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**Attachment influences on understanding of self and others: A cross-cultural
study of British and Cypriot college students**

Maria Georgiou

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Thesis Submitted to the University of Durham

Department of Psychology

For the degree of Doctor of Philosophy

2008

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Declaration

The research contained in this thesis was carried out by the author between October 2002 and December 2008 in Cyprus while being a part-time postgraduate student in the Department of Psychology at the University of Durham. None of the work contained in this thesis has been submitted in candidature for any other degree.

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Abstract

The main purpose of the studies conducted in this thesis was to explore relations between attachment representations and individuals' understanding self and others. The first two studies focused on young adults, whereas Study Three involved a sample of children aged between 4 and 6 years. Study One investigated how (a) cultural differences in caregiving practices related to young adults' perceptions of their parents as being caring versus overprotective, (b) perceived parenting and culture impacted on attachment style in relationships with peers, and (c) representations of relationships with parents and peers related to individuals' self-esteem. Cypriot college students ($n = 236$) were compared with British university undergraduates ($n = 168$). Compared with their British counterparts, the Cypriot participants perceived their parents to have been more overprotective and were less likely to report secure attachment style in their relationships with peers. Regardless of culture, higher perceived parental care and secure or dismissing attachment style with peers were independently associated with higher self-esteem.

The results of Study Two on a sample of 73 Cypriot college students showed that similar relations were observed between attachment representations and self-esteem when attachment was assessed in terms of unconscious internal working

models (IWMs) of parental attachment relationships using the Adult Attachment Interview (AAI). Individuals classified as secure or dismissing on the AAI reported higher self-esteem than those in the preoccupied group. Study Two also addressed how attachment representations related to adults' theory of mind abilities, and investigated whether such abilities mediated the relation between attachment and self-esteem. Preoccupied attachment as assessed either by the AAI or self-reported attachment style with peers was associated with slower processing on an adult theory of mind task. However, there was no evidence for theory of mind abilities mediating the relation between attachment and self-esteem.

Study Three investigated inter-relations between attachment representations, theory of mind, emotion understanding, and self-view in a sample of 80 Cypriot children with a mean age of 61.5 months. Secure attachment representations were associated with superior theory of mind and emotion understanding, but much weaker relations between attachment representations and self-view were found compared with the results on the adult samples in Studies Two and Three. Moreover, the one significant relation observed between attachment and self-view appeared to be indirect, and was mediated by children's emotion understanding.

The results are discussed in terms of (a) the influence of perceived parental attachment on relationships with peers, (b) the discriminant validity of the IWM construct, and (c) the tendency of adults and children to use their mentalising abilities in interpreting and explaining other people's behaviour.

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Chapter 1

Attachment: Theoretical Perspectives and Empirical Issues

During the 1930s and 1940s, psychoanalysts from different backgrounds observed how institutional care appeared to have a negative impact on personality development. In their early work with institutionalised children, Bowlby (1944), Spitz (1945), and Burlingham and Anna Freud (1944) began to explore whether maternal deprivation might help explain why these children's outcome was so poor. Working in a child guidance clinic from 1936-1939, Bowlby had the chance to study 44 cases of children aged from 6 to 16 which formed the basis of his 1944 paper "Forty-four juvenile thieves: their character and home-life", in which he proposed the relation between prolonged early parental separation and affectionless character. According to Bowlby, the close continuous emotional bond between mother and child needs to be taken into consideration when human development is studied.

Two movies, "Peril in infancy" (Spitz, 1947) and "A two year old goes to hospital" (Robertson, 1953), drew further attention to the distress and anxiety a young child experiences in an institutional setting. Robertson's observations showed that



children experienced intense and prolonged distress while they were in hospital, especially when parents did not visit them. In collaboration with Bowlby, Robertson used these naturalistic observations to formulate three distinct stages in how children react to separation: *protest*, *despair*, and *detachment*. In the first protest stage, children cried, clung, and screamed when parents left. In the second despair stage, they no longer actively protested with crying or clinging and seemed to be losing hope that the mother would return. In the last stage, children reacted to the mother with indifference, as if they were no longer interested in her.

At the same time, ethologists such as Harlow (1958/1966), Tinbergen (1951), and Lorenz (1950) were studying instinctive behaviour in monkeys and geese. In their work, the emphasis was on critical periods during development and on an in-built tendency to form an attachment with the mother. Bowlby (1958, 1969/1982) drew on this work as well as observations of human infants in formulating his attachment theory, which integrates psychoanalytic, ethological, evolutionary, and developmental psychology concepts to explain infants' innate drive to form an attachment to the primary caregiver.

1.1 Freud's Psychoanalytic Influence on Bowlby's Theory of Attachment

Bowlby was trained as a psychoanalyst. Influenced by Freud's writings, he believed that social relationships in human beings are mediated by instincts. According to psychoanalytic thinking, a child's tie to the mother rests on a biological need, with the development of a relationship between child and caregiver being formed to satisfy basic needs such as hunger. Freud (1926) initially remarked that a mother's importance lies in the fact that she feeds and arouses erotic feelings in the child. The baby becomes attached

to the mother as his/her physiological needs are met. This has been called the cupboard-love theory of object-relations or *secondary drive* according to Learning Theory.

In addition, Freud (1926) postulated that early experiences with parents are crucial in forming an individual's personality. Experiences that begin as early as infancy can influence one's emotional life into adulthood. Freud was the first to suggest that the aetiology of neurosis is to be found in the actual events of childhood experiences, although later he interpreted it as a fear of ungratified instincts (Freud, 1926). A stable and permanent relationship with a loving mother throughout infancy and childhood are thus of vital importance to the individual's emotional well being. If a child's need for love is not satisfied, the end result will be frustration and constant love-seeking. In line with psychoanalytic thought, libidinal craving and hatred may become intense in a child who is not loved or experiences separation from the mother after forming an emotional relationship with her.

Freud's theorising was based on his clinical observations without direct observation of infants or young children. In reading Freud's work, Bowlby (1958) stated that Freud failed to give due weight to the early mother–infant tie until work published in the last 10 years of his life. One Freudian concept that was particularly influential on Bowlby was the contention that the relationship with the mother becomes the prototype for all later love relationships. Freud (1940/1963) proposed that the infant–mother relationship is “unique, without parallel, established unalterably for a whole lifetime as the... prototype of all later love-relations” (p. 45). It seems that the whole study of mother–infant interaction in the developmental psychology sphere was inspired by this Freudian emphasis on relationships being transferred from one generation to the next.

1.2 Ethology and the Development of Attachment Theory

Upon completing his studies in medicine and psychiatry, Bowlby joined the British Psychoanalytic Institute. While undertaking his training in the object-relations approach to psychoanalysis, he was taught that emotional problems were the result of fantasies generated from internal conflict, rather than actual family experiences. However, Bowlby believed real life events to be of key importance in human development, and sought alternative frameworks to help explain the complexities of human emotional development.

Bowlby was influenced by ethological concepts, the origins of which can be traced back to the work of Darwin and the view that each species has its own particular behaviour patterns. As instincts have originated through the process of natural selection, certain species-specific patterns have evolved which helped in the survival of the species. Ethologists were the first to study such species-specific behaviours. The method used in the ethological approach is observation of animals in their natural environment. Such naturalistic observations make no effort to manipulate or control a situation, a method that Bowlby seemed to favour. That is the reason why Bowlby became interested in the work of ethologists as he believed that real life experiences were ignored by psychoanalysts. Whereas psychoanalysis used the term instinct to denote a motivating force, Bowlby proposed the term “instinctual responses” which denotes an observable pattern of behaviour.

In his paper “The nature of the child’s tie to the mother” (1958), Bowlby made a clear distinction between an instinct and an instinctual response. Instinctual responses

serve the function of self-preservation and reproduction. A combination of internal and external conditions activates such responses. In humans, internal conditions could be determined by physiological responses (e.g., hormones) or by mental processes such as thoughts, wishes, feelings, and motives. Such a condition leads to a responsive mood. Activation of an instinctual response occurs only in the presence of particular external conditions, which are elicited by “sign stimuli” known as *social releasers* and in turn terminated by *social suppressors*. In the course of the first year of human life, sucking, clinging, following, crying, and smiling act as social releasers of instinctual responses in mothers (Bowlby, 1958). A crying response can be terminated when infants are touched, rocked or talked to. If the caregiver is the one that soothes the infant, then she can actually terminate the response. Her behaviour is described as a social suppressor act. Social releasers appear when the human infant is tired, hungry, scared or in pain. Burlingham and Freud (1944) stated that clinging could also appear at bedtime or after a separation experience.

Bowlby (1958) proposed that the responses of sucking, clinging, following, crying, and smiling become integrated into a system called the attachment system which is directed to one single individual – the mother figure. Attachment is any form of behaviour a child exhibits to maintain proximity, and the activation and termination of these attachment-related instinctual responses become the basis of the mother–infant tie (Bowlby, 1958). Usually a child prefers one person, the mother, but may choose to seek proximity to any other available person who is known well. Children usually show a hierarchy of preference, with the pole position occupied by the person with whom they have developed the most enduring attachment relationship.

Bowlby's theory was also inspired by the work of Lorenz (1965) on imprinting in goslings. In geese, there is a tendency for the infant animal to form an attachment to the first moving object it sees 36 hours after birth. Lorenz's work on imprinting intrigued Bowlby as it suggested that specific behaviours develop in order to promote survival. Borrowing the term "behavioural system" from the ethologists, Bowlby (1969/1982) perceived attachment behaviour as part of a behavioural system. Bowlby used the analogy of a room thermostat which aims to maintain the room's set temperature. Through instruction, set-goal, and feedback, it monitors the room's temperature. The work of the ethologists showed that young offspring will stay close to their mother not only to be fed, but to be protected from danger, meaning that the social bond created between mother and infant was not related only to feeding. Bowlby shared the same view regarding human babies. According to him, attachment behaviour is goal-corrected and organised into a behavioural system. The goal of the human baby is to attain proximity to the caregiver. If one behaviour fails to accomplish the goal of proximity, another kind of behaviour will be attempted. He proposed that the human baby is equipped with a set of in-built strategies that aim to keep the parent close, increasing the chances of protection from danger.

Having read the work of Lorenz and Tinbergen (1951), Bowlby (1969/1982) came to the conclusion that human infants, like the young of most animal species, have an innate predisposition to seek proximity to the parent. The behaviour chosen by the infant in a specific situation is the one that is most useful at the time. The aim is not the "mother", but the maintenance of the desired distance from the mother. He proposed the concept of a *control systems approach*, where the attachment behaviour is compared to

the homeostatic principle. When separation is experienced in time or distance, the attachment system becomes activated, and it only switches off when sufficient proximity to the parent is achieved. The attachment system is switched on by internal conditions which include illness, hunger, fatigue or pain. External conditions, such as fearful stimuli and the location and behaviour of mother, could also activate the attachment system.

Such discoveries made by the ethologists generated ideas that Bowlby applied to human beings. Bowlby hypothesised that babies could be biologically programmed for relational experiences with caregivers. The same principle applies to caregivers, who seem to monitor their own reactions to the calls of their young one. The infant's attachment system and the adult's caregiving system may thus have evolved together, and work collaboratively to maximise protection of the child (Colin, 1996). The infant has the set goal of maintaining proximity to the caregiver, forms a plan likely to achieve this set goal, and begins to explore behaviours that will enact the plan successfully. But achieving the set goal also depends on the caregiver responding to the infant's attachment behaviours in such a way that proximity is achieved or maintained. The plan will be terminated when the discrepancy between the infant's position and the set goal is reduced to zero. Consequently this implies that the infant can differentiate between ends and means, and has an internal image of the attachment figure, of relevant aspects of self, and his/her own behaviour.

1.3 Attachment Theory and Mary Ainsworth

Bowlby's theory would not be complete without the contribution of Mary Ainsworth's observational findings on naturalistic mother–infant interaction patterns,

which helped to validate Bowlby's control systems approach to understanding attachment. While in Uganda, Ainsworth (1967) set up a study where she observed 28 unweaned babies in their home setting. She realised that she could spot behaviour that indicated attachment to the mother, listing differential crying, differential smiling, and vocalisation as behaviours via which infants could demonstrate who was their primary attachment figure. However, Ainsworth's observations showed that infants demonstrated different patterns of attachment behaviour towards the mother, suggesting that not all infants appeared to have proximity to mother as their set goal. Ainsworth thus classified the infants as *secure*, *insecure* or *non-attached* on the basis of the extent to which they directed attachment behaviours toward the mother.

In her second study, the Baltimore study, she attempted to replicate the findings of the Uganda study, and to develop a technique for observing and assessing individual differences in attachment behaviours more closely and systematically. Twenty-six families who were chosen before their baby was born participated in this research which involved 18 home visits beginning in the baby's first month and ending at 54 weeks of age. Each visit lasted four hours and notes were taken and grouped together for data analysis. In the final stages of the study, infants and mothers participated in the first strange situation procedures, a technique which has subsequently become the gold standard assessment for infant-caregiver attachment security.

The Baltimore study revealed considerable individual differences in mother-infant interactions during the first year of life. A wide range of behaviours was also seen during the short separations from the caregiver and subsequent reunion that constitute the strange situation, confirming the conclusions Ainsworth had drawn from her naturalistic

observations in Uganda. Ainsworth and colleagues described three distinct patterns of attachment (Ainsworth, Blehar, Waters, & Wall, 1978; Ainsworth & Wittig, 1969). Ainsworth et al. (1978) found that about 60% of 1-year-olds responded to the mother with proximity and relief at reunion (these were labelled as securely attached), 25% responded with indifference (insecure-avoidant), and 15% appeared to seek proximity but showed anxiety or resistance to contact at reunion (insecure-resistant). Moreover, further analysis showed that mothers' behaviour during the early months of life contributed to the later development of security or insecurity in their infants. Mothers who demonstrated higher levels of sensitivity, responding consistently and warmly to their babies' cries in the first three months, tended to have securely attached infants at the end of the first year (Ainsworth et al., 1978).

More recently, a fourth attachment category has been identified and defined: insecure-disorganised (Main & Solomon, 1986, 1990). Criteria for assessing disorganisation are divided into seven scales, which cover a wide-range of maladaptive behaviours typically observed during the reunion episodes of the strange situation. Internally inconsistent strategies for dealing with separation and reunion (e.g., strong proximity-seeking coupled with strong avoidance of the caregiver) are indicative of insecure-disorganised attachment, as are stereotypical, odd, or fearful reactions to being reunited with the caregiver. Main and Hesse (1990) proposed that that a common feature of all disorganized behaviours is "contradiction or inhibition of action as it is being undertaken" (p. 173). Although disorganized attachment is considerably more prevalent in infants who have been maltreated or whose caregivers are suffering from mental ill health, a meta-analysis showed that 15% of infants in normative, non-clinical samples are

classified as disorganised (van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). Across the four attachment categories, van IJzendoorn reported the following distribution in normative samples: 16% avoidant, 62% secure, 9% resistant, and 15% disorganized.

1.4 Bowlby and Internal Working Models

In his later work, Bowlby (e.g., 1973, 1980) was increasingly influenced by ideas from cognitive psychology, such as Craik's (1943) concept of representation and Piaget's (1951, 1952, 1954) work on the schemas that govern infants' behaviour. Bowlby proposed that humans form similar representations of themselves and their social relationships with others. He called these mental representations *internal working models*, and argued that they are formed by the individual using their past experiences to make predictions about themselves and their relationships in the future. The way in which attachment figures have behaved – whether they have been sensitive, loving, rejecting, inconsistent – are thus proposed to determine the child's expectations for the quality of subsequent relationships with new social partners. In a similar way, the individual forms an internal working model of the self in the sense of how acceptable or unacceptable they view themselves to be to attachment figures. A child who perceives the parent as readily available forms a working model of self as valued, competent, and lovable. However, the perception of a rejecting or absent parent may lead to the formation of a working model of self as devalued, unworthy, and incompetent. According to Sroufe and Fleeson (1986) the internal model of self and parents taken together represent both sides of the relationship.

These models allow individuals to anticipate the future and make plans (Bowlby, 1973). Bowlby thus maintained that there should be consistency in attachment relationships across generations, since one's early experiences with caregivers determine how one will approach new close relationships in the future, including the relationships one forms with one's child. Bowlby's notion of internal working models can be viewed using concepts borrowed from cognitive psychology to update Freud's contention that the mother-child relationship is the prototype of all future close relationships.

Bowlby incorporated internal working models into attachment theory, since he assumed that humans possess a representational system of the world, the self, and relationships, which is influenced by mother-child security of attachment. Assessment of adults' internal working models using the Adult Attachment Interview (George et al., 1985) has shown differences in the individual's ability to access thoughts and feelings with respect to attachment representations. In the case of insecure attachment, a person may be able to access either limited information or distorted personal memories. What then became important in attachment theory was the person's mental representation of early relationships rather than the actual childhood experiences. This shift to "the level of representation" (Main, Kaplan, & Cassidy, 1985) has resulted in the development of new assessment techniques and a huge body of literature focused on attachment representations, rather than attachment behaviours.

1.5 Assessing Adults' Internal Working Models

Up until the 1980s, research in attachment had focused exclusively upon infant-mother observations. In the mid 1980s, Main and colleagues (George, Kaplan, & Main,

1985; Main & Goldwyn, 1984) developed the Adult Attachment Interview (AAI) to assess adults' internal working models (IWMs) with respect to attachment. The AAI is a semi-structured interview in which the individual is asked to recall their early childhood experiences with caregivers and to reflect upon how these relationships have changed over time. On the basis of their discourse about attachment relationships, individuals are placed into one of four primary categories. *Secure/autonomous* individuals clearly value close relationships and can provide coherent, balanced, and objective accounts of their early childhood experiences. *Dismissing* individuals present the view that attachment relationships are not central or important to their lives by either criticising their attachment figures, idealising their early experiences, or insisting that they cannot recall their childhood relationships. The *preoccupied* classification denotes individuals who are still over-involved with their early attachment experiences, and are thus unable to gain any perspective on their close relationships. They may be angry about events that occurred in their childhoods, or passive, taking little active role in shaping the quality of their social relationships. The final *unresolved* category is reserved for individuals who show disorientation and lapses in the monitoring of reason when discussing events focusing on loss (e.g., deaths, severe separations) or abuse. Although these individuals' primary classification is unresolved, they are also given a secondary classification of secure, dismissing, or preoccupied to categorise their discourse during the parts of the AAI that do not deal with loss or abuse.

It is important to highlight that being classified as secure does not necessarily entail that childhood experiences have been largely positive; indeed, it is possible to be classified as secure even though one may have experienced severe rejection or even abuse

in childhood. Rather, the secure classification depends on the individual showing an obvious need for and valuing of relationships with other people, and that any previous difficulties concerning loss or abuse have been resolved. This is why the AAI is an assessment of the individual's current state of mind with regard to attachment and not a retrospective measure of the actual quality of early childhood experiences.

A great deal of research has reported a relation between parental IWMs as assessed by the AAI and the security of infant–parent attachment relationship. In a prospective study of pregnant mothers, maternal AAI classification predicted subsequent infant–mother attachment security in 75% of cases (Fonagy, Steele, & Steele, 1991). Ward and Carlson (1995) examined the link between the AAI and strange situation classification in a high-risk sample of unmarried adolescent mothers and their infants. Findings from this study showed a strong relation between parental IWMs and infant–mother security of attachment in the three-way analysis. Van IJzendoorn's (1995) meta-analysis confirmed the hypothesis that the parental AAI classification predicts the quality of infant–parent attachment security, suggesting that Bowlby was correct in stating that there would be intergenerational transfer of patterns of attachment.

In comparison to the body of research investigating concordance in attachment security between adults and their infants, little attention has been paid to the question of whether an individual's representations of relationships with parents influence the quality of their other close relationships. Research using the AAI focuses on adults' state of mind with regard to attachment, assessing attachment in terms of unconscious processes and representations of attachment relationships. The AAI thus relies on specific markers in individuals' discourse that are proposed to provide a window onto the unconscious

processes at work. In contrast, research on relationships with peers and romantic partners characterises adult attachment representations in terms of individuals' conscious appraisal of themselves in close adult relationships, relying on self-reported attachment style (Jacobvitz, Curran, & Moller, 2002).

