theory of mind was significantly different between-groups (as described in section 3.4.2). However, as shown in Table 12, both ANCOVAs indicate that, once attachment was considered as a covariate, the significant difference between theory of mind across groups no longer existed. These results suggest that attachment accounts for group differences in theory of mind, supporting hypothesis 4.

3.7 SUMMARY OF RESULTS

The characteristics of the participants used in this study were representative of past research, with the offenders having significantly lower IQ and being more likely to come from single-parent families with lower levels of education and employment than the non-offenders.

All of the hypotheses of the study were supported, with insecure attachment and poorer theory of mind being related to offending. There was also a relationship between theory of mind and attachment, with better theory of mind being related to more secure attachment. In addition, attachment seemed to account for the significant differences between the offending and non-offending group on theory of mind measures, suggesting a relationship between all three constructs.

CHAPTER 4: DISCUSSION

4.1 OVERVIEW

The primary purpose of this study was to consider differences between adolescent offenders and non-offenders in relation to attachment and theory of mind. This chapter discusses the meaning and implications of the study's findings. Firstly, a critical examination of the impact which demographic variables may have had on the results is given. This is followed by a discussion of the main constructs, attachment, theory of mind and offending, in relation to the hypotheses stated in the Introduction. Limitations of the research are then outlined, and finally, the implications that this investigation may have for future research and clinical work are discussed.

4.2 DEMOGRAPHIC PROFILES

Measuring the demographic variables of the participants allowed the results to be considered within a psychosocial context. There were clear markers of psychosocial risk within the offending group as compared to the non-offenders. In addition, these risk factors grouped together, both within-groups and across the sample as a whole. These are reviewed below.

The majority of offenders were from single-parent families, with the parent normally being the biological mother. Maternal correlates of conduct disorder have frequently been found to include coming from non-married or divorced families in which there is no current stable partner (Emery, Waldron, Kitzmann, & Aaron, 1999; Kalter, Riemer, Brickman, & Chen, 1985; Peterson & Zill, 1983; Renken et al., 1989). The main reason given for this is that there is less parental supervision in single-parent homes.

In this study, offenders were also characterised by having parents with fewer educational qualifications and higher unemployment rates than the non-offending group. In addition, the cognitive abilities of the offenders were markedly worse than those of the non-offenders. Such profiles are well known risk factors associated with conduct problems (see Burke et al., 2002).

Analyses of the whole-sample revealed inter-relationships between some of the demographic variables, with single-parent families showing lower levels of parental employment and education. This is consistent with Amato's research (1999) which also found a relationship between single-parent families and unemployment. Although this inter-relationship was found within the non-offending group it was not apparent within the offending group. This may have been due to the relatively small number of participants in the offending group, which may have obscured such relationships.

These results are in accordance with previous research, suggesting that participants were representative of adolescent offenders in terms of demographic and cognitive profiles, thus increasing the validity and generalisability of the findings.

4.3 ATTACHMENT

4.3.1 Are conduct problems associated with insecure attachment?

The results of this study show that adolescent offenders exhibit significantly more insecurity in their attachment to parents than non-offenders do (as measured by IPPA total), suggesting that insecure attachment is related to conduct problems in adolescence. Whole-sample analyses provided further evidence for this, as higher

self-report of delinquency was strongly correlated with insecure attachment. These findings indicate that adolescents' self-report of attachment to parents is related to their actual and reported level of conduct problems.

The IPPA was not designed to discriminate between different types of attachment. Instead, it provides a continuum of attachment, with higher scores representing "high security" and vice versa. Although the subscales only provide information about the degree and quality of involvement in specific areas of the parental relationship, they can be considered with regard to Ainsworth's attachment styles (Vivona, 2000), albeit speculatively. Ainsworth et al. (1978) described secure attachment as marked by trusting and respectful involvement with parents, implying that high levels of trust indicate secure attachments. Therefore, in addition to IPPA total, IPPA trust can be considered a measure of security, with higher scores being related to a more secure parental attachment.

Much research has linked insecure attachment with conduct problems in childhood (e.g. Greenberg et al., 1991). Similar trends have been found in the limited number of studies which have investigated this concept in adolescence (Allen et al., 1998; Allen et al., 2002; Arbona & Power, 2003; Carlson, 1998; Dekovic, 1999; Jackson & Foshee, 1998; Kenny et al., 1998; Marcus & Betzer, 1996; Raja et al., 1992; Rosenstein & Horowitz, 1996). These include studies which have also used the IPPA to measure attachment (Capaldi, 1992; Capaldi & Stoolmiller, 1999; Formoso et al., 2000). The results from this research add to the existing evidence base, providing further evidence of a relationship between insecure attachment and conduct problems within a previously neglected age-group.

The medium effect size of IPPA total, and large effect size of IPPA trust, suggests that attachment is an important risk factor for conduct problems in adolescence. In reviewing research with younger children, Greenberg et al. (1997) highlighted that the strength of this relationship appears to be dependent on other risk factors found in families. Given the comparative psychosocial disadvantage of the offending group, further risk factors may have contributed to this relationship.

Insecure attachment and self-report of delinquency were correlated within the non-offending group. This suggests that the relationship also exists in individuals with fewer risk factors. This contradicts past research, which has found such associations only in high risk samples (Carlson, 1998; Fagot & Kavanaugh, 1990). Differences in findings may relate to the measurement of delinquency as well as the age-group of the participants.

Previous research into adolescence has viewed it as a period of storm and stress, in which attachment relationships change and emotional distance from parents is important (Hilburn-Cobb, 2002). For example, Elliott and Menard, (1989) found that during adolescence the relationship between attachment to parents and conduct problems appears to decrease in importance as peers take on more of a central role. However, this study and other more recent research (e.g. Allen et al., 2002) suggest that relationships with parents remains pertinent in adolescence, with attachment to parents continuing to play an important role in conduct problems. This is consistent with earlier reviews of literature which have found that low parent-child involvement is one of the most powerful predictors of delinquency (Loeber & Stouthamer-Loeber 1986).

4.3.2 Are trust, communication and alienation related to conduct problems?

IPPA trust was the only subscale to show significant group differences, suggesting that conduct problems in adolescence are associated with levels of trust in the parental relationship. These results are consistent with Campbell's (1998) research, which also found that offenders reported a less trusting relationship with their parents than non-offenders (as measured by IPPA trust). Whole-sample analyses also showed significant correlations between less trusting parental relationships and higher self-report of delinquency, providing further evidence for trust of parents being pertinent to adolescent conduct problems.

It is notable that a number of items in the trust subscale indicate a level of autonomy for the adolescent: for example, "my parents accept me as I am" and "my parents trust my judgment". A high score on the trust subscale may represent healthy adjustment in terms of gaining an appropriate level of autonomy whilst remaining emotionally connected to parents. Conversely, low scores may represent difficulties in negotiating these changes. The emergence of increasing autonomy in adolescent-parent relationships is thought to be one of the primary developmental tasks of this age-group (Allen & Land, 1999). Managing to balance closeness and autonomy in relationships with parents is thought to be a positive developmental change and has been related to positive social outcomes (Allen, Hauser, Bell, & O'Connor, 1994a; Allen, Hauser, Eickholt, & O'Connor, 1994b; Fuligni & Eccles, 1993).

Speculatively, autonomy may be related to conduct problems in the following way: Where there are difficulties in achieving autonomy from parents, the adolescent may attempt to become more independent outside the parental relationship, which may be

achieved by acting antisocially. The struggle for independence in adolescence, and related higher levels of insecure attachment (Ammaniti et al., 2002) may account for some of the increase in conduct problems during adolescence. Clearly, this requires more research, looking specifically at the relationship between adolescent autonomy and conduct problems.

