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OXFORD DOCTORAL COURSE IN CLINICAL PSYCHOLOGY

**Attachment, conduct disorder and
perspective taking in 7-9 year old boys**

by David Tilbrook

A thesis submitted in partial fulfilment of the requirements of the
Open University/BPS for the degree of Doctor of Clinical Psychology

July 2000

Number of words: approximately 25000

AWARDED DATE: 12 September 2000

ABSTRACT

The perspective taking ability of children with aggressive behaviour problems was explored, by comparing them with non-aggressive children on tasks involving the prediction of emotion and behaviour on hypothetical short story vignettes. Their ability to correctly predict emotion and behaviour in emotionally charged, personally involving tasks was investigated, and linked with their security of attachment and verbal intelligence.

Contrary to what was predicted, the aggressive children were not observed to perform poorly on complex emotionally charged, personally involving vignettes. Also, security of attachment was not seen to relate to performance on vignettes. The ability to provide explanations of responses which incorporated a coherent description of the differing and false beliefs held by different characters correlated with verbal intelligence and tentatively with security of attachment. The two groups showed significant differences on all sub-scales of a measure of abnormal social behaviour and two out of three sub-scales of a measure of security of attachment. The results do not present a clear picture, but suggest that verbal intelligence is associated with perspective taking and understanding of emotion.

A consideration of methodological issues suggests that the short story vignettes suffer from poor reliability and possibly poor validity. The findings are discussed with relation to other literature, in particular an alternative theory of the development of emotion understanding that emphasizes the role of coherent psychological discourse by the caregiver. The role of disorganised attachment in childhood aggression is also discussed. Implications for clinical practice are considered and suggestions for future research are outlined.

ACKNOWLEDGEMENTS

Firstly, I should like to thank the headteachers and other staff of various schools in Oxfordshire for their considerable assistance. In particular Roy Howarth of Northern House School, Alan Haigh of John Hampden Primary School, and Ann Battersby of the EBD Outreach Service. Also, I would like to thank all the children who took part in the study.

Secondly, I should like to thank my supervisor, John Richer, for both his creative and practical assistance with this study.

My thanks also go to Myra Cooper and Paul Griffiths for clear advice on data analysis and experimental design.

Finally, my thanks go to Jude for her continuing support at a difficult time.

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Section ONE

INTRODUCTION

1.1 A CLASSROOM INCIDENT

John opened the door of the classroom and started to walk out into the corridor when Steve collided into him at a tremendous speed. You did that on purpose, said John and started laying into Steve with his fists. A few minutes later, James walked out into the same corridor and Bill ran straight into him. "Oi, that really hurt, what's going on", said James. "Sorry" Bill said, "we were having a race down the corridor. Do you want to join in?". "Yeah!" said James.

There are different ways of understanding the different reactions of the two boys to the same situation. An attributional approach would focus on the role of perceived intentionality underlying the accident. In this case, John might have perceived Steve's crashing into him as motivated by hostile and aggressive intent. This would justify his overreaction to the accident. The more calm and curious response from James might suggest that he did not necessarily perceive hostility or other negativity to underlie the accident. Whilst such an approach focuses on attributions regarding the perceived intent of the other in the interaction, an alternative way of understanding, that of attachment theory (see Bowlby, 1988), emphasises differing expectations of acceptance or rejection, based on past, and particularly early experience, as determining such perceptions of intent. Thus, whilst John expected rejection and hostility, James expected acceptance and pro-social behaviour, their differing expectations influencing their attributions of and response to the interaction.

This study investigates the ability of children who show aggressive behaviour to take the perspective of others in hypothetical emotionally charged social situations.

Typically, aggressive children are seen to show little concern for others, or for the consequences of their anti-social behaviour. As indicated above there are different theoretical approaches to understanding this. These will be outlined as they provide the background to the current study. Firstly, social cognition theory will be presented, followed by the perspective of attachment theory. These will then be combined to generate a model linking aggressive behaviour with perspective taking ability in 7-9 year old boys.

1.2 SOCIAL COGNITION

Social Information Processing model

The Social Information Processing model (Crick and Dodge, 1994) has been designed to account for the different behaviours and attributions of aggressive children. This model posits that children's social adjustment is based on the quality of sequential cognitive processing in particular social situations. The model has six sequential steps, which are; encoding of cues, interpretation of cues, clarification of goals, access to potential responses from memory, response decision and behavioural enactment of the chosen response. Differences between aggressive and non-aggressive children have been found at all of the following steps in this information processing cycle:

- a) At the encoding step, aggressive children have been found to attend to fewer relevant cues before interpreting the meaning of others' behaviour (Dodge, Pettit, McClaskey & Brown, 1986) and to attend selectively to hostile rather than benign cues (Milich & Dodge, 1984).
- b) At the interpretation step, aggressive children are more likely to attribute others' behaviour to hostile intentions (Dodge *et al*, 1986)
- c) At the response access step, aggressive children generate fewer verbal assertion solutions (Asarnow & Callan, 1985), fewer solutions to hypothetical problem situations, and an excess of physically aggressive solutions in response to social problems (Richard & Dodge, 1982).
- d) At the response decision step, aggressive children expect that aggressive solutions will successfully reduce aversive behaviour from others and will gain tangible rewards (Perry, Perry & Rasmussen, 1986).

Shure and Spivak (1972) view the generation of alternative solutions as a critical component of effective social behaviour. They suggest that "the adequacy of the problem solving skills in aggressive and isolated boys may be limited to an initial solution. When further solutions are called for the solutions they do choose are often characteristic of their behaviour (aggressive or ineffective)." Conduct disordered boys were seen, relative to controls, when presented with hypothetical social problems, to be "less able in generating relevant means to a social end, anticipate obstacles to be dealt with in the pursuit of a social end, and generate directly assertive social responses to a difficult social situation" (Joffe, Dobson, Fine, Marriage and Haley, 1990; p.573).

Aggressive children's views of emotionally difficult situations

Aggressive children appear to have different views of aggressive and pro-social behaviour from non-aggressive children. Responding to emotionally difficult social situations, behaviourally disruptive children have been seen to minimise the fear associated with being victimised, to explain victimiser's emotions with more references to desirable material and psychological consequences, and to make fewer references to the loss, harm and unfairness the victimisers had created. Behaviourally disruptive children view victimisation more positively than peers, although they more frequently identified sadness as the emotional consequence, and saw, in pro-social behaviour, more the avoidance of harm, loss or unfairness, than positive consequences (Arsenio and Fleiss, 1996).

Self / other differences in attributional style

The evidence does not support the idea that aggressive children respond to all negative behaviour with the same attributional bias, rather that attributions of hostile intent are largely reserved for perceived negative behaviour directed towards themselves, and not towards others. Demorest (1992) suggests that on the whole perceptual biases occur when the situation is personally involving, ambiguous and perceived as threatening. Downey, Lebolt, Rincon and Freitas (1998) suggest that this can be explained by the different expectations that are held regarding acceptance and rejection. That is, if a child expects rejection because of their relationship history, they are more likely to perceive it, but no more likely to expect others to feel rejected by a similar interaction than a child who expects acceptance. Exploring this notion, Downey *et al*, (1998)

found that children who angrily expected rejection showed heightened distress following an ambiguously intentioned rejection by a peer.

Database or Internal Working Model underlying Social Information Processing

Crick and Dodge's (1994) model incorporates a 'database' linking all of the information processing steps, which includes underlying beliefs or 'scripts' (Demorest, 1992) which personalise the individual's typical information processing style. These scripts or beliefs explain why some children respond with withdrawal and others with aggression under similar conditions. This notion of a database is similar to what have been termed 'internal working models' of relationships in attachment theory. An internal working model refers to the mental organisation, or construct, of expectations regarding the likely behaviour of self and others in relationships. In the example at the start of this chapter, it could be inferred that John's internal working model of relationships incorporated the expectation that other people will respond to him with rejection and hostility.

Attachment theory is particularly concerned with the expectations that people bring to social encounters and has generated a considerable and growing theoretical and research base. An outline of Attachment theory will be presented, followed by an outline of how the theory attempts to explain the development of social understanding from the earliest stages of life. Linking infant with adult attachment, an argument will be made to explain how the development of mind and understanding of mental states is inextricably bound up in the caregiver's sensitive responding to her infant.

1.3 ATTACHMENT THEORY

Attachment behaviour concerns 'any form of behaviour that results in a person attaining or retaining proximity to some other differentiated and preferred individual' (Holmes, 1993; p.68). Attachment behaviour can be triggered by any fear provoking situation, often evidenced at separations from an attachment figure and terminated on reunion with a 'secure base'. Secure base refers to the sense of safety and protection provided by or associated with an attachment figure. When threatened or stressed individuals return to their secure base until they feel safe to explore again, but only if sure that their attachment figure has and will continue to provide a secure base. If an attachment figure is unable to provide a secure base a child may develop an insecure attachment.

In what ways are insecure attachments maladaptive?

Longitudinal studies have indicated that insecure attachment at 12-18 months predicts a range of psycho-social difficulties later in development. These include; behavioural difficulties and poor quality of relationships with peers in pre-school (Erickson, Egeland and Sroufe, 1985); borderline personality disorder (Fonagy, Steele, Steele, Leigh, Kennedy, Mattoon and Target, 1996); depression (Harris and Bifulco, 1991); agoraphobia (Bowlby, 1973) and schizophrenia (Vaughn and Leff, 1983).

Types of insecure attachment in infancy

Ainsworth, Blehar, Waters and Hall, (1978) identified categories of attachment security and devised a procedure, which came to be known as the 'Strange Situation' to classify infants accordingly. The classifications are as follows:

1. Secure – autonomous; infants' responses to several short separations would be categorised as secure if they protest separation from their mother and show proximity seeking and reduced distress on her return, followed by resumed exploratory play; this pattern is seen in approximately a half of infants.
2. An Insecure-avoidant classification would reflect little anxiety shown at separation from mother and little interest in her return, avoiding proximity to her. This category account for about one quarter of infants.
3. Insecure-ambivalent classification would reflect considerable distress on separation and a resistance to being comforted on mother's return, the infant showing continued anger or passivity. Ambivalent infants constitute roughly 12% of the total.
4. A fourth category, identified after the original classification, is termed 'disorganised' and is characterised by confused and disorganised attachment behaviour. Disorganised attachment behaviour does not show consistency as in the avoidant, ambivalent and secure categories, but rather refers to an intermittent lack of an organised strategy for attaining safety and security when under stress. Disorganised infants show unexpected alternations of approach and avoidance to their attachment figure, with periods of 'freezing' and helpless behaviours. Individuals who fit this category are also ascribed one of

the others, as on top of the confusion and disorganisation, there is reliably a tendency towards one of the other behavioural styles.

Attachment in Adulthood

Adult security of attachment has been assessed using the Adult Attachment Interview (AAI: George, Kaplan and Main, 1985). This is a semi-structured interview designed to elicit internal working models of attachment. The AAI focuses on childhood memories of attachment related experiences and current feelings about those memories. The classification ascribed to an individual reflects rather more the degree of coherence and free expression of emotion relating to these memories than the presence or absence of a harsh or impoverished childhood.

Responses to the AAI enable one of the following classifications to be made; autonomous, dismissing, enmeshed and unresolved.

1. Adults with an autonomous classification tend to value relationships and can talk about their childhood, whether good or bad memories, with coherence and a reflective awareness of their parent's likely motivations.
2. Dismissing adults devalue feelings and relationships. Their responses to the AAI tend to idealize their parents but without being able to provide concrete memories.
3. A preoccupied adult remains entangled with their early relationships and whilst highly valuing feelings and relatedness, cannot reflect on or coherently describe them.

4. The 'unresolved' category reflects adults with an unresolved loss of an attachment figure or severe trauma in childhood, and is generally related to much more severe pathology, most notably, borderline personality disorder (Fonagy *et al*, 1996). It is hypothesized that parents in the unresolved classification behave in a frightened and frightening manner towards their infants, due to unresolved trauma (Main and Hesse, 1990). This behaviour may be implicated in the disorganised attachment in the infants of such parents, as the infant would find itself in an unresolvable paradox due to the parent's presence both heightening the infant's fear and need for soothing contact and making such contact fear-arousing rather than comforting.

Correspondence between adult and infant attachment security

A strong correspondence has been shown between a mother's recollection of and current thoughts and feelings about her childhood attachment experiences and the classification ascribed to her child in the Strange Situation (Steele, Steele & Fonagy, 1996). This is consistently found whether those responses were obtained several years after the assessment of attachment security was made (Grossman, Fremmer-Bombik, Rudolph & Grossman, 1988), at the same time (Ijzendoorn, Bakersman-Kranenburg, Zwart-Woudstra, Busschbach & Lambermon, 1991) or even before the birth of the infant (Fonagy, Steele & Steele, 1991). These findings provide powerful evidence supporting the role of mother-infant interactions in determining the attributional differences and different expectations found in studies on older children as outlined earlier.

Ainsworth *et al*, (1978) found that attachment status at one year correlated strongly with a maternal relationship characterised by sensitive responsiveness in the preceding twelve months, a finding which has been replicated (Main and Weston, 1982). de Wolff's (1996) meta-analysis has found that parents of insecure children are rated consistently lower on sensitivity as compared to parents of secure children. Also, various studies have shown not only the transmission of security or insecurity, but more specifically, transmission of different types of insecurity. Main and Goldwyn (1984) found that seventy-five percent of secure infants had mothers who were rated Secure-autonomous on the AAI, while mothers of avoidant infants tended to have Dismissing-detached, and ambivalent infants had Preoccupied-entangled parents.

Sensitive Responsiveness

In essence an individual whose attachment figure consistently and sensitively provides a secure base is likely to develop a secure attachment, whilst the failure of this is likely to lead to an insecure attachment. The provision of a secure base is more complex than just physical proximity, however. Rather, the quality and availability of sensitive and responsive caregiving from an attachment figure is of crucial significance, such that 'sensitive responsiveness' is considered the cornerstone of secure attachment in infancy. Early research in attachment indicated that maternal sensitivity to infant's signals at three months predicts infants' security of attachment at 18 months, independent of temperament or other factors (Ainsworth *et al*, 1978).

Affective attunement and responses to infant distress

Work in developmental psychology and psychoanalytic theory has enabled attachment theory to incorporate the notion of affective attunement with maternal sensitivity.

Stern (1985) showed how sensitive mothers interacted with their infants by increasing activity when the infant looked bored and holding back when the infant seemed over-stimulated, thus maintaining equilibrium. Also, these mothers showed cross-modal attunement by adding vocalisations to movements the infant made, or vice versa.

These factors are even more significant with regard to infants showing distress.

Sensitive mothers respond to distress in their infant in a manner that not only conveys an understanding of the cause of the distress but also reflects, or mirrors, the affective state of the infant. Bowlby (1988) suggests that a sensitive parent 'processes' or 'metabolizes' (Bion, 1978) the negative affect of the infant, whilst parents of insecure infants fail to respond appropriately, either by ignoring the distress (avoidants) or becoming over-involved, panicky or angry (ambivalents).

Thus, with a secure mother the baby learns to associate emotional distress with the possibility of its alleviation and learns that future moderate distress will not lead to the mobilisation of extreme defensive strategies. Such adaptations involve either sacrificing intimacy and acknowledgement of feelings, as in the case of avoidant insecurity, or autonomy, as in the case of ambivalent insecurity. Repeated encounters with a mother capable of understanding, containing and alleviating distress enhances the infant's capacity to tolerate negative affect without resort to primitive

psychological defences of aggression and avoidance (Fraiberg, 1982) as confidence increases in the infant that support will be forthcoming and effective.