Hazan and Shaver (1987) were the first to develop a self-report measure to assess adult attachment styles with respect to feelings about the self in romantic relationships. Hazan and Shaver provided three descriptions of adult behaviour that corresponded to the original categories of the strange situation procedure. Participants were asked to choose which category best described their experiences in their romantic relationships. The secure category characterises the subject as comfortable with intimacy and dependency. The dismissing style stresses a lack of trust, coupled with discomfort about intimacy and dependence on others. The preoccupied style describes anxiety about rejection, and an overwhelming desire for closeness and intimacy. Bartholomew and Horowitz (1991) adapted Hazan and Shaver's measure to devise the Relationship Questionnaire (RQ). In addition to the three categories operationalised by Hazan and Shaver, Bartholomew and Horowitz included a fourth category termed *fearful*. Fearful individuals desire intimacy, but avoid seeking out new relationships because of their acute fear of rejection.

Since Hazan and Shaver (1987) and Bartholomew and Horowitz (1991) developed self-report measures for assessing adults' attachments to peers and romantic partners, researchers have investigated whether the quality of these close adult relationships relates to caregiver-child attachment. Drawing firm conclusions from this research is hampered by the fact that different methodologies are often used to assess parental versus peer relationships. Crowell, Fraley, and Shaver (1999) reported that the

average correlation coefficient for studies investigating relations between attachment to parents versus peers using the same methodology to assess both types of relationship (interview or self-report) was .31, compared with a correlation of only .15 for studies that assessed these different relationships using different techniques. Crowell et al. (1999) thus concluded that the assumption that “the various measures of adult attachment, despite differences in the kinds of attachment relationships on which they focus, can be readily substituted for one another... is clearly false” (p. 458). In a recent meta-analysis, Roisman et al. (2007) reported that the correlation between AAI classification and self-reported attachment style was .09, indicating a trivial to small effect using Cohen’s (1988) criteria.

Variance in the methods used to assess different types of relationship may account for the fact that little concordance has been observed between representations of parental and peer relationships, but there are likely to be further reasons for the modest associations observed. The primary goals of the caregiving and attachment systems will change as the child grows up, and to maintain security, the caregiver must adapt to these changing demands. Bowlby (1973) argued that ontogenetic development “turns at each and every stage of the journey on an interaction between the organism as it has developed up to the moment and the environment in which it then finds itself” (p. 364). An adult’s current situation will thus influence how they view their previous experiences with attachment figures. The ultimate test of whether attachment relationships to parents in early childhood and to peers in adulthood are related would be to conduct a long-term longitudinal study, but for obvious reasons, such investigations are difficult. To our knowledge, no study has investigated how infant–caregiver strange situation

classification in infancy relates to individuals' subsequent security in relationships with peers or romantic partners.

Given Bowlby's (1969/82) argument that early relationships with caregivers become the template for later relationships with peers and romantic partners, cultural differences in caregiving practices may provide an elegant way of investigating whether secure representations of attachment relationships with parents facilitate the development of secure attachment relationships with peers. Chapter Two thus deals with cultural differences in caregiving as a means of investigating the possible transfer of attachment security from parents to peers.

Chapter 2

Attachment: Cultural Influences

In any given culture, parent–child relationships are bound by accepted caregiving practices and socio-cultural influences. Patterns of infant–caregiver attachment have been investigated in different cultures ever since Ainsworth’s (1967) first observations in Uganda. Ainsworth’s findings, together with those of other African populations such as the Gusii (Kermoian & Leiderman, 1986) and the Dogon (True, 1994), suggest that the proportion of secure infants is around two-thirds, and thus in line with the rates of security in US/UK samples. However, in countries that are seemingly much more similar to the US or UK than countries in Africa, markedly different distributions across attachment categories have been observed.

The first cultural differences in infant–mother attachment security were reported in Grossmann, Grossmann, Huber, and Wartner’s (1981) study on German mothers and infants. Grossmann et al. (1981) found that two-thirds of their sample were insecurely attached, with 52% of the sample classified as insecure-avoidant. In contrast, a study on children raised in Israeli kibbutzim showed an over-representation of insecure-resistant and an under-representation of insecure-avoidant classifications when compared to international norms (Sagi et al., 1985). The distribution observed in studies conducted in

Japan resembled that reported for the kibbutz-raised infants. Miyake, Chen, and Campos (1985) and Takahashi (1986) both found that none of the Japanese infants in their sample were classified as insecure-avoidant, with around two-thirds demonstrating secure attachment and the remaining third classified as insecure-resistant.

However, rather than highlighting fundamental differences in attachment relations between cultures, follow-up research and further analysis suggests that these early findings from studies in Germany, Japan, and Israel support the view that differences in caregiving practices determine attachment security. For example, Grossmann, Spangler, Suess, and Unzner (1985) argued that the over-representation of the insecure-avoidant pattern in their earlier study appears to have arisen due to parental encouragement of independence and self-reliance in children from infancy, a common caregiving practice in the sample of families from the very traditional area of Germany in which the study was conducted. In support of this argument, the infants of German mothers who did not adopt this practice fell into a distribution very like that expected in US/UK samples (Grossmann et al., 1985).

With regard to the distribution observed in kibbutz-raised infants, van IJzendoorn and Sagi (1999) argued that there were two possible explanations. First, the over-representation of resistant attachment could be due to the emotional reactivity that characterises Israeli society. There is growing evidence that emotional reactivity is more closely associated with resistant rather than avoidant attachment (Belsky & Rovine, 1987). The second reason could be the fact that, due to threats to national and personal security, Israeli parents have become overprotective and ignored children's attachment signals.

Finally, Japanese infants are traditionally raised in ways to maximise bodily contact between the mother and child, resulting in an underexposure to separation from the mother and to strangers (Miyake et al., 1985). Thus, the events of the strange situation are likely to be considerably more alien and distressing to Japanese infants than to infants in cultures where non-maternal childcare is more commonplace. This explanation is supported by the fact that Durrett, Otaki, and Richards (1984) reported that the distribution of attachment classifications observed in a sample of Japanese working mothers was comparable with that of the usual US/UK distribution. In a landmark meta-analysis on cultural variation in patterns of attachment, van IJzendoorn and Kroonenberg (1988) reported that variations within cultures were 1.5 times greater than variations between cultures. Thus, factors that vary within the same population (e.g., maternal mental health, poverty, caregiving style) have a greater impact on attachment security than do factors that vary from one culture to another.

2.1 Culture and Attachment Beyond Infancy

Hazan and Shaver (1987, 1994) claimed that adult–adult attachment dynamics are a manifestation of infant–caregiver attachment dynamics, arguing that attachment relationships in both childhood and adulthood are characterised by proximity maintenance, using the attachment figure as a safe haven and a secure base. Furthermore, they argued that each of these components is transferred sequentially from the primary caregiver to the peer or romantic partner. Hazan and Shaver (1994) argued that as children grow up they gradually redirect attachment functions from parents to peers. The initial step is proximity seeking which is evident in late childhood and early adolescence.

During adolescence, peers begin to seek support from each other and become a safe haven for one another. As they seek and find comfort in each other, during early adulthood, peer relationships become a secure base for them. Coming from the field of social cognition, Hazan and Shaver (1994) contended that attachment in adulthood exists primarily within romantic relationships.

According to adult attachment theory (Bowlby, 1973; Hazan & Shaver, 1994) the mental representations of parental relationships are accessible and are used to guide interpersonal behaviour in novel situations, especially in early adulthood, a period in which peer relationships become very important. But although peer relationships become very important in young adulthood, the increasing focus on peer relationships as providing love and support is not necessarily accompanied by a reduction in the importance of the role played by parental attachment. For example, Allen and colleagues have argued that secure relationships with parents facilitate increased autonomy in adolescence (Allen, Hauser, Bell, & O'Connor, 1994) and provide young adults with a secure base from which to explore their changing identity (Allen & Land, 1999). In early childhood, the primary goal of the caregiving system is protection, both in terms of meeting the child's physical needs and providing psychological and social support. However, in order for the caregiving system to support autonomy and self-development in adolescence, the parent must be willing and able to provide protection and support in more subtle ways. As Ekstein (1991) noted, "the most complex act of true parental love is the one that permits the child to move away towards his own life" (p. 531). Failure to manage this transition sensitively can result in parents being perceived as overprotective and stifling the adolescent's attempts to forge an adult identity.

By focusing on how cultural differences in caregiving practices impact on young adults' representations of their relationships with parents and peers, one can investigate whether secure representations of attachment relationships with parents and parental encouragement of autonomy in adolescence facilitate the development of secure attachment relationships with peers. As Bowlby (1973) stated, the family experience of those who grow up to become stable and autonomous is characterised by unflinching parental support and encouragement toward increasing autonomy as the children grow up. Perceptions about parents being overprotective may be particularly important both in the individual forging an autonomous self-identity and forming secure attachment relationships with peers.

2.2 The Focus of this Thesis

In the studies reported in this thesis, Greek Cypriots were chosen as a comparison group for a sample of British young adults. These groups were chosen for a number of reasons. Despite Western influences and urbanisation, Cypriot society remains very traditional, with strong emphasis on the nuclear family and extended kin (Attalides, 1981; Mavratsas, 1992). As most researchers of Greek and Cypriot society have pointed out, the conception of individuality differs from what is prevalent in the Western world. Mavratsas (1992) stated: "It is not accidental... that the Hellenes do not have a term which is equivalent to the English word "individualism"; the various Greek words which one may take as synonymous to the English word (e.g. atomikismos, egoismos) include a negative connotation which is absent from the English term, and this connotation indicates precisely that the individual ought not to think of himself independently of his

family” (p. 21). For example, Mavratsas (1992) highlighted how, when asked “Who are you?” a Greek person will provide their father’s name. The fact that the individual has an identity independent from their familial role will not even cross their mind. As Doukanaris (1997) pointed out, according to Herzefeld (1985), self-regard in Greek culture is a social self-regard which is defined within the social context of kin group, village, and even region and country.

As well as holding these collectivistic cultural values that are common to other societies (e.g., Asian and Arabic countries), there are circumstances unique to Cyprus that are likely to have enhanced family ties and definitions of the individual with reference to their family and kin. The sample of Cypriot young adults recruited for this thesis have parents who were born in the 1950s and 1960s. It is important to investigate the climate that existed at the time and its potential influence on parents’ beliefs and attitudes towards child-rearing. It is also necessary to outline the historical and political development of the island in order to understand not only the prevalence of the values and beliefs that may have influenced child-rearing practices, but the security of attachment to others.

2.3 Cyprus’s Historical Development

From archeological excavations, it can be said that human society made its appearance on the island of Cyprus 10,000 years ago. The initial Greek civilisation was later influenced by conquerors such as the Phoenicians before it became part of the Byzantine Empire. From the 12th to the 15th Century Cyprus was under the Lusignan dynasty, and in 1571 it became part of the Ottoman Empire. In 1878 it was placed under

British rule, and in 1925 it became a British colony. From 1955-1959 Cypriots engaged in a struggle against British rule, and in 1960 Cyprus gained its independence. In 1974, Cyprus experienced a Greek junta-inspired military coup against its first president and soon the Turkish invasion followed that separated the island into two parts, the North and the South. Almost 40% of the land came under Turkish control and 200,000 Greek Cypriots were expelled from their homes and ended up in the South part.

Further analysis of Cypriot history is beyond the scope of this thesis, but the constant foreign rule experienced by Cypriots has been argued to make them fearful and distrustful of outsiders. For example, Markides, Nikita, and Rangou (1978), in a study of a rural Cypriot village called Lysi, reported that the Lysi people did not even dare marry a person from another village. Lack of trust, fearfulness, and passivity could be considered characteristics transmitted from generation to generation in people who lived under constant foreign rule. Even to this day, Cypriots may feel they have no control over their fate as almost half of the island is under Turkish rule, and in addition Turkey could invade the Southern part at any moment. Political insecurity is thus part of a Cypriot's life. Maslow's (1954) hierarchy points to the fact that people need to satisfy basic physiological and safety needs before they are in a position to satisfy psychological needs such as love, belongingness, and gain self-esteem. One could argue that political insecurity serves as an obstacle for Greek Cypriots to let themselves free in a relationship to trust others.

Up until the 20th Century, Cyprus was an agrarian society. As a result of its political situation, where financial demands were placed from conquerors and the fact that resources, such as water and land were of limited supply, people were forced to rely

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on the family unit for their survival. Rural Cypriot society was characterised by a nuclear family system where interdependence was necessary for their survival. SurrIDGE (1930), a British colonial officer, observed an internal division of labour within the nuclear family. Men were responsible for heavy agricultural work and women for housework, child-rearing, and helping in lighter work in the fields. The nuclear family was the basic production unit.

While Cypriots could be characterised as distrustful and fearful, poverty, especially in rural communities, made interdependence between neighbours and relatives necessary. Given that it was impossible for a nuclear family to possess all the necessary equipment for their survival, the resulting cooperation between neighbours and kin strengthened the ties between people coexisting in communities. Although the most important social unit was the nuclear family, the extended family was also important in the life of a Cypriot. Kinship ties were very strong, and kin had to be respected and trusted.

Urbanisation began soon after Cyprus became a British colony in 1925. Whereas under Ottoman rule Cypriots did not have the right to own land, under British rule they had the right to private property and land that they could cultivate. From their income they needed to provide for the survival of the family as well as a dowry for their children. In most villages in Cyprus, a dowry was offered to the newly-wed couple as help during the first years of their life together. It could include land, household items, furniture, money, and even a house. Due to bad weather conditions and a heavy pressure to provide the dowry, most of them ended seeking employment in mines and small industries that made their appearance in the 1930s.

At the beginning of British rule, the urban population was only 17%; by 1960 it had risen to 36%. Gradually more and more people moved to urban centres, and as a result of urbanisation, the institution of the family underwent changes. Although in many cases the family ceased to be an agrarian production unit, Argyrou (1996) argued that the product merely changed, with families now setting up businesses in towns. Thus, the family maintained its production role in a different context, and traditional kinship ties continued even during industrialisation. It is evident that urbanisation did not affect the cohesiveness and strength of the Cypriot extended family since relatives in towns maintained close relationships with people in their family village (Mavratsas, 1992). The endurance of kinship ties despite urbanisation and industrialisation was also aided by the fact that Cyprus is a small island and, with short distances between villages and towns.

Kinship remains very important in modern Cypriot society. Ties of kinship still cut across classes and unite rural and urban Cypriots. Couples still count on kin for help in activities such as constructing their house, and a survey of migrants who moved from rural areas to Nicosia (the capital city of Cyprus) revealed that almost 40% mentioned help from a friend, neighbour, uncle, aunt, parent or sibling in getting in their first and subsequent jobs (Attalides, 1981). Kinship network and kinship support also help in acquiring status. For example, by claiming kinship to someone of higher standing than themselves, individuals can assist their professional career since a good family name becomes a passport to professional and personal development.

While close kinship ties can be seen to confer many advantages, they also can be seen to regulate the behaviour of individual family members much more strictly than is usually seen in individualistic societies such as the UK. The Cypriot family strives hard

to maintain its good name and in its effort to achieve it, may place demands on its individual members to conform to social values, through control and overprotection. Child-rearing practices in collectivistic societies thus involve a high level of control as the family is valued over and above individualistic concerns (Herz & Gullone, 1999).

Control and overprotection are seen most obviously in how daughters are raised. Attalides (1981) gives the following overview of the attitudes that prevailed during the 1950s in Cyprus: "Parents strictly control the premarital behaviour of daughters to safeguard them from sexual misconduct, and play an important role in the selection of marriage partners for both sons and daughters. Parents are very concerned that their daughters should be endowed with a good dowry by the time of their marriage and that their sons should receive some education. Divorce or separation is extremely rare. In old age parents are looked after by their children" (pp. 141-142).

Women needed to take care of the way they dressed, walked, and moved. The whole idea was to disguise their gender. In the lowland Cypriot village of Lysi, women were dressed in long dresses to the ankles and buttoned to the neck and the wrists. The idea was for the body not to be exposed. Women's clothes had to hide their femininity. A woman had to remain a virgin until the day she got married. In this same village, women could never enter a coffee-shop which was considered a man's territory. Young women were never seen to pass through the central square of the village where most of the coffee-shops were situated. A woman could circulate and talk to men freely only if she was considered not to be sexual object, as in the case of girls under the age of 12 or women over 50 (Markides, 1978). Loizos (1975) conducted fieldwork in a village called Kalo in Cyprus. His work was concerned with the politics in this rural village, but he also

addressed social values that prevailed and were representative of Cypriot values at the time. He stated: "A brother should defend the social reputation and physical person of his sister to the point of death. Siblings are expected to make sacrifices, to help with the education or marriage of their siblings, particularly brothers of their sisters" (Loizos, 1975, p. 67-68) Therefore it can be inferred that the task of the whole family was to control the behaviour especially of the female members.

As far as Cypriot men were concerned, an honorable man is a man who possesses "philotimo", which means love of honor that implies striving to attain self-respect and generosity. Argyrou (1996) claims that the Cypriot community respects a man who is respected by his own family. Therefore respect is a value that needs to be cultivated within the family. A man of honour should first be honoured and respected in his own household by his wife and children. Peristiany (1965) reports that the unmarried son should rise when the father entered the room, leave the coffee-shop when the father entered, and discontinue a gambling game in his father's presence. Even in the early years after marriage, a son did not dare to smoke or have platonic relations with a member of the opposite sex in his father's presence. Peristiany (1965) notes that the most respected individuals were the ones that their paternal and maternal ancestors were known for their respectability. A respectable person took care not to spoil the family name and was well aware of the local tradition and was willing to abide by the code of ethics and values of his community. Lack of chastity was considered sinful and led to negative social consequences.

This emphasis on premarital chastity has greatly influenced Cypriots' lives, and has helped in the continuity of traditional values. During the marriage ceremony, St

Paul's Epistle is read to the newly-wed couple. The message is that a wife should be submissive and fearful and the husband should love the wife as Christ loved the church. This is still the case today. The traditional values have been sanctioned by the Greek Orthodox Church which is a powerful institution and exerts influence on a Cypriot's life. The family should reflect God's will and relationships within the family should resemble the relationship of Jesus Christ to his Father. Obedience, respect, and submission to one's husband is a moral imperative.

The institution of marriage in the Cypriot community is very important. A man reaches manhood only when he marries, and marriage is considered to be the goal of a woman's life (Markides, 1978). The solidarity of the family is symbolised in the idea of blood. In marriage the husband's blood is mixed with the wife's and the end product is "one blood", which is the blood of their children. The Hellenic family is characterised by a strong child-centred attitude. From the day they are born, children become the centre of their parental attention and interest, and children regard their mothers always to be on their side (Markides, 1978). Papapetrou and Pendedeka (1998) reported that the Cypriot mother is regarded to be flexible, sensitive, and permissive when it comes to children's demands. However, their study also revealed that Cypriot mothers are overprotective and worry a great deal about their children. In contrast, the father's duty is to be the breadwinner and head of the family, with the father typically doing "very little in the house and he usually prefers the coffee-shop, a hobby or a second job. He is perceived as austere, strongly opinionated and distant" (Peristanis, 2004, p. 283).

2.4 Internal Working Models and Self-Esteem

Bowlby (1973, 1980) proposed that within the context of the mother–child relationship, children develop an idea of the self as being either lovable and worthy, or unlovable and worthless. Bowlby (1979) stated that IWMs of self can now be referred to as self-image, self-concept, or self-esteem. Based on this assumption, attachment researchers have been investigating relationships between attachment security and the developing self-concept. Cassidy (1988) found that securely attached children described themselves in a positive manner compared to their insecurely attached peers. Other researchers found that secure children were rated by their teachers as higher on self-esteem than their insecurely attached peers (Sroufe et al., 1983; Sroufe & Egeland, 1991).

Harter (1982, 1983) demonstrated that by the age of 8 children possess a global sense of self-worth which can be measured. Based on Harter's (1982,1983) argument it seems that self-esteem can not be assessed in children below the age of 8. However, other researchers like Eder (1989, 1990) proposed that children have an understanding of their mental states by the age of 3 that can be measured and assessed. One of the measures that has shown good internal consistency and is suitable for use with children in the ages of 3 to 8 is the Self-View Questionnaire developed by Eder (1990), which was used in Study Three to assess children's self-view. Given the age of the participants in Study Three we thought that Eder's (1990) Self-View Questionnaire would give us information on how children perceived themselves in terms of timidity, negative affect and agreeableness.

2.5 Themes of the Thesis

The overprotection of Cypriot parents could come at a cost to the child's later well being. In their efforts to protect their child, Cypriot parents may discourage

independence and autonomy, and such restrictions are likely to have implications for the child's later development. The long term effects of perceived overprotection could be seen later on in life manifesting in difficulties with peer relationships. These cultural practices may have an influence on young adults' (a) IWM of attachment relationships and current state of mind regarding childhood attachment experiences, (b) emerging relationships with peers and romantic partner, and (c) emerging self-identity.