No significant group differences were found in the communication subscale of the IPPA, possibly due to a type II error resulting from small sample size. However, within the whole-sample and across both groups, the SRYB uncovered a relationship between better communication with parents and fewer conduct problems. This supports previous findings in which communicative relationships with parents have been linked to successful adolescent adjustment including lower levels of delinquency (Caprara et al., 1998; Henggeler, Hanson, Borduin, Watson, & Bruck, 1985; Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikström, 2002).

Within this study, whole-sample analyses showed a positive relationship between alienation and self-report of delinquency. Although there was a trend for offenders to report higher levels of alienation than non-offenders, significant group differences were not found. As in the communication subscale, this may be attributed to a type II error resulting from small sample size. Alternatively, it may have been related to response style. The alienation subscale is characterised by distress-related questions, such as "I feel angry with my parents". Participants who felt particularly high levels of alienation may have minimised their distress (as is frequently found in individuals with avoidant attachment; Dozier & Kobak, 1992), thus obscuring group differences.

As mentioned earlier, the IPPA can be considered tentatively in relation to Ainsworth et al.'s (1978) attachment classifications. IPPA alienation can be linked to avoidant attachment, which is characterised by anger and avoidance of parents rather than engagement, as exemplified by the statements: "I get upset a lot more than my parents know about" and "talking over my problems with my parents makes me feel ashamed or foolish". If it is appropriate to consider IPPA alienation as a measure of avoidant attachment, high levels of alienation would be expected to relate to conduct problems given that previous research has frequently shown avoidant attachment styles to be linked to conduct problems (e.g. Troy & Sroufe, 1987).

Furthermore, theoretically one would expect offenders to report higher levels of alienation than non-offenders, as alienation is characterised by anger and questions relate to a sense of separation or estrangement. There has been empirical support for an association between alienation and delinquency, although definitions of the term have varied across studies. Those studies which have found such relationships have generally considered more serious offenders than those used in this study (Calabrese & Adams, 1990; Leblanc, 1988; Andrews, Wormith, & Kiessling, 1985). Conversely, Sankey and Huon (1999) did not find alienation from parents to be predictive of delinquency (although they did find a relationship between conduct problems and alienation from society). As in this study, the participants of Sankey and Huon's (1999) research included less serious delinquents. Given these results, it may be that alienation from parents is only important in severe and persistent conduct problems.

This study provides some evidence for a relationship between reported alienation

from parents and conduct problems in adolescence. However, given the absence of group differences and mixed findings in past studies, further research, paying particular attention to heterogeneity in offending samples is needed in this area to fully determine the relationship.

4.2.3 Attachment and demographic profiles

To determine appropriate statistical tests for the main analyses correlations were performed between demographic variables and the main constructs. From these it emerged that, within the non-offending group and across the whole-sample, ethnicity and employment were significantly correlated with attachment. In addition, whole-sample analyses revealed that participants from single-parent families reported lower levels of trust in their relationships with parents.

With regards to ethnicity, white non-offending participants reported more secure attachments overall, better communication with parents, higher levels of trust of parents and less alienation from parents than non-offenders from other ethnic groups. Similar trends emerged in the whole-sample on all attachment measures, apart from self-report of communication. None of these correlations was apparent within the offending group, possibly due to the smaller sample size.

It has been argued that attachment theory is applicable regardless of cultural setting (Ainsworth, 1989). However, most attachment research to date has been conducted within European American populations, raising questions about the generalisability of findings to other ethnic groups (Arbona & Power, 2003). In addition, frequently

used measures have not provided information on ethnic sample comparisons (Rice, Cunningham, & Young, 1997).

The few studies which have considered differences in attachment in relation to ethnicity have produced mixed results. A number of authors found no difference between European American, African American and Latino students on attachment measures (Arbona & Power, 2003; Lopez, Melendez, & Rice, 2000; Rice et al., 1997). Others have found that African American students report higher levels of trust in their relationships with parents than their European American peers (Cernkovich & Giordano, 1987; Giordano, Cernkovich, & De Maris, 1993). This might be explained by the fact that African American families place more importance on the emotional relationships with their families than their European American counterparts (Garcia-Coll, Meyer, & Brillion, 1994).

Unlike some of the aforementioned research, this study found significant differences between ethnic groups across all measures of attachment. In contrast to the past research which has uncovered ethnic differences in attachment (in which non-white participants have been found to report higher levels of trust), this study found that white participants reported more secure attachments and higher levels of trust than individuals from other ethnic groups. Direct comparisons are restricted given the different ethnic groups studied, with previous research having been carried out with American samples, and the current study using participants living in Britain. Furthermore, due to sample size it was only possible to code ethnicity as white/other, thus limiting analysis of more specific ethnic groups.

Differences in attachment across ethnic groups may be related to culturally based values and family organisation, which may impact upon the strength of parent-adolescent attachment and the importance of parental attachment to adolescents' attitudes and behaviours. Furthermore, Bowlby's model is reflective of a Western cultural view which puts prominence on the mother-child attachment. This was reflected in this study, utilising an attachment measure which focussed on adolescent-parent relationships. Definitions of security of attachment and 'normal' levels of trust and communication may vary across cultures. In addition, there are frequently significant relationships with extended family members in non-Western cultures (Suárez-Orozco, Todorova, & Louie, 2002) which may make the parent-adolescent relationship less important.

Although the categorisation of ethnicity did not permit exploration into the background of the participants, it is likely that within the white group there were more English participants than the non-white group. Non-white participants within this research may have been subjected to more disruptions in their family situation, such as acculturation stress and trauma, which may have affected their attachment relationships. Immigrating into a new country involves numerous transitions and adjustments which have been found to affect the parent-child relationship negatively in terms of the child's self-esteem and behaviour (Smith, Lalonde, & Johnson, 2004).

Clearly, more work needs to be done to explore the relationship between ethnicity and attachment in greater detail. However, the significant correlations found within the present study raise doubts about the applicability of the attachment model across cultures. This is particularly important to consider when researching and working

with individuals from a diversity of ethnic groups. It also highlights that work with adolescents from different ethnic backgrounds would benefit from an exploration of attachment issues, paying specific attention to cultural norms, which are, unfortunately, not currently available.

Whole-sample analyses revealed family constitution to be related to attachment, with adolescents living with one parent reporting lower levels of trust than participants from two-parent families. This is consistent with past research in which single mothers displayed more insecure attachments with their children than married mothers (Aronson & Huston, 2004). Similarly, children of divorced parents have been found to show less secure attachments than those of married parents (Brennan & Shaver, 1998; Lopez et al., 2000; Mickelson, Kessler & Shaver, 1997; Summers, Forehand, Armistead & Tannerbaum, 1998). Whilst not all single-parent families in this study had encountered divorce, these findings are complementary.

Possible reasons for the lower levels of trust in single-parent families include the fact that, on average, single mothers spend less total time with their children than do married mothers (Hill, 1985; Juster, 1985), providing less time to build up a trusting relationship with their children. However, it should be borne in mind that the quality of the parent child relationship, rather than quantity of time spent together, is what is likely to determine attachment style. Two-parent families allow the individual to build attachment relationships with both parents; if one parental figure represents insecurity, the other may provide a secure attachment. Furthermore, having two adults in a household may alleviate some of the parental stress, if the partners actively support each other (Burchinal, Follmer, & Bryant, 1996), meaning that

attachment figures may be emotionally available to build a secure attachment with their child.