1.4 MIND AND MENTALIZING

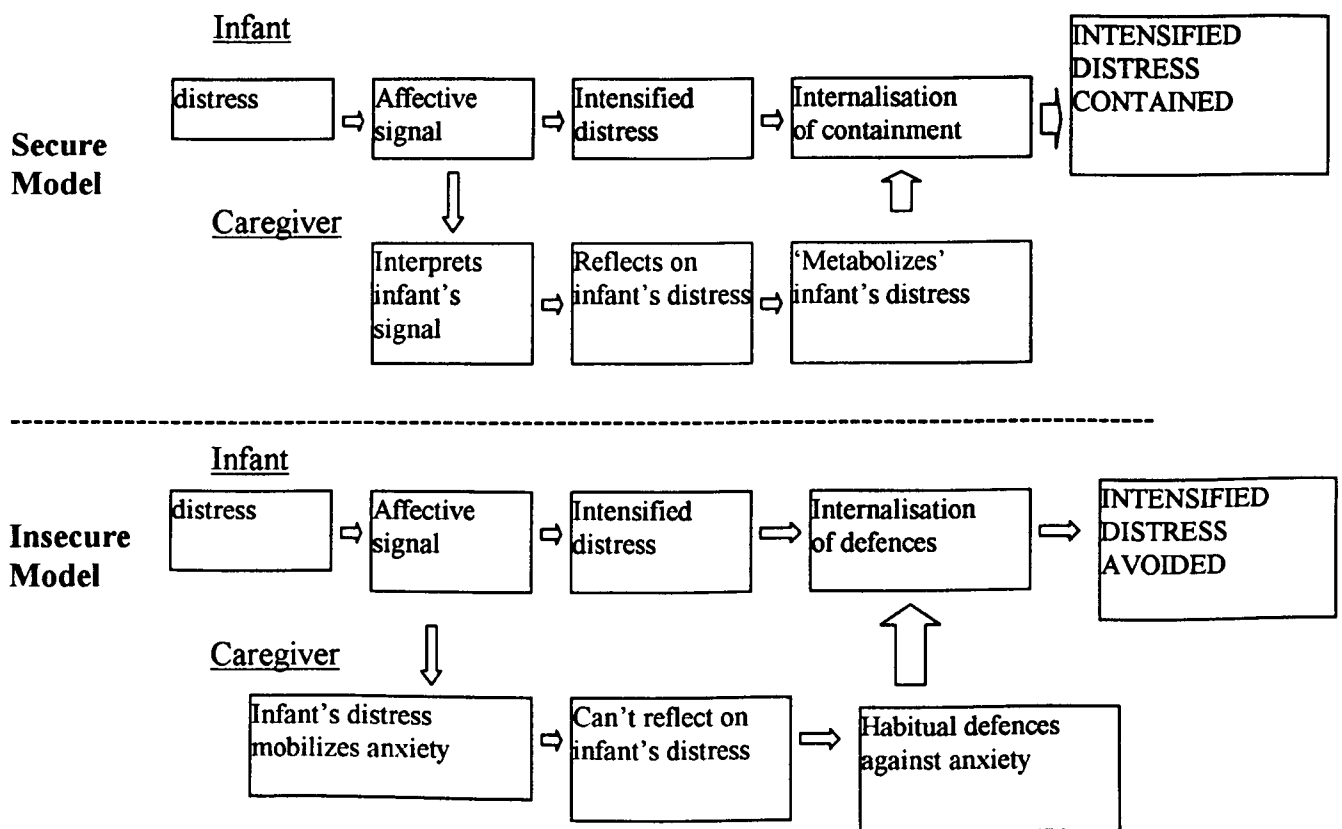
The development of 'mind'

'Mind' is therefore seen as developing through the caregiver's ability to envisage the child as a mental entity, and the capacity to reflect on the mental state of the infant. Through this process, the infant develops an awareness of its own mind through the mentalizing of the caregiver, gradually discovering that the behaviour and feelings of self and others are motivated by beliefs and desires. Fonagy, Steele, Steele, Moran and Higgit (1991) view the crucial aspect of mother-child interaction as the mother acting as a mirror, in which the infant sees reflected its feelings and desires. Disruptions in mirroring interrupt and distort the genesis of 'intersubjectivity' into the mother's usual coping strategy i.e. dismissive or entangled. Parents of insecure infants have not been able to process their own negative affect and thus cannot cope with it in their infants (Holmes, 1993), inevitably distorting this mirroring process.

A secure attachment relationship provides a safe context for the child to explore the mind of the caregiver and that only through getting to know the mind of the other can the child develop full appreciation of the nature of mental states (Fonagy *et al*, 1997). If the caregiver's reflective capacity enables her accurately to picture the child's feelings and intentions, the child has the opportunity to find itself, that is its mind, its

feelings and intentions, in the other. The caregiver, reflecting on the infant's mental experience, re-presents it to the infant translated into the language of action the infant can understand (Fonagy *et al*, 1991). The baby is, thus, provided with the illusion that the process of reflection of psychological processes was performed within its own mental boundaries. If the caregiver is not able to consistently do this, the child is left either without an other to find itself in, and thus has a limited capacity to learn about mental states, or worse, if the caregiver is hostile or frightening, the child is likely to turn away from considering its mind as it finds only 'unmetabolized', overwhelming feelings, which may in fact be frankly hostile to the child. The diagram overleaf depicts this process showing how the infant's distress can be differently responded to and the implications of this for what the infant internalises.

Figure 1. The transmission of secure and insecure internal working models.



These experiences of distress combined with the caregiver's responses to it become crystallised into an 'internal working model', which not only drive expectations of acceptance or rejection but shape the ability to think about minds, both one's own and those of others.

Metacognition and 'reflective self-function'

Main (1991) argues that differences in attachment organisations during childhood are strongly linked to the quality of metacognition (thinking about one's thinking) in the parent and that incoherent adult narratives, such as in the AAI, indicating poorly structured multiple models of attachment relationships, may be a key cause of the child's insecure pattern of attachment. Thus, the ability to reflect on one's self and situation is not only related to one's attachment history, but may be a function of it. That is, one consequence of insecure attachment may be the impaired ability to reflect on, or represent to oneself, one's feelings and thoughts.

Main (1991) suggests that an absence of metacognitive capacity, the inability to "understand the merely representational nature of their own (and others') thinking" makes infants vulnerable to inconsistencies in caregiver behaviour. "Not having a metacognitive distinction between appearance and reality available, they are unable to imagine that some propositions are in fact without validity; that some individuals believe things which are not true; and that they themselves may have false-beliefs at present or may have harboured false beliefs in the past" (p.128-9).

Multiple internal working models

In contrast to the integration of information relevant to attachment seen in secure children and adults (Main *et al*, 1985) is the incoherence and lack of integration of, or lack of access to, information seen in those who are insecure with respect to attachment. Pressed to describe and evaluate their attachment experiences and relations, insecure individuals frequently present a jumble of contradictory thoughts, feelings and intentions which can only loosely be described as a 'model'. There exist multiple models of a thing which ought to have a singular model.

Young children may be especially vulnerable to developing multiple models due to difficulties with the 'dual coding' of single entities. That is, working with an assumption of 'mutual exclusivity' they may not be able to fit the same item into two categories at once. One study has shown that three year olds are not able to see how the same person could be simultaneously, a doctor and a father or both a father and a grandfather (Watson, cited in Main, 1991). Secure six year olds have been observed to make more spontaneous metacognitive remarks, more often spontaneously acknowledged experiencing more than one feeling at a time, show awareness of how feelings might differ depending on the situation, and sometimes recognise that different people might feel differently in the same situation, during a separation anxiety interview (Kaplan, cited in Fonagy *et al*, 1997)

'Epistemic space'

Secure children are more likely to devote more attention to exploration, or more generally, 'epistemic activity', than insecure children because less attentional monitoring need be devoted to the emotional and physical availability of the parent or caregiver. Empirical support for this has been found in two studies (Main, cited in Main (1991); Suess, Grossman and Sroufe, 1989). Thus, secure children would appear to have access to greater 'epistemic space' in which to reflect on thoughts, feeling and behaviours, because mentalizing has not been compartmentalised and fragmented. Insecure attachment is likely to lead to "defensive thinking processes – processes which are likely from the first to distort, disorganise, or limit access to memories, feelings, intentions, and recognition of options" (Main, 1991; p. 146). Indeed, this is the very function of the defensive processes.

Secure attachment is seen to enhance the ability of individuals to represent to themselves their thoughts and feelings and to reflect on them. This 'reflective self-function' has direct implications for individual's ability to see and consider points of view and perspectives other than their own.

1.5 PERSPECTIVE TAKING

Development of 'folk psychology'

From the beginning of life differences are observed in infant sensitivity to the moods of others (Stern, 1985), to a sophisticated awareness of 'folk psychology' (Flavell, 1988), that is, an ability to understand a representational level of reality. Fonagy, Redfern & Charman (1997) found that security of attachment predicted theory of mind competence as measured by a belief-desire reasoning task in three and a half to six year old children, with verbal mental age, chronological age and social maturity controlled for. Fonagy, Steele, Steele & Holder (1998) continued this work by assessing theory of mind competence in the children assessed in their previous studies (Fonagy *et al*, 1991; Fonagy *et al*, 1996), which had assessed concordance between parent and infant attachment. Following these children up at age five and a half, they assessed competence on a cognition-emotion task (predicting a story character's emotion rather than action, based on a false belief). Secure attachment as assessed in infancy was seen to predict performance on the cognition-emotion task. 64% of those classified secure at 12 months passed the task at 5 ½ years, whereas 67% of those classified insecure failed. Verbal fluency was also a significant predictor of performance on the cognition-emotion task.

Linking these findings with the earlier attachment measures, it is seen that a mother's attachment classification before the birth of her child is a powerful predictor of the child's theory of mind competence at 5 ½ years. 75% of children whose mothers

were classified as secure on the AAI passed the cognition-emotion task, whereas only 16% of those mothers classified insecure-preoccupied, and 25% classified insecure-avoidant did so. “This suggests that the caregiver brings something to the parent-child relationship, evident soon after the birth of the child, that may be critical in the child’s establishment of both secure attachment and mind reading” (Fonagy *et al*, 1997; p. 36).

Summary and link to conduct disorder

The above outlines a theory of the development of social and emotion understanding and disruptions to that development. This study is focusing on children who show aggressive behaviour. This group has been chosen because of the apparent lack of concern shown by these children for others or awareness of consequences of their behaviour. One study has investigated whether these children lack a theory of mind, but did not find this to be the case (Happé and Frith, 1996). It would appear that these children show more subtle and complex distortions and difficulties with mind reading behaviour, or perhaps that they have something akin to a theory of ‘nasty minds’.

After describing and defining Conduct Disorder, a model will be presented to account for the characteristics of aggressive children’s behaviour, drawing on attachment theory as discussed.

1.6 CONDUCT DISORDER

Definition

DSM IV (American Psychiatric Association, 1994) defines conduct disorder as “a repetitive and persistent pattern of behaviour in which the basic rights of others or major age-appropriate social norms are violated.....(there is)...little empathy and little concern for the feelings, wishes, and well-being of others. Especially in ambiguous situations, aggressive individuals with this disorder frequently misperceive the intentions of others as more hostile and threatening than is the case and respond with aggression that they then feel is reasonable and justified” (p.88-89).

Conduct disorder is very serious, being the most common reason for referral to mental health services for boys (Offord, Boyle and Szatmari, 1987). It is considered resistant to treatment, particularly in adolescence (Kazdin, 1993). There are two subtypes, childhood onset and adolescent onset, the cut-off between the two being placed at ten years of age. Prevalence rates vary according to area and method of diagnosis, falling between 6-16% for males, the rate for females being considerably lower. It has been identified that rates have risen over the last decades. Conduct disorder can have an onset before the age of five but is more common in late childhood and early adolescence. Early onset predicts a worse prognosis. Whilst the majority of cases remit by adulthood, a considerable proportion develop into meeting the criteria for anti-social personality disorder and there are strong links with adult criminality (Farrington, 1994, cited in Fonagy, 1998).

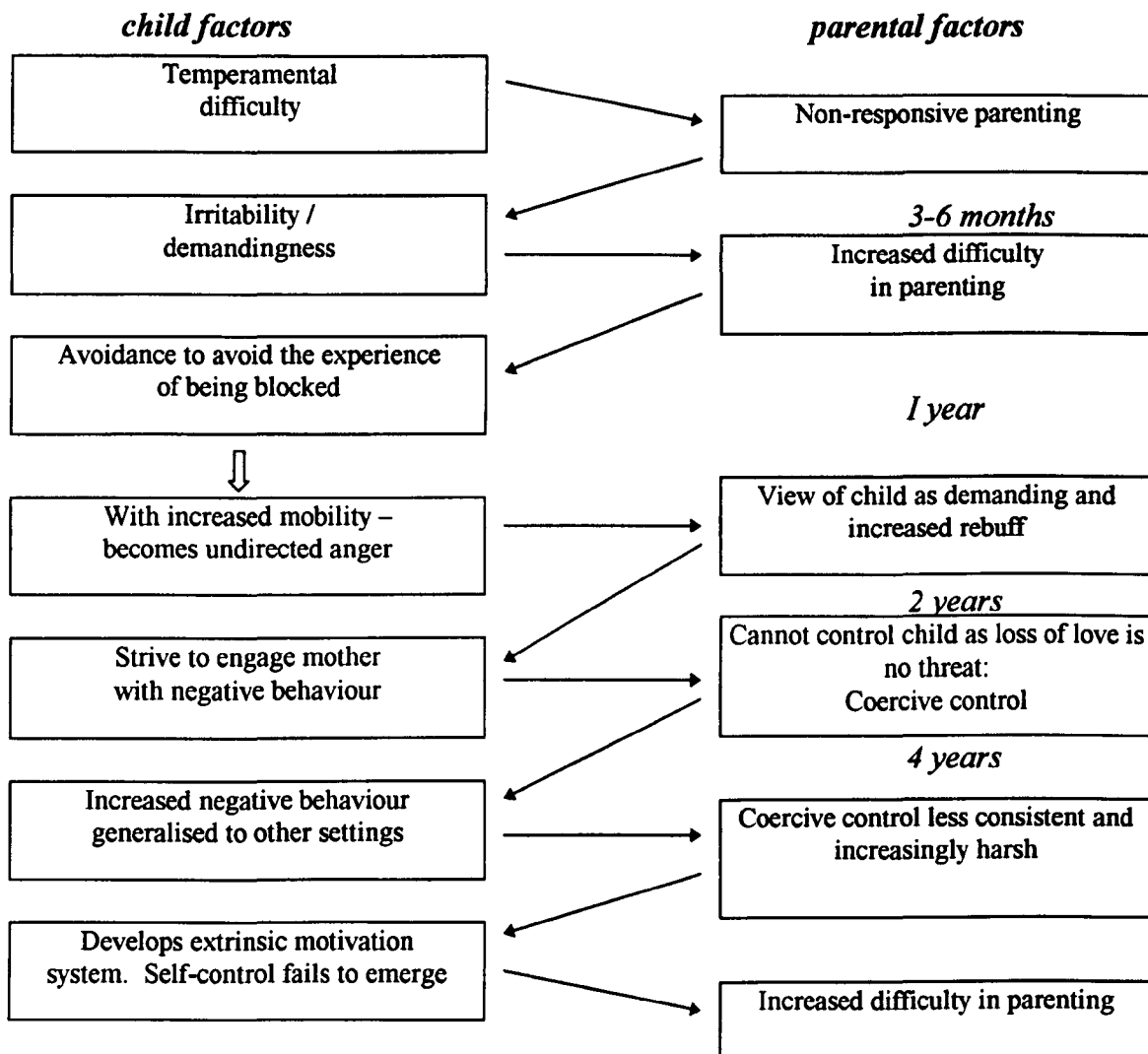
A model linking attachment, conduct disorder and mentalizing

Fonagy (1998) highlights five interlinked risk factors for the development of childhood conduct disorder:

1. Biological - gender, early temperamental difficulties such as resistance to control, hyperactivity, cognitive and language comprehension problems. The direction of causality is, however, unclear (Greenberg, Speltz & DeKlyen, 1993).
2. Social – poverty, ethnicity and overcrowding
3. Family adversity – maternal alcohol abuse, mental illness, antisocial personality disorder, marital discord. In terms of social and family factors, cumulative adversities may be particularly linked with conduct disorder (Blanz, Schmidt and Esser, 1991).
4. Ineffective parental management – harsh, erratic and abusive discipline
5. Problems in early parent-child relations (insecure attachment)

Controversy surrounds the relative importance of and relationships between these factors (Fonagy, 1998), but Fonagy's model presents a heuristic that attempts to sidestep this controversy. The model is presented overleaf:

Figure 2. The developmental relationship of conduct disorder and insecure attachment.



Fonagy (1998) suggests that a, perhaps biologically determined, temperamental difficulty combines with a mother who has difficulty in attuning to a male child, perhaps because of unresolved trauma, and is frighteningly intrusive and inconsistent in responding to her infant. Maternal hostile-intrusive behaviours predicting aggressive behaviour disorders are observable as early as the sixth month of infancy, before the onset of coercive cycles (Egeland *et al*, 1993), perhaps indicating that the role of irritable temperament is less significant. Nonetheless, unresponsive parenting increases

irritability and demandingness, increasing difficulty in parenting. This leads to anxious attachment or disorganisation of attachment; the former preserving proximity to the mother, the latter reflecting the inability to develop a coherent and consistent attachment strategy by the child.

Approaches to mother have been seen to decline in frequency in the middle of the second year (Main *et al*, 1985), thus no 'holding' environment exists to contain a difficult temperament. Increasing mobility in the child leads to more frequent episodes of undirected aggression and negative interactions, which increase the mother's belief in the demandingness and difficulty of her child's behaviour. Aggressive and oppositional behaviour serve to protect the child's fragile and vulnerable sense of self (Fonagy, Moran and Target, 1993), but this disruption in the mother-child interaction reduces the opportunity for the child to learn about mental states.