Most research in attachment has focussed on the IWM in relation to parent-child attachment relationships. A few studies (Allen, Moore, Kuperminc, & Bell, 1998; Kobak & Sceery, 1988; Larose & Bernier, 2001) have demonstrated links between AAI security and the nature and quality of adolescents' peer relationships. Roisman (2006) argued that the IWM may not have such a narrow range of influence, but could capture a more broad-based task of adulthood, in that individuals develop a coherent narrative about early experiences that enables them to navigate interpersonal relationships in general more successfully. He looked at the link between AAI and negotiating a collaborative task between same-sex strangers in a non-attachment-related context. Findings revealed that secure adults showed positive emotional engagement, in contrast to preoccupied adults who tended to monopolise the puzzle-building task, and dismissing adults who demonstrated negative emotional engagement.

The studies reported in this thesis investigate relations between IWMs of relationships with parents, understanding of other people's behaviour, and self-identity in both adult and child samples. The first study involving adults sought to address how cultural differences in caregiving practices influence one's perception of peer relationships and oneself. The second study on adults investigated potential mechanisms

that might help explain how representations of relationships with parents might influence both one's relationships with peers and romantic partners and one's self-esteem, considering whether attachment representations are related to individuals' more general understanding of how behaviour is governed by internal states and whether such internal-state understanding might mediate the relation between attachment representations and self-esteem. The study involving children addressed how early representations of attachment relationships with parents relate to their understanding of mind and emotion and their views about themselves.

Harter (1982, 1983) demonstrated that by the age of 8 children possess a global sense of self-worth, and Eder (1989, 1990) proposed that children have an understanding of their mental states by the age of 3 that can be measured and assessed. One of the measures that has shown good internal consistency and is suitable for use with children in the ages of 3 to 8 is the Self-View Questionnaire developed by Eder (1990), which was used in Study Three to assess children's self-view.

By studying how attachment representations relate to understanding of internal states and representations of self in both adults and children, the studies reported in this thesis can help to establish whether the same relations are seen across the lifespan, or only at specific points in development. Assessing relations between attachment relationships and other measures of adults' and children's representational abilities also enabled us to investigate the discriminant validity of the IWM construct, an issue that has become increasingly controversial in theoretical work on attachment, as discussed in Chapters 4 and 5.

Chapter 3

Relations between Attachment, Self-Esteem, and Perceived Parental Bonding in Cypriot and British Young Adults

As discussed in the previous two chapters, attachment theory (Bowlby, 1969/82, 1973, 1980) proposes that individuals use early experiences with caregivers to form IWMs of self and relationships with others. If caregivers have been sensitive and loving, the child will form an IWM of self as being worthy of love and attention and an IWM of relationships with others as being satisfying and worthwhile. Conversely, if caregivers have been insensitive or inconsistent, the child will form an IWM of self as unworthy of love and attention and expect relationships with others to be unfulfilling. In addition to expecting intergenerational transfer of attachment patterns, the fact that childhood attachment relationships are proposed to shape one's IWM of self as well as of relationships with others leads to the prediction that early attachment experiences will play a role in determining young adults' evolving self-identity, and in particular their self-esteem.

Links between infant–parent attachment security and children's later self-esteem have been identified. For example, the Minneapolis longitudinal study has revealed that children who were securely attached as infants were rated by their teachers as possessing

higher self-esteem, emotional health, compliance, and positive affect (Elicker et al. 1992; Kestenbaum, Farber, & Sroufe, 1989; Sroufe, 1983; Sroufe et al., 1983; Sroufe & Egeland, 1991; Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1984). Conversely, early disorganisation in attachment relationships has been found to relate to mental ill health in early adulthood (Carlson, 1998; Lyons-Ruth, 2003; Ogawa, Sroufe, Weinfield, Carlson, & Egeland, 1997).

One aspect of parenting that may be particularly relevant to young adults' emerging self-identity is perceived overprotection by parents. In early childhood, the primary goal of the caregiving system is protection, both in terms of meeting the child's physical needs and providing psychological and social support. However, in order for the caregiving system to support autonomy and self-development in adolescence, the parent must be willing and able to provide protection and support in more subtle ways. Failure to manage this transition sensitively can result in parents being perceived as overprotective and stifling the adolescent's attempts to forge an adult identity.

While there are several techniques for assessing adults' general representations of attachment relationships with parents, Parker, Tupling, and Brown's (1979) Parental Bonding Instrument (PBI) is unique in focusing specifically on whether parents are perceived to have been overprotective. The PBI also has the advantage of separately assessing individuals' perceptions about each parent, yielding scores for perceived care and overprotection for mother and father. One can thus investigate whether perceptions of maternal or paternal relationships are more strongly related to individuals' interpersonal development.

In order to explore relations between perceived parental overprotection and young adults' emerging self-identity, the study reported in this chapter recruited participants from two countries with very different caregiving practices: Cyprus and the United Kingdom (UK). As discussed in Chapter Two, despite Western influences and urbanisation, Cypriot society remains very traditional, with strong emphasis on the nuclear family and extended kin well into adulthood (Attalides, 1981; Mavratsas, 1992; Peristianis, 2004). Cypriot young adults are socialised to maintain family honour through abiding by strict moral codes, with traditionally more emphasis placed on ensuring young women's moral virtue than young men's (Markides et al., 1978; Peristianis, 2004). Moreover, Cyprus' unique recent history, with almost half of the island being under Turkish control since 1974, is likely to have reinforced the importance of family and protection, making Greek Cypriots fearful and distrustful of outsiders (e.g., Markides et al., 1978). In contrast, the UK is a multi-cultural, individualistic society where regular contact with extended family is increasingly rare, adolescents are allowed much greater autonomy, and the individual rather than the family is emphasised as the basic unit of society.

Despite cultural differences in caregiving experiences, all young adults should seek to forge their own autonomous self-identity and focus more prominently on relationships with peers. If Bowlby was correct in claiming that attachment experiences with parents determine one's IWM of self, one would predict that parental overprotection may hinder young adults' independence and result in them seeing themselves as less capable and competent than their peers. In contrast, if parents are considered to have been caring and supportive, this should result in their children having a positive opinion of

themselves. In support of this argument, Herz and Gullone (1999) reported that higher self-esteem was associated with lower scores for parental overprotection and higher scores for parental care on the PBI in a sample of 11- to 18-year-olds. It was therefore hypothesized that Greek Cypriot young adults would be more likely than their British counterparts to perceive their parents as overprotective, and that in both countries, higher scores for perceived overprotection would relate to lower self-esteem. It was also investigated whether gender influenced any observed relations given that the behavior of Cypriot young women is more tightly controlled than that of their male compatriots. In its effort to maintain the good name of daughters, the family may place demands on them to conform to social values through control and overprotection. Such demands are less likely to be placed on sons. Therefore, we expected Cypriot female participants to perceive their mothers and fathers as more overprotective than both Cypriot male participants and their British counterparts.

The final aim of the study reported here was to investigate whether attachment relationships with peers as well as with parents contribute to young adults' self-esteem. It may be that the security of peer relationships makes no independent contribution to self-esteem once perceptions of parental relationships have been accounted for, given that IWMs of peer relationships are assumed to be determined by the quality of attachment experiences with parents (e.g., Bowlby, 1969/1982). Alternatively, perceptions of parental relationships may not explain any variance in self-esteem independently of relationships with peers since attachment functions are proposed to transfer from parents to peers during adolescence (Hazan & Zeifman, 1994).

Bartholomew and Horowitz (1991) drew heavily on the concept of IWMs in defining their four attachment styles, arguing that there should logically be four categories based on the assumption that individuals form an IWM of close relationships and a complementary IWM of self, both of which can either be positive or negative. Thus, secure individuals have positive IWMs of both self and of close relationships. Dismissing individuals have a positive IWM of self, but a negative IWM of close relationships, whereas preoccupied individuals show the opposite pattern. Finally, the fearful category describes individuals who have a negative IWM of both self and close relationships. In support of the argument that the RQ categories reflect differing valence in IWMs of self, Park, Crocker, and Mickelson (2004) found that secure and dismissing attachment styles (both with a positive IWM of self) were related to higher self-esteem, whereas preoccupied and fearful styles (negative IWM of self) were associated with lower self-esteem. Similarly, in their original paper describing the RQ, Bartholomew and Horowitz (1991) reported that the secure and dismissing styles were associated with positive self-concept, whereas the preoccupied and fearful styles related to more negative views of self. However, no study has yet investigated whether perceived parental bonding and peer attachment style make independent contributions to young adults' self-esteem.

People's perception of self is greatly influenced by culture. Markus and Kitayama's (1991) seminal work on culture and the self describe the differences in the perception of self between individualistic and collectivistic cultures. According to these researchers the construct of self develops through early patterns of direct interactions with parents and peers in a given culture. Individualistic cultures emphasize the inherent separateness of persons who are independent from others. Achieving the cultural aim of

independence requires the construction of a self that is organized around one's feelings, thoughts and actions, rather than by reference to others' feelings and actions. A person is considered an independent and an autonomous entity. In contrast, collectivistic cultures stress the importance of connectedness of human beings to each other and the interdependence among individuals. An individual's sense of self is determined to a large extent by the thoughts, feelings, and actions of others, as one needs to see oneself as part of a larger social unit. The fact that family ties still predominate in early adulthood in Cyprus, whereas the main focus of attachment tends to transfer from parents to peers during the teenage years in the UK, makes the cross-cultural study reported in this chapter well suited to investigating the comparative contributions of perceptions about parental versus peer relationships to young adults' self-esteem. Research has shown that self-esteem is stable across the life-span or increases with age (Gove et al., 1989; Trzesniewski et al., 2003; Coleman et al., 1993). A general increase in self-esteem with age has even been observed in psychiatric patients, independent of the type of disorder patients were suffering from (Salsali & Silverstone, 2003). Consequently, age was included as a control variable in the regression analyses.

In summary, this study investigated how perceptions of relationships with parents and peers related to young adults' self-esteem in a country where family ties still predominate in early adulthood (Cyprus), and one in which the main focus of attachment tends to transfer from parents to peers during the teenage years (the UK). We hypothesised that (a) Greek Cypriot students (particularly women) would be more likely than their British counterparts to perceive parents as overprotective; (b) in both countries, self-esteem would relate positively to secure or dismissing peer attachment and perceived

parental care, and negatively to perceived parental overprotection; and (c) in both countries, secure peer attachment would relate to higher perceived parental care and lower perceived parental overprotection. Finally, we investigated whether perceptions of peer and parental relationships made independent contributions to self-esteem, although no directional hypothesis was made.

3.1: Method

3.1.1: Participants

Participants were students drawn from two countries. The Cypriot sample comprised of 236 (158 women) college students, aged 17 to 37 years ($M=20.7$ years, $SD=2.70$ years). All participants spoke Greek as their native language and lived in Cyprus. The British sample consisted of 168 (92 women) university undergraduates aged 17 to 34 ($M=20.6$ years, $SD=2.63$ years), all of whom lived in the UK and spoke English as their native language. All questionnaires were completed anonymously, and no incentive was offered for participation.

3.1.2: Procedure

All measures were translated into Greek by the author who is bilingual. The translated questionnaires were then piloted on a sample of 16 Cypriot students. No problems were identified from this pilot, and these translations were used for the Cypriot sample in the main study. All students completed the questionnaires in the order described below.

Perceived Parental Bonding (See Appendix 1) was assessed using the PBI (Parker et al., 1979). Two copies of the PBI, one for each parent, were administered to the students. The PBI is a 25-item self-report measure of parental attitudes and behaviors,

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with each item being scored on a 4-point Likert scale. Items assess perceived care (12 items) or perceived overprotection (13 items), yielding scores of between 0 and 36 for care, and between 0 and 39 for overprotection. High care scores indicate empathy and warmth (e.g., ‘was affectionate to me’, ‘could make me feel better when I was upset’), while low care scores indicate indifference and rejection (e.g., ‘seemed emotionally cold to me’, ‘made me feel I wasn’t wanted’). High overprotection scores reflect a parent who infantilises, controls, intrudes, and encourages dependency (e.g., ‘did not want me to grow up’, ‘invaded my privacy’), while low overprotection scores point to a parent who encourages independence and autonomy in the child (e.g., ‘liked me to make my own decisions’).

The PBI has been shown to have good reliability and validity (Parker et al., 1979; Wilhelm & Parker, 1990), and has been used to assess reported parental characteristics of the subcultures of Jewish and Greek parents in Australia (Parker & Lipscombe, 1979). *Peer Attachment Style* (See Appendix 2) was assessed using the RQ (Bartholomew & Horowitz, 1991), in which participants indicate which of four paragraphs (secure, dismissing, preoccupied, or fearful styles) best describes their relationships with peers and romantic partners. The RQ has been shown to have acceptable reliability and validity (Griffin & Bartholomew, 1994; Scharfe & Bartholomew, 1994).

The RQ has been previously used on a Cypriot sample as Cyprus was one of the countries that participated in the International Sexuality Description Project – a survey study of 17,804 people from 62 countries (Schmitt et al, 2003).

Self-Esteem was assessed using Rosenberg’s (1965) Self-Esteem Inventory (SEI) (See Appendix 3). The SEI is a 10 item-scale that measures global self-esteem, with each

item scored on a 4-point Likert scale (possible scores range from 10 to 40). In the original coding scheme, higher scores indicate lower self-esteem, but items were reverse scored in the study reported here so that higher scores represent higher self-esteem. The SEI has good internal consistency and test-retest reliability as well as good convergent validity (Blascovich & Tomaka, 1991; Flemming & Courtney, 1984). The SEI has been used across the globe to assess self-esteem (Schmitt & Allik, 2005).

3.2: Results

3.2.1: Descriptive Statistics and Preliminary Analyses

Tables 3.1 and 3.2 show the descriptive statistics with respect to gender and peer attachment for the British and Cypriot samples. Table 3.3 shows the descriptive statistics for the whole sample as a function of gender nationality and gender. Six participants (5 British) did not complete the PBI for fathers due to parental separation early in their lives. Secure peer attachment style was reported by 92 (39%) Cypriot and 90 (54%) British participants, dismissing style by 50 (21%) Cypriot and 21 (13%) British participants, preoccupied style by 36 (15%) Cypriot and 23 (14%) British, and fearful style by 58 (25%) Cypriot and 34 (20%) British participants. Peer attachment style was related to nationality, $\chi^2(3) = 9.83, p < .025, w = 0.16$. British participants were more likely to report secure peer attachment style than were their Cypriot counterparts.

Table 3.1: Mean Scores for MC, MO, PC, PO and SE in Cypriot Secure, Dismissing, Preoccupied and Fearful Participants

	Secure		Dismissing		Preoccupied		Fearful	
	Men <i>n</i> =38	Women <i>n</i> =66	Men <i>n</i> =20	Women <i>n</i> =35	Men <i>n</i> =10	Women <i>n</i> =32	Men <i>n</i> =12	Women <i>n</i> =56
MC	29.11 4.87	29.12 6.80	27.20 7.18	27.46 5.34	22.40 11.85	26.44 6.01	26.08 5.28	28.06 6.66
MO	11.84 6.34	12.77 7.17	12.65 6.60	15.94 7.06	15.80 7.93	15.75 7.61	13.67 6.96	14.79 7.35
PC	24.58 6.74	25.61 8.96	24.37 6.75	23.43 7.13	24.00 11.85	21.91 6.44	20.85 4.98	24.70 9.75
PO	10.76 6.49	12.70 8.21	11.79 6.79	14.94 8.23	11.10 10.67	16.53 6.81	12.17 6.81	13.63 8.52
SE	32.26 3.84	31.68 4.53	32.10 4.44	30.00 5.09	28.20 6.03	26.47 4.77	29.67 4.46	28.07 5.61

Note. MC = Maternal Care, MO = Maternal Overprotection, PC = Paternal Care, PO = Paternal Overprotection, SE = Self-esteem.

Table 3.2: Mean scores for MC, MO, PC, PO, and SE in British Secure, Dismissing, Preoccupied and Fearful Participants

	Secure		Dismissing		Preoccupied		Fearful	
	Men <i>n</i> =42	Women <i>n</i> =48	Men <i>n</i> =13	Women <i>n</i> =8	Men <i>n</i> =8	Women <i>n</i> =15	Men <i>n</i> =13	Women <i>n</i> =21
MC	30.62 3.80	30.60 5.76	29.62 4.43	28.25 9.08	27.88 6.94	28.47 7.90	25.25 5.30	23.05 8.94
MO	11.71 6.78	9.44 4.51	13.00 8.30	14.00 8.35	13.25 7.01	15.07 7.54	14.46 6.54	15.24 7.54
PC	25.95 6.42	27.51 8.64	26.92 7.12	29.25 9.05	22.13 6.92	26.67 5.69	23.64 5.41	22.48 9.34
PO	9.34 5.81	12.70 8.21	9.83 3.79	11.75 6.82	7.00 3.16	12.13 6.36	9.45 4.44	11.05 6.00
SE	33.19 3.74	31.19 4.18	33.00 2.61	29.00 3.63	28.88 4.32	27.00 3.34	28.46 5.59	24.86 5.46

Note. MC = Maternal Care, MO = Maternal Overprotection, PC = Paternal Care, PO = Paternal Overprotection, SE = Self-esteem.

Table 3.3: Mean Parental Bonding Index and Self-Esteem Scores as a Function of Nationality and Gender

	Cypriot		British	
	Men <i>n</i> =78	Women <i>n</i> =158	Men <i>n</i> =76	Women <i>n</i> =92
Maternal Care	27.17 6.95	27.95 6.28	29.25 4.90	28.32 7.78
Maternal Overprotection	13.08 6.58	15.03 7.44	12.57 6.97	12.09 6.45
Paternal Care	23.84 7.42	24.03 8.46	25.33 6.49	26.30 8.62
Paternal Overprotection	11.48 7.07	13.75 8.00	9.15 5.35	10.40 6.08
Self-esteem	31.23 4.54	29.56 5.41	31.89 4.43	28.84 5.07

Note. For the Paternal Care and Overprotection scores, *n*=77 for Cypriot men, *n*=72 for British men, and *n*=90 for British women since 7 participants did not complete the PBI for fathers due to parental separation early in their lives.

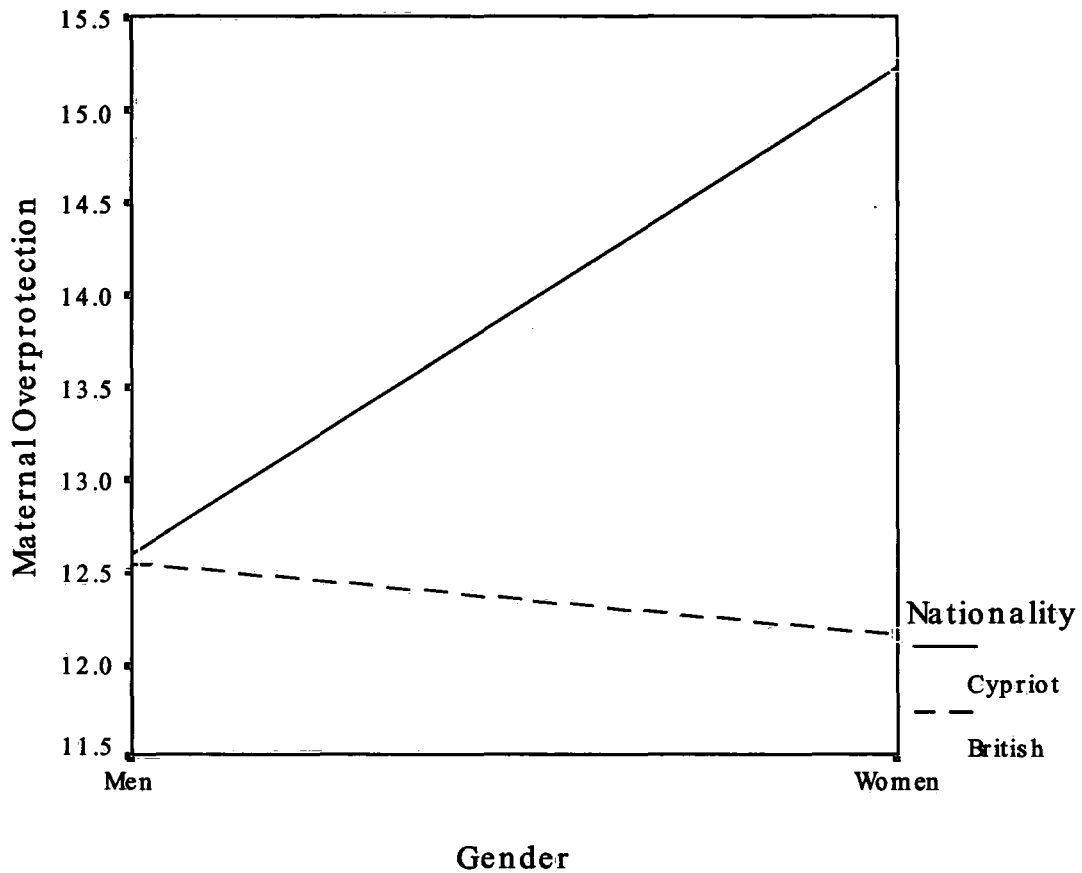
3.2.2: Relations between Nationality and Perceived Parental Bonding

Differences in PBI scores between the British and Cypriot samples were investigated in a series of nationality (British, Cypriot) \times gender (men, women) ANCOVAs with age as a covariate. For maternal care, there was no main effect of nationality, $F(1, 403) = 2.48$, n.s., $\eta^2 = .006$, or gender, $F(1, 403) = 0.40$, n.s., $\eta^2 = .001$, and no nationality \times gender interaction, $F(1, 403) = 0.72$, n.s., $\eta^2 = .001$. For paternal care, there was a main effect of nationality, $F(1, 397) = 4.46$, $p < .05$, $\eta^2 = .011$, but no effect of gender, $F(1, 397) = 0.15$, n.s., $\eta^2 = .000$, and no interaction, $F(1, 397) = 0.47$, n.s., $\eta^2 = .001$. A post-hoc t test showed that British participants reported higher paternal care than their Cypriot counterparts, $t(434) = 2.08$, $p < .05$, $d = 0.21$.