It is also interesting to note that during adolescence single parents themselves have higher rates of emotional and behavioural problems and are more likely to have cognitive deficits. These difficulties may limit their ability to establish secure and trusting relationships. Given that less trusting relationships and less secure attachment have been found to relate to delinquency and are more prevalent in single-parent families, the fact that the number of such families has dramatically increased over the past four decades (Bachrach, 1999) is of concern.

Within the non-offending group, parents' employment status was found to be related to attachment. Participants with non-working parents reported higher levels of trust of, and communication with, their parents. This makes sense intuitively, as non-working parents would have more time available to build up a trusting and communicative relationship with their children.

There are a number of limitations to relying heavily on the above mentioned finding. Participants with one working parent and one unemployed parent were coded on the variable as "parents employed". Like adolescents coded as "parents unemployed" these individuals would have time to build a secure relationship with the one non-working parent at home. In addition, these correlations were not found on two of the attachment measures, nor were they seen across the sample as a whole. This highlights the possibility of a spurious result, which may be related to the fact that a number of correlations were performed, increasing the risk of a type I error.

Furthermore, some research has found positive effects deriving from full-time maternal employment on self-esteem for adolescents (Duckett, Raffaelli, & Richards, 1989). The relationship between parents' employment and attachment warrants more research before conclusions are made.

4.3.4 Summary

The findings of this study clearly support hypothesis 1.a, in that offenders are characterised by less secure attachments than non-offenders. Marked differences were seen in the levels of trust across groups, with offenders reporting significantly less trusting relationships with parents than the non-offenders. It has been suggested that a lack of trust in the parental relationship may be linked to delinquency because trust allows the individual to acquire a sense of autonomy, a primary developmental task of adolescence. Although no group differences were reported in terms of communication and alienation, there were clear correlations between self-report of delinquency and these two domains, as well as the other IPPA scales, lending support to hypothesis 1.b.

Interesting relationships between some of the demographic variables and attachment, namely ethnicity, parents' employment and family situation, arose during the study. Most noteworthy, perhaps, was that ethnicity was strongly related to all attachment measures in the non-offending group, with white participants showing more secure attachments than participants from other ethnic groups. Reasons for this are not clear, and interactions between attachment and ethnicity, family constitution and parents' employment, need to be explored in larger samples.

4.4 THEORY OF MIND/MENTALISATION

4.4.1 Does a theory of mind deficit exist in young offenders?

Fonagy et al. (1997a) put forward a convincing argument as to why theory of mind deficits may be seen in offenders. They argued that difficulties envisioning the mental states of others' may mean that individuals find it difficult to anticipate the consequences of an action on the mind of a victim, being more likely to devalue the victim and treat them like physical objects. Additionally, individuals with poorer mentalisation capacities were proposed to have a less well-established sense of their own identity making them feel less responsible for their actions. Because theory of mind deficits lead to problems in experiencing feelings in mental terms, violence was postulated to be a means of managing thoughts, beliefs and desires in the physical realm. Despite this compelling argument, most studies to date have found either no difference, or only modest one, between individuals with conduct problems and those without, in respect of theory of mind measures (Blair et al., 1996; Campbell, 1998; Happe & Frith, 1996; Ritchell et al. 2002).

In contrast to these studies, this research has provided clear support for theory of mind deficits in an offending population, with the adolescent offenders performing significantly worse on a theory of mind measure than non-offending peers. Further support comes from analyses of the sample as a whole, in which a more impaired theory of mind was strongly associated with a higher self-report of delinquency. This constitutes a new finding, with both actual and reported levels of conduct problems being significantly related to theory of mind abilities in adolescence. This is consistent with Fonagy et al.'s (1997a) model. Although findings contradict the majority of studies in this area, results are in accordance with Haut et al. (2000), who

found that sex offenders showed an impairment in theory of mind when compared to non-offenders, and with Hughes et al. (1998), who showed that “hard-to-manage” school children demonstrated a delayed emotional understanding as compared to their “normal” peers.

There are a number of possible reasons which may account for differences between the present study and past research. Sample size, the measures used and the age-group studied may explain some of the seemingly contradictory findings. Although the number of participants in this research was not as large as was hoped, previous research into theory of mind and conduct problems has been characterised by particularly small samples. Of those reported above only Hughes et al. (1998) had a sample size of more than 50 participants in total (interestingly, this was one of only two studies to find significant group differences in theory of mind tasks). In such instances of small samples statistical power is reduced and there is a risk that actual differences will not be elucidated. The relatively larger sample size used in this study may have allowed such differences to be observed.

Measurement of theory of mind has varied across studies. In some cases, simple measures which only require first order theory of mind to pass have been utilised (e.g. Happe & Frith, 1996; Blair et al., 1996). This may lead to ceiling effects and mean that subtle differences cannot be detected. This study was not restricted in this way, as the Eyes test is a more advanced continuous measure of theory of mind. Advanced verbal skills, which have been found to correlate with theory of mind abilities (e.g. Meins et al., 2002), and which offenders rarely have, are often needed to pass theory of mind tests. This complicates interpretations of the relationship

between theory of mind and offending. There was no correlation between verbal abilities and theory of mind abilities in this research, suggesting that there was no overlap and that the theory of mind results were not influenced by verbal abilities.

Another possible reason for differences between the present study's results and past research could be the age profile of the participants. Other than Campbell's (1998), the aforementioned studies have either considered theory of mind and conduct problems in childhood or adulthood. Extending these studies to adolescence may have uncovered different processes that are occurring during this developmental stage.

There is virtually no research into theory of mind in adolescence, with the construct yet to be defined and operationalised for this age-group. This may relate to measures being simplistic, leading to conclusions that mentalising abilities in six to seven year olds are close to the normal adult ceiling (Dennett, 1988). However, limited norms of the Reading the Mind in the Eyes test (Baron-Cohen et al., 2001b) suggest that theory of mind abilities increase between the ages of 6 and 12. Theoretically, the advent of formal operational thinking (in which the individual develops abstract reasoning) and an increased differentiation of self and other (Bowlby, 1973) which are seen in adolescence, may relate to the evolution of more complex theory of mind skills during this developmental stage.

Mentalisation may be particularly important in the development of psychopathology in adolescence. Identity formation is thought to be a specific task of adolescence (Erikson, 1968), however, theory of mind deficits may lead to difficulties achieving

this self-awareness. Successful negotiation of the transition from the family environment to a position of social responsibility is likely to need a high level of self awareness. Lack of self awareness, as influenced by deficits in mentalisation, may reduce the individual's sense of responsibility for their actions and influence the development of conduct problems. Furthermore, changes in lifestyle, such as spending more time without parental support, and understanding and following the social rules of peer groups, may exert a greater need for the use of theory of mind skills. During adolescence mentalisation deficits may therefore be particularly pronounced, and may in turn lead to an increase in conduct problems. Different developmental stages could therefore account for the inconsistencies between results from this study and past research.

Although findings are in contrast with previous research into theory of mind and offending, the results of this research are in accordance with studies which have measured similar constructs to theory of mind, such as empathy, emotional recognition and perspective-taking. Those considering emotional recognition seem most relevant, given the similarities between emotional recognition tasks and the Eyes test. These have found that offenders lack emotional recognition skills when compared to non-offenders (Hudson et al., 1993; Moriarty et al., 2001; Savitsky & Czyzewski, 1978). The results are consistent with the large body of research which has linked deficits in empathy, perspective-taking and moral reasoning with offending (Blair, 1992; Hanson & Scott, 1995; Pithers, 1999; Marshall & Maric, 1996; Miller & Eisenberg, 1988). Despite these deficits frequently being found, authors are still cautious in their conclusions (e.g. Geer et al., 2000). The results of this study support the notion that such deficits do exist in offending populations.