A coercive pattern of interacting develops as the child grows, and as the threat of loss of love no longer is a significant one, as the child has turned away from an expectation of love and security from the mother, discipline becomes increasingly harsh and inevitably inconsistent. A relation between harsh and ineffective parental discipline and aggressive behaviour problems has consistently been found (Loeber and Dishion, 1983). Lyons-Ruth (1996) describes "early coercive interaction between parent and child, characterised by scolding and explosive, irritable and inconsistent discipline, (which) leads to escalating child aggressive behaviour" (p. 65). Coercive parental behaviour becomes part of a wider context in which positive techniques of motivation

and guidance are not used. This style of interacting generalises to other settings such as pre-school and an extrinsic motivation system develops.

Having lacked a safe environment in which to explore minds, there follows a reduced reflective awareness, with poor sensitivity to internal signals and self-control fails to emerge. Around age six a developmental reorganisation occurs, whereby signs of conflict over approach / avoidance and helplessness give way to increasingly controlling behaviour towards the attachment figure reflecting role reversal. In this way, the child shows directing and organising behaviour which becomes increasingly coercive as it is ineffective and met with harsh responses.

From a social learning perspective (see Patterson and Banks 1989), Rothbaum and Weisz (1994, cited in Lyons-Ruth, 1996) found that five major parental control variables correlated inversely with aggressive behaviour; these were, “including praise for desirable behaviour, clear tracking and direction around desirable behaviour, use of positive incentives, giving suggestions and choices and responsiveness to child-initiated behaviour” (p.65). The mothers of aggressive boys have also been seen to make more hostile attributions to videotapes of misbehaviour than mothers of non-aggressive boys, to attribute the behaviour more to personality dimensions, to attribute more responsibility to the child for the misbehaviour and to endorse more forceful discipline responses (Dix and Lochman, 1990). Finally, the same study found that children’s aggression has been seen to correlate with mothers’ tendencies to make hostile attributions to vignettes involving their own children. Thus, coercive parent-child

cycles are embedded in a larger context of rejecting parental behaviour and this rejecting parental stance is likely to include characteristic perceptual and information processing biases that may be transmitted from parent to child.

Disorganised attachment in Conduct Disorder

Whilst early research indicated that aggressive behaviour was associated with insecure-avoidant infants (e.g. Erickson *et al*, 1985), more recent studies suggest that infant disorganised attachment is associated with later aggression. Whilst about 15% of infants from two parent, middle class families display disorganised attachment behaviour, the incidence of disorganised attachment rises to 82% among attachment relevant family risk conditions, such as maternal mental illness, substance abuse, and adolescent parenthood (Lyons-Ruth, Repacholi, McLeod, Kroonenberg and Frenkel, 1992). Lyons-Ruth, Alpern and Repacholi, (1993) found pre-schoolers with highly hostile behaviour to be six times as likely to have been classified as disorganised in their attachment relationships than to have been classified as secure.

1.7 THE PRESENT STUDY

Summary

Aggressive boys show biases in their perception of social situations. These biases are seen to reflect expectations of hostility and rejection from others. Such expectations,

crystallised into internal working models of relationships, are seen to have strong links with the quality of interaction between infants and their caregivers, in particular, the degree to which the caregiver can sensitively attune to their infant's signals and behaviour. Feeling safe in exploring the mind of a sensitive caregiver, the infant is able to develop a sense of the caregiver as thinking, or mentalizing. Fonagy *et al*, (1997) stress that, "What I believe is ... important for the development of mentalizing capacity is that exploration of the mental state of the sensitive caregiver enables the child to find in the caregiver's mind an image of himself as motivated by beliefs, feelings and intentions, in other words, as mentalizing" (Fonagy *et al*, 1997; p. 36).

Disruptions in this process have been identified. Where a caregiver is frightened or frightening the infant can show disorganisation of attachment behaviour. This disorganisation, in combination with a stressed or traumatised caregiver, is seen to give rise to coercive patterns of interaction which become increasingly and mutually hostile and rejecting. Opportunities for learning about minds are reduced both by this troubled early disruption and by the disruption to and distortion of later social encounters, as the children expect continued hostility and rejection. Defences erected against continual threats to the psychological self turn the child further and further away from the minds of others and from reflectiveness in general. Thus, difficulties in considering more than the most immediate (typically hostile) attribution of others' intent significantly compromises the perspective taking ability of aggressive children.

Fonagy *et al*, (1998) have shown that security of attachment is predictive of basic perspective taking ability in 5 year olds. However, Frith and Happe (1996) have found that children with conduct disorder, aged between 6 and twelve, have no difficulty with this basic test, and cannot be said to lack a 'theory of mind'. They do, however, show considerable differences from a matched peer group without conduct disorder on the socialization domain of the Vineland Adaptive Behaviour Scales (Sparrow, Balla and Cicchetti, 1984). Frith and Happe (1996) indicate that more complex assessments of aggressive children's mentalizing ability was required to better understand their difficulties in social interaction.

The Present Study

The present study develops previous research in three ways, by:

1. using emotionally charged perspective taking tasks
2. incorporating second order as well as first order assessments
3. incorporating a self / other split into the design such that scenarios requiring perspective taking can both have the participant child as the central character in the vignettes, or have an objective other as the central character.

Whilst Fonagy *et al's*, (1998) study did incorporate second order tasks, too few children passed the task for a reliable analysis of the data to be undertaken. Perner and Wimmer (1985) found that it is not until children are six to seven that they typically

pass this test. Older children (7-9 years) are included in the current study. The other two factors of emotionally charged scenarios, and a self / other split are hypothesized to highlight the reduced ability of aggressive children to think about the thoughts and feelings of others and themselves from a variety of perspectives. Both of these factors have been found to be associated with the perceptual biases observed in aggressive children.

In essence, as a result of the reduced 'epistemic space' for considering differing perspectives under conditions of emotional stress, aggressive children are likely to become entangled in the emotions of the hypothetical vignettes, as it resonates with their self-image and experience, and fail to retain the objectivity required. Similarly, in line with previous research (e.g. Dodge, 1980), that has identified perceptual biases operating on the basis of whether the self or an objective other is being considered, 'epistemic space' is likely to be reduced in emotionally charged vignettes that include the participant child as the central character.

Overall, the study seeks to answer the following questions:

- a) Do children who show aggressive behaviour also show insecurity of attachment compared to non-aggressive peers?
- b) Do aggressive children show difficulties in perspective-taking tasks involving emotionally charged hypothetical situations in which they are participants in the situation, but not in tasks involving others or emotionally neutral situations.
- c) Do these difficulties relate to (in)security of attachment.

- d) Do aggressive children show less ability to provide coherent explanations of differing and mistaken beliefs in short story vignettes.

1.8 RESEARCH HYPOTHESES

The first two hypotheses relate to children's social behaviour and security of attachment, as assessed by the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1996), and the Separation Anxiety Test (SAT; Wright, Binney and Smith, 1995), respectively. These hypotheses seek to establish the differences found between the two groups on these variables, and replicate previous findings regarding the social behaviour problems of aggressive children.

Hypothesis 1 : Social Behaviour measure (SDQ)

- H1: Children in the Conduct Problems (CP) group will be rated by their teachers as having more behavioural difficulties than children in the control group, as measured by the SDQ. The CP group will be rated higher than the Control group on the Conduct Problems sub-scale of the SDQ, as the two groups were identified by scores on this measure. Also:
- a) The CP group will be rated higher than the Control group on the Peer Problems sub-scale of the SDQ
 - b) The CP group will be rated higher than the Control group on the Total Difficulties sub-scale of the SDQ

H0: No differences will be observed between the CP and Control group in teachers' ratings of the children's behaviour, as measured by the SDQ.

Hypothesis 2 : Security of Attachment

H1: Children in the CP group will show less security of attachment compared to the Control group. Specifically:

- a) The CP group will show lower scores than the Control group on the attachment sub-scale of the SAT
- b) The CP group will show lower scores than the Control group on the self-reliance sub-scale of the SAT
- c) The CP group will show higher scores than the Control group on the avoidance sub-scale of the SAT

H0: No differences will be observed between the CP and Control groups on Security of attachment, as measured by the SAT.

Hypotheses 3: Performance on the vignettes

H1: The CP group will show a lower score than the control group on correct responses to the second order emotionally charged 'self' vignettes, but not on any other vignette.

HO: No difference will be observed between the CP and Control group on scores on second order emotionally charged 'self' vignettes. Differences will be observed on correct responses to other vignettes

Hypothesis 4: Security of attachment and performance on the vignettes

H1: Differences in security of attachment will relate to scores on second order emotionally charged 'self' vignettes, but not on any other vignettes.

Specifically, correct scores on this vignette will be predictive of:

- i) higher scores on the attachment sub-scale of the SAT
- ii) higher scores on the self-reliance sub-scale of the SAT
- iii) lower scores on the avoidance sub-scale of the SAT

HO: No differences will be observed on sub-scales of the SAT on the basis of correct scores on the second order emotionally charged 'self' vignette.

Hypothesis 5: Relation of group to the provision of full justifications by group

H1: The Control group will more frequently provide full justifications for their answers to second order vignettes, by specifying the differing beliefs of the characters.

HO: No differences will be observed between the Control and CP groups in the frequency of providing full justifications for answers to vignettes.

Hypothesis 6: Relation of security of attachment to provision of full justifications

H1: Security of attachment will correlate with the provision of full justifications for answers to second order vignettes. Specifically, provision of full justifications will correlate:

- a) positively with scores on the attachment sub-scales
- b) positively with scores on the self-reliance sub-scales
- c) negatively with scores on the avoidance sub-scales

H0: No correlations will be observed between security of attachment and provision of full justifications.

Section 2

METHOD

2.1 DESIGN

This study used a between group comparison (behaviour problem group and non-behaviour problem group) with performance on false-belief tasks as the dependent variable. This variable is divided into three factors, 1st order vs 2nd order, emotionally painful vs emotionally neutral and self vs other vignettes.

The effects of chronological age, verbal IQ, verbal memory, social behaviour in school and security of attachment, as independent variables, were also examined.

2.2 ETHICAL APPROVAL

A proposal for the research project was submitted to Oxfordshire Psychiatric Research Ethics Committee in November 1999. Approval was granted to the project in February, 2000. Minor alterations to the vignettes, as a result of piloting, were approved by the Chairman to the Ethics Committee in February, 2000 (see Appendix 1a and 1b for copies of letters confirming approval).

2.3 PARTICIPANTS

Thirty nine children took part in the study. Sixteen were in the experimental group and twenty three in the control group. The experimental group was identified by the

Headteacher at a school for children with emotional and behavioural disturbance (EBD) and by the co-ordinator of the EBD outreach service for the county. Final selection for the experimental group was determined by the teacher rating the child above the cut-off for conduct problems in the Strengths and Difficulties Questionnaire (SDQ: see below). The control group were identified from a mainstream primary school. The headteacher identified children who did not show significant conduct problems, but as for the experimental group, final selection for this group was determined by a score below the cut-off for conduct problems on the SDQ.

2.4 MEASURES

Separation Anxiety Test

The Separation Anxiety Test (SAT) is a measure of children's internal working models of relationships. It is a semi-projective measure, using responses to photographs depicting separations between a child and his or her parents. The test was originally designed for 4 – 7 year olds, but a recent study (Wright, Binney and Smith, 1995), using a new set of photographs has extended its use to 8 – 12 year olds. The photographs are categorised as either 'mild' or 'severe' separations following other SAT scoring systems (Klagsbrun and Bowlby, 1976; Shouldice and Stevenson-Hinde, 1992; Slough and Greenberg, 1990), based on face validity and taking normative developmental factors into account.

The SAT was introduced as follows: "I've got some pictures here and I want you to help me tell some stories about them. These are pictures about a boy about your age. There are no right or wrong answers; you can make up anything you want to say".

The pictures were then presented one at a time with the following comments:

1. The Mum is going shopping and the boy is staying at home alone (mild)
2. The boy is going away on a school trip for two weeks. Here he is saying goodbye to his Mum and Dad (severe)
3. Mum and Dad are going out for the evening (mild)
4. The Dad is leaving home after an argument with the Mum (severe)
5. It's the boy's first day at a new school (severe)
6. Mum is going into hospital (severe)

For each photograph the child is asked, "How does the boy feel", "Why does he feel that way?", and "What's the boy going to do?". If the child did not answer, or said "don't know" the question was rephrased or a gentle probe used. For each photograph the questions were asked firstly about the boy in the picture, and subsequently about the participant child.

Responses to the photographs were recorded on paper. This had proved satisfactory in the Wright, et al (1995) study, as responses were generally short. The responses were then coded using the Scoring Indices for the Seattle Version of the Separation

Anxiety Test (Slough, Goyette and Greenberg, 1988). Scores were computed for each of the three sub-scales of the test; attachment, self-reliance and avoidance, with separate summary scores for other and self responses.

Scores were calculated as follows. Responses to all three parts of the answer were considered, i.e. the valence of feeling, the focus of justification for feeling and the content of coping. Each response is first classified into one of the five major categories; attachment, self-reliant, attachment/self-reliant, avoidant, or additional. Attachment responses focus on some component of the parent leaving or unavailability, whereas self-reliant responses focus on the enjoyment of being alone and not being afraid or the parent's absence. The avoidant category indexes the child's inability to answer the questions, which includes incomplete answers or discussion of irrelevant issues. The attachment/self-reliant category reflects components of both categories, whilst the additional category includes answers which indicate anxiety or those with content which deviates from the norm or appears disturbed.

After being allocated to one of the five major categories the responses are placed into one of 21 sub-categories which differentiate particular aspects of the answer (see Appendix 2 for the description of the 21 sub-categories). The sub-categories were then given a score derived from the following system: a 4-point attachment rating score (4= high, 1= low) to responses to each of the severe separations, a 4-point self-

reliance score (4= high, 1= low) to each of the mild separations, and a 3-point avoidance score for each picture.

The SAT has been found to have inter-rater reliability at an acceptable level, but test-retest reliability has not been established at a statistically significant level. Test-retest reliability was therefore undertaken in this study. Approximately four weeks after the initial administration of the tests, the SAT was repeated with a twelve participants, six from each of the two groups.

Theory of mind tasks

Each child was read four short stories (vignettes). There were eight stories in all, which differed in the following ways: the stories were based around two basic stories, one involving going to the cinema and the other which room a particular lesson was occurring in. Firstly, there are two versions of each story, an emotionally charged story and an emotionally neutral story. These versions differ in content but not structure or complexity. Each of these stories had two versions, one in which the participant child was the central character in the story ('self' vignette) and one in which an objective other was the central character ('other' vignette). The table below depicts the different vignettes:

- 1) 1st story: emotionally charged version 'self'
- 2) 1st story: emotionally charged version 'other'

- | | | | |
|----|------------|-----------------------------|---------|
| 3) | 1st story | emotionally neutral version | 'self' |
| 4) | 1st story | emotionally neutral version | 'other' |
| 5) | 2nd story: | emotionally charged version | 'self' |
| 6) | 2nd story | emotionally charged version | 'other' |
| 7) | 2nd story | emotionally neutral version | 'self' |
| 8) | 2nd story | emotionally neutral version | 'other' |

Each child is only tested on four vignettes as the difference between self and other is purely one of pronouns, 'you' as opposed to 'he'. The vignettes were developed by the experimenter using the original false-belief vignettes of Perner and Wimmer (1985). This vignette follows a clear structure and creating further vignettes was a matter of generating different scenarios and applying the structure to them. In developing the vignettes, care was taken to ensure a similar word count in each vignette and a similar reading ease. Table 1 overleaf shows word count, reading ease and school grade level. The Flesch Reading Ease score is on a scale from 0 (hardest) to 100 (easiest). A standard document is approximately 60-70. The Flesch-Kincaid grade level reflects rating of the text for school grades. Thus, grade level 3 indicates that the text is suitable for year three children (approximately age 7) A standard document is approximately 7.0-8.0.

Table 1. Word count, reading ease and grade level of the vignettes.

Vignette	Word count	Flesch Reading ease	Flesch-Kincaid grade level
<i>1PO</i>	203	88.4	3.5
<i>1PS</i>	203	89.3	3.4
<i>1NO</i>	222	90.6	3.2
<i>1NS</i>	226	90.0	3.3
<i>2PO</i>	226	85.7	3.6
<i>2PS</i>	216	86.8	3.3
<i>2NO</i>	207	90.5	3.4
<i>2NS</i>	204	91.2	3.3

The vignettes involve both first and second order beliefs. First order concerns one character's (mistaken) belief about an event, whilst second order concerns the belief of one character about the belief of another character about an objective event. Second order vignettes by their nature include first order issues and can be assessed in the same vignette. Thus, in the current study, the first half of the vignette was read to the child up to the point where a character holds a false belief. A question is asked about that character's belief. Then the rest of the vignette is read to the child, and at the end the second order question is asked. An explanation of each answer was requested, e.g. 'why would your Mum think that', and the response was coded as either providing or not providing a full second order justification in terms of the (false) beliefs of the characters.