For maternal overprotection, there was a main effect of nationality, $F(1, 403) = 4.67$, $p < .05$, $\eta^2 = .011$, no main effect of gender, $F(1, 403) = 2.37$, n.s., $\eta^2 = .001$, and a significant nationality \times gender interaction, $F(1, 403) = 4.32$, $p < .05$, $\eta^2 = .010$. For the main effect of nationality, Cypriot young adults perceived their mothers to have been more overprotective than did their British counterparts. As Figure 3.1 shows, the interaction for maternal protection scores arose due to the fact that Cypriot women perceived their mothers to have been more overprotective than did British women. Cypriot and British men did not differ in perceived maternal overprotection.

For paternal overprotection, there was a main effect of nationality, $F(1, 397) = 14.88$, $p < .001$, $\eta^2 = .036$, and of gender, $F(1, 397) = 5.29$, $p < .025$, $\eta^2 = .013$, but no interaction, $F(1, 397) = 0.43$, n.s., $\eta^2 = .001$. Post-hoc t tests showed that Cypriot participants perceived their fathers to have been more overprotective than did British participants, $t(434) = 4.83$, $p < .001$, $d = 0.50$, and women reported higher paternal overprotection than did men, $t(429) = 3.54$, $p < .001$, $d = 0.37$.

Figure 3.1. Mean Maternal Overprotection Scores for Cypriot and British Men and Women



3.2.3: Peer Attachment and Parental Bonding

PBI scores are shown as a function of peer attachment style in Tables 3.1 and 3.2. Relations between parental bonding and peer attachment were investigated in a series of one-way ANCOVAs with age and gender as a covariate. For maternal care, there was a main effect of attachment style, $F(3, 403) = 8.60, p < .001, \eta^2 = .06$. Post-hoc pairwise comparisons showed that individuals with secure peer attachment rated their mothers as more caring than those in each of the dismissing, preoccupied, and fearful groups. No other pairwise contrasts were significant.

Paternal care was related to peer attachment style, $F(3, 403) = 2.90, p < .05, \eta^2 = .022$, but post-hoc tests indicated that there were no significant pairwise contrasts.

For maternal overprotection, there was an effect of attachment style, $F(3, 403) = 8.17, p < .001, \eta^2 = .057$, with post-hoc tests showing that secure individuals rated mothers as being less overprotective than those in each of the three insecure groups. No other pairwise comparisons were significant.

There was a marginally significant relation between paternal overprotection and peer attachment style, $F(3, 403) = 2.44, p = .064, \eta^2 = .018$. Post-hoc comparisons showed that preoccupied individuals rated their fathers as more overprotective than did secure individuals, with no other significant pair-wise contrasts.

3.2.4: Predictors of Self-Esteem

Independent predictors of SEI scores were investigated using hierarchical linear regression analyses. In the first regressions, gender, age, and nationality were entered at the first step, the four PBI variables at the second, and four-way RQ attachment style at the third. As Table 3.4 shows, at the second step, scores for both maternal and paternal care and maternal overprotection independently predicted self-esteem. Higher self-esteem was associated with higher perceived care for both parents and lower perceived maternal overprotection. PBI variables accounted for 24% of the variance in self-esteem. With attachment style added at the final step, care scores for both mother and father remained significant predictors, with the effect of maternal overprotection being reduced to a non-significant trend. Gender, age, and nationality also independently predicted self-esteem at the final step. Post-hoc tests showed that

men had higher self-esteem scores than women, $t(440) = 4.74, p < .001, d = 0.48$, but there was no difference between the self-esteem scores of the Cypriot and British participants, $t(440) = 0.35, n.s., d = 0.04$, and age and self-esteem scores were not correlated, $r(440) = 0.08, n.s.$

Table 3.4: Summary of Hierarchical Regression Analysis for Variables Predicting Self-Esteem Scores

Variable	<i>B</i>	<i>SE B</i>	β
Step 1			
Age	0.07	0.09	.04
Gender	2.29	0.54	.22 [†]
Nationality	0.15	0.52	.01
Step 2			
Age	0.21	0.08	.12**
Gender	1.98	0.47	.19 [†]
Nationality	0.77	0.46	.07
Mother Care	0.28	0.04	.36 [†]
Father Care	0.07	0.03	.11*
Mother Overprotection	0.09	0.04	.13*
Father Overprotection	0.02	0.04	.04
Step 3			
Age	0.22	0.08	.12**
Gender	1.54	0.46	.15 [†]
Nationality	0.92	0.44	.09*
Mother Care	0.25	0.04	.31 [†]
Father Care	0.06	0.03	.09*
Mother Overprotection	0.07	0.04	.09 ^a
Father Overprotection	0.03	0.04	.05
Peer Attachment Style	1.12	0.18	.27 [†]

Note. $R^2 = .05, p < .001$ for Step 1; $\Delta R^2 = .24, p < .001$ for Step 2; and $\Delta R^2 = .07, p < .001$ for Step 3.

^a $p = .066, * p < .05, ** p < .01, ^\dagger p < .001$.

In the second regression, gender, age, and nationality were added at the first step, but four-way attachment style was added at the second. As Table 3.5 shows, at the second step, attachment style independently predicted self-esteem, accounting for 14% of the variance. When the PBI variables were added at the third step, attachment style remained a significant predictor of self-esteem. A post-hoc one-way ANOVA showed a main effect of attachment style on self-esteem scores, $F(3, 442) = 28.40, p < .001, \eta^2 = .163$ (see Tables 1 and 2 for mean scores), with pairwise comparisons indicating that individuals with secure peer attachment style had higher self-esteem than those in the preoccupied and fearful groups, and individuals in the dismissing group reporting higher self-esteem than those in the preoccupied and fearful groups. No pairwise comparisons were significant.

Table 3.5: Summary of Hierarchical Regression Analysis for Variables Predicting Self-Esteem Scores

Variable	<i>B</i>	<i>SE B</i>	β
Step 1			
Age	0.07	0.09	.04
Gender	2.29	0.54	.22 [†]
Nationality	0.15	0.52	.01
Step 2			
Age	0.12	0.08	.07
Gender	1.62	0.50	.15 [†]
Nationality	0.46	0.48	.04
Peer Attachment Style	1.56	0.20	.37 [†]
Step 3			
Age	0.22	0.08	.12**
Gender	1.54	0.46	.15 [†]
Nationality	0.92	0.44	.09*
Peer Attachment Style	1.12	0.18	.27 [†]
Mother Care	0.25	0.04	.31 [†]
Father Care	0.06	0.03	.09*
Mother Overprotection	0.07	0.04	.09 ^a
Father Overprotection	0.03	0.04	.05

Note. $R^2 = .05, p < .001$ for Step 1; $\Delta R^2 = .14, p < .001$ for Step 2; and $\Delta R^2 = .17, p < .001$ for Step 3.

^a $p = .066, * p < .05, ** p < .01, † p < .001$.

3.3: Discussion

The study reported in this chapter aimed to assess how assumed cultural differences in caregiving practices related to young adults' perceived parental bonding and attachment relationships with peers, and to investigate cross-cultural influences of perceived parental and peer attachment on self-esteem. Broad support was obtained for the hypothesized relations.

In support of our first hypothesis, Cypriot participants perceived both parents to have been more overprotective than did their British counterparts. As well as this main effect, there was an interaction between gender and nationality for maternal overprotection scores. Compared with British women, Cypriot women perceived their mothers to have been more overprotective, while there was no such difference in Cypriot versus British men. There was also a main effect of gender for paternal overprotection, with women from both countries perceiving their fathers to have been more overprotective than did men. However, contrary to expectations, British participants perceived their fathers to have been more caring than did their Cypriot counterparts, although the effect size for this relation was small (Cohen, 1988). Regardless of culture, secure peer attachment was associated with higher scores for perceived parental care and lower scores for perceived parental overprotection.

With respect to relations with self-esteem, regression analyses showed that perceived parental bonding and peer attachment style predicted self-esteem scores independently of one another. Specifically, perceived maternal care was the best predictor of self-esteem, followed by peer attachment style, with paternal care also independently predicting self-esteem, and a non-significant trend for maternal overprotection as a predictor. Higher self-esteem was associated with higher perceived parental care and with both secure and dismissing peer attachment style.

The findings thus replicate those of previous studies indicating a link between parental bonding and self-esteem in adolescents (Herz & Gullone, 1999), and between secure and dismissing peer attachment style and higher self-esteem (Bartholomew & Horowitz, 1991, Park et al., 2004). However, our study is unique in identifying independent contributions of perceptions of both peer and parental attachment relationships to self-esteem.

The fact that both parental and peer attachment relationships make independent contributions to self-esteem suggests that both types of relationship contribute to how one views oneself, and that current peer relationships do not mediate the observed link between self-esteem and representations of childhood relationships with parents. It is possible that both types of relationship were found to make independent contributions to self-esteem because the participants in our study were young adults for whom ties with parents are still likely to be an intrinsic part of their lives.

Another finding worthy of discussion is the fact that Cypriot students were less likely than their British counterparts to report secure attachment style with peers. While 54% of British participants reported having a secure attachment style, only 38% of Cypriots perceived their peer relationships as being secure. This finding, together with the fact that Cypriot young adults were more likely than their British counterparts to perceive their parents as being more overprotective, is consistent with the proposal that parents' willingness to encourage their children to become autonomous in early adulthood promotes successful peer relationships (e.g., Allen et al., 1994).

The results of Study One thus support a number of central proposals in attachment theory. First, the fact that the same relations between perceptions of

attachment relationships and self-esteem were found in both cultures supports the view that IWMs play an important role in determining psychological well-being (e.g., Bowlby, 1969/82). It is interesting to note that perception of parents as being caring during childhood was more important in determining self-esteem than was the perception that parents were overprotective. Future research should investigate in greater detail whether positive, supportive aspects of parenting are more strongly deterministic of one's IWM of self than parenting practices that do not allow children greater autonomy as they grow up and function to maintain control over the child's life. Second, in line with the argument that both secure and dismissing individuals have a positive IWM of self, we found no self-esteem differences between individuals in these groups, whereas both secure and dismissing individuals' self-esteem was higher than that of individuals in the two groups proposed to have negative IWMs of self (preoccupied and fearful). Finally, the fact that, regardless of cultural background, robust relations were found between perceptions of parental and peer relationships supports Bowlby's (1969/82) argument that early experiences with caregivers provide a template for later relationships with peers and romantic partners.

It is important to note the limitations of the present study. First, it is important to consider whether the measures of parental and peer attachment used in the study reported here are equivalent across Cypriot and British cultures. For example, while parental overprotection as assessed by the PBI and the insecure peer attachment styles have negative connotations from the perspective of an individualist culture such as the UK, such perceptions of close relationships may not be viewed negatively in Cyprus. Related to this point is the fact that cultural differences in caregiving practices were assumed in Study One, and not measured directly. However, the behaviors indicative of care and overprotection on the PBI and of secure attachment style with peers

appear unlikely to apply only to specific cultures. Moreover, the fact that assessments of both relationships showed the same pattern of relations with self-esteem regardless of the participants' culture suggests that the measures of peer and parental attachment relationships were culturally equivalent. Second, given that all assessments were made concurrently, it is also impossible to draw strong conclusions relating to the causal role that attachment relationships may play in young adults' developing self-identity and self-esteem. Our findings are, however, consistent with those of longitudinal studies that have shown a link between early attachment security and later self-esteem (Sroufe, 2005).

Finally, we have relied solely on self-report assessments of attachment relationships which rely on individuals' conscious appraisals of their social relationships. In contrast, IWMs as assessed by more in-depth measures such as the AAI (George et al., 1985) are proposed to function at a unconscious level. The results of the study reported in this chapter thus cannot address how unconscious representations of attachment relationships impact on attachment style with peers and on one's self-esteem. Investigating this question, together with exploring potential mechanisms that might account for the relation between attachment representations and self-esteem, was the focus of the study reported in Chapter 4.

Chapter 4

Understanding the Link between Attachment and Self-Esteem: The Role of Unconscious Attachment Representations and Mentalising Abilities

The results of Study One showed that individuals who perceived their parents to have been caring and not overprotective were more likely to report having secure relationships with peers and romantic partners, and that positive representations of both parental and peer relationships contributed to higher levels of self-esteem. However, these findings give little clue about what mechanisms might account for the observed relations, and cannot address how unconscious IWMs of parental attachment relationships determine self-esteem. Investigating these issues was the main aim of the study reported in this chapter.

As Roisman (2006) pointed out, there are a number of possible interpretations of attachment theory that can be used to explain concordance in attachment representations across different close relationships and why attachment may impact on an individual's psychological development. First, it may be that representations of childhood attachment relationships have a constrained arena of influence, impacting only on attachment-related issues. At the other end of the spectrum, representations of early attachment experiences have been interpreted to have a pervasive influence on "a dizzying variety of later outcomes" (Thompson & Raikes, 2003, p. 707). For

example, differences in attachment representations have been used to explain individual differences in attributes ranging from religious beliefs and commitment (Kirkpatrick & Shaver, 1992) to job satisfaction and mobility (Schirmer & Lopez, 2001; Van Vianen, Feij, Krausz, & Taris, 2003).

Roisman (2006) focused specifically on how attachment representations as assessed by the AAI may help to define a more tenable middle ground between these two extremes, arguing that “rather than exclusively reflecting attachment-related states of mind, the AAI may also more broadly capture a defining task of adulthood (to develop a coherent narrative about one’s early interpersonal experiences) that has important implications for navigating human relationships generally” (p. 342). In support of this argument, Roisman reported security-related differences in how adults collaborated with a stranger to complete a moderately challenging puzzle-building task. Secure individuals engaged with the stranger in an emotionally positive manner, whereas dismissing individuals tended to disengage from the task and produced more negative than positive emotional comments relating to the task and the stranger’s actions. Individuals in the preoccupied group were characterised by their tendency to dominate the task, showing little collaboration with the stranger. These effects of AAI classification on collaboration strategy were independent of self-report measures assessing the Big Five personality traits, suggesting that the observed relations cannot be explained in terms of underlying personality differences.

Fraley and colleagues have also addressed how attachment representations relate to individuals’ reactions to new people, although these studies used self-report measures of attachment rather than the AAI. Brumbaugh and Fraley (2007) investigated whether working models of attachment relationships at both the global (one’s feelings in general about emotionally close relationships) and specific

(representations of one's relationship with a parent and with one's current romantic partner) level influenced how participants perceived new people. Participants were required to report on their feelings toward three advertisements on a 'friend-meeting' site, two of which were unknowingly modelled on the representations participants had previously provided of parent and romantic partner. Results showed that the target resembling the partner was likely to receive a positive evaluation, whereas no such effect was found for evaluations of the target resembling the parent.

Why might representations of close relationships influence how one approaches interactions with new social partners? According to Fonagy and Target (1997), the attachment system is intimately connected with the capacity to attribute mental states to others. The ability to represent behaviour in terms of mental states is proposed to have its roots in the child's early social relationships. For example, Bowlby (1969) suggested that a crucial part of the goal-corrected nature of the attachment system was the child's ability to see that the mother has her own separate goals and interests and to take these into consideration when planning attachment behaviours and strategies.

There is some empirical support for a relation between mother-child attachment security and children's performance on theory of mind tasks (Fonagy, Redfern, & Charman 1997; Greig & Howe, 2001; Laible & Thompson, 1998; Meins, Fernyhough, Russell, & Clark-Carter, 1998; Ontai & Thompson, 2002; Repacholi & Trapolini, 2004), leading Ontai and Thompson (2008) to argue that children's ability to represent the caregiver's beliefs and desires in a stable and organized fashion is fostered by a secure attachment relationship. Over time, this tendency to interpret the caregiver's behaviour with reference to underlying internal states generalises to children's understanding of other people's mental states. However, studies have not

unanimously found a link between attachment and ToM. For example, Meins et al. (2002) reported no association between infant–mother attachment security and children’s ToM abilities at age 4, and Ontai and Thompson (2008) reported similar null findings for ToM assessments at age 5.

One could argue that individual differences in ToM abilities might help to explain the observed link between attachment representations and self-esteem. Having good ToM skills might smooth the way for social interactions, resulting in more positive interactions with others and thus in an increased sense of self-worth and higher self-esteem. If this argument is correct, ToM abilities would thus mediate the relation between attachment and self-esteem. Finding a link between attachment representations in adults and their ToM abilities would also provide further support for Roisman’s (2006) contention that attachment constructs help adults navigate social relationships in general.

To date, no study has investigated whether adults’ attachment representations relate to their mentalising abilities in non-attachment contexts. It is thus impossible to establish whether secure attachment representations in adulthood relate to individuals’ general tendency to infer people’s likely internal states when attempting to understand their behaviour. Although Fonagy and colleagues (e.g., Bouchard et al., 2008; Fonagy, Steele, Moran, Steele, & Higgitt, 1991; Fonagy & Target, 1997) have argued that adults’ ability to reflect on the reasons for people’s actions and on one’s own behaviour (so-called *reflective function*) is the crucial determinant of secure AAI classification, and the capacity responsible for the AAI’s predictive power, reflective function has only been assessed within the context of discourse about close relationships either with attachment figures (e.g., Bouchard et al., 2008) or with one’s own child (Grienenberger, Kelly, & Slade, 2005; Slade, Grienenberger, Bernbach,

Levy, & Locker, 2005). In order to establish the sphere of influence of attachment IWMs, the study reported in this chapter investigated relations between adults' representations of their attachment relationships and their tendency to infer internal states when interpreting other people's behaviours in non-attachment contexts. Relations between ToM and attachment representations were explored both when attachment was assessed using the self-report RQ (Bartholomew & Horowitz, 1991) and the AAI (George et al., 1985).

Tasks assessing adults' ToM are much less well established than those to assess children's ToM abilities. Due to the fact that adults make few errors on tasks where they are simply required to infer a person's belief (Fletcher et al., 1995; Stone, Baron-Cohen, & Knight, 1998), researchers have used various means to increase the cognitive load (e.g., dual presentation of a working memory or executive function task) while the ToM task is being performed (German & Hehman, 2006; McKinnon & Moscovitch, 2007). However, Apperly, Back, Samson, and France (2008) cautioned against this approach. Given that ToM tasks involve the recruitment of working memory and executive abilities (Apperly, Samson, & Humphreys, 2005; Bloom & German, 2000), errors observed under increased cognitive load may indicate the adult's inability to cope with the additional memory or executive demands that are required to succeed on the ToM task, rather than indexing problems in underlying ToM understanding (Apperly et al., 2008).

While ToM errors could arise due to problems in processing mental state information at various points – encoding, holding the information in mind during the task, using mental state information to evaluate the appropriate response – the results of Apperly et al. (2008) suggest that adults' errors on ToM tasks are caused by problems in holding the mental state information in mind and using it to formulate the

protagonist's response. Apperly et al. reported that time available to encode the mental state information appeared to have little impact on adults' ToM performance. If adults' difficulties on ToM tasks are best characterised in terms of holding mental state information in mind so that it can be used to predict and explain people's behaviour, assessing the time taken to perform tasks, rather than relying solely on accuracy of performance, may provide a sensitive index of ToM competence.