4.5 THE RELATIONSHIP BETWEEN ATTACHMENT AND THEORY OF MIND

4.5.1 Is there a relationship between insecure attachment and an impairment in theory of mind?

As far as the author is aware, this is one of only two studies (the other being Campbell, 1998) to consider attachment and theory of mind in fourteen to sixteen year old males. As expected, insecure attachment (as measured by IPPA total) was related to a worse performance in the theory of mind task. These findings are particularly compelling, given that the design of the study minimised shared method variance by utilising disparate measures (attachment was measured by self-report and theory of mind with a task). Such results provide empirical evidence for Fonagy et al.'s (1991b) model of the development of theory of mind, extending its applicability to adolescence. The discovery that attachment to parents during adolescence continues to exert an influence on theory of mind abilities constitutes a new finding.

Previous research into theory of mind and attachment has mainly used child participants. To the author's knowledge, Campbell (1998) and Humphress et al. (2002) were the only researchers to have considered the two constructs with an adolescent population, although the latter was with a slightly younger age group (mean age 12.6). Despite different age-groups being considered, the current findings are consistent with past research (Fonagy et al., 1997c, Humphress et al., 2002; Main, 1991; Meins et al., 1998, Moss et al., 1997; Steele et al., 1999).

As the Eyes test does not focus upon the relationship with parents, one could argue that it measures a general theory of mind ability rather than material contextualised to the attachment relationship. If the measure is not linked to the attachment

relationship, results suggest that adolescent offenders have a general impairment in mentalisation, rather than in relation to attachment-related material alone. This is consistent with DeRosnay and Harris's (2002) work, in which they found that insecurely attached three to six year olds have deficits in emotional understanding, even in contexts where the material has no clear link to attachment. Future research into mentalisation abilities across different contexts would be interesting.

The fact that theory of mind is related to attachment has implications for our understanding of its development. The modularity theory (Frith et al., 1991; Leslie, 1994) postulates that theory of mind is an innate ability. Findings from this study do not support this model, but instead suggest that the development of theory of mind is related to attachment to the primary caregiver.

Although a relationship was found between theory of mind and attachment, it should be borne in mind that this may be accounted for by other factors which are more common in secure attachment relationships. For example, mothers of secure adolescents may be better than mothers of insecure adolescents at informal teaching of theory of mind.

4.5.2 Theory of mind, communication, trust and alienation

Levels of communication and trust in relationships with parents were related to theory of mind abilities within the whole-sample, with reports of more trusting relationships and better communication with parents being associated with superior theory of mind abilities. This study extends previous findings to adolescence, suggesting that within fourteen to sixteen year-old males, reported levels of communication with parents relate to theory of mind abilities. Within both groups

IPPA communication remained strongly correlated to the Eyes test with a particularly strong relationship ($r = .641$) observed in the offending group.

These findings suggest that communication with parents is particularly important in understanding theory of mind abilities. This fits with studies investigating theory of mind in younger children. A number of authors have found the development of theory of mind to be dependent on relationships with parents, with better theory of mind abilities being related to environments characterised by higher levels of parental discussion of emotions (Denham & Kochanoff, 2002; Dunn et al., 1991; Meins et al., 2002).

Some of the items on IPPA communication (“my parents sense when I’m upset about something”, “my parents help me to understand myself better” and “if my parents know something is bothering me, they ask me about it”) and IPPA trust (“when we discuss things, my parents consider my point of view”, “my parents respect my feelings” and “my parents understand me”) reflect an ability on the part of the parent to view the adolescent as a mentalising individual and to interpret their behaviour with reference to their mental states (known as “mother’s mind-mindedness”; Meins et al., 2002). Therefore, it seems important for the development of mentalisation in adolescence, as well as in childhood, that parents can understand and communicate their child’s feelings. This may indicate that theory of mind abilities are still developing in adolescence, and that attachment relationships continue to play an important part in this.

If an adolescent views his parents as trustworthy, available and reliable, they may be

more inclined to use their parents' interpretations of emotions to guide their own understanding. In addition, given the postulated relationship between the trust subscale and feelings of 'safe' autonomy (see section 4.3.2), higher levels of independence may enable the adolescent to explore his or her own, and others', feelings whilst maintaining a secure base to which to return (Grossmann, Grossmann, & Zimmermann, 1999).

No relationship between theory of mind and alienation was found. High levels of alienation indicate more insecurity in attachment to parents. However, individuals who are more insecure may have had difficulties expressing these emotions and may have minimised their feelings of distress, therefore showing less alienation than would be expected. Research still needs to address whether theory of mind abilities relate to levels of alienation from parents.

4.6 ATTACHMENT, THEORY OF MIND AND OFFENDING

4.6.1 Is there a relationship between attachment, theory of mind and offending?

The final hypothesis to be tested was that there would be a significant relationship between all three constructs measured in this study. Based upon Fonagy et al.'s (1997a) model, it was proposed that the relationship between theory of mind and offending would be accounted for by attachment, as within this model attachment is seen to determine theory of mind abilities, which, in turn, give rise to conduct problems.

As expected, significant differences in theory of mind between-groups no longer existed when attachment (IPPA total and IPPA trust) was held constant, suggesting

the three constructs are related. These results are consistent with Fonagy et al.'s (1997a) model. It should be borne in mind that these results do not allow causal inferences. It is also likely that attachment will exert an influence on conduct problems in ways other than theory of mind alone, such as through setting up coercive family processes (Patterson, 1986) whereby the child learns to avoid the parents' demands through a process of negative reinforcement.

Fonagy et al.'s model (1997a) was based specifically upon violent offending. These results suggest that the model may also be applicable to a range of antisocial behaviours, as well as to individuals with moderate but substantive levels of conduct problems. As described in section 4.3.1, Fonagy et al. (1997a) gave a number of reasons as to why mentalisation deficits may relate to offending. Although a couple of these were specific to violent offending (such as using violence to manage thoughts and feelings and treating others as physical objects), further explanations could relate to offending in general. For example, feeling less responsible for one's actions, and not anticipating the consequences of an action on another individual may be associated with a number of crimes. It therefore seems that mentalisation deficits are found in both violent and non-violent adolescent offenders. Although the sample size in this study did not permit the analysis of this in more detail, it may be that less severe mentalisation deficits relate to less interpersonal and less severe crimes and vice versa.

4.7 LIMITATIONS OF STUDY

4.7.1 Participants

Despite the power analysis recommending a minimum of 32 participants per group, it

was only practically possible to recruit 21 individuals in the offending group. Although type II errors do not appear to have made a large impact on the results, having more participants would have allowed a more detailed exploration of the research questions. This would have been particularly useful in terms of ethnicity, allowing analysis of additional ethnic groups (rather than a dichotomous white/other variable). A larger sample would have also permitted more detailed within-group analysis, which would have allowed differences in attachment and theory of mind with regard to type of offence (e.g. violent versus. property) to be explored.

Selection bias was particularly apparent within the non-offending group, in which the response rate was only 25%, even after the recruitment procedure had been amended to increase uptake. This may have resulted in the sample containing individuals who were unrepresentative of 'normal' adolescents. Although this may have exaggerated group differences, the SRYB did show variability within the non-offending group. Furthermore, missing a lesson to partake in the research and the chance to win £30 may have provided incentive for a broader range of students to participate.