Initial forms of the vignettes were piloted on six children, half showing behavioural problems and half not. After administering each vignette a range of prompts was used to ascertain whether the vignette was clearly understandable in terms of the objective facts of the story. Minor alterations were made for such purposes of clarification and

to reinforce the boundaries of each character's knowledge e.g. that one character left the house to go to school before another character made a telephone call. As stated earlier, the amended versions were passed to the Chairman to the Ethics Committee for approval. A copy of the vignettes is presented in Appendix 3.

Social behaviour measure

Each child's teacher completed the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1996). The SDQ has five sub-scales; conduct problems, hyperactivity, pro-social behaviour, emotional symptoms and peer problems. For each of the 25 behaviour items the teacher rated whether the problem statement was not true, somewhat true or certainly true (see Appendix 4 for a record of the five items corresponding to each sub-scale). The SDQ was used primarily for the conduct problems sub-scale; those children scoring above the cut-off were included in the experimental group. The SDQ also has a 'total difficulties score' which is the sum of the four negative behaviour sub-scales (all but the pro-social behaviour sub-scales).

Verbal intelligence measures

Each child was assessed on two sub-scales of the Weschler Intelligence Scale for Children – III (WISC-III; Weschler, 1991); vocabulary and similarities.

Verbal memory measure

Each child was assessed on the Children's Memory Scale (Weschler, 1987) using the version for 6-8 year olds.

2.5 PROCEDURE

Access to participants

The headteachers of the mainstream primary school, the EBD primary school and the co-ordinator of the EBD outreach service were contacted by letter (see Appendix 5a) and subsequently by telephone to discuss the project and the arrangements. The parents of the participants were contacted by letter (Appendix 5b) informing them about the project and asking them to complete a consent form for their child's participation.

Interview procedure

The children were seen by the experimenter one at a time, the interview taking approximately 40 minutes. The study was briefly explained to the child as follows:

I am doing a project about stories. In my project I am trying to find out what children know about what goes on in different people's minds in a story. So I am going to read out to you some short stories that I have written and ask you about what different people in the story might be thinking and feeling. In some of the stories you

will be one of the people there, in others it will be about other people. We will also do two word quizzes and a memory test. Lastly, we will make up some stories about what's going on in some photographs that I've got. OK?

Any questions that the child had were then answered. The presentation of the measures was as follows:

Vignette 1

Vocabulary sub-test

Vignette 2

Similarities sub-test

Vignette 3

Children's Memory Scale

Vignette 4

Separation Anxiety Test

The order of presentation of the vignettes was rotated in order to cancel out any order effects.

Monitoring child distress in the interview

Whilst the Separation Anxiety Test and the emotionally painful vignettes were designed to mildly arouse the child's anxieties, it was not anticipated that either would

cause any significant distress. Nonetheless, attention was paid throughout to the child's level of anxiety and potential distress. No child showed significant distress in the interview. At the end of the interview a few minutes were taken to debrief the child in order to check for any distress and to reorient the child to their school day. Positive comments were made about their ability to make up interesting stories and to reinforce the made-up nature of the vignettes.

Section 3

RESULTS

3.1 OVERVIEW OF RESULTS SECTION

The results will be presented in the following order: description of the sample data, descriptive statistics, followed by experimental testing of the hypotheses. The data in this study is at the ordinal and nominal level of measurement, thus non-parametric tests will be used.

3.2 SAMPLE DATA

Response rate and sample size

Details of response rates are presented in Table 2.

Table 2. Responses to letters and numbers interviewed

Group	Total number of letters sent (%)	Number of responses received – gave consent (% of total letters sent)	Number declining consent (%)	Number interviewed (% of total responses giving consent)	Number included in analysis (% of total number interviewed)
CP	41 (51%)	18 (44%)	0 (0%)	16 (89%)	15 (94%)
Control	40 (49%)	29 (72%)	2 (7%)	23 (85%)	23 (100%)
Total	81 (100%)	47 (58%)	2 (2%)	39 (87%)	38 (97%)

A total of eighty one letters were sent to the parents of identified children. Forty seven responses were received in total, of which two declined consent, both from the control

group. The response rate was higher for the control group than for the CP group (72% > 44%). Two participants from the CP group were not interviewed. One had been suspended and the headteacher didn't think it appropriate to include him in the study. The other boy had been bitten by a dog and was not in school. Six boys, potentially for the control group, were not interviewed as a sufficient sample size had been achieved for that group. One boy in the CP group had severe communication difficulties and his responses could not be quantified. He was therefore excluded from the analysis.

Demographic data

Conduct Problems: A Mann-Whitney 'U' test indicated that there was a significant difference between the two groups on the Conduct Problems sub-scale of the SDQ ('U' = 74, $p < 0.0005$), with the CP group showing a higher rating. This establishes the difference that defines the two groups.

Age: The mean age of participants was 8 years 8 months ($SD = 0.64$, range = 7 years 7 months to 9 years 10 months). The mean age for the CP group was 9 years 0 months and for the control group was 8 years 7 months. A Mann-Whitney 'U' test indicated that there was a significant difference between the two groups in terms of age ($U = 96.5$, $p < 0.02$), with the CP group being older than the control group. This finding is taken into account in the analyses where it might be a factor influencing variability in other measures.

Verbal IQ: In order to obtain a single, analogue measure of verbal IQ for comparison with other variables, the scaled scores for the two sub-tests were summed. Spearman tests showed a significant correlation between the two sub-tests ($r = 0.38$, $p < 0.01$). A Mann-Whitney 'U' test indicated that there was a significant difference between the two groups in terms of verbal IQ ($U = 113$, $p < 0.05$).

Memory: The mean scores on the Children's Memory Scale for the CP group was 31.9, compared to 33.0 for the Control group. A Mann-Whitney 'U' test indicated that this difference was not statistically significant ($U = 165$, $p = 0.84$).

3.3 DESCRIPTIVE STATISTICS

SDQ variables

Ratings on the SDQ given by the teachers of the children are presented in Table 3.

Table 3.. Descriptive statistics for SDQ variables and total difficulties score, including SDQ bandings (standard deviations in parentheses)

Group	SDQ sub-scales					Total difficulties
	Conduct Problems	Emotional Symptoms	Hyper-Activity	Peer Problems	Prosocial Behaviour	
CP	6.47 (2.36) abnormal	2.07 (1.44) normal	6.93 (2.05) abnormal	4.53 (2.17) abnormal	4.4 (2.38) abnormal	20.07 (7.84) abnormal
Control	.48 (.59) normal	1.26 (1.91) normal	4.0 (2.47) normal	1.04 (1.66) normal	7.22 (1.88) normal	6.78 (4.1) normal

The CP group shows mean scores in the abnormal range for all sub-scales except Emotional Symptoms. The control group shows mean scores in the normal range for all sub-scales.

Separation Anxiety Test scores

Summary scores for the attachment, self-reliance and avoidance sub-scales of the SAT are presented below in Table 4.

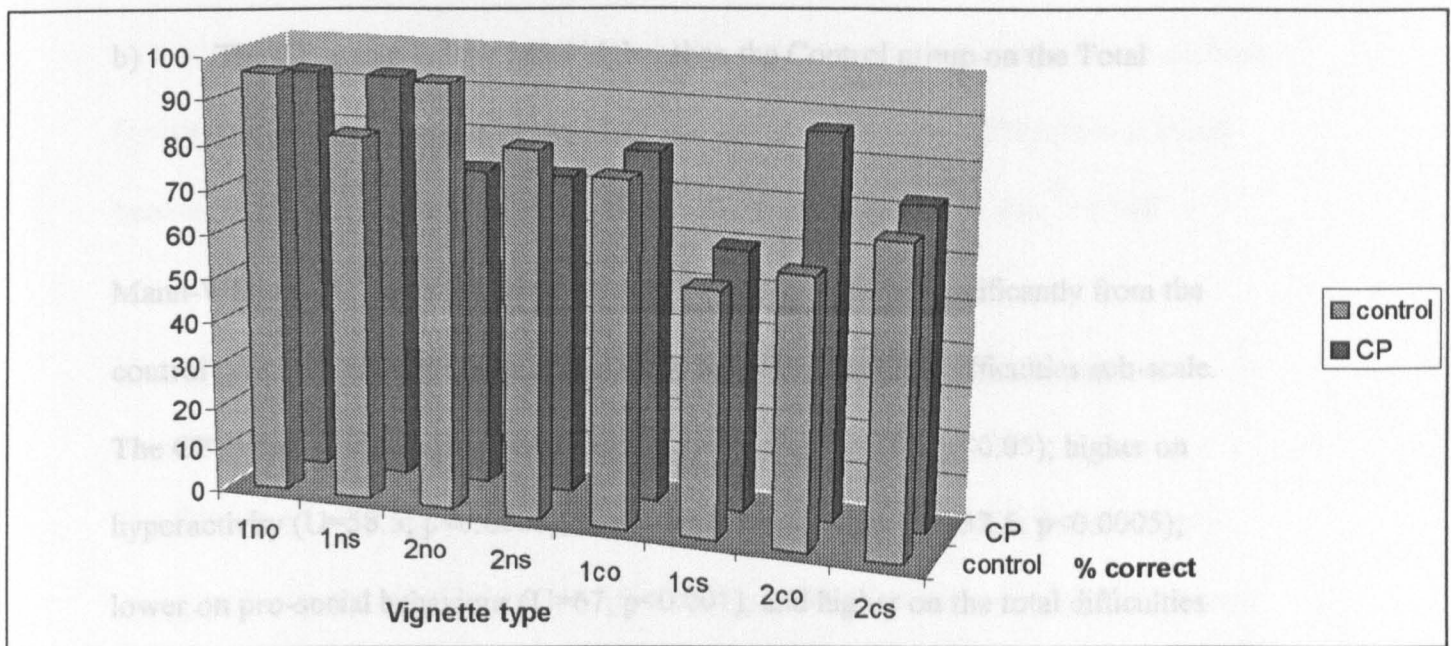
Table 4. Descriptive statistics for SAT sub-scales (standard deviations in parentheses)

Group	SAT sub-scales					
	Attachment		Self-reliance		Avoidance	
	Other	Self	Other	Self	Other	Self
CP	9.9 (3.6)	8.6 (4.0)	3.9 (1.2)	4.5 (1.4)	8.3 (2.7)	9.0 (3.1)
Control	13.9 (2.0)	13.5 (2.7)	4.5 (1.6)	4.6 (1.8)	6.2 (0.6)	6.9 (1.7)

The CP group show lower scores on attachment and self-reliance sub-scales and higher scores on avoidance sub-scales in comparison with the control group.

Vignette scores

Chart 1 below depicts the performance on each type of vignette, for the control and CP group. 1 and 2 refer to first and second order; 'c' and 'n' refer to emotionally charged and emotionally neutral, and 's' and 'o' refer to 'self' and 'other'. The two groups are identified by the legend in the chart.

Chart 1. Performance on vignettes by group

The chart indicates that 73% of the CP group correctly responded to the second order emotionally charged 'self' vignette, compared with 70% of the control group.

3.4 INVESTIGATION OF THE HYPOTHESES

Hypothesis 1 : Social behaviour

Children in the Conduct Problems (CP) group will be rated by their teachers as showing further behavioural difficulties as measured by the SDQ, compared with children in the control group. Specifically:

- a) The CP group will be rated higher than the Control group on the Peer Problems sub-scale of the SDQ
- b) The CP group will be rated higher than the Control group on the Total Difficulties sub-scale of the SDQ

Mann-Whitney 'U' tests indicated that the CP group differed significantly from the control group on all sub-scales of the SDQ, including the total difficulties sub-scale. The CP group scored higher on emotional symptoms ($U=104$; $p<0.05$); higher on hyperactivity ($U=58.5$; $p<0.0005$); higher on peer problems ($U=32.5$; $p<0.0005$); lower on pro-social behaviour ($U=67$; $p<0.001$); and higher on the total difficulties score ($U=10.5$; $p<0.0005$).

Hypothesis 2: Security of attachment

Children in the CP group will show less security of attachment compared to the Control group. Specifically:

- a) The CP group will show lower scores than the Control group on the attachment sub-scale of the SAT
- b) The CP group will show lower scores than the Control group on the self-reliance sub-scale of the SAT
- c) The CP group will show higher scores than the Control group on the avoidance sub-scale of the SAT

Mann-Whitney 'U' tests showed that the CP group showed significantly lower scores than the control group on the attachment sub-scale, both for 'other' (U=60.5; $p < 0.0005$) and 'self' (U=50; $p < 0.0005$), higher scores on the avoidance sub-scale, both for 'other' (U=62.5; $p < 0.001$) and 'self' (U=89; $p < 0.01$). No difference was found between the two groups on the self-reliance sub-scale, either for 'other' or 'self'.

Hypotheses regarding second order, emotionally charged, 'self' vignettes

Hypothesis 3

The CP group will attain lower scores than the Control group on the second order emotionally charged 'self' vignettes. There will not be any differences between groups on any of the other vignettes.

In order to investigate this hypothesis, binary logistic regression was used. Binary logistic regression is used when the outcome variable is binary, e.g. live or die, pass or fail, and an analysis is required to determine which of a range of factors and their interactions best predict this outcome. In this instance, it was assessed whether, in the context of correct and incorrect answers to the eight different vignettes, only the interaction of group (CP vs control), complexity (first vs second order), emotion (emotionally charged vs emotionally neutral), and involvement ('self' vs 'other') variables, was statistically significant. If this four way interaction proved to be significant, then further inspection of the data, using chi-square, would reveal the

nature of the interaction, in this instance, the CP group are predicted to score lower on the second order, emotionally charged, 'self' vignettes.

Verbal IQ, verbal memory and chronological age were entered first into the model as co-variates, in order to control for the variability due to these factors.

The predicted four way interaction was not seen to occur in the regression analysis. In fact, none of the variables, either singly, or in interaction with others was found to be predictive of correct scores. That is, there were no differences either between any of the vignettes or on the basis of the emotional valence, personal involvement, or complexity.

Hypothesis 4

Differences in scores on the Separation Anxiety Test will be found in relation to whether participants correctly or incorrectly responded to the second order emotionally charged 'self' vignettes. Specifically, those who respond correctly to this vignette will score:

- a) higher on the attachment sub-scales of the SAT
- b) higher on the self-reliance sub-scales of the SAT
- c) lower on the avoidance sub-scales of the SAT

These differences will not be found on the basis of responses to the other vignettes.

Mann-Whitney 'U' tests indicated that there was no difference on the SAT in terms of responses to the second order emotionally charged 'self' vignette. There were also no differences found with regard to the other vignettes.

Quality of justifications for answers to vignettes

Hypothesis 5

The Control group will more frequently provide full justifications for their answers to the vignettes, by specifying the differing beliefs of the characters, than the control group.

A Mann-Whitney 'U' test indicated that there was no difference between the CP and Control groups with regard to the provision of full justifications for answers to vignette questions ($U = 74, p = 0.31$).

Hypothesis 6

Provision of full justifications to second order questions will correlate with security of attachment; the correlations will be positive for the attachment and self-reliance sub-scales and negative for the avoidance sub-scale. Table 6 overleaf depicts the correlations between SAT sub-scales and the provision of full justifications.

Table 6. Correlations between SAT sub-scales and full justifications.

SAT sub-scales	Spearman's correlation coefficient	Significance
Attachment 'other'	0.36	p < 0.01
Attachment 'self'	0.24	p = 0.07
Self-reliance 'other'	0.09	NS
Self-reliance 'self'	0.13	NS
Avoidance 'other'	-0.23	p = 0.08
Avoidance 'self'	-0.11	NS

A Spearman correlation test indicated that the provision of full justifications was correlated significantly with the Attachment 'other' sub-scale of the SAT. Attachment 'self' and Avoidance 'other' approached significance (p=.07 and .08 respectively). All of the correlations were in the predicted direction, positive for attachment and self-reliance and negative for avoidance.

3.5 ADDITIONAL ANALYSES

Verbal Intelligence

Relation between Verbal IQ and Security of Attachment

Verbal IQ was found to correlate with all sub-scales of the SAT, except self-reliance 'self'. The correlations were positive for attachment and self-reliance 'other' and negative for avoidance ('self' and 'other'). Table 7 below presents the correlation coefficients and the level of significance.

Table 7. Relation between Verbal IQ and SAT sub-scales

SAT sub-scales	Spearman's correlation	Significance
Attachment 'other'	.43	$p < 0.005$
Attachment 'self'	.31	$p < 0.05$
Self-reliance 'other'	.34	$p < 0.05$
Self-reliance 'self'	.24	$p = 0.7$
Avoidance 'other'	-.34	$p < 0.05$
Avoidance 'self'	-.39	$p < 0.01$

Relation between Verbal IQ and SDQ

Verbal IQ was found to correlate with all sub-scales of the SDQ except emotional symptoms. The correlations are negative for all sub-scales except pro-social behaviour, that is verbal IQ is negatively associated with abnormal social behaviour.