The study reported in this chapter assessed adults' ToM abilities using Corcoran, Mercer, and Frith's (1995) 'hinting task', in which the participant listens to a series of vignettes about various social situations in which a character makes an veiled request for the other character to do something. For example, a man who is running late and wants his wife to iron a shirt for him to wear at an interview says, "I want to wear the blue shirt, but it's very creased" rather than asking her directly to iron it for him. After listening to the veiled request for each scenario, participants are asked what the character really means by this statement. If participants cannot infer the character's real meaning, they are given a more obvious hint (e.g., "It's in the ironing basket" in the scenario above).

The hinting task has good face validity and has been used to assess ToM abilities in normal adults and those suffering from anxiety/depression or schizophrenia (Corcoran & Frith, 2003; Corcoran et al., 1995). This task was also chosen because it assesses a broader range of mental states than the false-belief tasks used in other studies (e.g., Apperly et al., 2008; German & Hehman, 2006), and is centred on social interactions which may be particularly useful in highlighting attachment-related differences in adults' general processing of mental state information. Finally, we assessed performance on the hinting task in terms of both accuracy and response time given the conclusion of Apperly and colleagues that

adults' difficulties on ToM tasks arise because of problems in holding mental state information in mind and using it to formulate their response.

How might one's attachment representations impact on hinting task performance? We predicted that attachment-related differences would be most obvious on the response time assessment of ToM rather than basic accuracy given that adults tend to score accurately on ToM tasks in the absence of additional cognitive load. It might be that secure individuals will show superior ToM skills than their counterparts in each of the other attachment groups due to their characteristic higher scores on reflective functioning (e.g., Bouchard et al., 2008). Alternatively, deficits in the ability to process and use mental state information efficiently might be associated with specific types of insecure attachment. In particular, individuals in the preoccupied group may be slower at processing mental state information because of their characteristic tendency to become over-involved with interpersonal relationships and thus unable easily to portray a balanced perspective on the causes of people's behaviour. Consequently, preoccupied individuals may have longer response times for the hinting task.

In summary, the study reported in this chapter investigated relations between adults' attachment IWMs and their ToM abilities, hypothesizing that secure attachment representations as assessed either by the AAI or the RQ would be associated with superior ToM performance, with preoccupied individuals encountering most problems in efficiently processing mental state information. In order to explain relations between attachment representations and self-esteem, we explored whether adults' ToM abilities mediated or moderated this link. An additional subsidiary aim of Study Two was to provide AAI data on a Cypriot sample and to compare the distribution of attachment classifications with published norms.

4.1: Method

4.1.1: Participants

Participants were 73 Cypriot young adults (43 women) with a mean age of $M=20.4$ years, $SD=2.5$ years, range 18–30 years. All participants were college students who were native Cypriots and spoke Greek as their first language.

4.1.2: Procedure

Participants were seen individually. After reading the participant information sheet and signing a consent form, participants completed measures in the order described below.

The Relationship Questionnaire (RQ; Bartholmew & Horowitz, 1991). This self-report measure of adult attachment style was completed as detailed in Chapter Three (see p.39)

Self-Esteem was assessed using the Self-Esteem Inventory (SEI; Rosenberg, 1965) as described in Chapter Three (see p.39).

The Hinting Task (Corcoran et al., 1995) assesses theory of mind in adults (See Appendix 5). It consists of 10 vignettes involving two people. Each vignette ends with one of the characters dropping a hint. The vignettes were translated into Greek and read out to the participant, who had to say what the character really means by their statement. One example is the following: “Jessica and Max are playing with a train set. Jessica has the blue train and Tom has the red one. Jessica says to Max ‘I don’t like this train’. What does Jessica really mean when she says this?” If the participant gave the correct answer after this prompt, they scored 2 points. If the participant failed to give the correct answer, a further prompt was provided: “Jessica goes on to say: ‘Red is my favourite colour’. What does Jessica want Max to do?” If the participant provided the correct answer after this second prompt, they scored 1

point. Incorrect responses scored 0. Therefore the scores could range from 0-20. A full list of the vignettes is given in Appendix 5.

Since normal adults tend to score well on this task in terms of accuracy (Corcoran & Frith, 2003; Corcoran et al., 1995; Fernyhough et al., 2008) we also measured time taken to complete the task. It may be that attachment-related differences in normal adults are not evident in accuracy of response, but in the time taken to process information on people's beliefs and desires presented in a story. Participants' responses were audio-taped, and the time taken for to respond to the prompts was measured later using a stopwatch. Participants received a score for overall response time.

The Adult Attachment Interview (George et al., 1985) is a semi-structured protocol to assess the state of mind with respect to attachment; that is, adults' representations of early attachment experiences with parents (Main & Goldwyn, 1984) (See Appendix 4). The interview consists of 18 questions and typically lasts between 60 and 90 minutes. The interview begins with a request for a general description of the family background, after which the participant is asked to choose five adjectives describing the relationship with their mother in childhood. After the adjectives are given, the person is asked to recall experiences that support the adjectives chosen. The same process is repeated for the relationship with the father. The interview also includes questions relating to how the person reacted in childhood to emotional upset, physical injury, illness, separation from parents, and parental rejection. The participant is questioned about experiences of abuse and loss, and is finally asked to reflect on how their early experiences have affected their adult personality and how their relationships with attachment figures have changed over

time. Participants with children are asked how experiences with their own parents may have influenced the relationship with their children (Hesse, 1999).

The scoring system consists of two parts: the “experience scales” and the “state of mind scales”. The experience scales, which are inferred by the coder, measure childhood experiences with each parent on the following dimensions: rejecting, loving, neglecting, pressure to achieve, and role-reversing. The adult attachment classification is derived primarily from the state of mind scores. The state of mind scale consists of the following 9-point scales: idealisation, derogation, lack of memory, passivity of speech, metacognitive processes, coherence of transcript, and coherence of mind. Coherence is assessed using Grice’s maxims for the four basic components of a coherent narrative: quality (being truthful), quantity (being succinct), relation (being relevant to the topic), and manner (being clear and orderly).

According to Hesse (1999), the expectation from the subject is to produce and reflect upon memories related to attachment and at the same time produce a coherent and consistent discourse. Depending on the type of discourse produced, each interview is placed in a specific category. There are four main categories: secure/autonomous (F), dismissing (Ds), preoccupied (E), and unresolved (U).

Individuals are placed in the secure category if they produce a coherent and collaborative discourse, whether experiences are reported as positive or negative. Secure individuals show a valuing of attachment and do not violate notably Grice’s maxims as they offer evidence in supporting their descriptions. Secure individuals also show a capacity for metacognitive monitoring of memories and language during the interview (Main, 1991).

The dismissing category is assigned to individuals who produce an inconsistent narrative, tend to be excessively brief, and offer unsupported positive

adjectives for their parents, thus violating Grice's maxims. Dismissing individuals tend to minimise the importance of attachment relationships, present themselves as strong and independent, fail to remember childhood experiences, and very often idealise attachment figures. Throughout the discourse dismissing individuals keep their attachment system relatively deactivated.

Preoccupied individuals produce a long but incoherent narrative. They are excessively preoccupied with past attachment relationships, some in an angry, others in a passive, and others in a fearful manner. They use vague language, nonsense words and very often wander off onto irrelevant topics.

The unresolved category is assigned to individuals who, during discussions of loss or abuse, fail to maintain an organized discourse strategy in terms of reasoning. They do not seem to have resolved their feelings in terms of loss or traumatic experiences. An example is the belief that a dead person is still alive, or disruptions in narrative quality (e.g., long, unacknowledged silences) when talking about traumatic experiences. Individuals given a primary unresolved classification are also given a secondary secure/dismissing/preoccupied coding to classify the parts of the interview that do not deal with loss or trauma.

The AAI has shown adequate test-retest reliability from periods ranging from 2 months to 1.5 years (Bakermans-Kranenburg & van IJzendoorn, 1993; Fonagy, Steele, & Steele, 1991). Convergent and discriminant validity have been extensively demonstrated for the AAI (Bakermans-Kranenburg & van IJzendoorn, 1993; Crowell et al., 1999; Crowell & Treboux, 1995; Hesse, 1999).

The AAI was audiotaped and transcribed verbatim before being coded by the author who was trained in administration and coding of the AAI. In December 2006,

the author was found to be highly reliable across the full 30-case reliability testing administered by Mary Main and Eric Hesse.

4.2: Results

4.2.1: Descriptive Statistics and Preliminary Analyses

Hinting task data were unavailable for two participants due to technical problems, and RQ data were missing on two further participants due to ambiguous responses. Of the 73 participants, 57 completed the AAI, with the remaining participants declining to take part due to constraints on their time.

With respect to self-reported peer attachment style as assessed by the RQ, 22 participants were secure, 17 were dismissing, 14 preoccupied, and 18 fearful. Using the AAI classifications, 33 were secure, 20 were dismissing, 2 were preoccupied, and 2 unresolved. One of the unresolved participants was coded as ‘cannot classify’, and the other received a secondary secure classification. In the statistical analyses reported below, the unresolved/cannot classify participant was excluded, and the unresolved/secure participant was included in the secure category.

With respect to relations between RQ and AAI classification, 36% (12) of individuals were in the secure category on both measures, 32% (6) of individuals were in the dismissing category on both measures, 100% (2) of individuals were preoccupied on both measures, and the unresolved/CC participant chose the fearful category on the RQ. The two attachment measures were not related, $\chi^2(9) = 14.26$, n.s., $w = 0.51$. However, caution should be exercised in interpreting this result given the low cell counts.

Scores for the SEI and hinting task accuracy were normally distributed, but those for response time on the hinting task were negatively skewed. Response time

scores were thus log-transformed, after which they met the assumptions of normality. Transformed scores were used in the analyses reported below.

4.2.2: Relations between Hinting Task Performance and Attachment Style

Table 4.1 shows the mean scores for accuracy and response time for the hinting task as a function of participants' self-reported attachment style with peers. A 4(attachment style) \times 2(gender) ANCOVA with age added as a covariate showed that there was no main effect of attachment style, $F(3, 60) = 1.13$, n.s., $\eta^2 = .049$, or gender, $F(1, 60) = 0.01$, n.s., $\eta^2 = .000$, on accuracy on the hinting task, and no attachment style \times gender interaction, $F(3, 60) = 1.94$, n.s., $\eta^2 = .085$.

For response time on the hinting task, there was no main effect of gender $F(1, 60) = 0.04$, n.s., $\eta^2 = .0004$, but there was a main effect of attachment style, $F(3, 60) = 5.09$, $p < .005$, $\eta^2 = .167$, and a significant attachment style \times gender interaction, $F(3, 60) = 6.05$, n.s., $\eta^2 = .199$. Post-hoc comparisons showed that preoccupied individuals were slower in completing the hinting task than those in both the secure and the dismissing groups, with no other significant pairwise contrasts. Figure 4.1 shows the interaction for response time. Post-hoc t tests showed that men and women did not differ in response time if classified as secure, $t(20) = 1.65$, n.s., or dismissing, $t(15) = 0.19$, n.s., but preoccupied men took longer to respond than did preoccupied women, $t(12) = 2.93$, $p < .01$, whereas fearful women took longer to respond than did fearful men, $t(14) = 2.71$, $p < .025$.

Table 4.1: Mean Scores for ToM Performance and Self-Esteem as a Function of Attachment Style

	Secure		Dismissing		Preoccupied		Fearful	
	Men	Women	Men	Women	Men	Women	Men	Women
	<i>n</i> =12	<i>n</i> =10	<i>n</i> =7	<i>n</i> =10	<i>n</i> =6	<i>n</i> =8	<i>n</i> =4	<i>n</i> =12
Accuracy	17.08 <i>1.83</i>	16.60 <i>1.43</i>	17.29 <i>1.98</i>	16.30 <i>2.41</i>	14.33 <i>3.39</i>	16.75 <i>2.25</i>	17.25 <i>2.22</i>	16.08 <i>2.35</i>
Time	225.33 <i>87.24</i>	294.40 <i>132.33</i>	239.00 <i>90.88</i>	230.80 <i>91.06</i>	472.00 <i>117.57</i>	279.38 <i>129.07</i>	202.75 <i>9.36</i>	306.08 <i>93.20</i>
SE	31.92 <i>4.19</i>	32.00 <i>4.30</i>	31.86 <i>4.02</i>	32.90 <i>3.90</i>	28.83 <i>4.96</i>	27.63 <i>3.93</i>	30.75 <i>1.26</i>	30.22 <i>3.99</i>

Note. Standard deviations are in italics. Accuracy = accuracy score on the ToM task, Time = response time on the ToM task, SE = Self-esteem.

Means and standard deviations for response time are presented in seconds.

4.2.3: Relations between Hinting Task Performance and AAI Classification

Table 4.2 shows the mean accuracy and time scores for the hinting tasks with respect to participants' AAI classification. Given that the two individuals classified as preoccupied were both men, it was not possible to include gender and AAI classification as an independent variables in two-way analyses as above. Note, however, that gender was unrelated to hinting task accuracy, (Men $M = 16.53$, $SD = 2.45$, Women $M = 16.44$, $SD = 2.07$), $t(69) = 0.18$, n.s., and response time, (Men $M = 279.40$, $SD = 131.57$, Women $M = 286.83$, $SD = 120.35$), $t(69) = 0.25$, n.s.

Table 4.2: Mean Scores for ToM Performance and Self-Esteem as a Function of AAI Classification

	Secure <i>n = 33</i>	Dismissing <i>n = 19</i>	Preoccupied <i>n = 2</i>
ToM accuracy	16.48 <i>1.75</i>	16.47 <i>2.37</i>	18.00 <i>2.83</i>
ToM response time	287.67 <i>112.98</i>	278.68 <i>123.79</i>	575.50 <i>50.21</i>
Self-esteem	31.06 <i>4.82</i>	31.16 <i>3.63</i>	23.50 <i>4.95</i>

Note: Standard deviations are in italics. Means and standard deviations for response time are presented in seconds.

A one-way ANCOVA with age added as a covariate showed that there was no relation between AAI classification and accuracy on the hinting task, $F(2, 50) = 0.42$, n.s., $\eta^2 = .005$, but there was an effect of AAI classification on time taken to complete

the task, $F(2, 50) = 4.57, p < .025, \eta^2 = .154$. Post-hoc comparisons showed that preoccupied individuals were slower than those in both the secure and dismissing groups, with no other significant pairwise contrasts.

4.2.4: Predicting Self-Esteem

We investigated whether ToM abilities mediated the relation between attachment representations and self-esteem using the widely accepted procedure proposed by Baron and Kenny (1986). In order to conclude that ToM was a mediator, the following conditions had to be met: (a) variations in attachment representations must account for significant variance in ToM performance, (b) variations in ToM performance must account for significant variance in self-esteem, and (c) once ToM performance is controlled, the relation between attachment representations and self-esteem should no longer be significant.

First relations between the attachment measures and self-esteem were explored (see Tables 4.1 and 4.2 for means and standard deviations). One-way ANCOVAs with age added as a covariate showed that the main effect of attachment style on SEI scores approached significance, $F(2, 50) = 3.02, p = .058, \eta^2 = .108$. Post-hoc tests revealed non-significant trends for preoccupied individuals to have lower self-esteem than those in the secure group ($p = .059$), and the dismissing group ($p = .062$). No other pairwise comparison was significant.

A second ANCOVA showed that AAI classification had a main effect on SEI scores, $F(3, 50) = 3.81, p < .025, \eta^2 = .146$. Post-hoc tests showed that preoccupied individuals received lower self-esteem scores than their counterparts in the secure and dismissing groups, with no other significant pairwise comparisons.

The results reported in sections 4.2.2 and 4.2.3 above showed that only response time on the ToM task was related to attachment style and AAI classification, and thus only this measure of ToM performance was explored as a mediator of the relation between attachment representations and self-esteem. Response time was found to account for a significant amount of variance in SEI scores, $B = 7.16$, $\beta = 0.27$, $p < .05$, $R^2 = .07$, meeting requirement (b) of mediation.

Hierarchical linear regression analyses with SEI scores as the dependent variable tested requirement (c) of mediation for relations between self-esteem and each of the attachment measures. In each regression, response time was entered at the final step, with the attachment variable entered at the second step. Tables 4.3 and 4.4 summarize the results of these regression analyses. Inspection of the beta coefficient weightings in these tables indicates that no strong support was obtained for ToM reaction time mediating the relation between attachment and self-esteem. With respect to self-reported attachment style, with all variables entered into the regression equation, ToM reaction time failed to account for significant independent variance in self-esteem scores. For AAI classification, although ToM reaction time approached significance as a predictor of self-esteem at the final step, AAI classification failed to predict independent variance in self-esteem even before the ToM variable was entered into the regression equation.

Table 4.3: Summary of Hierarchical Regression Analysis for Attachment Style and ToM Response Time Predicting Self-Esteem Scores

Variable	<i>B</i>	<i>SE B</i>	β
Step 1			
Age	0.20	0.20	.12
Step 2			
Age	0.20	0.20	.13
Attachment style	0.85	0.44	.23*
Step 3			
Age	0.22	0.20	.13
Attachment style	0.73	0.44	.20
ToM response time	-0.06	0.01	-.19

Note. $R^2 = .01$, n.s. for Step 1; $\Delta R^2 = .05$, $p < .05$ for Step 2; and $\Delta R^2 = .04$, n.s. for Step 3.

* $p < .05$.

Table 4.4: Summary of Hierarchical Regression Analysis for AAI Classification and ToM Response Time Predicting Self-Esteem Scores

Variable	<i>B</i>	<i>SE B</i>	β
Step 1			
Age	0.11	0.25	.06
Step 2			
Age	0.14	0.25	.08
AAI classification	1.19	1.14	.15
Step 3			
Age	0.14	0.25	.08
AAI classification	0.81	1.13	.10
ToM response time	-0.01	0.01	-.26 ^a

Note. $R^2 = .00$, n.s. for Step 1; $\Delta R^2 = .02$, n.s. for Step 2; and $\Delta R^2 = .06$, $p = .074$ for Step 3.

^a $p = .074$.

4.2.5: Validating Cypriot AAI Data Against International Norms

Table 4.5 shows the AAI data from the Cypriot participants together with that presented in van IJzendoorn and Bakermans-Kranenburg's (1996) meta-analysis on AAI classification in non-clinical samples of men and women.

Table 4.5: AAI Data for Study Two and International Norms

	Secure	Dismissing	Preoccupied	U/CC
Study Two	33 (58%)	20 (35%)	2 (4%)	2 (4%)
International norms	407 (56%)	116 (16%)	71 (10%)	134 (18%)

Chi-square was used to explore whether the distribution in the Cypriot participants differed from international norms. Using the secure/insecure dichotomy, there was no difference between the two populations, $\chi^2(1) = 0.09$, n.s. However, using the four categories, the distributions were found to differ, $\chi^2(3) = 20.22$, $p < .001$. Although caution should be exercised in interpreting these findings given the low number of preoccupied and unresolved individuals in the Cypriot sample, the data suggest that dismissing status is more common in Cypriot individuals compared with international norms for men and women.

4.3: Discussion

The aims of the study reported in this chapter were to explore whether (a) IWMs of parental attachment relationships (as assessed using the AAI) showed similar relations with self-esteem as did the Bartholomew and Horowitz (1991) self-report measure, and (b) individuals' ToM abilities mediated the relation between attachment and self-esteem.

The relations between attachment and self-esteem were the same regardless of whether attachment was assessed using a self-report measure of attachment style in relationships with peers and romantic partners or a discourse-based measure of current state of mind regarding attachment relationships with parents (the AAI). There was a non-significant trend for a relation between peer attachment style and scores on the SEI, with post-hoc tests indicating trends for preoccupied individuals to report lower levels of self-esteem than their counterparts in either the secure or dismissing groups. This same pattern of findings emerged for relations between AAI

classification and SEI scores, but the effects between AAI classification and self-esteem reached statistical significance.