Caution must be exercised in generalising the findings too widely. Like the majority of previous research into conduct problems, the participants were all male. Past research has found differences between female and male trajectories to offending (Jasper et al., 1998) as well as theory of mind abilities (Baron-Cohen et al., 1997). Conclusions should not therefore be extended to female offenders. As the offending group was characterised by significant but moderate levels of antisocial behaviour, findings can only be compared with less serious delinquents and are still

to be confirmed in more serious and prolific offenders. Future research with more prolific offenders is warranted.

4.7.2 Measures

As attachment and theory of mind are relatively new areas of study in adolescence, it was difficult to find appropriately validated and standardised tools for this study.

One of the main limitations with the IPPA is that it is unable to distinguish attachment according to Ainsworth et al.'s (1978) classifications. Rather than rating a participant as secure, avoidant, ambivalent or disorganised, it provides a continuous measure of attachment and has subscales indicative of relative degrees of perceived parental security with regards to specific aspects of the participant's relationship with parents (trust, communication and alienation). Using such a measure prevented comparisons with studies in which specific types of attachment have been investigated. Although an individual may have a different attachment to mother and father (Fonagy, 1999a) the version of the IPPA used in this research did not consider each parent separately. Given the limitations of the IPPA, it would have been helpful to use further attachment measures, such as the AAI, to provide typologies of attachment and a separate measure of attachment to both parents, to supplement the findings.

The Eyes test also has a number of limitations. Like other measures of theory of mind it is not well validated, with limited norms being reported up to the age of twelve only. It measures the ability to recognise and label mental states (of Caucasian adults rather than a diverse racial mix of children) with a structured, static

task based on visual stimuli alone. This may miss some of the more sophisticated processes involved in theory of mind. For example, it does not consider a naturalistic ability to infer emotions from an individual's behaviour, nor does it indicate how to respond to different emotions in a socially appropriate way. Measuring theory of mind could also have been improved by using an additional measure, but given the current status of theory of mind research, no such tool was available.

The self-report of youth behaviour did not uncover significant differences between-groups on responding to "SRYB yes recently". However, it is likely that the two groups would have differed in amount of delinquent behaviour over the past six months. Therefore, it is possible that the lack of group differences observed in this area may be an artefact of the measure. Although some violent and serious crimes are considered in the SRYB they are not its main focus. Instead, questions consider both illegal behaviours and school related behaviours, all of which are afforded equal weighting. It is likely that minor school related behaviours, which would show more commonalities across groups, would have been estimated as occurring most frequently, possibly obscuring actual group differences in other illegal behaviours. In addition, "SRYB yes recently" asks the participant to specify how many times he has carried out an act within the past six months. Accurate estimates proved difficult to obtain as shown by some of the participants commenting on finding it hard to specify a figure.

Despite the aforementioned limitations with SRYB, by permitting whole-sample analysis of offending, this measure added to findings based on group membership

alone. For example, despite no group differences being found on IPPA alienation and IPPA communication, correlations between both measures and self-report of delinquency were found across the whole-sample.

4.8 IMPLICATIONS OF THE STUDY

4.8.1 Future research

This study has a number of implications for future research. As certain new findings surfaced from this study, most notably the importance of attachment and theory of mind in adolescent conduct problems, replication, addressing the limitations outlined in section 4.7, would be useful. Furthermore, as the design was cross-sectional and based upon single time-point assessments, no direct cause-effect inferences are warranted. More detailed longitudinal studies would be necessary to consider causal pathways.

In addition to security of attachment as a whole, levels of trust in the parental relationship emerged as important in adolescent conduct problems. Much of the literature to date has focussed upon conflict in families rather than possible protective factors. However, some research has looked at aspects of parent-adolescent relationships which may serve as protective factors. For example, a relationship with an affectionate parent has been found to reduce involvement in crime (Pulkkinen, 1983) and maternal involvement has been found to buffer against deviant behaviour (Patterson, DeBaryshe, & Ramsey, 1989). Trust in families as a protective factor is therefore important to consider further. It would also be interesting to investigate whether there is a large effect size between trust and conduct problems in younger children, or whether, as proposed, trust is coupled with

adolescent development in terms of acquiring autonomy, and would therefore be less important in child conduct problems.

Although not directly related to the main research questions, an interesting relationship between ethnicity and attachment was found in this research. This adds to a research base which has looked at ethnic groups which are not comparable with other studies, and provided mixed results. Considering this relationship in more detail would further our understanding of the impact that ethnicity has on attachment and provide much needed norms.

As theory of mind has been considered so rarely in adolescence, possibly the most important task is to get a normative understanding and to develop well-validated measures for future research. Using the Eyes test did not allow further exploration into whether offenders find specific types of emotion particularly difficult to interpret. Items on the Eyes test were a mix of positive and negative emotions and differences across offenders and non-offenders were found, suggesting there is a general theory of mind deficit. However, given the findings of previous studies that children with conduct problems show a “skewed” theory of mind (Happé & Frith, 1996; Hughes et al., 1998) it would be useful to investigate whether there are specific emotions that adolescent offenders find particularly difficult, or particularly easy to interpret.

This study found evidence that adolescents with conduct problems exhibit worse theory of mind abilities than ‘normal’ non-offending peers. Future research could consider the influence of age-group and level of conduct problems on this

relationship. Whether theory of mind abilities relate to type of offender, particularly those not considered in this study (high risk offenders, sex offenders, and psychotic offenders) could also be investigated further. Furthermore, comparisons between theory of mind in individuals with conduct problems and other clinical groups would determine whether mentalisation deficits are specific to conduct problems or found in a number of psychological disorders. This is important to consider as insecure attachment has been linked to a number of disorders.

The theory of mind task in this study contained material without clear links to attachment, suggesting that attachment is related to the development of theory of mind in general, as opposed to being limited to understanding emotions within the context of the attachment relationship. However, intra-individual differences in theory of mind have been found (Fonagy, 1999b). Whether these differences exist in adolescent offenders could be investigated more systematically, particularly given the importance that the attachment relationship seems to hold in theory of mind development. Considering theory of mind in different contexts (e.g. emotionally charged or cognitively loaded situations) may also highlight more marked differences between offenders and non-offenders.

4.8.2 Clinical implications

Kazdin (1997) suggested that treatments derived from an evidence-based model of conduct disorder were most likely to be effective. Results of this study add to the current evidence base, providing a number of clinical implications for working with individuals with conduct disorders. Most notably, perhaps, is the need for the early identification of insecure attachment patterns, given the importance that they seem to

hold in the development of antisocial behaviour. In line with this, the Government has recently put an emphasis on preventing conduct problems developing, by offering parenting programmes to at-risk families (e.g. “Sure Start”). These have proved successful to some extent, however the focus upon behavioural change may neglect consideration of qualities of the parental relationship, such as trust and communication, which this study found relate to conduct problems.

By the time an individual reaches adolescence conduct problems are often long-standing and deep-rooted. Single-component treatments have not provided unequivocal evidence of effectiveness, and parent training in adolescence seems to have less of an impact than in childhood (Fonagy, Target, Cottrell, Phillips, & Kurtz, 2002). Given that the current study and past research has shown conduct problems in adolescence are related to a number of factors, it is not surprising that simple treatments have not yielded significant changes.