Table 8 below presents the correlation coefficients and their significance.

Table 8. Relation between Verbal IQ and SDQ sub-scales

SDQ sub-scales	Spearman's correlation	Significance
Conduct problems	-.355	p < 0.01
Hyperactivity	-.355	p < 0.01
Emotional symptoms	-.065	NS
Peer problems	-.425	p < 0.001
Pro-social behaviour	.533	p < 0.0001
Total difficulties score	-.400	p < 0.01

Relation between verbal IQ and memory

Verbal IQ was found to correlate with verbal memory ($r=.295$, $p < 0.05$) and with total score on the vignettes ($r=.337$, $p < 0.05$).

Investigation into people who scored poorly on the emotionally charged vignettes

In order to understand the characteristics of those children who scored poorly on the second order emotionally charged 'self' vignettes, scores on this were compared with scores on the SDQ. Mann-Whitney test of difference indicated that children who correctly responded to this vignette did not show any differences from those who responded incorrectly in terms of social behaviour, as measured by the SDQ.

However, those children who failed the second order, emotionally charged, 'self' vignette, were found to provide significantly fewer full justifications for their responses to the second order vignettes ($U = 89, p < 0.05$).

Provision of Full Justifications

Provision of full justifications on second order tasks was found to correlate with verbal IQ ($r = .325, p < 0.05$), verbal memory ($r = .416, p < 0.005$), and total score on the vignettes ($r = .407, p < 0.01$).

'Self' versus 'other' differences on the SAT

In line with previous research, (Wright *et al*, 1995) it was predicted that the CP group would show greater differences than the Control group between their responses to the 'self' and 'other' sub-categories of the SAT. Specifically, on the attachment and self-reliance sub-scales the CP group will be rated higher for 'other' than for 'self', whilst

on the avoidance sub-scale, the CP group will be rated higher for 'self' than for 'other'.

Each of the children's 'other' scores was subtracted from their 'self' scores for each of the three scales. These difference scores were then divided into three groups:

- 1) those children whose 'self' score was greater by two or more points from the 'other' score
- 2) those whose 'self' score was equal to or within one point of the 'other' score, and
- 3) those whose 'self' score was two or more points less than the 'other' score.

Table 9 below shows the series of 3 x 2 contingency tables that this produces:

Table 9. Distribution of participants categorised on self-other difference on each of the three scales and across groups.

Variable	SAT sub-scale					
	Attachment		Self-reliance		Avoidance	
	CP	Control	CP	Control	CP	Control
Self > other	2	3	2	4	4	3
Self = other	7	14	12	17	10	20
Self < other	6	6	1	2	1	0

Chi-square tests of association indicated that there were no significant differences between the CP and Control group on the attachment and self-reliance sub-scales of

the SAT (Attachment: Chi-square = 0.89, ns; Self-reliance: chi-square = 1.12, ns), but there was a significant difference on the avoidance sub-scale (chi-square = 7.96, $p < 0.005$). However, this difference must be treated with some caution as there is only one case separating the two groups on self > other, which is the most important aspect of the hypothesis.

Relation between SDQ measure and SAT

Conduct problems, peer problems and total difficulties scores, as measured by the SDQ, will correlate with security of attachment, as measured by the SAT. Specifically:

- a) Conduct problems, peer problems and total difficulties scores will correlate negatively with the attachment sub-scale of the SAT
- b) Conduct problems, peer problems and total difficulties scores will correlate negatively with the self-reliance sub-scale of the SAT
- c) Conduct problems, peer problems and total difficulties scores will correlate positively with the avoidance sub-scale of the SAT

Spearman's correlation was carried out on the sub-scales of the SDQ and the SAT to test the hypothesis that abnormal scores on the SDQ would correlate with lower attachment, self-reliance, and higher avoidance, on the SAT. Because of the large number of statistical tests undertaken here, caution must be used in interpreting the results. One might expect roughly two of the 36 tests to produce a significant result by chance. Rather than simply reduce the probability level to $p < 0.01$ to account for this,

the table of correlations is presented with markers for $p < 0.05$, $p < 0.01$ and $p < 0.005$, so that potentially useful information is not lost.

Table 10. Correlations between Separation Anxiety Test and Strengths and Difficulties Questionnaire.

SDQ sub-scales	SAT sub-scales					
	Attachment 'other'	Attachment 'self'	Self-reliance 'other'	Self-reliance 'self'	Avoidance 'other'	Avoidance 'self'
Conduct problems	-.436 ***	-.553 ***	-.184 ns	.008 ns	.741 ***	.565 ***
Emotional symptoms	-.368 *	-.421 ***	-.215 ns	-.196 ns	.257 ns	.424 ***
Hyperactivity	-.209 ns	-.347 *	-.081 ns	.028 ns	.411 **	.368 *
Peer problems	-.454 ***	-.400 **	-.332 *	-.118 ns	.462 ***	.302 *
Pro-social	.319 *	.376 *	.173 ns	.214 ns	-.333 *	-.383 **
Total difficulties	-.493 ***	-.528 ***	-.289 *	-.128 ns	.623 ***	.508 ***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.005$

The attachment and avoidance sub-scales show significant correlations on most of the SDQ sub-scales, especially conduct problems, peer problems and the total difficulties score. The self-reliance sub-scale showed little correlation with SDQ sub-scales.

3.6 ASSESSMENT OF RELIABILITY

Inter-rater reliability on the Separation Anxiety Test

Reliability analysis, using Intra-class correlation coefficients, was undertaken for each of the six SAT sub-scales. Twelve participants responses to the SAT were rated by a colleague of the experimenter who was familiar with attachment theory. The same scoring criteria was applied. The results are presented in table 11.

Table 11. Inter-rater reliability on the Separation Anxiety Test. Intra-class correlation coefficients and their significance.

SAT sub-scales	Intra-class correlation coefficient	Significance
<i>Attachment – ‘other’</i>	.9051	p < 0.001
<i>Attachment – ‘self’</i>	.8742	p < 0.005
<i>Self-reliance – ‘other’</i>	.9162	p < 0.001
<i>Self-reliance – ‘self’</i>	.9267	P < 0.001
<i>Avoidance – ‘other’</i>	.9896	p < 0.001
<i>Avoidance – ‘self’</i>	.9248	p < 0.001

Table 11 indicates that there is a high degree of inter-rater reliability on the SAT.

Test-retest reliability on the Separation Anxiety Test

Twelve children were re-tested on the Separation Anxiety Test approximately four weeks after the initial testing in order to establish test-retest reliability. Table 12 below presents the intra-class correlation coefficients and their significance.

Table 12. Test retest reliability on the Separation Anxiety Test.

SAT sub-scales	Intra-class correlation coefficient	Significance
<i>Attachment – ‘other’</i>	.47	p < 0.05
<i>Attachment – ‘self’</i>	.51	p < 0.01
<i>Self-reliance – ‘other’</i>	.37	p = 0.06
<i>Self-reliance – ‘self’</i>	.39	p = 0.06
<i>Avoidance – ‘other’</i>	.53	p < 0.01
<i>Avoidance – ‘self’</i>	.54	p < 0.01

Whilst the attachment and avoidance sub-scales show significant correlations and the self-reliance sub-scale approaches significance, all of the correlation coefficients are lower than a figure of 0.7-0.8 which is regarded as a minimum for acceptable reliability.

Test-retest reliability on the vignettes

The same twelve children were also reassessed on the vignettes for the purposes of test-retest reliability. Table 13 overleaf presents the correlation coefficients and their significance.

Table 13. Test-retest reliability on the vignettes

Vignette type:	Spearman's correlation	Significance
first, charged, self	.57	p < .05
second, charged, self	.15	p = .19
first, charged, other	.32	p = .07
second, charged, other	.50	p = .09
first, neutral, self	.77	p < .05
second, neutral, self	.69	p < .05
first, neutral, self	.25	p = .15
second, neutral, self	.35	p = .06

Three out of the eight vignettes showed statistically significant test-retest reliability, using the 5% level of confidence. Only one of these has a correlation coefficient above 0.7.

Section 4

DISCUSSION

4.1 OVERVIEW OF DISCUSSION SECTION

There were two main aims of this study. The first was to investigate whether aggressive children showed insecurity of attachment. The second was to investigate whether these aggressive, insecure children performed poorly on a specific measure of perspective taking ability, which was second order, emotionally charged, vignettes which personally involved the child. No differences between the two groups were predicted on any other vignette. This study extends previous research which has found that insecure children perform worse on basic perspective taking, and that aggressive children show biased social information processing, especially in emotionally negative or ambiguous situations.

Summaries of the research findings related to the hypotheses derived from the above aims will be presented first, followed by a discussion of methodological considerations. Finally, interpretations of the main research findings, with implications for clinical practice and future research will be discussed.

4.2 SUMMARY OF RESEARCH FINDINGS

Social behaviour

As predicted, the Conduct Problem (CP) group were rated by teachers as having significantly greater problems in social behaviour than the Control group, using the

SDQ. Mean scores for the CP group fell in the abnormal range for all of the SDQ sub-scales, except Emotional Symptoms, whilst the mean scores for the control group all fell in the normal range. The differences between the two groups were statistically significant for all the sub-scales, including Emotional Symptoms.

Security of attachment

As predicted, the CP group were rated significantly lower on the Attachment sub-scale and significantly higher on the Avoidance sub-scale of the Separation Anxiety Test (SAT) than the control group. No difference was found on the Self-reliance sub-scale. Nonetheless, on the whole the CP group showed less security of attachment than the control group.

The Attachment and Avoidance sub-scales of the SAT showed a strong correspondence with sub-scales of the SDQ, with scores indicative of insecure attachment correlating with abnormal social behaviour. The Self-reliance sub-scale of the SAT showed little such correspondence. Nonetheless, insecurity of attachment was clearly associated with abnormal social behaviour.

Greater differences between responses to the 'self' and 'other' aspects of the SAT in the CP group were not found in this study, in contrast to Wright *et al*, (1995).

Hypotheses regarding the vignettes

It was hypothesized that the CP group would score significantly worse on second order emotionally charged 'self' vignettes than the control group. This hypothesis was not supported. Scores on second order emotionally charged 'self' vignettes were expected to be predictive of ratings on the Separation Anxiety Test. No significant differences were found.

Those children who responded correctly to second order emotionally charged 'self' vignettes were not seen to show any difference from those who responded incorrectly in terms of their teachers' ratings of their social behaviour.

Provision of full justification for responses to the vignettes

It was expected that the control group would more frequently provide a full justification for their responses to second order vignettes in comparison to the CP group. These justifications should coherently explain the differing and sometimes false beliefs held by different characters. No difference was found between the two groups. It was found, however, that provision of full justifications correlated with verbal IQ, verbal memory and total score on the vignettes. Verbal IQ was also found to correlate with security of attachment and normal social behaviour and was found to be higher in the control group than in the CP group. Those children who passed the emotionally charged second order, 'self' vignette were seen more frequently to provide full justifications to their responses to second order tasks. Finally, there were some

tentative associations between the provision of full justifications and security of attachment.

In summary, the principal experimental hypotheses, that the CP group would perform worse on emotionally charged 'self' vignettes, did not find any support from the data. This is in spite of the clear differences between the groups on measures of social behaviour and security of attachment. Associations were found between verbal IQ, verbal memory, the provision of full justifications for answers to the vignettes, and total scores on the vignettes. This suggests that verbal intelligence is highly associated, more so in this study than security of attachment or social behaviour, with correct responses to the vignettes. This, and other issues will be taken up in section 4.4

Interpretation of Research Findings.

4.3 METHODOLOGICAL CONSIDERATIONS

The Sample

It may be that the Conduct Problem group was rather heterogeneous, including children with rather mild conduct problems as well as some with more severe ones. Inclusion to the CP group was on the basis of scoring above the cut-off on the Strengths and Difficulties Questionnaire 'Conduct Problems' sub-scale, and whilst this is a well standardised and validated measure it is not a diagnostic tool. Thus, it could

be suggested that what was captured by the SDQ Conduct Problem sub-scale score was perhaps a more transitory, less severe measure than, for example, a diagnosis of Conduct Disorder, according to DSM IV (American Psychiatric Association, 1994) criteria. There were, however, clear and significant differences on the Conduct Problems sub-scale and on other measures of social behaviour, suggesting a reliable difference did exist between the groups.

One factor which could not be controlled for was the impact of children attending different schools. Whilst the control group all attended the same school, the conduct problem group came from several schools, including one school for children with emotional and behavioural disturbance and four mainstream primary schools. It is therefore unlikely that there was a systematic difference in the school environment or teaching methods between the two groups.

The Measures

Vignettes

Test-retest reliability on the vignettes indicated that only one of the eight vignettes showed acceptable reliability. It is possible that this explains the lack of predicted findings with regard to the vignettes. With hindsight it might have been advisable to have undertaken test-retest reliability assessment when piloting the vignettes.

However, due to a lack of this having been undertaken in previous research using false belief measures, and time constraints in this study, it was not completed. Furthermore,

Hughes, Adlam, Happe, Jackson, Taylor and Caspi (2000) have just published the results of a study investigating the reliability of false-belief tasks, after highlighting that despite about 750 studies having been published regarding these tasks, their reliability has not been established. They found generally good test retest reliability, although their study was restricted to children between 55 and 62 months of age.

The use of a prompt highlighting the central character's lack of a particular piece of knowledge, immediately before each question was asked in the vignettes, may have made the task of identifying the false belief too easy. Perner and Wimmer's (1985) research with second order vignettes had two conditions, one with and one without a prompt. Providing the prompt, which was a factual statement, e.g. 'Steve couldn't hear what his friends said because he was too far away', may also have served to distract the participants from the emotional nature of some of the vignettes. Thus, focusing the children on the factual elements of the task may have prevented them from being affected by the emotionally distressing aspect of the story. Rather than providing a prompt it might have been better to ask a memory question after the main question, such as 'Did John know his mother had spoken to the ticket man?'

Similarly it may have been better not to have asked first order theory of mind questions during the second order vignettes, but instead to have read the whole vignette asking just the second order question at the end. It may have been that stopping half way through the vignette and asking a question at that stage may have not only distracted

the children from the emotional element of the story but also may have scaffolded their thinking, providing them with half of the answer to hold in mind whilst the second half was considered. Not doing this would have created a greater fluidity in their processing of the details, more closely approximating to real life social interaction. In developing second order theory of mind research Perner and Wimmer (1985), suggest that first order questions can be asked at the appropriate point in a second order task.

Maybe because the vignettes were hypothetical and clearly not real, they failed to induce negative emotional arousal in the CP group. The sense of the experimenter was that the control group more frequently showed concern and distress at the emotionally painful vignettes than the CP group. Perhaps the CP group were so used to experiencing first hand the sort of scenario designed to be emotionally arousing in the vignettes that they held little power to emotional trouble them. In support of this idea, Vitaro and Pelletier (1991) found that 'maladjusted' children behaved more negatively in more realistic situations while responding the same way as well-adjusted children in hypothetical situations. Certainly when asked about hypothetical situations, children are less likely to feel threatened or time-pressured, both of which are thought to influence social-cognitive performance (Cates, Shontz, Yavak, Dell'Oliver and Yoshinobu, 1996). Thus, in the current study, whilst the 'self' vignettes were told from the first person perspective, they may not have been personally involving, and hence emotionally stressful, as intended. There is, therefore a question over the validity of these measures.

The use of hypothetical situations ensures greater standardization of the procedure, and has been used successfully in numerous other studies which have found significant differences between aggressive children and non-aggressive children. Furthermore, the SAT uses hypothetical scenarios and the CP group showed highly significant differences from the control group on that measure. It is likely, however, that different hypothetical situations vary significantly in the extent to which they engage the participant and his emotions, and consequently the degree to which such situations stimulate responses which reflect underlying expectations of acceptance or rejection and hostility.

The measure 'quality of justifications' for responses to the vignettes must be interpreted with caution. This is because the measure simply records whether or not the child explained the differing beliefs of the characters in their responses to second order tasks. Whilst the children were asked why the character would think or feel a certain way, no further prompts could be used without giving the answer away, and thus it is possible that often, children might have had the degree of sophistication required to provide such a justification, but simply responded with a different focus. This measure can, therefore, only be used as an indicator of such ability.