In testing the potential mediating role of ToM abilities in the links between attachment representations and self-esteem, relations were seen between ToM performance and both peer attachment style and AAI classification, although only with respect to response time and not accuracy on the ToM task. Individuals who reported preoccupied style on the RQ had longer response times on the ToM task than their counterparts in both the secure and dismissing groups, and gender and attachment style also interacted on ToM response time. Women and men in either the secure or dismissing groups did not differ, but preoccupied men had longer response times than did preoccupied women, whereas the opposite gender effect was seen in the fearful group. Using AAI classification as the attachment variable, preoccupied individuals had longer response times on the ToM task than those in either the secure or dismissing group. This pattern of findings is not unexpected given the characteristic way in which individuals classified as preoccupied on the AAI are most likely to encounter difficulties in standing back from their attachment experiences to gain an understanding of the cognitive and emotional processes that may have led to attachment figures behaving as they did. The results of Study Two show that preoccupied individuals' difficulties in understanding the underlying reasons for people's behaviour are also evident in their processing of social situations and subtle hints indicating desired actions in the ToM task. However, it could be argued that one of the shortcomings of this study is that the AAI and the Hinting Task were administered by the same person. Given that no other Greek speaking person was found to be reliable on the AAI, the author had no other choice but to do the administration and coding of the AAI herself. To control for this confound, the author

proceeded in data analysis after the collection of all data. In this way she was unaware of AAI classification when coding the Hinting Task.

Given the null findings for relations between attachment representations and ToM accuracy, mediation was explored only in relation to response time on the ToM task. Response time accounted for 7% of the variance in SEI scores, with quicker responses being associated with higher self-esteem. Separate linear regression analyses to test for mediation using either attachment style or AAI classification showed that once ToM response time had been accounted for, attachment representations no longer predicted self-esteem. However, no strong evidence was obtained for ToM skills mediating the relation between attachment representations and self-esteem.

A subsidiary aim of Study Two was to validate the AAI data on a Cypriot sample against international norms. While no difference was found when numbers falling the secure and overall insecure groups was found, comparing distributions across the four attachment categories suggested an overrepresentation of dismissing attachment in the Cypriot sample. Although these findings need to be replicated before firm conclusions can be drawn, if the difference is genuine, how could one account for the high percentage of dismissing individuals in the Cypriot sample? Due to the Turkish invasion that led to the loss of property, many Cypriot parents emphasise the provision of material wealth for their children. For example, parents continue to offer accommodation to their grown-up and married children even when they have independent incomes (Konis, 1990). This emphasis on relationships being based on providing material belongings rather than response to emotional needs is typical of individuals in the dismissing category (Main & Goldwyn, 1998). Alternatively, the observed difference could have arisen because the Cypriot sample

consisted of college students who are at the point of shifting attachment relationships from parents to peers and who may have attempted to dismiss attachment-related experiences with parents. In contrast, van IJzendoorn and Bakermans-Kranenburg's (1996) meta-analytic data were based on samples of parents with young children. The different samples used in the two studies may thus account for the observed differences in the Study Two sample compared to international norms.

The results of Study Two replicate and extend those of Study One regarding the relation between attachment representations and self-esteem. When attachment was assessed in terms of unconscious representations of close relationships using the AAI, individuals in the secure and dismissing groups were found to have higher self-esteem than their counterparts in the preoccupied group. This suggests that the effect of self-reported attachment style on self-esteem observed in Studies One and Two generalises to IWMs of attachment relationships that are unavailable to conscious appraisal. Indeed, the results of Study Two showed that AAI classification was more strongly related to self-esteem than was individuals' conscious self-report of attachment style.

However, it is important to treat the results of Study Two with a degree of caution based on the fact that only two individuals were classified as preoccupied on the AAI. In this study, only 4% were found to be preoccupied in comparison to 10% in van IJzendoorn and Bakermans-Kranenburg's (1996) meta-analysis. This difference could be due to sample bias since the sample consisted of college students. If parents or somewhat older adults had been included, the percentage of preoccupied participants may have been closer to that reported by van IJzendoorn and Bakermans-Kranenburg. Thus, although the same pattern of findings was observed for self-reported preoccupied style, these findings need to be replicated before firm

conclusions can be drawn on the relation between ToM and attachment, and its potential mediating effect on the link between attachment and self-esteem. Although no mediation between attachment and self-esteem was found, if we did find mediation, one would predict that acquiring and honing one's ToM skills will have a dramatic effect on one's sense of self-worth to the extent that becoming a good 'mind-reader' could potentially ameliorate any negative impact of attachment insecurity on self-esteem. In order to investigate this issue in greater detail, a developmental approach was taken in Study Three to address how acquisition of mentalising abilities in early childhood relates both to children's representations of attachment relationships and to their sense of self worth.

Chapter 5

Attachment Representations, Self View, and Mentalising Abilities in Childhood

As discussed previously, Bowlby (1973, 1980) proposed that within the context of mother–child interaction, children develop IWMs of attachment relationships. While the AAI has become a well-established assessment of IWMs in adults, devising and operationalising a gold standard procedure for assessing IWMs in children has proved more elusive. The ways in which children demonstrate attachment change profoundly over the first 5 years, with the overt differences in attachment behaviour observed in the strange situation procedure evolving into more subtle indicators of security and insecurity (e.g., Sroufe, 1996). Consequently, assessments that aim to assess older children’s attachment security focus on children’s *mental representations* of attachment-related experiences rather than more basic attachment behaviours. These measures typically base their assessment of security on how children respond to emotionally provocative material.

The original assessment of children’s IWMs of attachment relationships is the Separation Anxiety Test (SAT), which was developed by Klagsbrun and Bowlby (1976). The SAT is a semi-projective test, adapted from Hansburg’s (1972) original measure designed to assess adolescents’ responses to separations from parents. Klagsbrun and Bowlby (1976) modified Hansburg’s (1972) measure so that it could

be used in the age range of 4 to 7 years. In the initial test there were twelve pictures showing separations between parents and their child. Klagsbrun and Bowlby (1976) reduced them to six, with the situations involving both severe separations (e.g., parents go away for two weeks) and mild separations (e.g., the child is told to go and play by himself/herself because the parents want some time alone together to talk).

The story-completion tasks to assess children's attachment IWMs grew from Bretherton, Ridgeway, and Cassidy's (1990) procedure, in which children observe an experimenter act out the beginning of a story involving attachment-related distress (e.g., physical injury, fear, separation) and are asked to complete the story. The MacArthur Story Stem Battery (Emde, Wolf, & Oppenheim, 2003) is an extension and elaboration of Bretherton et al.'s (1990) original stories and coding procedures that is often used to assess attachment IWMs in children aged 3 and above. This procedure yields scores for narrative coherence and resolution, with higher scores being associated with secure IWMs.

Green, Stanley, Smith, and Goldwyn (2000) developed a somewhat different scheme for coding children's story completions. Green et al.'s (2000) categorical scheme draws heavily on the classic patterns of attachment observed in the strange situation procedure, translating them into narrative responses to attachment themes. For example, children classified as having avoidant attachment representations typically adopt self-care strategies and do not involve the caregiver in order to assuage distress, whereas children with ambivalent representations find new sources of distress in an attempt to maintain or increase the caregiver's involvement.

5.1 Relations between Representations of Attachment Relationships and Representations of Self

As well as providing the child with the material to form an IWM of attachment relationships, Bowlby (1973, 1980) proposed that within the context of the mother–child relationship, children develop an idea of the self as being either lovable and worthy, or unlovable and worthless. In further developing this idea, Bowlby (1979) stated that the concept of the IWM of self can be conceived in terms of what is now referred to as self-image, self-concept, or self-esteem.

Harter (1982, 1983) demonstrated that by the age of 8, children can understand their own personality traits, whereas younger children do not possess a psychological understanding of self. Therefore since children younger than 8 do not possess a full understanding of self, it is difficult to measure self-esteem in children younger than this age. Harter argued that it is not until middle childhood that children acquire a *global sense of self worth*. Other research (Bretherton & Beeghly, 1982; Eder, 1989, 1990) suggests that even though a full dispositional concept of self does not appear to be acquired until age 8, children have an understanding of their internal states by the age of 3. Very young children are skilled users of mental and emotional state language (Bretherton & Beeghly, 1982), and Eder (1990) reported that 3-year-olds can organise general statements about themselves into meaningful and consistent self-conceptions. For example, a statement such as “I usually play with friends” could form the basis for the dispositional conception “I am affiliative” (Eder, 1990). Based on such findings, it is suggested that children from the age of 3 are capable of understanding their personality traits which can be assessed using a psychometric construct of self-descriptive statements selected by young children that reflect their feelings about themselves (Eder, 1990). Therefore Eder’s (1990) Self-View

Questionnaire could provide a means of measuring how children feel about themselves. It is the only psychometric instrument that exists which measures young children's self-view. Its weakness is the fact that it does not give an overall value that an individual places on oneself as a person (as it does not measure self-esteem) but rather how children perceive themselves in terms of personality characteristics.

A number of studies have been carried out to test connections between the working model of self and mother-child attachment. In a study by Sroufe and Egeland (1991), where self-esteem was rated by teachers, preschoolers who were securely attached in infancy showed higher self-esteem than their insecurely attached peers. Cassidy (1988) replicated this finding, showing that a concurrent measure of 6-year-olds' behavioural attachment security was related to their self view. Cassidy reported that securely attached children were able to provide a positive but balanced view of themselves, admitting commonplace imperfections in themselves. In contrast, children who were insecurely attached provided an idealised or overly negative self view. Similarly, Pipp, Easterbrooks, and Harmon (1992) found that 2- and 3-year-olds were more likely to demonstrate more accurate and complex self-knowledge if they had been securely attached in infancy. Data from these studies thus support the notion that there is a connection between the security of children's attachment behaviours towards the mother and their representation of self.

More recently, researchers have investigated links between self and *representational* measures of children's attachment. Verschueren, Marcoen, and Schoefs (1996) assessed 5-year-olds' attachment representations using a story-completion task, and reported concurrent relations with children's self-view. Children with a negative model of self were more likely to be classified as insecure, whereas secure attachment representations tended to be associated with a positive model of

self. While Verschueren et al. (1996) acknowledged that their findings cannot establish any causal relation, they highlighted the close link between the working model of the attachment figure and the working model of self.

5.2 The Influence of the Caregiver–Child Relationship on Children’s General Representational Abilities

Self view seems to be only one representational factor that is related to the quality of the mother–child relationship, with evidence for security-related differences in children’s understanding of mind and emotion. Initial studies on children’s mentalising and theory of mind (ToM) abilities focused on the age at which children typically understand how behaviour is governed by internal states such as beliefs. ToM research focused on a single cognitive process and examined children’s understanding of false belief. It was believed that between the ages of 2 and 3, children realise that actions are guided by desires, and from 3 years onwards they become aware of the role of beliefs and false beliefs in guiding behaviour (e.g., Astington, Harris, & Olson, 1988; Harris, 1999; Perner, Leekam, & Wimmer, 1987; Wimmer & Perner, 1983).

However, many researchers believe that ToM understanding includes multiple concepts and Wellman and Liu (2004) suggested a developmental progression in preschoolers’ developing ToM ability. A number of studies supported the notion that children’s understanding of desires precedes their understanding of beliefs (Bartsch & Wellman, 1995; Flavell, Flavell, Green & Moses, 1990; Wellman & Woolley, 1990).

Wellman and Liu’s (2004) meta-analysis showed that children can correctly judge person’s diverse beliefs before they are able to judge false beliefs, and can understand ignorance before understanding false belief. In their meta-analysis,

Wellman and Liu have shown that differentiating between real and apparent emotion does not develop until late within the preschool years. In using a ToM scale to assess preschoolers ToM ability Wellman and Liu (2004) have claimed that there is a consistent developmental progression, where for most children passing a later item required passing all earlier items.

However, there is now a consensus that other factors can contribute in children's understanding of mind, since numerous empirical studies have highlighted how children's early interpersonal experiences influence their mentalising abilities.

Main (1991) reported a relation between security of attachment and 6-year-olds' metacognitive abilities. Securely attached children were better able than their insecure counterparts to understand that different people can have different emotional responses and that other people cannot read their thoughts. A study conducted by Fonagy, Redfern, and Charman (1997) on 3- to 6-year-old children showed that security of attachment as assessed by the SAT (Klagsbrun & Bowlby, 1976) predicted performance on a task assessing their understanding of the relation between belief and emotion. Once again, secure attachment was associated with better mentalising abilities.

In a longitudinal study of mother–infant dyads, Meins, Fernyhough, Russell, and Clark-Carter (1998) reported that 83% of children classified as securely attached in the strange situation in infancy passed the unexpected transfer task at age 4 compared with 33% of insecurely attached children. At age 5, 85% of securely attached and 50% of insecurely attached children gave the maximum number of correct answers on a task requiring an understanding of informational access. However, in their more recent longitudinal research, Meins and colleagues (Meins et al., 2002, 2003) have failed to replicate this link between strange situation

classification in infancy and superior mentalising abilities in early childhood. Other null findings were reported by Ontai and Thompson (2008), who found no association between attachment security and children's ToM at age 5. This mixed picture of findings led Repacholi and Trapolini (2004) to argue that the relation between attachment security and ToM may be dependent on whether ToM tasks are relevant to attachment themes. This argument was supported by their finding that children who scored highly for attachment avoidance on the SAT had more difficulty understanding their own mothers' false beliefs than those of an unknown adult female experimenter.

Relations between attachment security and children's understanding of emotions have also been explored, given that attachment organisation and IWMs are assumed to form the basis of emotional regulation (e.g., Bretherton & Mulholland, 1999; Cassidy, 1994). Mixed findings have been reported for relations between behavioural measures of attachment security and children's understanding of emotion, with some researchers finding superior emotion understanding in secure children (Laible & Thompson, 1998; Steele, Steele, Croft, & Fonagy, 1999), while Ontai and Thompson (2002) reported equivocal relations. There is also debate as to whether security is related to children's ability to process specific types of emotional material. For example, Laible and Thompson (1998) reported that attachment security was related specifically to children's understanding of negative emotions. This finding is consistent with the theory that secure relationships are characterized by open communication, meaning that discourse about negative emotions is likely to be more frequent and elaborate between securely attached children and their mothers (Bretherton, 1990). However, Belsky, Spritz, and Crnic (1996) reported that it was insecure-group children who were more accurate in remembering negatively valenced events they had witnessed in a puppet procedure. These authors argued that insecurely

attached children are more likely to have experiences that induce negative affect, and thus become more attuned to and familiar with negative emotions. In contrast, the picture between attachment *representations* and children's emotion understanding is more clear cut, with secure attachment representations relating to superior emotion understanding (de Rosnay & Harris, 2002; Fonagy et al., 1997).

These findings from ToM and emotion understanding thus converge to suggest that representational measures of attachment security are more strongly linked to children's mentalising abilities than are behavioural assessments of security. At first glance, these findings appear supportive of Fonagy and Target's (1997) proposal that attachment security should relate to children's mentalising abilities because individual differences in the caregiver's tendency to recognize and reflect back the child's internal states characterize secure versus insecure attachment relationships, with secure mothers acting as a mirror for their children's internal states. According to Fonagy (1997), early experience with the caregivers, especially in the first year of life, creates a bedrock of mentalising ability. The parent thus brings to the parent-child relationship elements that are critical for the establishment of both security of attachment and mentalisation. However, it may be that the link between attachment security and mentalising abilities is confounded by the fact that assessments of attachment representations require sophisticated perspective-taking and linguistic abilities. This issue is discussed further below.

5.3 Understanding the Links between Attachment and Representational Abilities

As discussed above, links have been found between attachment security and children's (a) self view, and (b) mentalising abilities. However, it is difficult to establish a clear understanding of the precise interconnections between attachment,

self-view and mentalising abilities for a number of reasons. First, interpreting findings for a link between behavioural measures of attachment security and children's self view or ToM are problematic due to a lack of any theory-driven explanation for such links. To explain why attachment security may relate to children's representational abilities, researchers typically invoke the IWM concept, despite the fact that their assessments focus exclusively on attachment *behaviours* and not attachment *representations* (i.e. IWMs). The fact that there is little evidence for longitudinal continuity between early attachment behaviours and children's later attachment representations (Bar-Haim, Sutton, Fox, & Marvin, 2000; Bretherton, Ridgeway, & Cassidy, 1990; Cassidy, 1988; Main, Kaplan, & Cassidy, 1985; Trapolini, Ungerer, & McMahon, 2007) further highlights the problems inherent in relying on the IWM to explain how attachment security in infancy relates to children's later self view and ToM performance. Consequently, Meins et al. (1998) argued for caution in interpreting the association between attachment security in infancy and children's later ToM performance, and suggested that this link may be indirect, being mediated by the mothers' tendency to treat her child as an individual with a mind (so-called *mind-mindedness*).

Second, even when attachment security is assessed using a representational measure, it is difficult to form firm conclusions on relations between attachment and children's representational abilities because of concerns over the discriminant validity of the representational attachment measures. For example, the SAT requires the child to answer questions about how the depicted child feels in response to imminent separation from the parents, and to predict how the child will behave when confronted with such feelings. Clearly, then, this task which is meant to assess children's IWMs of attachment relationships requires considerable ToM skills. Any observed relation

between SAT attachment measures and ToM performance (e.g., as reported by Fonagy et al., 1997) may thus be due to the assessments tapping into common variance in mental perspective taking and the understanding of how internal states govern behaviour. Similarly, there are serious potential confounds if attachment representations are assessed using story-completion tasks which require high-level receptive and expressive verbal abilities in the child. For example, Oppenheim, Nir, Warren, and Emde (1997) reported that narrative coherence on the attachment story completion task was positively associated with children's general verbal abilities. The sizeable relation between verbal ability and children's performance on mentalising tasks is well-known (e.g., Astington & Baird, 2005), raising the suspicion that any observed relation between story-completion assessments of attachment security and children's understanding of mind and emotion can be explained in terms of underlying verbal abilities.

Finally, little research has investigated mediational models to explain links between attachment and children's other representational abilities. To our knowledge, only one study has explored this issue, although it investigated the potential moderating effect the quality of mother-child interaction may have on the relation between self-view and ToM ability, rather than addressing the possibility that any link between attachment and ToM may be mediated by a third variable. Cahill, Deater-Deckard, Pike, and Hughes (2007) investigated whether mother-child warmth and responsiveness moderated the relation between children's self view and their ToM abilities in a sample of 3½-year-old twins. Children's self view was assessed using a shortened version of Eder's (1990) task, and mother-child warmth and responsiveness were scored from a home-based observation. Cahill et al. (2007) found partial support for the hypothesis that the quality of the mother-child relationship moderated the

relation between self view and ToM in that the mother–child warmth \times ToM interaction term predicted independent variance in children’s self-worth scores. However, Cahill et al.’s findings are difficult to interpret due to the fact that (a) bivariate correlations among self-worth, ToM, and mother–child warmth appear to have been misreported (see Table 1, p. 51), (b) mediation was not tested using the Baron and Kenny (1986) method, and (c) full results of the regression analyses were not presented. Thus, it is impossible on the basis of these findings to exclude the possibility that a different moderation effect was at work. For example, it may have been the case that children’s ToM performance or self-worth was the moderating variable. Study Three did not aim to investigate moderating relations but mediating factors between security of attachment and self-view, exploring whether ToM performance mediated the relation between attachment representations and self-esteem.

In summary, Study Three tested the following specific hypotheses: (a) children with secure representations of attachment relationships will perform better on tasks assessing understanding of mind and emotion, and (b) secure attachment representations will be associated with positive, balanced representations of self. Study 3 also explored whether any observed relations were direct or mediated by other variables.

5.4: Method

5.4.1: Participants

Participants were 80 Cypriot children (42 boys, 38 girls) who ranged in age from 46 to 76 months ($M = 61.5$, $SD = 8.3$). The children were recruited from three schools: 36% attended a private school, 41% attended a state school, and 23% attended a community school. All of the children spoke Greek as their native

language. Of the 110 parents contacted about the study, 80 (73%) gave written consent for their children to participate.

5.4.2: Procedure

Each child was seen on two different occasions in their school setting and was tested on a one-to-one basis. Testing took place in an empty, quiet classroom. In the first testing session, children were given a battery of tests in the following order: the ToM battery, the Self-View Questionnaire, the Test of Emotion Comprehension (TEC), and Denham's (1986) affective labelling and affective perspective ability test. The first testing session lasted around 30 minutes. Two weeks later, children were seen for a second testing session in which they completed the MCAST and SAT. The second testing session lasted between 20 and 30 minutes. Children were videotaped in both testing sessions. Children's general verbal abilities were not assessed due to the lack of any appropriate standardised test in Greek. Lewis et al. (1996) also did not assess verbal abilities in the Greek and Cypriot sample when they tested social influences on children's false belief tasks.

5.4.2.1: The ToM Battery

Children's understanding of mental states was assessed using four stories from Wellman and Liu's (2004) ToM battery. The first task presented to the child aimed to measure diverse beliefs. The experimenter showed a toy figure of a girl and a sheet of paper with bushes and a garage drawn on it. Then the child was told the following: "Here is Linda. Linda wants to find her cat. Her cat might be hiding in the bushes or it might be hiding in the garage. Where do you think the cat is? In the bushes or in the garage?" This is the *own-belief* question. If the child chooses the bushes, the experimenter says the following: Well, that's a good idea but Linda thinks her cat is in the garage." (Or, if the child chooses the garage, he or she is told that Linda thinks

her cat is in the bushes). Then the child is asked the target question: So where will Linda look for her cat? In the bushes or in the garage?" The child passed this task if the answer was the opposite to that given in response to the own-belief question. This task was derived from those used by Wellman and Bartsch (1989) and Wellman et al. (1996).