Only a couple of treatments have been found effective in treating adolescents with conduct problems, namely functional family therapy (Alexander & Parsons, 1982) and MST (Henggeler et al., 1998). Functional family therapy views conduct problems as serving a function, such as the regulation of support, intimacy and distance amongst family members. Using behavioural, systemic and emotional processing components, the intervention targets both family and individual behaviour, with a goal of changing patterns of negative interactions and communication. MST considers conduct problems as multi-determined and therefore addresses multiple systems in the child’s social ecology, considering family, peer and individual influences upon the behaviours. Methods of treatment in

functional family therapy and MST are consistent with the results of this study, which highlight the need for a focus on a number of areas in the individual's life, including relationship with parents, emotional difficulties, and psychosocial factors.

Specifically addressing the relationship between theory of mind deficits and adolescent conduct problems may enhance the effectiveness of interventions. Therapists should not presume a level of mentalisation, but be aware that adolescents with conduct problems are more likely to find emotional understanding more difficult than their peers. Methods to strengthen the adolescents' capacity for mentalisation, such as practising recognising, labelling and communicating emotions (Izard, 2002) could be incorporated into treatment. Such empathy-related techniques have been found to increase the understanding of others in pre-school populations (Eisenberg & Fabes, 1998). Without a specific focus on theory of mind, other interventions, such as social skills training, may prove ineffective (Gibbs, Potter, Barriga, & Liao, 1996).

As mentalisation impairments are thought to be initially functional (to protect the child from a rejecting caregiver), the attachment relationship needs to be addressed at the same time as individual work on theory of mind. It is unlikely that the individual will be motivated to change his or her theory of mind if it results in increased feelings of rejection. Given the importance that communication with parents was found to have in respect of theory of mind development, enhancing communication with parents, in particular "maternal mind-mindedness", may help the adolescent develop his or her theory of mind abilities.

Family interventions should consider how parent-child relationships have adjusted to adolescents' changing developmental needs (Fuligni & Eccles, 1993). The strong relationship found between trust and conduct problems suggests that parents are required to perform a complicated balancing act between control, warmth and autonomy granting. This may be particularly difficult for parents of adolescents' with conduct problems, given their high levels of psychosocial risk. Supporting parents to allow adolescents to have input in decision-making may address the adolescents' developing needs for independence in a supportive context, promoting appropriate levels of individuality by demonstrating to the adolescents that their viewpoint is important (Brody, Moore & Gleib, 1994; Eccles et al., 1993).

4.8.3 Social implications

The reparation order (sections 67-68 of Crime and Disorder Act, 1998) is a new court disposal which is available for any juvenile (ten to seventeen years old) who has been convicted of an offence. Under the order the offender is expected to make appropriate reparation to his or her victim. One form of reparation that has been suggested is that the offender be obliged to listen to the distress the offence has caused the victim. The efficacy of this suggestion and the utility of it in reducing recidivism may depend on the offender's theory of mind.

As this study found that adolescent offenders have difficulties in recognising the emotions of others, it would be necessary to provide the offender with a framework in which they are able to recognise and understand the distress they have caused the victim. Without taking account of theory of mind deficits it is unclear how useful it would be for the offender to hear from their victim. This is particularly important to consider given the distress that this may cause the victim. It is not apparent whether

such a framework is currently employed within the youth offender system. However, if used appropriately (alongside other interventions such as family work), the reparation order may help to enhance the offender's theory of mind abilities, and facilitate the prevention of future offending.

Traditional societal methods of dealing with young offenders, such as via the criminal system, are shown to relate to an increase in re-offending (Lipsey & Wilson, 1993). Part of this may be explained by rejection from society mirroring the individual's insecure attachment with their parents, which in itself has been found to relate to offending. The treatment of young offenders within a criminal system should therefore consider how to allow the development of healthy attachment relationships, whilst considering the safety of society at large.

4.9 CONCLUDING COMMENTS

Investigating a group already characterised by psychosocial risk, this research uncovered two further inter-related constructs as meaningful in adolescent conduct problems. High levels of insecure attachment and theory of mind deficits were found in adolescent boys with conduct problems, highlighting both constructs as important risk factors in young offending.

Consistent with Fonagy et al.'s (1991a) model, attachment was found to relate to theory of mind, with adolescents with secure relationships with parents having superior mentalising capacities to those with insecure attachments. Empirical support was also found for Fonagy et al.'s (1997a) model of the development of crime, in that attachment, theory of mind and offending were interrelated. This suggests that theory of mind may be a mediating factor in the relationship between

attachment and offending, with insecure attachment giving rise to theory of mind deficits, which in turn, increase the risk of conduct problems.

On considering specific qualities of parental relationships, trust was found to be particularly important in determining levels of conduct problems. With regard to theory of mind, communication with parents was found to be especially pertinent, which was suggested to relate to “maternal mind-mindedness” providing a forum from which to internalise the perspective of others. Both trust and communication with parents were therefore highlighted as important areas to address in treatment of adolescents with conduct problems.

Given the increase in antisocial behaviour in adolescence, the physical, psychological and economic impact it has on society, and the limited success of current interventions, practitioners have stressed a need for research into this area. This study helps to fill the gap in research into conduct problems in adolescence, increasing our knowledge about deficits in such populations and providing suggestions for future research and methods of intervention. Hopefully, with developments in research and evidence-based practice, attempts to reduce youth offending will become more effective.

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APPENDICES

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APPENDIX A1: Local Research Ethics Committee (LREC) Approval



MERTON & SUTTON LOCAL RESEARCH ETHICS COMMITTEE

Tel: 020 8296 3525

Fax: 020 8296 3165

23 May 2003

Re: LREC No. 03/13

[Please quote above reference in all correspondence]

Mrs S Mundy
Trainee Clinical Psychologist
Sub-dept. of Clinical Health Psychology
University College London
1-19 Torrington Place, London, WC1

Dear Mrs. Mundy,

re: Attachment and Theory of Mind in adolescents: a comparison of young offenders with school aged children

Thank you for your letter of 17 May 2003. The consent form for adolescents to sign and the amended information sheet conform to the Committee's recommendations and I am happy to give approval to your study on behalf of the Committee.

LREC approval is given on the understanding that:

- i) the study is commenced within the next 12 months. Should the start of the study be delayed beyond this time, a re-application to the Committee will be required.
- ii) any change or amendment to the protocol will be reported to the Committee.
- iii) the Committee should be sent one copy of any publication arising from your study, or a brief report after completion if there is to be no publication. If the study lasts for more than a year, a brief annual report should be provided.

The documents reviewed were the Application Form signed 14/2/03, the Thesis Proposal, the consent form and information sheet and the investigator's CV.

Yours sincerely,

A handwritten signature in cursive script that reads "Henry Wilcox".

Dr. H. Wilcox
Chairman
Local Research Ethics Committee

All correspondence to:

The Chairman, LREC, R&D Unit, St. Helier Hospital, Carshalton, Surrey SM5 1AA

APPENDIX B1: Information sheet

Sarah Mundy,
Sub-department of Clinical Health Psychology,
University College London,
17-19 Torrington Place

November, 2003

XXXXXX SCHOOL: Years 10 and 11 INFORMATION SHEET

Dear Parents/Guardians,

I am doing some research and would like your son to be involved. The research is comparing young offenders with boys at XXXX school. I am looking to see whether the two groups are different from each other in terms of understanding other people's emotions and in their relationships with people. These results will be used to help us understand criminal behaviour better and may allow us to develop some strategies to prevent it occurring so frequently. I have asked all the boys at XXXX who are aged 14-16. I have asked your son to be involved only because of his age, not because of anything to do with criminal behaviour so do not worry. Indeed, if your son has a criminal record he would not be suitable.