Strengths and Difficulties Questionnaire

With regard to the SDQ, it has been reported to be an acceptable measure of problem social behaviour, and additional sub-scales of Peer Problems and Pro-social behaviour are clearly of considerable relevance to conduct problems (Scott, 1996). However, there is only one item in the questionnaire that relates specifically to physical aggression ('often fights with other children or bullies them'), and this was the key feature of the experimental group. It may have been more informative to have used the Achenbach Child Behaviour Checklist (Achenbach, 1991) which includes an Aggression sub-scale, or use the criteria from DSM IV for Conduct Disorder. Other research studies have employed a range of criteria, for example, Happe and Frith (1996) used DSM IV diagnosis, Richard and Dodge (1982) used sociometric ratings, Routh, Hill, Steele, Elliot and Dewey (1995) used the Eyberg Behaviour Inventory (ECBI; Eyberg and Ross, 1978), DeKlyen used the Child Behaviour Checklist (Achenbach and Edelbrock, 1993), and Moss, Rousseau, Parent, St-Laurent and Saintonge (1998) used the pre-school socio-affective profile (LaFreniere, Dumas, Capuano and Dubeau, cited in Moss *et al*, (1998).

Separation Anxiety Test

Differences between responses to 'self' and 'other' aspects of the SAT were not observed in the CP group, in contrast to the findings of Wright *et al*, (1995). It is unclear why this is the case. Inter-rater reliability was observed to be highly significant in this study and there is little room for difference in the administration of the test.

Test-retest reliability was not established at an acceptable level, replicating the finding in the Wright *et al*, (1995) study. Interestingly, no differences were observed between 'self' and 'other' in the vignettes, as discussed above. This finding is therefore noted but no explanation presents itself to account for them at present.

It might have been more useful to have had a single measure of security of attachment rather than scores on several sub-scales. Most helpful would have been the ability to generate a classification, such as secure, ambivalent or, avoidant. This would not only have generated a clearer picture of each child's attachment status, but would also have cut down the number of statistical tests that needed to be performed, enhancing reliability. At present there are no assessments of attachment security in school aged children that can generate such a classification.

It would also have been useful to have had a way of identifying disorganisation of attachment, as it has been strongly associated with aggression in children. Again, there are currently no assessments of disorganisation of attachment in school aged children. The potential importance of this is discussed in the following section.

4.4 INTERPRETATION OF RESEARCH FINDINGS

Previous research (e.g. Fonagy *et al*, 1997) has identified that insecurely attached 5 year olds perform significantly worse on basic perspective taking (false-belief) tasks. It

was predicted in this study that aggressive children three years older than this would show insecure attachment and similar difficulties in extensions to these tasks, in which greater complexity, negative emotional arousal, and personal involvement in the tasks, would highlight their continuing difficulties with mentalizing in social interaction.

Whilst the aggressive children did indeed show insecurity of attachment relative to the control group, they did not show the predicted difficulty in the second order, emotionally charged, 'self' vignette. This section will focus on possible explanations for this finding, taking into account other research findings and alternative theories of the development of emotion understanding.

It is clear that the control and conduct problem groups differed widely in security of attachment and social behaviour. Insecurity of attachment has been observed in aggressive pre-schoolers (Lyons-Ruth *et al*, 1993) and school age children (Moss, Parent, Gosselin, Rousseau and St. Laurent, 1996). The findings on the measure of social behaviour replicate Frith and Happe's (1996) observation of aggressive children's low scores on the Socialization domain of the Vineland Adaptive Behaviour Scales. Whilst no significant differences were found on the crucial vignette, an array of findings relating to differences in verbal intelligence present a complex picture.

Verbal Intelligence

Verbal IQ was seen to be higher in the control group. This replicates Moffit's (1993) finding that children with conduct disorder show lower verbal intelligence of 0.5 of one

standard deviation, in comparison to matched peers. However, whilst the CP group did show lower verbal IQ they did not perform at a lower level on the vignettes, either for the main experimental vignette, second order, emotionally charged, 'self' vignette, or for their total score across all the vignettes.

Verbal IQ was seen, nonetheless to correlate with total score on the vignettes, suggesting that there is an important role for verbal IQ in correctly responding to these tasks. There have been some indications that verbal intelligence may be an important factor in theory of mind ability (Dahlgren and Trillingsgaard, 1996; Frith, Happe and Siddons, 1994). Fonagy *et al*, (1998) also found that verbal fluency related to performance on a cognition-emotion task. Dahlgren and Trillingsgaard (1996) concluded that the best predictor for the ability to attribute mental states to others is a combination of language competence and intellectual level.

Provision of full justifications

Verbal IQ did correlate with the provision of full justifications, suggesting that the ability to coherently provide psychological accounts of differing views is strongly related to verbal intelligence. Provision of full justifications was also seen to correlate with one sub-scale of the Separation Anxiety Test (attachment 'other'), with two other sub-scales approaching significance (attachment 'self' and avoidance 'other'). These correlations were in the predicted direction, with higher scores on attachment and lower scores on avoidance correlating with the provision of full justifications. Whilst

caution must be exercised in interpreting these findings, they are suggestive of a tentative link between security of attachment and the ability to provide coherent psychological discourse, as predicted.

Interestingly, out of all eight vignettes, responses to the second order, emotionally charged, 'self' vignette was the only one to be predictive of differences in the provision of full justifications. That is, those children who responded correctly to these vignettes provided significantly more full justifications than those who responded incorrectly, with no such difference predicted by responses to any of the other vignettes. This is a complex finding, but perhaps suggests that there was a consistency between all of the other vignettes, but only this one stood out (as predicted) in such a way that it identified / separated those children well able to generate coherent psychological discourse from those less able to. This perhaps suggests that the ability to provide coherent explanations is more powerfully associated with emotion understanding and perspective taking ability than simply the ability to correctly predict thoughts or feelings. There is some support for this notion in Fabes, Eisenberg, Nyman and Miceaelieu's (1991) finding that securely attached children were no better at correctly identifying a peers emotion but were better than insecurely attached children at explaining the reasons for the emotions.

Verbal Memory

Verbal memory correlated with verbal IQ, but not with total score on the vignettes, suggesting that memory is not an important factor in responding to these tasks. However, verbal memory did correlate with the provision of full justifications, suggesting that memory is important in the ability to 'hold in mind' disparate points of view while considering a response. Again, the picture this presents is not a clear one as regards the role of verbal intelligence, but does not appear to support Frith (1992) who suggested that perspective taking ability is IQ independent.

Verbal Intelligence, Security of Attachment and Social Behaviour

Verbal IQ correlated with all sub-scales of the Separation Anxiety Test and all sub-scales of the Strengths and Difficulties Questionnaire. However, verbal IQ, security of attachment and social behaviour were not associated with performance on the main experimental vignette. Whilst verbal IQ seems to be strongly implicated in the provision of full justifications, most notably to the main experimental vignette, security of attachment has been seen to be rather less an important factor. Whilst these associations cannot be said to be causal, a tentative conclusion could be suggested that verbal ability, including the ability to generate coherent psychological discourse, but excluding attachment status, is strongly related to understanding of emotion, in particular, perspective taking under conditions of mistaken beliefs. In support of this notion, Cutting and Dunn (in press) found that language ability, narrative coherence and vocabulary were the strongest predictors of mental state understanding. This view

will be explored more fully below in relation to an alternative model of the development of emotion understanding.

Finally, it is important to acknowledge that due to the poor reliability of the vignettes, caution has to be exercised in generating assertions relating to the findings in this study. It is possible that this lack of reliability obscures the differences that were hypothesized to exist between the groups on perspective taking, but the findings cannot be taken either to support the hypotheses or to support an alternative model. Thus, the interpretation of the findings in this section are speculative where reference is made to performance on the vignettes.

Is security of attachment an important factor in the understanding of emotion?

There is controversy over whether security of attachment in infancy is an important factor in the development of emotion understanding. Research to date presents a confusing picture. In Fonagy *et al's*, (1998) study, children classified as insecure avoidant or resistant at 18 months were particularly likely to fail a cognitive-emotion task at age 5 ½, but those classified as disorganised were as likely to pass as securely attached children. Whilst Fabes *et al*, (1991) found that securely attached children were better at explaining the emotions of their peers during interaction at pre-school, insecure children have been found to be more accurate in remembering episodes of negative rather than positive emotion enacted in the course of a puppet show, whereas secure children showed the reverse pattern (Belsky, Spritz and Crnic, 1996). There is

also the informal observation in the current study that it was the control group who seemed to show more distress during the emotionally charged vignettes.

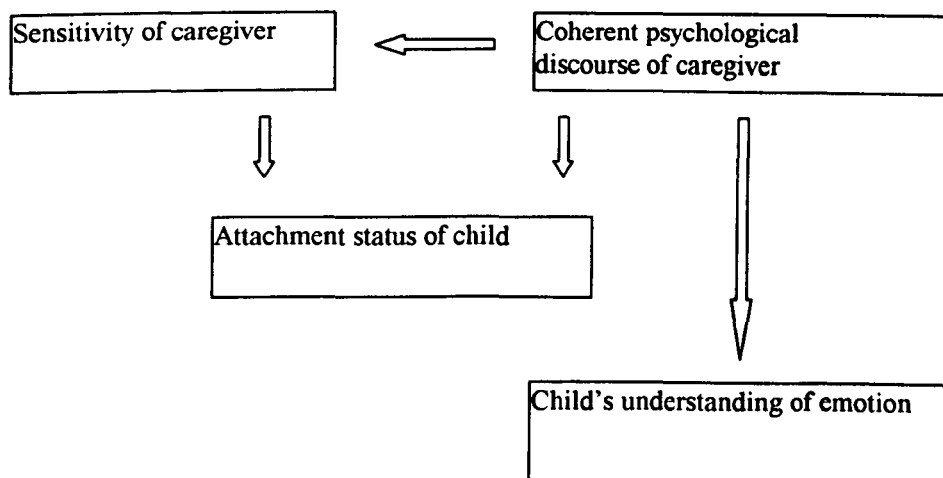
Clearly, the ability to remember negative emotion is not the same thing as the ability to retain an objective viewpoint under conditions of negative emotional arousal. It is, perhaps understandable that children who are used to an environment in which negativity, hostility and rejection are the norm, might be more experienced in encoding and retrieving episodes of negative emotion, not least perhaps because in order to survive and get their needs met they may have to have a sophisticated understanding and sensitivity to it. It may be, however, that there is an important situational aspect involved in the ability to consider mental states. That is, with a benevolent and encouraging person, aggressive, insecure children may be rather more able to look at a situation from different perspectives, than with a person who is perhaps abrupt and demanding, or even hostile. Some children, however, may have an internal working model highly dominated by expectations of rejection and hostility, such that even very benign and supportive people will be viewed with mistrust. It may be that the CP group in this study had a high proportion of children who could respond to an encouraging and supportive stranger, and thus that their internal working models of relationships, whilst more insecure than the control group, were not so expectant of hostility that perspective taking and considering emotions was too threatening, such that this ability became 'off-line'.

The picture that emerges, then, is a complex one in which, alongside clear perceptual biases and reduced expectation of responsiveness from others (insecure attachment), aggressive children may still show a sophisticated ability flexibly to take differing perspectives in considering emotionally charged stories.

An alternative model: The role of caregiver discourse

Whilst Fonagy and other attachment theorists see the perceptual biases of children with conduct disorder as significantly related to their attachment histories, Harris (1999) proposes an alternative model, which sees attachment as a by-product of coherent psychological discourse by the caregiver and not on the causal pathway to the child's understanding of emotion. Figure 3 below depicts this model.

Figure 3. The role of caregiver discourse : Attachment as a by-product



Harris' model assumes that caregiver discourse has an impact on the child's security of attachment but more importantly, that it has a direct impact on the child's understanding of emotion, independent of attachment. He writes:

“This hypothesis implies that children who lack a secure attachment can nevertheless, provided they have access to a suitably instructive model for the encoding of emotional experience, arrive at a sophisticated understanding of emotion. On this model, a caregiver who is ‘mind-minded’ (Meins, 1997) and skilled at translating psychological experience into a coherent dialogue might simultaneously foster a secure attachment on the part of her child and also sensitive understanding of emotion, without the former providing a pathway to the latter” (p.17).

Such coherent and readily available conversation about emotions could provide children with a format for organising and retrieving episodes of emotionally charged situations and also help them to understand that a given situation can be appraised in different ways. The research programme of Judy Dunn and her colleagues has shown that the development of children's understanding of mental states is embedded within the social world of the family with its interactive network of complex and at times intensely emotionally charged relationships. Dunn, Brown and Bearsall (1991) demonstrated that performance of a perspective taking task at six years was predicted by the diversity of feelings, their causal content and the extent to which disputed feelings were discussed in families at three years. Denham, Zoller and Couchoud

(1994) showed that parental talk about emotions and their own affective responding to the child's emotions at three to four years predicted emotion understanding. Garner, Jones, Gaddy and Rennie, (1997), found that three to five year olds' understanding of emotion was correlated with the extent to which their mothers offered them explanations for the causes and consequences of emotion during a joint picture-book session. Finally, whilst Fonagy (1997) stresses the role of attachment status, he also reports that the way in which a caregiver reflects on and talks about emotionally charged experiences in the course of the Adult Attachment Interview, even before the birth of her child, predicts the child's performance on a false-belief perspective taking task at age five.

The role of family size and in particular the presence of siblings has recently been shown to be implicated in the development of mentalizing. Perner, Ruffman and Leekham (1994) found that three to four year old children with siblings were more likely to correctly predict a story character's mistaken (based on a false belief) action than children without siblings. The potential importance of this finding is underscored by Brown and Dunn's (1992) observation that four year olds spend more time discussing feelings, and a wider range of feelings with siblings than with their mothers. Harris (1994) suggests that family discussion of emotions indicates to children that individuals differ in their emotional reactions to similar situations, thus alerting them to the representational processes underlying emotion related behaviour. It has to be borne in mind, however, that it need not be the child's parent who provides coherent

psychological discourse. Even in the context of insecure attachment and a hostile environment in which to grow up, anyone who provides the child with coherent psychological discourse may help this ability to develop. A teacher at school, other member of the family, friend's parents, priest, etc. could fulfil this role.

It could, nonetheless, be argued that there is likely to be an association between security of attachment on the one hand and understanding of emotion and perspective taking on the other, as even though attachment status is not viewed, by this model, as being on the causal path between the caregiver's ability to provide coherent psychological discourse and the child's understanding of emotion, 'mind-mindedness' is considered to be crucial to both security of attachment and understanding of emotion, and there is considerable research evidence (e.g. Fonagy *et al*, 1991) in support of this. Indeed, much of the research evidence to date can be seen as supporting both models.

One way of linking the alternative systems of explanation described is to suggest that security in infancy predisposes children to benefit from certain social processes which may be directly involved in the development of social understanding. For example, children who, in their third year, are better able to engage in co-operative interaction (Dunn, Brown, Slomkowski, Telsa and Youngblade, 1991) and particularly joint pretend play (Astington and Jenkins, 1995), do better on assessments of mind-reading and emotion understanding. Stage and Main (1984, cited in Carlson and Sroufe, 1995)

found that discourse patterns between mothers and children at age 6 could be predicted from early attachment classifications, and that secure dyads are more likely to create patterns of narration that support thinking about feelings and intentions which lie at the root of theories of mind. Thus, Fonagy (1997) writes, “Children with a secure attachment history are more likely to engage in activities which involve sharing their mental world and thus encounter experiences which teach them about how the mind works” (p.35).

Thus, secure attachment is seen to follow from the caregiver’s ability to see the child as a mental entity, and secure attachment, in turn, creates the safe environment in which to learn about minds. Poor ability in the caregiver to accurately reflect on a child’s behaviour and intentions, especially where self-expression is repeatedly interpreted as aggression, may lead the child’s self-expression to become fused with his aggression, leading to a pathological pleasure in destructiveness (Fonagy, Moran and Target, 1993). Whilst security of attachment was not associated with perspective taking in the current study, insecure attachment was seen to correlate with abnormal social behaviour, including peer problems and lack of pro-social behaviour. This, perhaps offers some support to this notion that security of attachment better enables children to engage in and learn from shared social interaction. This finding was, however, correlational, and thus suggesting a causal connection can only be in terms of a hypothesis.

The role of disorganised attachment

A short-coming of this study was the inability to identify disorganisation of attachment. At present there are no measures of attachment in childhood, other than the 'Strange Situation', that can identify disorganised attachment. This, in fact, may be a crucial, as Fonagy *et al*, (1997) found that children disorganised with respect to attachment were as likely to pass perspective taking tasks as secure ones, and Lyons-Ruth *et al*, (1996) found that pre-schoolers with highly hostile and aggressive behaviour were six times as likely to have been classified disorganised in infancy than to have been classified as secure. Thus, there is something peculiar to disorganisation of attachment in that children showing this pattern of behaviour don't appear to have had interrupted, or otherwise inhibited, the ability to consider mental states. It could be that a proportion of the children in the CP group in the current study are disorganised with respect to attachment, but that the SAT was not able to identify this, and thus, the absence of a relationship between scores on the main experimental vignette could be due to this factor, rather than the notion that security of attachment is not involved in emotion understanding, as suggested by Harris (1999).