The second task assessed knowledge access. Children were presented with a nondescript plastic box with a drawer. Children were asked: "What do you think is inside the drawer?" The child could give any answer or say they did not know. Then the experimenter opened the drawer and said: "Let's see what's inside. There is a dog inside." The drawer was closed and the child was asked to state what was in the drawer. Then a toy figure of a girl called Polly was introduced. The experimenter said: "This is Polly. Polly has never seen inside this drawer. Now here comes Polly. Does Polly know what is in the drawer?" (this is the target question). "Did Polly see inside this drawer?" (this is the memory control question). To pass this task, the child has to say no to both the target and the memory questions. This task was derived from those used by Pratt and Bryant (1990) and Pillow (1989), although it was modified to resemble the unexpected transfer task.

In the third task, the child was shown a Pringles box and told: "Here is a box of crisps. What do you think is inside the box?" After the child responded, the experimenter continued, "Let's see... can you tell me what is really inside the box?" while opening the box to reveal a toy pig. The experimenter ensured that the child responded correctly to this question. The box was then closed and the experimenter produced a toy figure called Jack. The experimenter said: "Here comes Jack. Jack has never seen inside this box of crisps before. What does Jack think is in the box?" (target question). If no answer was given the experimenter said: "Does he think it's

crisps or a pig?” Then the reality control question was then posed: “Okay what is really in the box?” If the child gave no answer: “Is it crisps or a pig?” Next the memory control question was presented: “Did Jack see inside this box?” This task was derived from Perner, Leekam, and Wimmer (1987). In order to pass this task, children had to pass both control questions and say that Jack would think there were crisps in the box.

In the fourth task, children were presented with a toy figure of boy called Simon and an A4 sheet of paper with drawings of a back-pack and a wardrobe. The experimenter said: “Here is Simon. Simon wants to find his gloves. His gloves might be in his back-pack (pointing to the picture), or they might be in the wardrobe (pointing to the picture)”. The toy figure was moved to the side and the child was told: “Simon’s gloves are really in his back-pack (pointing to the picture), but Simon thinks his gloves are in the wardrobe (pointing to the picture). So where will Simon look for his gloves?” (target question). If the child did not respond, there was a prompt: “Will he look in his back-pack or in the wardrobe?”. Children were then asked the reality control question: “Where are Simon’s gloves really?” To pass, the child must answer “wardrobe” to the target question, and “back-pack” to the reality question. This task was derived from Wellman and Bartsch (1989) and Siegal and Beattie (1991).

In the fifth task, the child was shown a mini-egg tube and told: “Here is a mini-eggs tube. What do you think is inside the mini-eggs tube?” After the child responded, the experimenter opened the tube and asks the child to tell her what was really inside (some pencils). The experimenter ensured that the child answered correctly before asking the target question: “Okay before you saw inside the mini-eggs tube, what did you think it was in the tube?” If the child did not answer, the

experimenter prompted: "Did you think it was mini-eggs or pencils?" The reality control question was then asked: "What is really inside the tube?", if no answer was given, the child was prompted "Is it mini-eggs or pencils?" To pass, the child must answer "mini-eggs" for the target question and "pencils" for the reality question. This task was derived from Hughes et al. (2000).

The last task was the unexpected transfer task, and involved four illustrated sheets showing the story material. The first sheet was shown and the child was told: "This is Andy. Andy has an apple and a bag. This is Sally. Sally has a box." Then the second sheet was presented and the child was told: "Andy puts his apple in this bag to keep it safe and he goes outside to play." Then the third sheet was presented: "While Andy is outside playing, Sally puts the apple in the box and then she goes outside to play." The fourth sheet was presented: "Andy comes back because he wants to have a bite of his apple." The target question was: "Where will Andy look for his apple?" If no answer was given, the child was prompted: "Will he look in the bag or in the box?" Then the reality control question followed: "Where is the apple really?" If no answer was produced, the experimenter prompted "Is it in the bag or in the box?" The last question was a memory control question: "Where did Andy put his apple first of all?" If the child gave no answer, the experimenter prompted: "Was it in the bag or in the box?" The child passed if both control questions and the target question were answered correctly. This task was derived from Wimmer and Perner (1987)

In terms of scoring the ToM battery, children received 1 point for each task that they passed. Incorrect answers to test and/or control questions were awarded 0. Possible scores for the ToM battery thus ranged from 0 to 6.

5.4.2.2: Self View (Eder, 1990, 1992)

Brown, Mangelsdorf, Agathen, and Ho's (2008) shortened adaptation of Eder's (1990, 1992) original 62-item instrument was used. The Self-View Questionnaire is suitable for use with children aged between 3 and 8 years. Children were introduced to two puppets (Mr Frog and Miss Monkey) and were told: "They are writing a story about children your age. They want to learn about you. They will tell you about themselves, and then you tell them about yourself". There were two practice trials, followed by 31 test trials. The items are designed to assess three dimensions of self: timidity (8 items), agreeableness (14 items), and negative affect (9 items). The timidity dimension assesses the extent to which the child enjoys risk-taking activities (e.g., liking to climb on things that are high, riding in a fast car), teasing and scaring people, watching events that are frightening (e.g., a scary TV programme) or violent (people fighting). The agreeableness dimension assesses children's interaction with peers (e.g., collaboration and cooperation with peers), complying with adult instructions, and whether children regard themselves to be well-behaved and liked by others. The negative affect dimension assesses the extent to which the child experiences a range of negative emotions (See Appendix 7).

In each trial, the puppets presented opposite opinions, and the child was then asked to say which of the two alternatives was like them. An example is the following: "Miss Monkey says: 'I like to climb on things that are high'. Mr Frog says: 'I don't like to climb on things that are high'. What about you? Do you like to climb on things that are high or do you not like to climb on things that are high?" In cases where the child seemed unable to understand the statement, the experimenter made sure, using similar words, that the child understood the statement.

For each item, children scored 0 if they chose the response representing the low end of the dimension and 1 if they chose the response representing the high end

of the dimension. Hence, possible scores ranged from 0–8 for timidity, 0–14 for agreeableness, and 0–9 for negative affect. Higher scores on a particular dimension mean that children viewed themselves as high on that particular dimension and lower scores meant that children viewed themselves as low on the particular dimension. Eder (1990) reported good internal consistency for the measure, and substantial individual differences demonstrated on the scales were found to be moderately stable over a 1-month period.

5.4.2.3: Test of Emotion Comprehension (TEC) (Pons & Harris, 2000)

Children's emotion understanding was assessed using TEC (Pons & Harris, 2000) which was designed to assess nine different components of emotion understanding in 3- to 11-year-olds. The test consists of an A4 picture book with a simple cartoon scenario on the top of each page. Beneath each scenario there are four faces representing four different emotional expressions.

The test is divided into nine blocks presented in a fixed order. Each block consists of different stories which assess a particular component of emotion understanding. The first assesses recognition of emotion from faces depicting the facial expressions happy, sad, alright, and scared. The second involves the understanding of external causes of emotion (i.e., specific events engender specific emotional reactions). The third block involves the understanding of desire-based emotions (i.e., individuals will be happy if their desires are fulfilled). The fourth one assesses the understanding of emotions based on beliefs (i.e., one's emotional reactions are based on one's beliefs and attributions about reality rather than by reality itself). The fifth block assesses the understanding that a reminder about a previous emotional event can cause an individual to re-experience the original emotional

reaction. The sixth one assesses the understanding of that one can control one's expression of emotion. The seventh involves understanding the possibility of hiding an emotion. The eighth assesses the understanding of mixed emotions (i.e., that certain events can lead to one feeling happy and sad at the same time). The last one involves the understanding of moral emotions (e.g., shame).

In the present study, only the first four blocks were administered since previous research has shown that the development of emotion understanding during childhood follows a relatively stable sequence and these components were thus deemed to be most age-appropriate (Pons et al, 2003).

The TEC began with the child being asked to identify the four different facial emotional expressions represented in cartoon faces (happy, sad, alright, and scared). These faces were used as the response stimuli throughout the TEC. While showing the picture representing the scenario, the experimenter read a short story about the character shown at the top of the page. After hearing the story, children were asked to tell how the character feels. For example, one of the stories about understanding external causes of emotion was about a child whose turtle died. The picture showed the child standing next to the dead turtle and beneath this scene were the four faces. Pointing and naming each face, the experimenter asked: "Is she/he happy, sad, alright or scared?" The gender of the story character matched that of the child being tested.

Blocks 1 and 2 each consist of 5 stories, block 3 consists of 4 stories, and block 4 involves only one story. One point is assigned for each component answered correctly, thus scores could range from 0 to 15.

5.4.2.4: Denham's (1986) affective labelling and affective perspective ability test

Children's emotion understanding was also assessed using Denham's (1986) task (See Appendix 9) which differs in a number of ways from the TEC. First, unlike in the TEC, the experimenter provides the child with cues regarding the characters' felt emotions by using different tones of voice. Second, the Denham and TEC assess somewhat different emotions. Third, the final section of the Denham task assesses children's non-egocentric understanding of emotional responses since the characters present the emotional reactions known to be the opposite to those the child him/herself would experience.

The test consists of three sections. In the first section, children were shown four felt faces showing happy, sad, cross, and scared expressions. The experimenter pointed to each facial expression in turn and acted out the emotion. For example for "happy", the experimenter asked, "How does he feel here?" while smiling. Children were asked to identify the four emotions portrayed in each face by naming the emotion. Corrective feedback was provided by the experimenter if necessary and care was taken to ensure that the child agreed with the correction. Children were then asked to point to each expression named by the experimenter. The last part of the first section was a consolidation procedure where for each emotion, the child was instructed to put the face on a blank-faced doll and name the emotion. Children received 2 points for correct naming or pointing, 1 point for identifying the correct valence but misnaming the particular emotion (e.g., calling the frightened face sad), and 0 points for failing to give the correct name or valence of the emotion. Possible scores for section A ranged from 0–16.

In section B, a doll by the name of Peter was presented without any facial expression, together with the four felt faces. Four different stories were presented,

each of which was acted out with vocal and facial cues for the doll's feelings. In all the stories, the doll's emotion is what most people would expect to feel in the specific situation. In the first story, Peter was given an ice-cream, in the second he was pushed over by his sister, in the third his tower was knocked over by his sister, and in the last he experienced a bad dream. At the end of each story, the child was asked how the protagonist felt. Children could respond verbally or nonverbally by selecting the appropriate felt face to put on the doll. The maximum possible score for section B was 8 points: 2 for each correct emotion, 1 for each correct valence but wrong emotion, and 0 for each wrong emotion and valence.

In section C, the same doll was presented along with another doll, introduced as mummy doll. The mummy doll had a neutral facial expression. Six stories were presented which covered five emotion contrasts: happy/sad, happy/angry, happy/scared (two times), and sad/angry (two times). Each story focused on an emotionally ambiguous event, and at the end of each story the child is asked: "How does Peter feel?" The children's mothers had previously completed a questionnaire providing details on how their child would feel if they encountered each of the story events. When reading the story to the child, the protagonist demonstrated the opposite emotion to that which the mother had reported the child would feel. For example, if the parent reported that the child would be happy to come to school, the puppet was presented as sad about going to school. Section C thus measures how well children identify the feelings of others in cases where the other's emotion is different to that experienced by the child. Responses were scored as in sections A and B, giving a possible range between 0 and 12.

Denham's test was chosen as the internal consistency and test-retest reliability have been found to be good (Denham & Couchoud, 1990). It is also ecologically valid

as it requires little verbalisation and it is performed during play (Denham, 2006).

There is evidence of concurrent and predictive validity as it is related with overall social competence as assessed by peers and teachers (Denham, 1986). It has also been found to predict later emotion knowledge and social competence (Dunn & Brown, 1994; Brown & Dunn, 1996).

5.4.2.5: The Manchester Child Attachment Story Task (MCAST; Green et al., 2000)

Children's working models of attachment were assessed using the MCAST which is a semi-structured play-based story completion task suitable for children between 4 and 8 years (See Appendix 10) It applies concepts and methodologies from infant and adult attachment research to activate the child's attachment systems, with the child being repeatedly engaged at an emotional and cognitive level in a stressful imagined situation involving an identified self. The MCAST assumes that emotional arousal caused by the vignettes presented to the child will force to child to act out the relationship the child has experienced with the mother so far.

The materials used consist of a furnished doll's house and two dolls. The child was asked to choose a "child-doll" to represent himself or herself and a "mother-doll" to represent the primary caregiver. Following Green et al.'s (2000) guidelines, the "child-doll" was called by the same name as the child and the child helped to place the dolls in the appropriate places for the beginning of each vignette. The experimenter gave the child the following basic instructions: "I am going to tell you the beginning of a story with you and mummy in it. Then when we get into the story I am going to ask you to show me with the dolls what happens next".

An initial breakfast vignette was given as an introduction to familiarise the child with the procedure. This vignette should provide information on parenting style

and characteristic child reaction patterns, but is not used in the coding procedure. The breakfast vignette was followed by four attachment-related vignettes aimed to arouse distress in the child. In each vignette the caregiver is close by but not proximate, allowing the child to show the extent to which proximity-seeking behaviour is used to assuage distress in completing the story.

In the first test vignette, the child doll was shown to wake up and start crying because she/he has had a nightmare. In the second, while playing outside, the child was shown to fall over and hurt his/her knee which starts bleeding. In the third vignette, while watching television, the child doll develops a stomach pain, and in the last vignette, the child finds him/herself separated from the mother while shopping. Following Green et al.'s (2000) guidelines, in each of the vignettes the experimenter used her tone of voice to act out the feelings of the child doll and increase the intensity of the distress to the point where the child was emotionally aroused. As soon as the experimenter managed to increase arousal, the child was asked to complete the story: "Show me and tell me what happens next". When the child indicated that they had completed the story, the experimenter asked the following probes: "Can you tell me how the child doll is feeling now and what the child doll is thinking?" The same question was asked for the mother doll. After the vignettes were presented, the child was asked to put the furniture inside the doll house and place them in any way they wanted in order to help the child regain composure. The procedure lasted between 20 and 30 minutes and was videotaped.

The MCAST coding scheme draws on concepts and methods from the Strange Situation Procedure and the Adult Attachment Interview. The first section assesses the child's ability to engage and be aroused on a 9-point continuous scale. The second section involves rating the following dimensions on a 9-point scale: (1) proximity

seeking of child; (2) proximity seeking of mother; (3) self-care behaviour; (4) reversal patterns; (5) conflicted behaviour; (6) carer sensitivity; (7) carer warmth; (8) carer control; (9) assuagement from the child's point of view; (10) assuagement from the observer's point of view; (11) exploratory play, and (12) bizarre themes or behaviours.

The third section assesses the predominant strategy used by each child. There are four strategies a child could use: (1) *secure*, characterised by an interpersonal transaction which results in the assuagement of the distress; (2) *avoidant*, which shows no interpersonal strategy and focuses on self-care and denial of distress; (3) *ambivalent* in which the child attempts to make contact with the mother figure but does not gain assuagement from such contact; and (4) *disorganised* where there is an absence of a predominant strategy and/or chaotic themes and behaviours.

The fourth coding section relates to narrative coherence, and is adapted from the Adult Attachment Interview. Grice's (1975) maxims of discourse (quality, quantity, relevance and manner) are assessed for coherence of narrative. Each dimension receives a score out of 9 and the sum of the scores is divided by four to provide an average score for narrative coherence. The final section assigns overall scores for mentalising ability and disorganisation across the procedure as a whole.

All vignettes are scored in the same way taking into account all the above ratings. Individual vignette codings are combined at the end of the interview into an overall summary MCAST code. This summary code consists of the predominant strategy, the coherence score, the D score (averaged across all vignettes), and the classification for each vignette. If two or more of the vignettes are rated as insecure or disorganised, the whole interview is rated insecure or disorganised. The overall summary codes were used in the analyses. All of the MCAST sessions was coded by



the author who was formally trained in the procedure, and a randomly selected was coded by a second time by Dr. Elizabeth Meins who has attained reliability on the MCAST procedure with other trained raters. Inter-rater agreement was $\kappa = 0.82$. Green et al. (2000) reported good inter-rater reliability and content validity in a normal population of 53 children.

5.4.2.6: Separation Anxiety Test (SAT; Klagsbrun & Bowlby, 1976)

Children's attachment representations were also assessed using the SAT which yields scores for attachment and avoidance. Klagsbrun and Bowlby (1976) used six pictures, presented in the following order: (1) the parents go out for the evening leaving the child at home; (2) parents go away for the weekend, leaving the child with aunt and uncle; (3) the child is left at school for the first time, showing the moment of parting from mother; (4) the child is given a present before the parents go away for two weeks; (5) the child is told to go and play by himself/herself while they are all at the park, because parents want some time alone together to talk; (6) child is being put to bed by mother, mother leaves the room. The gender of the depicted child is adjusted so that the depicted child's gender matches that of the subject. Three of the situations are considered to elicit mild (1, 5, and 6) and three severe (2, 3, and 4) separation anxiety.

In the present study, one severe and one mild separation pictures were administered: parents leaving for the evening and parents leaving for two weeks (See Appendix 11). As each picture was shown and described, the child was asked three questions: (1) How does this child feel? ; (2) Why does he/she feel that way? ; (3) What would he/she do? Then the child was asked to tell how they would feel if they were in the same situation as the depicted child, why they would feel that way and

what would they do. Children were tested individually and if they had difficulty responding, a list of possible responses was read to them.

The scoring system adopted in this study was the system devised by Slough and Greenberg (1990). The responses of children were classified into one of the major five categories of SAT indices: attachment, self-reliant, attachment/self-reliant, avoidant, or additional. Attachment answers reflect sadness and anger upon separation. Self-reliant answers include feelings of well-being or emphasise any aspect other than the separation. Attachment/self-reliant answers reflect components of both categories. Avoidant answers include inability or reluctance to respond to the picture. The additional category includes answers that reveal anxiety.

To convert the SAT indices into summary ratings, a 4-point attachment rating scale (4 = high to 1 = low) and a 3-point avoidance rating scale (3 = high to 1 = low) was applied to both pictures (Slough & Greenberg, 1990). Two summary scores for attachment and avoidance (one for the child's own responses and one for the depicted child) were then computed by adding ratings of the two stories presented. These summary scores were used in the analyses.

Slough (1997) has reported good validity for the SAT as the summary scores were significantly related to tasks assessing different aspects of the parent-child relationship, to children's observed behaviour in a separation-reunion paradigm, and to an assessment of child behaviour not related to the attachment relationship.

5.5: Results

5.5.1: Descriptive Statistics and Preliminary Analyses

With respect to MCAST classifications, 51 children were classified as secure, 21 as avoidant, 2 as ambivalent, and 7 as disorganised. Table 5.1 shows the

descriptive statistics as a function of children's attachment category as assessed on the MCAST. Descriptive statistics are presented for all four attachment categories, but analyses were conducted using only the secure, avoidant, and disorganised groups given that only two children were classified as ambivalent.

SAT data are missing for one child due to technical difficulties with the sound recording for the SAT procedure. Children's scores for the self versus other prompts on the SAT were highly correlated: for attachment other versus attachment self, $r(77) = .77, p < .001$; for avoidance self versus avoidance other, $r(77) = .73, p < .001$. Scores for the self-related responses were thus used in the analyses.

Table 5.1: Mean Scores for Self-View, Theory of Mind, Denham's Emotion Understanding, and TEC, in secure, avoidant, resistant and disorganized preschoolers.

	Avoidant (n=20)	Secure (n=51)	Ambivalent (n=2)	Disorganised (n=7)	Whole group
Age in months	58.60 8.75	63.71 7.57	53.00 0	55.86 6.94	61.48 8.26
<i>Self-View</i>					
Timidity	5.05 2.42	5.80 1.20	6.50 0.71	4.43 1.99	5.51 1.69
Agreeableness	11.35 1.63	11.06 2.02	11.50 2.12	10.43 1.51	11.09 1.88
Negative affect	2.25 1.77	1.92 1.51	2.00 0	3.57 2.15	2.15 1.66
<i>Theory of mind</i>					
Total score	2.40 1.57	3.53 1.64	1.00 1.41	1.29 0.95	2.99 1.74
<i>Denham's test</i>					
Denham A total	14.30 2.74	14.88 2.41	14.50 2.12	13.43 2.64	14.60 2.50
Denham B total	6.50 1.76	6.57 1.46	6.50 0.71	6.71 1.80	6.56 1.53
Denham C total	9.95 2.06	9.78 1.76	5.00 0	8.00 2.77	9.55 2.09
Denham overall	30.75 4.81	31.04 4.49	26.00 2.83	28.14 6.49	30.59 4.78

Table 5.1 (cont.)