The research would involve me asking your son some questions and for him to do some tasks such as looking at pictures of eyes and guessing what feelings they are showing. It would take about 40 minutes. We would carry it out during normal school hours so it would not involve him staying at school any longer than usual. Any results will be confidential and you would not have to let anyone know that he was taking part if you did not want to. It is unlikely for there to be any harm from this study but if there is anything that worries you or your son you can 'phone me on 07905 943 654. **Everyone who takes part has the chance of winning £30 music or sports vouchers.**

If you would like your son to be involved then please sign the consent slip. Following that please **give it to your son's class teacher** who will pass it on to me. Please would you do this as soon as possible. We will then carry out the research, as described above, at school. If you are unsure about whether you would like your son to be involved, or don't understand this sheet then please ring me on 07905 943 654. I can answer any questions you have and then you can decide whether or not you would like him to be involved.

Thank you for taking the time to read this, I appreciate your help.

Yours faithfully,

Sarah Mundy, Trainee Clinical Psychologist

APPENDIX B2: Consent form

CONSENT SLIP

If, once you have read the information sheet, you would like your son to be involved please sign this slip. If you decide that it is alright for your son to take part in the study you can always change your mind and withdraw him from the study without giving a reason. This will not affect his future treatment.

Name of Parent/Guardian
(BLOCK CAPITALS)

Signature of Parent/Guardian

Name of Pupil
(BLOCK CAPITALS)

Signature of Pupil

Date

Name of Investigator (BLOCK CAPITALS)

Signature of Investigator

Date

**APPENDIX C1: Inventory of Parent and Peer Attachment (IPPA)
(parent version), Armsden and Greenberg, 1987**

QUESTIONS ABOUT MY PARENTS

Some of the following statements ask about your feelings about your parents or the person who has acted as your parent. If you have more than one person acting as your parent answer the questions for the one you feel has most influenced you. Please read each statement and circle the ONE number that tells how true the statement is for you now.

	Never True	Not Often True	Sometimes True	Often True	Always True
1. My parents respect my feelings.	1	2	3	4	5
2. I feel my parents are successful as parents.	1	2	3	4	5
3. I wish I had different parents.	1	2	3	4	5
4. My parents accept me as I am.	1	2	3	4	5
5. I have to rely on myself when I have a problem to solve.	1	2	3	4	5
6. I like to get my parent's point of view on things I am concerned about.	1	2	3	4	5
7. I feel it's no use letting my feelings show.	1	2	3	4	5
8. My parents sense when I'm upset about something.	1	2	3	4	5
9. Talking over my problems with my parents makes me feel ashamed or foolish.	1	2	3	4	5
10. My parents expect too much from me.	1	2	3	4	5
11. I get upset easily at home.	1	2	3	4	5
12. I get upset a lot more than my parents know about.	1	2	3	4	5

	Never True	Not Often True	Some-times True	Often True	Always True
13. When we discuss things, my parents consider my point of view.	1	2	3	4	5
14. My parents trust my judgment.	1	2	3	4	5
15. My parents have their own problems, so I don't bother them with mine.	1	2	3	4	5
16. My parents help me to understand myself better.	1	2	3	4	5
17. I tell my parents about my problems and troubles.	1	2	3	4	5
18. I feel angry with my parents.	1	2	3	4	5
19. I don't get much attention at home.	1	2	3	4	5
20. My parents encourage me to talk about my difficulties.	1	2	3	4	5
21. My parents understand me.	1	2	3	4	5
22. I don't know who I can depend on these days.	1	2	3	4	5
23. When I am angry about something my parents try to be understanding.	1	2	3	4	5
24. I trust my parents.	1	2	3	4	5
25. My parents don't understand what I'm going through these days.	1	2	3	4	5
26. I can count on my parents when I need to get something off my chest.	1	2	3	4	5
27. I feel than no one understands me.	1	2	3	4	5
28. If my parents know something is bothering me, they ask me about it.	1	2	3	4	5

APPENDIX C2: Self-report of Youth Behaviour (SRYB), Olweus, 1986

SELF REPORT OF YOUTH BEHAVIOUR

Client ID#: (office use only)		Today's Date: (day/month/year)	
Sex:	<input type="checkbox"/> Male <input type="checkbox"/> Female	Date of Birth: (day/month/year)	

INSTRUCTIONS: Please read each item below. Circle "No" if you have NEVER done the behaviour. Circle "Yes" if you have ever done the behaviour in the past. If you have done the behaviour in the past, write down how many times in the last six months.		Have you EVER done this?		if YES, about how many times in the last six months?
		NO	YES	
1	Stolen money or other things from members of your family?	No	Yes	_____ times
2	Skipped school for a whole day?	No	Yes	_____ times
3	Stolen a wallet or purse while the owner wasn't around?	No	Yes	_____ times
4	Been sent out of the classroom?	No	Yes	_____ times
5	Falsified someone's signature to get money or other advantages?	No	Yes	_____ times
6	Had a violent quarrel with a teacher?	No	Yes	_____ times
7	Taken things worth less than £50 from a shop without paying?	No	Yes	_____ times
8	Been late for school in the morning?	No	Yes	_____ times
9	Broken into a parking meter or the coin box of a pay phone?	No	Yes	_____ times
10	Purposely destroyed chairs, desks or other things at school?	No	Yes	_____ times

INSTRUCTIONS:

Please read each item below. Circle "No" if you have NEVER done the behaviour. Circle "Yes" if you have ever done the behaviour in the past. If you have done the behaviour in the past, write down how many times in the last six months.

Have you EVER done this?

NO

YES

if YES, about how many times in the last six months?

		NO	YES	
11	Without permission, taken a <i>bicycle</i> not belonging to you?	No	Yes	_____ times
12	Without permission, taken a <i>car</i> not belonging to you?	No	Yes	_____ times
13	Scribbled on the school building, outside or inside, or on things belonging to your school?	No	Yes	_____ times
14	Have been kept in detention after school or during lunchtime?	No	Yes	_____ times
15	Skipped one or two lessons?	No	Yes	_____ times
16	Taken things worth more than £50 from a shop without paying?	No	Yes	_____ times
17	Broken into a shop, house or flat and taken something?	No	Yes	_____ times
18	Purposely destroyed seats in a bus, a cinema or other places?	No	Yes	_____ times
19	Sworn at a teacher?	No	Yes	_____ times
20	Taken part in a "gang fight"?	No	Yes	_____ times
21	Purposely destroyed or broken such things as windows, benches, telephone booths, or post boxes?	No	Yes	_____ times
22	Been called to the head for something wrong you had done?	No	Yes	_____ times
23	Avoided paying for such things as cinema tickets, bus or train rides, or food?	No	Yes	_____ times

INSTRUCTIONS: Please read each item below. Circle "No" if you have NEVER done the behaviour. Circle "Yes" if you have ever done the behaviour in the past. If you have done the behaviour in the past, write down how many times in the last six months.		Have you EVER done this?		if YES, about how many times in the last six months?
		NO	YES	
24	Drunk so much beer, wine or spirits that you clearly felt drunk?	No	Yes	_____ times
25	Started a fight in which you deliberately struck the other person first?	No	Yes	_____ times
26	Used a weapon (such as a knife or a broken bottle) in a fight?	No	Yes	_____ times

APPENDIX C3: Family, Education, Occupation and Ethnicity (FEO)

Family, Education, Occupation & Ethnicity

We would be grateful if you would please answer the following questions about your family, education, occupation and ethnicity as best you can. For questions where you have to think about a child, we would like you to think about your son who is taking part in this project with you.