A further possibility is that children disorganised with respect to attachment are not a homogenous group as regards emotion understanding. Classifications of disorganised attachment status include a sub-classification of one of the secure, insecure ambivalent or insecure avoidant patterns. It is likely that disorganised secure children show good emotion understanding, similar to fully secure children, but in contrast to ambivalent

and avoidant and disorganised ambivalent / avoidant children. It may be, then, that there was a high proportion of disorganised secure children in Fonagy *et al's* (1997) study, perhaps giving a misleading impression that disorganised children as a group have good mentalizing abilities. Fonagy *et al*, (1996) suggest that adults with borderline pathology (Borderline Personality Disorder) show very poor reflective self-function, that is, ability to reflect on their own mental functioning, and that this is likely to relate to disorganised insecure attachment. Disorganised secure children show good reflective self-function, and are more likely to show internalizing disorders. Thus, it appears that there are crucial differences within the overall classification of disorganised attachment, with significant implications for emotion understanding and reflective self-function as well as different prognoses in terms of adult psychopathology.

This has to remain a hypothesis, however, until measures of attachment in middle childhood are developed that can identify not only disorganisation of attachment, but sub-groups within the overall classification.

4.5 CLINICAL IMPLICATIONS

The clinical implications of the findings generated by this research are limited by the lack of support for the main experimental hypotheses and by the lack of clarity

concerning whether the CP group showed disorganisation of attachment which has been seen to associate with better perspective taking than insecure ambivalent and avoidant attachment. Fonagy (1997) asserts: "I believe that the systematic facilitation of the development of the children's awareness of the mental states of those around them is an important target for preventive intervention in social and behavioural disorders in children as well as personality disturbance and anti-social behaviour in adolescence and adult life" (p. 37). Aggressive children, who are seen to evidence disorganisation of attachment, may need less help, however, with understanding the mental states of those around them than with separating their self-expression and self-image from aggressive behaviour.

Parent Training

Parent training (see Webster-Stratton, 1993) for oppositional and aggressive children could be enhanced as a result of being informed by the underlying goals and meaning of the child's aggressive behaviour. These may be very different with disorganised children whose inconsistent controlling and freezing or helpless behaviour separates them from insecure ambivalent and avoidant children. Insisting on comforting, by physically holding a disorganised child ('holding therapy' see Richer and Zapella, 1989) may provide the required if dramatic containment the child requires in order to give up his controlling behaviour, but would need to take into account the mental state of the person doing the holding. This person has to be the child's attachment figure,

but if they were either frightened or frightening as has been identified with the mothers of disorganised infants, this might serve to re-traumatise the child.

However, more needs to be known about middle school-aged children with disorganised attachment before more clear implications for enhancing parenting training can developed. It is known that parent training tends to be more effective with less severe problems and where the parents are of high intelligence, motivated, and are secure themselves, with respect to attachment (Fonagy, 1998). Also, that mothers attachment status is strongly associated with outcome in parent training; mothers classified 'unresolved' in the AAI appear not to benefit, in contrast to those with a different classification (Routh *et al*, 1995).

Individual Therapeutic Work

Whilst therapy with insecure ambivalent and avoidant children could follow a more established path, individual therapy with disorganised children may need to have a different focus. A cognitive-behavioural approach might help disorganised children to identify and challenge patterns of thinking based in hostile expectations. Cognitive behavioural work with children is relatively new, however, and there is likely to be an age below which it is not of use; before the stage of 'formal operations' .

Alternatively, a psychodynamic approach, whether child psychoanalysis or play orientated, could provide a containing environment in which the child could feel safe enough to express and 'work through' frightening and aggressive phantasies.

Engagement in therapy, both by the child and the parents is known to be problematic with this client group.

Group Therapeutic Work

Verbal IQ showed a strong relationship with both security of attachment and social behaviour. This has been found before (especially regarding reading ability) at least in relation to conduct disorder. Whilst attempting to increase aggressive children's verbal IQ is unlikely to have an effect on either their behaviour or their security of attachment, engaging aggressive children in therapeutic groups designed to facilitate emotional expression and sharing of personal histories may have an indirect impact on the ability to coherently represent to themselves their psychological life, seen by both attachment and discourse approaches as central to adaptive interpersonal behaviour.

Accurate assessment of the child's attachment status before beginning a form of treatment might serve to increase both attendance at therapy and it's potential success. Attempting to teach some disorganised children about mental states might be like teaching grandmother to suck eggs, the inevitable consequence of which would be drop-out from treatment. Acknowledging the skill and ability of disorganised children in emotion understanding is perhaps crucial if the children are to view and experience therapy as sensitive to their psychological state, that is, accurately empathic.

Early Intervention

Early intervention is widely accepted as likely to be more effective than later intervention. Maternal hostile-intrusive behaviours predicting aggressive behaviour disorders are observable as early as the sixth month of infancy, before the onset of coercive cycles (Egeland *et al*, 1993), that is before an overt disorder can be seen. A significant role could be played by primary care, especially Health Visitors, in identifying such maternal behaviour towards her infant, and offering appropriate support (Davis, Spurr, Cox, Lynch, von Roenne and Hahn, 1997). Research describing intervention studies with insecure mothers and with 'irritable' babies shows a promising outcome for such early intervention (see van den Doom, 1994).

An important caveat to these implications and suggestions is that they are based on tentative findings from the current study, combined with theoretical and research information from previous work, and cannot be seen as having a base in reliable evidence from the current study.

4.6 SUGGESTIONS FOR FUTURE RESEARCH

Clarifying the roles of security of attachment and caregiver discourse

Whilst the attachment model asserts the importance of security of attachment in determining the child's understanding of emotion, the discourse model asserts the

importance of the child experiencing coherent psychological discourse from another person. There are considerable overlaps in previous research findings from these two different approaches, but Harris (1999) indicates that a programme of research could be undertaken to test specific predictions that separate these two theories. Both longitudinal and intervention studies could be used:

1. Longitudinal studies could identify from assessments of both security of attachment and the caregiver's propensity for coherent psychological discourse, at 18 months, what is more predictive of emotion understanding as the child develops. The attachment model would assert that once the predicted link between attachment status and emotion understanding had been taken into account, any correlation with the caregiver's ability to generate coherent psychological discourse would disappear. The prediction would be *vice versa* for the discourse model.
2. Intervention studies could assess whether interventions designed to increase security of attachment have an impact on emotion understanding. The discourse model would not make such a prediction. The discourse model would predict, however, that even in the context of an insecure attachment, a child could be helped to understand emotional experiences if provided with the linguistic and narrative tools so to do.

Harris (1999) points out that one likely finding is that both security of attachment and the provision of coherent psychological discourse are important factors in emotion understanding. It is likely that undergoing psychotherapy will impact on both the cognitive ability of emotion understanding and also on underlying expectations of responsiveness (or otherwise) from others, that is internal working models of relationships. Similarly, the degree to which a 'corrective emotional experience' such as a supportive long term relationship can alter both of these factors is unclear. Nonetheless, whilst overlaps are likely to exist, there are specific predictions as outlined above which can usefully deepen our knowledge of the importance of these factors to emotion understanding.

Integrating perspectives

Fonagy and Target (1997) appear to dismiss the social-cognition approach as providing "a barren picture which ignores the central role of the child's emotional relationship with the parents or other caregivers in fostering the capacity to understand interaction in terms of mental states" (p.680). Also, Lyons-Ruth *et al*, (1996) argue, "documenting that young children at risk for CD show less than optimal responses on a variety of developmental tasks is unlikely to be useful without accompanying close description of how the deviant behaviour is organised, what underlying goals or functions it may serve, and what emerging meaning systems support and direct it" (p.70). However, there is a growing voice in the last five years (Astington and Jenkins, 1995; Downey *et al*, 1988), arguing for the integration of social-cognitive

and attachment perspectives, “in order to elucidate the social-cognitive processes through which internal working models of relationships can influence how children perceive social events and how they construct plans for dealing with these events” (p. 1075). The Social Information Processing model developed by Crick and Dodge (1994) offers a clear experimental paradigm for assessing social cognition, but would be enriched by incorporating the attachment perspective. Thus, research could benefit from bringing together these different, and at times, competing approaches, integrating the experimentally derived evidence with the ethological analysis of the meaning and goals of social behaviour, in order for a fuller picture of aggression in children to emerge.

The Separation Anxiety Test needs to have addressed the issue of test-retest reliability. Also, it could be developed to enable a classification of attachment status to be made, including the identification of children showing disorganisation of attachment, including its sub-groups.

Whilst the vignettes used in the current study showed poor test-retest reliability, further development of this measure offers a potentially fruitful approach to assessing the ability of children to keep mentalizing, to keep considering different perspectives, when under emotional stress. Previous research identifies that emotionally charged and personally involving situations highlight perceptual biases, and likely, aggressive and impulsive behavioural responses, in children with behaviour problems. Thus,

future research could develop this measure, taking into account the issue of how personally involving and emotionally stressful the 'self' vignettes actually are.

4.7 CONCLUSIONS

The conduct problem group in this study were seen to show further abnormal social behaviour and less security of attachment in comparison with the control group of non-conduct problem children. Whilst predicted differences were not observed on complex emotionally charged personally involving vignettes, interpretation of this finding is compromised by poor reliability and questionable validity in this measure. The conclusions that can be drawn from this study are therefore tentative.

Verbal intelligence is strongly implicated in perspective taking ability, but not in emotionally charged, personally involving tasks. Performance in these tasks appears to be related more to the specific ability to generate coherent psychological discourse. This may be a better measure of sophisticated emotion understanding than the ability simply to identify and predict feelings or behaviour. This sophisticated ability may exist in aggressive children, disorganised with respect to attachment, but less so in other insecurely attached children. It is unclear whether this ability is a function of sensitive responsiveness in infancy, leading to security of attachment, or a function of experiencing coherent psychological discourse, whether from a caregiver or other

person. Furthermore, if it is a function of sensitive responsiveness, how can some disorganised children's apparent sophistication in this ability be explained, other than by reference to the discourse model. Further research is clearly required, both to isolate these factors and identify how their interact.

Section 5

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Section 6

APPENDICES

APPENDIX CONTENTS

- 1a) Letter from Ethics committee granting approval
- 1b) Letter from Ethics committee approving changes to vignettes
- 2) Sub-categories of the Separation Anxiety Test
- 3) Copy of the short story vignettes
- 4) Strengths and Difficulties questionnaire sub-scale items
- 5a) Letter to headteachers
- 5b) Information letter and consent form for parents

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RB/OB/099.60

2 February 2000

 Mr David Tilbrook
 35 Marsh Baldon
 Oxford
 OX44 9LP

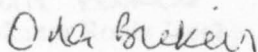
Dear Mr Tilbrook

Re: 099.60 – Theory of Mind, Attachment and Conduct Disorder.

Thank you for your letter dated 10 January 2000 letting me have the further details on this project. In response to your query in relation to exclusion of point 3 of the consent form, this seems perfectly in order for this study. I am therefore happy to confirm ethical approval, and wish you every success with the study. I would be very grateful if you could send me a copy of any publication which may arise from this study.

May I remind you that if the investigators do not follow the protocol, or make changes to the protocol, without informing OPREC then Ethics Committee approval will be withdrawn. In addition OPREC should be made aware of any adverse events.

Yours sincerely



 Dr Paul Harrison
 Vice Chairman
 Oxfordshire Psychiatric Research Ethics Committee

Oxfordshire Psychiatric Research Ethics Committee (OPREC)					
Title of Project – Theory of Mind, Attachment and Conduct Disorder.					
OPREC No: : 099.60					
Committee Members in Attendance at OPREC meeting on: Tuesday 21 December 1999					
Prof Robin Jacoby	(Chair)	✓	Dr Hendrick Chapel	(DHA Appointee)	
Dr Paul Harrison	(Vice Chair - Univ rep)	✓	Dr R Briggs	(GP representative)	✓
Dr Myra Cooper	(Clinical Psychology rep)	✓	Mrs P Morely	(Lay rep)	
Dr Marian Perkins	(Cons Child psychiatrist)		Dr D Rowe	(Learning Disabilities)	
Dr J McCleery	(University rep)	✓	Ms J Hall	(LMC and Local Com. Health Council rep)	✓

Chairperson: Prof Robin Jacoby

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Our Ref. RJ/em/O99.60

29th February 2000

Mr David Tilbrook
Trainee Clinical Psychologist
Oxford Doctoral Course in Clinical Psychology
Isis Education Centre
Warneford Hospital

Dear Mr Tilbrook

Re: O99.60 – Theory of mind, attachment and conduct disorder

Thank you for your letter dated 21st February, asking for a modification to the submitted protocol; there seems to be no problem with this, and can now confirm OPREC Approval for this amendment.

May I remind you that if the investigators do not follow the protocol, or make changes to the protocol, without informing OPREC then ethics committee approval will be withdrawn. In addition OPREC should be made aware of any adverse events.

Yours sincerely,

Robin Jacoby
Professor Robin Jacoby
Chairman
Oxford Psychiatric Research Ethics Committee

Chairperson: Prof Robin Jacoby

**SCORING INDICES FOR THE SEATTLE VERSION OF
THE SEPARATION ANXIETY TEST**

Attachment

1. **TYPICAL ATTACHMENT** responses are ones in which the child responds with a negative feeling, such as sad, and justifies this by noting the separation from the parents and copes by some appropriate activity, such as playing or expressing an emotion (e.g. crying). Justifications which indicate that the child felt sad or bad about being alone or lonely, considered a recognition of the separation, are also assigned a category of 1.
2. **HI ATTACHMENT** responses are like **TYPICAL ATTACHMENT** responses but include coping solutions in which support or company is sought from people in the scene, or from some other person (e.g. friend, relative, teacher)
3. **LO ATTACHMENT** responses were those with a negative feeling valence but the examiner was unable to elicit an adequate response for either the justification or coping. **LO** responses are considered somewhat **AVOIDANT** and include responses which explain the feeling as due to the separation but are missing an adequate way of coping or those which have an adequate coping strategy but lack a justification for the feeling. In some cases the child seemed only able to reiterate the emotions which were felt.
4. **ATTACHMENT / RETRIBUTION** responses are those in which the child gives a negative feeling (e.g. sad, mad) attributed to the separation but the coping response entails a form of retribution for the parents leaving. However, the act of retribution was not always directed at the parents, but was also aimed at teachers, siblings or pets. Typically the method of punishment described was disobeying, or getting into some mild form of trouble. Running away, if it results in reuniting the child with the parents or with the parents reaffirming their love for the child, is also coded here. (but see category 21)
5. **ATTACHMENT / INCREASE ACCESS TO PARENTS** are responses which have a negative feeling valence in regard to the parents leaving, while the coping response describes a way in which the child will physically get to the parents or try to get them not to leave.
6. **ATYPICAL ATTACHMENT** responses are unusual because the child gives a feeling with a positive valence (e.g. happy, fine) but justifies it by depending on the parents in some way or by refusing to accept the separation. Although similar to category number 5, **INCREASE ACCESS TO PARENTS**, the responses in this category indicate that the child will not allow the separation to take place. (By refusing to accept the separation, these answers also have an **AVOIDANT** component.) Also, unlike **ATTACHMENT / SELF-RELIANT** responses (see category number 11), where the child expresses both components of **ATTACHMENT**

and SELF-RELIANCE in the answer, responses in this category indicate a reliance on the parents to justify their feelings of well-being. Children whose answers fall in this category appear to feel that they have the control to prevent the separation and therefore do not need to feel upset about it.

Self-reliant

7. TYPICAL SELF-RELIANT responses have a positive feeling valence and often focus on enjoying being alone or on a salient feature of the photograph other than the parents' leaving. Coping with the separation involves an appropriate activity, play, or expressing an emotion.

8. HI SELF-RELIANT responses also have a positive valence for the feeling but the feeling is most often justified by adding a person to the scene or relying on persons in the scene while coping appropriately. Sometimes the child gives a positive feeling but attributes it to something other than having another person there but relies on another person to cope with the separation. These responses are also placed in this category.

9. LO SELF-RELIANT responses have a positive feeling but, like LOW ATTACHMENT responses, the examiner was unable to elicit an adequate response for either the justification for the feeling or the coping question. Children who gave the coping response, "He'd do nothing", were also scored in this category. Responses which justified the positive feeling with "I like to feel that way" or a similar response were also placed here.

10. ATYPICAL SELF-RELIANCE are responses in which the child gives a feeling with a negative valence but attributes it to something other than the separation (which would be coded under the ATTACHMENT category). The answer is complete (a feeling, logical justification for the feeling and appropriate coping) but the focus is on something other than the parents' leaving.