Your answers will be completely confidential.

Your name & date of birth.....

Your child's name..... & date of birth.....

Today's date

(1) Please indicate who lives in your household:

Number of adults (please state their relationship to you e.g. partner, mother-in-law etc.)

.....

Number of children (please state their relationship to you)

.....

(2) Please indicate your marital status (please circle the one that applies to you).

Single Married Separated Divorced Remarried Widowed

(3) Is your child adopted (please circle)? Yes No A foster child? Yes No

(4) What is your ethnic group? (please choose one section from a to f then tick the appropriate box)

a. White

British Irish

Any other White background (please describe.....)

Appendix C3. FEO (cont.)

b. Black or Black British

- Caribbean African
- Any other black background (please describe.....)

c. Asian or Asian British

- Indian Pakistani Bangladeshi
- Any other Asian background (please describe.....)

d. Chinese

- Chinese

e. Mixed

- White and Black Caribbean White and Black African White and Asian
- Any other Mixed background (please describe.....)

f. Other (please describe.....)

(5) Which of these qualifications do you have? (please tick all the boxes that apply to you or, if not specified, the nearest equivalent).

- | | |
|--|---|
| <input type="checkbox"/> 1+ O Levels/CSEs/GCSEs (any grades) | <input type="checkbox"/> NVQ Level 1, Foundation GNVQ |
| <input type="checkbox"/> 5+ O Levels, 5+CSEs (grade 1) | <input type="checkbox"/> NVQ Level 2, Intermediate GNVQ |
| <input type="checkbox"/> 5+ GCSEs (grades A-C), School Certificate | |
| <input type="checkbox"/> 1+ A Levels/AS Levels | <input type="checkbox"/> NVQ Level 3, Advanced GNVQ |
| <input type="checkbox"/> 2+ A levels, 4+ AS Levels, Higher School Certificate | <input type="checkbox"/> NVQ Levels 4-5, HNC, HND |
| <input type="checkbox"/> First Degree (eg BA, BSc) | <input type="checkbox"/> Other Qualifications (eg City and Guilds, RSA/OCR, EC/Edexcel) |
| <input type="checkbox"/> Higher Degree (eg MA, PhD, PGCE, post-graduate certificates/diplomas) | <input type="checkbox"/> No Qualifications: In which school year did you leave secondary education? |

(6) Please tick the box that most closely describes your occupation.

- Professional post (eg teacher, doctor, accountant, solicitor)
- White collar worker (eg police constable, bank clerk or other administrative role, computer programmer, nurse)
- Skilled manual worker (eg plumber, electrician, HGV or train driver)
- Semi-skilled or unskilled manual worker (eg porter, van driver, packer)
- Homemaker
- Without income:
 - Unemployed: For how long have you been unemployed?
 - State benefits: For how long have you been drawing benefits? ...
 - Other (please describe)

(6a) If employed, please write the full title of your main job and how many hours you usually work in a week.

.....

(7) If you have a partner who lives with you, please tick the box that most closely describes his occupation.

- Professional post (eg teacher, doctor, accountant, solicitor)
- White collar worker (eg police constable, bank clerk or other administrative role, computer programmer, nurse)
- Skilled manual worker (eg plumber, electrician, HGV or train driver)
- Semi-skilled or unskilled manual worker (eg porter, van driver, packer)
- Homemaker
- Without income:
 - Unemployed: For how long has he been unemployed?
 - State benefits: For how long has he been drawing benefits?
 - Other (please describe)

(7a) If employed, please write the full title of his main job and how many hours he usually works in a week.

.....

Thank you

APPENDIX D1: Within-group correlations between all variables

Table 13: Within-group correlations across all variables

	Eyes	IPPA total	IPPA trust	IPPA comm.	IPPA alien.	SRYB Ever	SRYB Rec.	VIQ	PIQ	Parent edu.	Voc. qual	Parents' employ.	Family sitn.	Ethnic.
Eyes	—	.228	.116	.406*	.058	-.199	-.290	.215	-.251	.154	.129	.118	.107	.011
IPPA Total	.532*	—	.911**	.885**	.839**	-.478**	-.511**	-.189	.128	-.042	-.027	.285	.139	-.497**
IPPA Trust	.407	.912**	—	.745**	.661**	-.463**	-.474**	-.189	.250	-.062	-.006	.320*	.088	-.519**
IPPA comm.	.641**	.896**	.693**	—	.568**	-.492**	-.558**	-.251	.089	.061	.001	.365*	.082	-.377*
IPPA Alien.	.101	.692**	.589**	.416	—	-.298	-.306	-.066	.000	-.119	-.067	.056	.202	-.420**
SRYB Ever	-.385	-.428	-.327	-.456*	-.252	—	.930**	.298	-.012	.035	-.224	-.053	-.058	.088
SRYB rec.	-.310	-.342	-.342	-.307	-.178	.733**	—	.284	-.028	.002	-.313	.006	-.100	.157
VIQ	-.185	.147	.013	.198	.150	.317	.385	—	.173	.154	.025	-.250	.222	.060
PIQ	-.253	-.039	-.238	.116	-.044	.069	.306	.712**	—	-.222	.065	-.085	.087	-.245
Parents' edu.	-.188	-.058	.781	-.054	.001	.290	.175	.205	.093	—	.186	.348*	-.356*	.022
Voc. Qual	.058	.213	.067	.299	.129	.213	.240	.425	.530*	-.010	—	.033	-.030	.031
Parents' employ.	-.049	-.152	.743	-.070	-.321	.256	.147	.178	.058	.193	.295	—	-.407*	-.018
Family sitn.	-.058	.420	.231	.132	.001	-.328	-.225	-.518*	-.236	.079	-.012	.012	—	-.186
Ethnic.	.218	-.147	.139	.165	-.375	-.317	-.161	-.329	-.323	-.193	-.080	-.136	-.012	—

Note: *Non-offenders in italics in top right of table*, offenders in normal font in bottom left of table. **Bold indicates a significant correlation (* < .05, ** < .01)**

APPENDIX D2: Whole-sample correlations across all variables

Table 14: Whole-sample correlations across all variables

	IPPA total	IPPA trust	IPPA comm.	IPPA alien.	SRYB ever	SRYB rec.	VIQ	PIQ	Parent edu.	Voc. qual	Parents' Employ	Family sitn.	Ethnic.
Eyes	.420**	.345**	.553**	.098	-.356**	-.344**	.162	-.083	-.070	.049	-.022	.109	.060
IPPA Total		.912**	.889**	.750**	-.520**	-.463**	.199	.242	-.131	.020	.033	.219	-.365**
IPPA Trust			.722*	.575**	-.502**	-.446**	.237	.338*	-.201	-.045	.017	.267*	.432**
IPPA comm.				.480**	-.504**	-.446	.151	.196	-.038	.101	.116	.135	-.140
IPPA alien.					-.286*	-.262*	.105	.044	-.090	-.016	-.077	.145	-.410**
SRYB Ever						.834**	-.034	-.168	.256	-.134	.167	-.255	-.012
SRYB rec.							.131	-.007	.135	-.052	.114	-.196	.047
VIQ								.538**	-.235	.013	-.201	.077	-.151
PIQ									-.328*	.061	-.176	.133	-.282*
Parents' edu.										.175	.352**	-.295*	.001
Voc. Qual											.173	-.075	.016
Parents' employ.												-.297*	-.029
Family sitn.													-.157

Note: **Bold** indicates a significant correlation (* < .05, ** < .01)