Attachment / Self-reliant

11. TYPICAL ATTACHMENT / SELF-RELIANT responses have components of both ATTACHMENT and SELF-RELIANT responses. These include positive valence attachment responses which acknowledge that the parents are not leaving or that the child gets to stay with them and mixed valence feeling responses with appropriate rationale for each, along with an appropriate coping solution. Sometimes the child's rationale for one of the two feelings wasn't expressed until the coping response, these answers were still scored in this category.

12. HI ATTACHMENT / SELF-RELIANT responses add a person to the scene to rely on or rely on a person or persons in the scene while otherwise fulfilling the criteria under number 11 for an ATTACHMENT / SELF-RELIANT response.

13. LO ATTACHMENT / SELF-RELIANT responses are, again, answers which are incomplete or inadequate. Answers coded here include those where the child gave

a mixed valence feeling but could not justify the feelings but gave an adequate coping response. Also coded here are answers with a negative feeling valence with no justification but with a HI coping response (getting a person to rely on). As in the other LO categories, feelings which are justified with “I like to feel that way” are also coded here.

14. ATTACHMENT / SELF-RELIANT / IMAGE OF PARENTS categorizes responses in which children give components of either ATTACHMENT or SELF-RELIANT responses but retain an image of their parents some how to deal with the separation. Even though the child may also rely on other people (generally coded in a HI category) if the parents are thought about or imagined it should be categorized here. This method of dealing with a separation, imagining the parents, seems in itself to contain elements of both attachment and self-reliance. Answers in this category include “thinking” about the parents, dreaming about them, writing a letter to them or calling them on the telephone.

15. ATTACHMENT / SELF-RELIANT / INCREASE ACCESS TO PARENTS includes responses which fulfil the criteria for the TYPICAL ATTACHMENT / SELF-RELIANT or HI ATTACHMENT / SELF-RELIANT categories but the coping response describes a way in which the child will physically gain access to the parents.

Avoidant

16. AVOIDANT responses are really ‘non-responses’. The examiner can elicit very little or no information about the child’s feelings, why the child feels that way or what the child might do. If any two of the three parts of an answer are missing it is categorized here. AVOIDANT responses also include those which deny that a separation might occur.

17. AVOIDANT-CONFUSED responses are also avoidant, but are unlike answers placed in the AVOIDANT category where the child is passively silent. Children giving this type of answer seem ‘confused’ because they talk about things unrelated to the picture being shown, focus on irrelevant features in the picture or give an illogical justification for the feeling. These responses are AVOIDANT as demonstrated by the inability to discuss the separation but the child self-distracts by discussing irrelevant issues.

Additional

18. ANXIOUS responses are those that reveal anxiety or fear in some component of the answer to the picture. However, the child’s response is still complete, with a feeling, a justification for the feeling and an appropriate coping solution (which includes giving an emotion such as ‘cry’). Answers categorized here are not those of a child who shows an irrational fear or is overwhelmed by the separation. These answers are much like those categorized under the ATTACHMENT categories but rather than “sad” the children are generally scared or frightened because their parents are unavailable.

19. ANXIOUS / INCREASE ACCESS TO PARENTS include responses which fulfil the criteria for ANXIOUS but the child copes by trying to be with the parents.

20. ATYPICAL responses are those in which the child claims to feel “good” or “happy” about the separation and specifically attributes it to the parents’ leaving. These answers might be considered an extreme form of self-reliance. Sometimes the child is unable to give an appropriate coping solution but the response is coded here rather than in a LO category to tag the unusual justification for the feeling.

21. BIZARRE responses are those which deal with hostility, hatred of mother or father, abandonment or death.

Scores assigned to the sub-categories of the SAT indices on the Attachment component (severe separations)

<u>Sub-categories receiving a score of 4:</u>	1, 2, 11, 12, 14, 18
<u>Sub-categories receiving a score of 3:</u>	5, 8, 13, 15, 19
<u>Sub-categories receiving a score of 2:</u>	3, 6, 7, 8, 10
<u>Sub-categories receiving a score of 1:</u>	4, 9, 16, 20, 21

Scores assigned to the sub-categories of the SAT indices on the Self-reliant component (mild separations)

<u>Sub-categories receiving a score of 4:</u>	7, 8, 11, 12
<u>Sub-categories receiving a score of 3:</u>	13, 14, 15
<u>Sub-categories receiving a score of 2:</u>	1, 2, 3, 5, 6, 9, 10, 18, 19
<u>Sub-categories receiving a score of 1:</u>	4, 16, 17, 20, 21

Scores assigned to the sub-categories of the SAT indices on the Avoidant component (all pictures)

<u>Sub-categories receiving a score of 3:</u>	6, 10, 16, 17
<u>Sub-categories receiving a score of 2:</u>	3, 9, 13
<u>Sub-categories receiving a score of 1:</u>	1,2,4,5,7, 8, 11, 12, 14, 15, 18, 19, 20, 21

Appendix 3

(1) Emotionally charged- Other

Today is Bill's birthday. At breakfast his Mum told him that for his birthday treat she would take him to the cinema. They would see the Star Wars film. Bill felt really excited and couldn't wait till the evening.

Then Bill left for school. Later his Mum got a letter from the headmaster. It said that Bill's behaviour was very bad. If it didn't improve he would be expelled from school. Bill's mother rang the headmaster to say sorry for Bill's behaviour. She said that to punish him, she would not take him to the cinema tonight. Bill didn't know his Mum had got the letter from the headmaster.

What will Bill be feeling as he walks home after school?

The headmaster saw Bill just as he was leaving to go home. He told him that his mother was going to punish him for his bad behaviour. She would not take him to the cinema. Bill's Mum didn't know that the headmaster told Bill this. Bill felt very sad and upset. And he was worried about what his mother would say when he got home.

What does Bill's Mum think Bill will be feeling as he walks home? Why would she think that?

(1) Emotionally charged - Self

It's your birthday. At breakfast your Mum tells you that for your birthday treat she will take you to the cinema. You would see the Star Wars film. You felt really excited and couldn't wait till the evening.

Then you left for school. Later your Mum got a letter from the headmaster. The letter said that your behaviour was very bad. If it didn't improve you would be expelled from school. Your Mum rang the headmaster to say sorry for your behaviour. She said that to punish you she would not take you to the cinema tonight. You didn't know your Mum had got the letter from the headmaster.

What will you be feeling as you walk home after school?

The headmaster saw you just as you were leaving to go home. He told you that your mother was going to punish you for your bad behaviour. She would not take you to the cinema. Your Mum didn't know that the headmaster told you this. You felt very sad and upset. And you were worried about what your Mum would say when you got home.

What does your Mum think you will be feeling as you walk home? Why would she think that?

(1) Emotionally neutral - Other

Today is Bill's birthday. At breakfast his Mum told him that for his birthday treat she would take him to the cinema. They would see the Star Wars film. She said that if there were no tickets for Star Wars then they would see Flubber instead. Bill felt really excited and couldn't wait till the evening.

Then Bill left for school. Later his Mum rang up the cinema to get the tickets. The ticket man said that there were no tickets left to see Star Wars. There were tickets for Flubber though. Bill's Mum got tickets for Flubber instead. Bill didn't know his Mum had spoken to the ticket man.

At lunchtime Bill talked to his friends about going to the cinema. Which film does he tell them he is going to see tonight?

Bill told his teacher about seeing Star Wars tonight. The teacher said that he knew that there were no tickets left for Star Wars. He had rung up the cinema earlier. There were tickets for Flubber, though. Bill said he didn't mind. He could see Star Wars another time and he really wanted to see Flubber as well.

***As Bill's Mum has her lunch at home she is thinking about going to the cinema tonight. Which film does she think Bill expects to see?
Why would she think that?***

(1) Emotionally neutral - Self

Today is your birthday. At breakfast your Mum told you that for your birthday treat she would take you to the cinema. You would see the Star Wars film. She said that if there were no tickets for Star Wars then you would see Flubber instead. You felt really excited and couldn't wait till the evening.

Then you left for school. Your Mum rang up the cinema to get the tickets. The ticket man said that there were no tickets left to see Star Wars. There were tickets for Flubber though. Your Mum got tickets for Flubber instead. You didn't know that your Mum had spoken to the ticket man about this.

At lunchtime you talk to your friends about going to the cinema. Which film do you tell them you are going to see tonight?

You told your teacher about seeing Star Wars tonight. The teacher said that he knew that there were no tickets left for Star Wars. He had rung up the cinema earlier. There were tickets for Flubber, though. You said you didn't mind. You could see Star Wars another time and you really wanted to see Flubber as well.

***As your Mum has her lunch at home she is thinking about going to the cinema tonight. Which film does she think you are expecting to see?
Why would she think that?***

(2) Emotionally charged - Other

Wednesday morning is a painting lesson for Steve. He really liked painting because he was in a group with his best friends, Jon and Martin. Steve saw Jon and Martin talking on the other side of the classroom. They were saying they didn't want *Steve* in their group anymore. Steve didn't hear what they said because he was too far away. The teacher told the children to get into their groups.

What will Steve be feeling as he walks over to Jon and Martin's table?

When he got there, Jon said, "We don't want you in our group any more. You always mess about and get us into trouble". Steve felt upset and angry. In the end he had to do pottery with William and Jo. They weren't his friends. Steve hated pottery. He felt even more upset.

Steve, William and Jo went to the pottery room. Jon and Martin stayed in the classroom. The teacher doing pottery was very nice. She helped Steve to make a pencil pot. Steve found that he enjoyed pottery after all. Also, William and Jo turned out to be very friendly. When the class ended Steve felt very happy. Jon and Martin didn't know the pottery had been like this.

What does Jon think Steve will be feeling when he comes back to the classroom? Why would Jon think that?

(2) Emotionally charged - Self

Wednesday morning is a painting lesson. You really like painting because you are in a group with your best friends. You saw your friends talking on the other side of the classroom. They were saying they didn't want *you* in their group anymore. You didn't hear what they said because they were too far away. The teacher told everyone to get into groups.

What will you be feeling as you walk over to your friend's table?

When you got there, your friend said, "We don't want you in our group any more. You always mess about and get us into trouble". You felt upset and angry. In the end you had to do pottery with William and Jo. They weren't your friends. You hated pottery. You felt even more upset.

You went with William and Jo to the pottery room. Your friends stayed in the classroom. The teacher doing pottery was very nice. She helped you to make a pencil pot. You enjoyed the pottery after all. Also, William and Jo turned out to be very friendly. When the class ended you felt very happy. Your friends didn't know the pottery had been like this.

What do your friends think you will be feeling when you come back to the classroom? Why would they think that?

(2) Emotionally neutral - Other

Wednesday morning was a painting lesson for Steve. He really liked painting because he got to be in a group with his best friends, Jon and Martin. They had a great time together.

Just before break time the teacher told all the children to go to the painting room for the lesson after break. The children went off to the playground and the teacher went to the staff room. During break time the teacher remembered that the next lesson was pottery not painting. She had told the children the wrong thing. She went to the playground and told Jon to tell all the children in the class to go to the pottery room, not the painting room. Jon told everyone he could find. He couldn't find Steve though. Steve didn't get told this.

Which room will Steve go to for the lesson after break? Why would he go there?

Just as the teacher left the staff room to go to the pottery room she saw Steve alone in the corridor. She told him to go to the pottery room. Jon didn't know that the teacher had told Steve.

Which room does Jon think Steve will go to for the lesson after break? Why would Jon think that?

(2) Emotionally neutral - Self

Wednesday morning was a painting lesson. You really like painting because you get to be in a group with Jon, your best friend. You had a great time together.

Just before break time the teacher told all the children in the class to go to the painting room for the lesson after break. You all went off to the playground and the teacher went to the staff room. During break time the teacher remembered that today was pottery not painting. She had told the children the wrong thing. She went to the playground and told Jon to tell all the children in the class to go to the pottery room, not the painting room. Jon told everyone he could find. He couldn't find you though. You didn't get told this.

Which room will you go to for the lesson after break? Why would you go there?

Just as the teacher left the staff room to go to the pottery room she saw you alone in the corridor. She told you to go to the pottery room. Jon didn't know that the teacher had told you.

Which room does Jon think you will go to for the lesson after break? Why would he think that?

Appendix 4

Scoring the Informant-Rated Strengths and Difficulties Questionnaire

The 25 items in the SDQ comprise 5 scales of 5 items each. It is usually easiest to score all 5 scales first before working out the total difficulties score. Somewhat True is always scored as 1, but the scoring of Not True and Certainly True varies with the item, as shown below scale by scale. For each of the 5 scales the score can range from 0 to 10 if all 5 items were completed. Scale score can be prorated if at least 3 items were completed.

<u>Emotional Symptoms Scale</u>	Not True	Somewhat True	Certainly True
Often complains of headaches, stomach-aches ...	0	1	2
Many worries, often seems worried	0	1	2
Often unhappy, downhearted or tearful	0	1	2
Nervous or clingy in new situations ...	0	1	2
Many fears, easily scared	0	1	2
<u>Conduct Problems Scale</u>	Not True	Somewhat True	Certainly True
Often has temper tantrums or hot tempers	0	1	2
Generally obedient, usually does what ...	2	1	0
Often fights with other children or bullies them	0	1	2
Often lies or cheats	0	1	2
Steals from home, school or elsewhere	0	1	2
<u>Hyperactivity Scale</u>	Not True	Somewhat True	Certainly True
Restless, overactive, cannot stay still for long	0	1	2
Constantly fidgeting or squirming	0	1	2
Easily distracted, concentration wanders	0	1	2
Thinks things out before acting	2	1	0
Sees tasks through to the end, good attention span	2	1	0
<u>Peer Problems Scale</u>	Not True	Somewhat True	Certainly True
Rather solitary, tends to play alone	0	1	2
Has at least one good friend	2	1	0
Generally liked by other children	2	1	0
Picked on or bullied by other children	0	1	2
Gets on better with adults than with other children	0	1	2
<u>Prosocial Scale</u>	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	0	1	2
Shares readily with other children	0	1	2
Helpful if someone is hurt, upset or feeling ill	0	1	2
Kind to younger children	0	1	2
Often volunteers to help others	0	1	2

The Total Difficulties Score:

is generated by summing the scores from all the scales except the prosocial scale. The resultant score can range from 0 to 40. The total score can be prorated if at least 12 of the relevant 20 items were completed.

Oxford Doctoral Course in Clinical Psychology

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Tel: 01865 226431/226374 ♦ Fax: 01865 226364 ♦ e-mail: maxine.pribyl@oxmhc-tr.anglox.nhs.uk ♦

Dear Headteacher,

My name is David Tilbrook. I am a Trainee Clinical Psychologist undertaking a dissertation investigating the ability of children to take the perspective of other people. In particular I am interested in children who show behavioural difficulties of aggression and hostility to others. The reason I am writing to you is that I would like to make use of seven to nine year old children in your school for this project.

The project would involve teachers identifying children who show such behavioural difficulties, and some children who don't, for comparison. Teachers would fill in a short questionnaire (25 'tick box' items) about the child's behaviour. I would then see each child individually, and undertake the following assessments:

1. A brief assessment of verbal IQ
2. I would tell the child several short stories about incidents that might happen at school in which relationship difficulties or other difficult situations would occur. I would then ask what different characters in the story might be feeling and why.
3. I would assess the child's 'security of attachment' by showing several photographs depicting parent / child separation and asking what the child in the photograph might be feeling, and what the participant child would feel and do in such a situation.

This project is being supervised by Dr John Richer, Consultant Child Clinical Psychologist.

I shall telephone in a few days to discuss with you whether it will be possible to make use of your school. Please contact me on the number above if you wish.

Yours faithfully,

David Tilbrook (Trainee Clinical Psychologist)

Oxford Doctoral Course in Clinical Psychology

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Dear Mr and Mrs

February 8th 2000

My name is David Tilbrook. I am a Trainee Clinical Psychologist interested in how children learn about what goes on in the minds of other people. I am doing a research project at schools in Oxford to learn more about this and would like to involve your son in my project.

I need your permission for this and so it is important that you know just what I would be doing. The main part of the project involves me telling short stories about something that might happen at school, and where the different characters in the story have different feelings about what is going in. I would then ask what the different people in the story are feeling and why that might be.

If you would like to ask me more about the project I should be very happy to talk about it. Please call me on the number at the top of the page; if I am not there I will call you back. Mr the Headteacher supports the project and you can contact him on Thame 212291.

Please fill in the slip below and return it to school, even if not to give permission.

Yours sincerely,

David Tilbrook

Research Project Into Children's Understanding of the Minds of Other People

Name of child:

*Please tick if
you agree*

I confirm that I have read and understood the information about the project described above, and have had the opportunity to ask questions

I understand that participation is voluntary and that I am free to withdraw at any time, without giving any reason.

I agree to my son taking part in the above study.

Parent's name:..... Date:..... Signature:

Course Director : Dr Susan Llewelyn, BA., MSc., FBPpS., C.Psychol.
Tel: (01865) 226434 susan.llewelyn@oxmhc-tr.anglox.nhs.uk