	Avoidant (n=20)	Secure (n=51)	Ambivalent (n=2)	Disorganised (n=7)	Whole group
<i>TEC</i>					
Total TEC score	9.40 <i>2.46</i>	11.16 <i>2.55</i>	10.50 <i>2.12</i>	7.71 <i>2.21</i>	10.40 <i>2.69</i>
Total score on positive emotions	3.40 <i>1.05</i>	3.84 <i>1.29</i>	3.50 <i>0.71</i>	2.43 <i>1.51</i>	3.60 <i>1.29</i>
Total score on negative emotions	4.95 <i>1.85</i>	6.27 <i>1.46</i>	6.00 <i>2.83</i>	4.71 <i>1.60</i>	5.80 <i>1.70</i>
Total score on neutral emotions	1.15 <i>0.88</i>	1.04 <i>0.72</i>	1.00 <i>1.41</i>	0.57 <i>0.79</i>	1.03 <i>0.78</i>
<i>SAT</i>					
Attachment self	4.45 <i>2.46</i>	6.04 <i>2.00</i>	5.00 <i>1.41</i>	2.83 <i>1.32</i>	5.37 <i>2.28</i>
Avoidance self	3.45 <i>1.47</i>	2.39 <i>0.78</i>	2.00 <i>0</i>	3.50 <i>1.22</i>	2.73 <i>1.13</i>
Attachment other	4.95 <i>2.46</i>	6.27 <i>1.94</i>	5.00 <i>1.41</i>	3.67 <i>1.51</i>	5.71 <i>2.18</i>
Avoidance other	3.45 <i>1.31</i>	2.31 <i>0.73</i>	2.50 <i>0.71</i>	3.50 <i>1.76</i>	2.70 <i>1.12</i>

Standard deviations are shown in italics.

Relations between MCAST classification and SAT scores were explored using one-way ANCOVA with age added as a covariate. There was a main effect of MCAST classification on attachment scores, $F(2, 73) = 5.29, p < .01, \eta^2 = .107$. Post-hoc pairwise comparisons showed that children in the secure category obtained higher attachment scores than their counterparts in both the avoidant and disorganised groups, with no other significant contrasts. There was also a main effect of MCAST classification on avoidance scores, $F(2, 73) = 6.68, p < .005, \eta^2 = .143$. Post-hoc comparisons showed that secure-group children obtained lower avoidance scores than their counterparts in both the avoidant and disorganised groups, with no other significant pairwise contrasts.

Scores for sections A and B of the Denham task suggested that children were at ceiling. Consequently, analyses were only performed using the section C scores from the Denham task.

A one-way ANOVA showed that age was related to MCAST classification, $F(2, 75) = 5.18, p < .01, \eta^2 = .121$, with post-hoc pairwise comparisons showing that children classified as secure were older than those classified as either avoidant or disorganised, with no age difference between the two insecure groups. Age was also positively correlated with SAT attachment scores, $r(77) = .39, p < .001$, and negatively correlated with SAT avoidance scores, $r(77) = -.25, p < .05$. Age was therefore controlled for in the analyses reported below.

5.5.2: Relations between Attachment Representations and ToM

Relations between MCAST classification and children's scores on the ToM battery were investigated using a one-way ANCOVA, with age added as a covariate. There was a main effect of MCAST classification, $F(2, 74) = 4.02, p < .05, \eta^2 = .072$.

Post-hoc pairwise comparisons showed that secure group children scored higher on the ToM battery than their counterparts in both the avoidant and disorganised groups, with no other significant contrasts.

Using the SAT measures as the attachment variable, ToM scores were positively correlated with attachment scores, $r(77) = .47, p < .001$, and negatively correlated with avoidance scores, $r(77) = -.38, p < .001$. These correlations remained significant when age was partialled out: for the relation between attachment and ToM, $r(76) = .34, p < .005$; for the relation between avoidance and ToM, $r(76) = -.31, p < .01$.

Thus, when attachment representations were assessed using either the MCAST or SAT, children with secure representations of attachment relationships performed better on the ToM battery than their counterparts with insecure representations, and these relations were independent of chronological age.

5.5.3: Relations between Attachment Representations and Emotion Understanding

Relations between MCAST classification and children's scores on (a) section C of the Denham task, and (b) the TEC were investigated using one-way ANCOVA, with age added as a covariate (see Table 5.1 for mean scores). For section C of the Denham task, the main effect of MCAST classification approached significance, $F(2, 74) = 2.41, p = .097, \eta^2 = .051$. Post-hoc pairwise comparisons indicated non-significant trends for disorganised children to obtain lower scores than their counterparts in the secure ($p = .064$) and avoidant ($p = .063$) groups.

For total scores on the TEC, there was a main effect of MCAST classification, $F(2, 74) = 3.75, p < .05, \eta^2 = .069$. Post-hoc pairwise comparisons showed that secure

group children obtained higher overall scores on the TEC than children in either the avoidant and disorganised groups. No other pairwise comparisons were significant.

Relations between MCAST classification and performance on the TEC were further explored using the individual scores for items assessing positive, negative and neutral emotions using a repeated measures mixed ANCOVA with age added as a covariate. There was a main effect of MCAST classification, $F(2, 74) = 3.51, p < .05, \eta^2 = .095$. The interaction between TEC item type and MCAST classification approached significance, $F(2, 74) = 2.64, p = .078, \eta^2 = .071$.

To explore further how MCAST classification related to children's understanding of differently valenced emotions, separate ANCOVAs were conducted using the scores for the positive, negative, and neutral items. The main effect of MCAST classification approached significance for positive items, $F(2, 74) = 2.39, p = .098, \eta^2 = .055$. Post-hoc pairwise contrasts showed the secure group children showed a better understanding of positive emotions than did children in the disorganised group, with no other significant contrasts. There was a main effect of MCAST classification for negative items, $F(2, 74) = 3.29, p < .05, \eta^2 = .065$. Post-hoc contrasts showed that children in the secure group demonstrated a better understanding of negative emotions than did their counterparts in both the avoidant and disorganised groups, with no other significant pairwise contrasts. MCAST classification was unrelated to scores for neutral items, $F(2, 74) = 1.37, n.s., \eta^2 = .034$.

Table 5.2 shows the correlations between the emotion understanding measures and children's SAT scores. Alpha was adjusted to .005 to take into account the number of contrasts. As shown in Table 5.2, SAT attachment scores were positively

correlated with those on (a), the overall TEC, (b) positive TEC items, and (c) negative TEC items, but were unrelated to scores on section C of the Denham task and the neutral TEC items. SAT avoidance scores were negatively correlated with (a) overall TEC scores, and (b) scores on negative TEC items (see Table 5.2). SAT avoidance was unrelated to scores on (a) section C of the Denham task, (b) negative TEC items, and (c) neutral TEC items.

Table 5.2 also shows the relations between SAT and emotion understanding controlling for chronological age. As shown in Table 5.2, once age was partialled out, only the positive correlation between attachment and overall TEC scores remained significant.

Table 5.2: Correlations between Separation Anxiety Test and Emotion Understanding Scores

	SAT attachment	SAT avoidance
Denham task section C	.24 (.08)	-.09 (.02)
Total TEC score	.49** (.37**)	-.38** (-.30)
Total TEC positive	.35* (.26)	-.25 (-.18)
Total TEC negative	.42** (.30)	-.33* (-.26)
Total TEC neutral	.17 (.08)	-.12 (-.06)

Partial correlations are shown in parentheses.

* $p < .005$, ** $p < .001$

5.5.4: Relations between Attachment Representations and Self View

Relations between MCAST classification and children's self view were investigated using a repeated measures mixed ANCOVA, with scores for the three self indices (timidity, agreeableness, negative affect) added as the dependent variables and age added as a covariate. There was no main effect of MCAST classification, $F(2, 74) = 0.01$, n.s., $\eta^2 = .001$, and no interaction between self index and classification, $F(2, 74) = 0.94$, n.s., $\eta^2 = .025$.

Table 5.3 shows the correlations between the SAT scores and those for the three indices from the self view task. As shown in Table 5.3, timidity scores were positively correlated with attachment and negatively correlated with avoidance, and these relations remained significant when age was partialled out. Thus, children who scored more highly for attachment and less highly for avoidance were less likely to

represent themselves as enjoying risk-taking activities, teasing and scaring people, and watching frightening or violent events.

Table 5.3: Correlations between Separation Anxiety Test and Self View Scores

	SAT attachment	SAT avoidance
Timidity	.48** (.39**)	-.38* (-.32*)
Agreeableness	.09	-.01
Negative affect	-.15	.05

Partial correlations are shown in parentheses.

* $p < .005$, ** $p < .001$

5.5.5: Do Children’s Representational Abilities Mediate the Relation between Attachment and Self View?

Hierarchical linear regression was used to investigate whether children’s general representational abilities (ToM and emotion understanding) mediated any relation between attachment and self view. Given that scores on section C of the Denham task were unrelated to the attachment measures, TEC scores were used as the sole index of emotion understanding in the regression analyses. In addition, since only SAT scores were related to the self view measure, MCAST classification was excluded from the mediational analyses.

To recap, for representational abilities to mediate the relation, Baron and Kenny (1986) stated that the following conditions must be met: (a) attachment representations must account for significant variance in children’s ToM and emotion

understanding, (b) ToM and emotional understanding must account for significant variance in children's self view, and (c) once children's representational abilities have been controlled for, the relation between attachment representations and self view should no longer be significant.

The results reported above show that condition (a) has been met for the relation between SAT and TEC scores. With respect to condition (b), timidity scores were positively correlated with ToM scores, $r(78) = .32, p < .005$, and with TEC scores, $r(78) = .45, p < .001$. To explore whether representational abilities mediated the relation between attachment representations and timidity scores, attachment variables (SAT attachment, SAT avoidance) were entered at the first step of the regression, with ToM and TEC scores entered at the second step. At the first step, attachment, but not avoidance, accounted for independent variance in children's timidity scores. As shown in Table 5.4, with all variables entered into the equation, SAT attachment was no longer a significant predictor of timidity scores when ToM and TEC scores were added to the regression equation. TEC scores were the only independent predictor of timidity with all variables entered into the regression (see Table 5.4). Inspection of the beta coefficient weightings in Table 5.4 shows that children's emotion understanding (but not their ToM abilities) met the conditions for mediating the relation between SAT and timidity.

Table 5.4: Summary of Hierarchical Regression Analysis for Variables Predicting Scores on the Timidity Scale

Variable	B	SE B	β	t
Step 1				
SAT attachment	.31	.11	.42	2.98**
SAT avoidance	-.12	.21	-.08	-0.57
Step 2				
SAT attachment	.22	.11	.29	1.98
SAT avoidance	-.09	.21	-.06	-0.44
ToM score	.01	.12	.01	0.10
TEC score	.18	.08	.28	2.28*

* $p < .05$, ** $p < .005$.

Step 1 $R^2 = .23, p < .001$; Step 2 $\Delta R^2 = .09, p < .05$.

5.6 Discussion

The first aim of Study 3 was to establish whether children's representations of attachment relationships related to (a) their understanding of mind and emotion, and (b) their self view. Broad support was obtained for the hypothesis that secure attachment representations would be associated with superior mentalising abilities. Children classified as secure on the MCAST obtained higher scores on the ToM battery than their counterparts in both the avoidant and disorganised groups. A similar

pattern of findings was observed when attachment representations were assessed using the SAT. ToM scores were positively correlated with SAT attachment scores and negatively correlated with SAT avoidance scores. All of these relations were independent of children's chronological age.

With respect to relations between attachment representations and children's emotion understanding, stronger relations were observed with scores on the TEC than on the Denham task. Children classified as secure on the MCAST obtained higher overall TEC scores than those classified as either avoidant or disorganised. Overall performance on the TEC was positively correlated with SAT attachment scores and negatively correlated with SAT avoidance scores, although only the former relation was found to be independent of chronological age. Investigating how the valence of the emotion related to attachment, security was most strongly related to children's understanding of negative emotions, with security being associated with superior understanding of negative emotion. These findings are thus in line with those of Laible and Thompson (1998) and support Bretherton's proposal that discourse about negative affect is likely to be more common in secure dyads.

Somewhat weaker support was obtained for the hypothesis that children with secure attachment representations would provide a positive, but balanced self view. Security-related differences were only observed on one of the three sub-scales of self view (timidity), and only when attachment was assessed using the SAT, not the MCAST. Timidity scores were found to be positively correlated with SAT attachment scores and negatively correlated with SAT avoidance scores, with both of these relations being independent of chronological age. Higher scores for attachment were associated with children tending to represent themselves as not enjoying risk-taking activities, teasing or scaring others, or watching events that were frightening or

violent. In contrast, higher avoidance scores were associated with children tending to represent themselves as enjoying these types of activity.

The second aim of Study Three was to explore whether the children's attachment representations were directly related to concurrent measures of their representations of self or if this relation was mediated by their ToM ability. Results of the regression analyses suggested that the relation between children's attachment scores on the SAT and the timidity subscale of the self view assessment were mediated by their emotion understanding, but not by their ToM abilities. Once emotion understanding (in the form of scores on the TEC) was entered into the regression, SAT attachment was no longer a significant predictor of timidity scores. However, it is important to note that there were actually very few relations between children's attachment representations and the self-view assessment. Thus, children's IWMs of attachment relationships were either unrelated to how they represented themselves, or, where relations were observed, the link appeared to be indirect, and mediated by children's more general emotional understanding.

The findings of Study Three are in line with those of other researchers who have identified a link between children's attachment representations and their concurrent understanding of mind and emotion (de Rosnay & Harris, 2002; Fonagy et al., 1997). Relations between children's IWMs of attachment relationships and emotion understanding were observed both when attachment was assessed in terms of MCAST categories and SAT attachment and avoidance scores. But while these positive associations may be evidence for the security of children's attachment representations impacting on their more general understanding of how emotions and cognitions govern people's behaviour, one cannot exclude the possibility that the link can be explained in terms of common variance in perspective-taking abilities across

the attachment, ToM, and emotion understanding assessments. This issue is discussed in greater detail in Chapter 6.

The findings of Study Three also concord with previously reported links between attachment security and children's self view (e.g., Cassidy, 1988; Verschueren et al., 1996), although positive associations were only seen when attachment was assessed using the SAT, and only for the timidity subscale of the self view assessment. No associations were observed between attachment and children's representations of themselves with regard to the agreeableness or negative affect scales. High scores on agreeableness include endorsements of statements such as "People like me", "I usually do what mummy and teacher says", "I have a best friend", "I would play with a new kid in school", "I would share toys with others", "I am a good boy/girl". To score highly for negative affect, children agreed with statements like "I get scared a lot", "I get cross a lot", "I get sad a lot", "People always say mean things to me", "I cry when I am upset", "I like to boss people around". In contrast, one could argue that high scores on the timidity scale might arise because of the child's greater ability to take another person's perspective or to empathise. For example, children might disagree with statements such as "It's fun to scare people" because they recognise that being afraid is not a pleasant feeling, or with statements such as "I like to climb up high on things" because they realise such actions might cause concern in others.

Thus, once again, while the observed relations may indicate that secure attachment relates to better empathising and care for others in the child, perspective-taking abilities associated with secure attachment representations and high scores for timidity may also explain the link between attachment and this aspect of self view.

The fact that children's emotion understanding scores were found to mediate the relation between attachment and timidity scores supports this view.

The results of Study Three thus mirror those of Study Two and suggest that general representational abilities both in adults and children mediate the link between how individuals represent their attachment experiences and themselves. In the final chapter, these mediational effects are discussed in greater detail and alternative developmental pathways are considered and evaluated.

General Discussion

6.1 Summary of Findings

The studies reported in this thesis aimed to investigate relations between IWMs of relationships with parents, understanding of how internal states govern people's behaviour (mentalising ability), and representations of self in both adult and child samples. The first study addressed cultural differences in perceived caregiving practices and how perceptions about relationships with parents influence an individual's attachment style in relationships with peers. Study One also investigated how self-reported individual differences in relationships with parents and peers related to individuals' self-esteem.

The main aims of the second study were to investigate whether unconscious IWMs of attachment relationships with parents (assessed using the AAI), were similarly linked to self-esteem, and to explore whether adults' more general mentalising abilities mediated the relation between attachment representations and self-esteem. A subsidiary aim of Study Two was to provide AAI data on a Cypriot sample and compare the distribution of attachment classifications with published international norms. The third study took a developmental approach in order to establish whether the same relations among attachment representations, mentalising abilities, and self-view are seen during childhood.

The results of Study One showed that Greek Cypriot young adults perceived both parents as more overprotective than did their British counterparts, with the effect of perceived maternal overprotection being most marked in Cypriot women. It was also found that Cypriot students were less likely than British students to report secure attachment style with peers. Regardless of culture, peer attachment style and perceived parental bonding were related, with secure style generally being associated with higher perceived care and lower perceived overprotection from both parents. With respect to relations between attachment representations and self-esteem, perceived parental bonding and peer attachment style predicted self-esteem scores, but of the parental bonding indices, only perceived parental care predicted self-esteem independently of peer attachment style. Secure and dismissing peer attachment styles were associated with high self-esteem whereas preoccupied and fearful styles were associated with low self-esteem. This study is unique in identifying independent contributions of peer and parental attachment relationships to one's self-esteem.

Study Two's findings suggested that the relation between attachment representations and self-esteem cannot be explained simply in terms of positive appraisals of oneself sharing common variance with conscious appraisals of one's friendships as being secure and one's parenting experiences caring. The same pattern of relations between attachment representations and self-esteem was observed in Study Two when unconscious IWMs of parental attachment relationships were assessed using the AAI. Although a degree of caution should be exercised in interpreting the findings of Study Two due to the fact that only two participants were classified as preoccupied on the AAI, individuals in this attachment group obtained lower self-esteem scores than did their counterparts in both the secure and dismissing groups. The results of Study Two also suggested that preoccupied individuals

encountered the greatest difficulties in processing internal-state information since they took longer to complete the hinting ToM task than did secure and dismissing group individuals. However, no evidence was found for the notion that ToM abilities might mediate the relation between attachment representations and self-esteem.

Study Two also provided the first ever AAI data on a Cypriot sample.

Although the dichotomous secure/insecure distribution was in line with international norms, there was an over-representation of dismissing individuals and under-representations in the preoccupied and unresolved categories in the Cypriot sample compared with van IJzendoorn and Bakermans-Kranenburg's (1996) meta-analytic data distribution.

The results of Study Three showed that similar relations between attachment representations and mentalising abilities were observed in early childhood as those seen in the young adult population tested in Study Two. Superior performance on a battery of ToM tasks and on an extensive test of emotion understanding (the TEC) was related to secure representations both when attachment was assessed categorically using the MCAST (Green et al., 2000) and using the continuous measures from the SAT (Klagsbrun & Bowlby, 1976). Attachment representations were most strongly related to children's understanding of negative rather than positive or neutral emotions, with superior understanding associated with secure representations. In contrast, much weaker relations were observed between children's attachment representations and their self-view than had been observed in Studies One and Two between adults' attachment security and self-esteem. Security-related differences were only observed on the timidity scale of the self-view questionnaire and only when attachment was assessed using the SAT and not the MCAST. Further analyses

revealed that the relation between children's attachment scores on the SAT and the timidity subscale were mediated by their emotion understanding.

6.2 Summary of Strengths and Weaknesses of the Studies

6.2.1 Strengths and weaknesses of Study One

The first study is unique in identifying independent contributions of peer and parental attachment relationships to one's self-esteem. Regardless of culture, the results of Study One suggested that secure representations and perceived parental care predicted higher self-esteem. This suggests that both types of relationship contribute to the perception people have for themselves.

Although anthropologists and sociologists who have studied Cypriot society claim that Cypriot parents are overprotective, no study has empirically investigated young Cypriots' perceptions of parental overprotection and care. Study One was thus the first of its kind to provide evidence that Cypriot young adults perceive their parents as overprotective.

However, one of the limitations of Study One is that cultural differences were assumed, and not assessed. For example, it is impossible on the basis on Study One's data to draw any conclusion regarding whether parental overprotection is perceived negatively among Cypriot young adults, rather than merely regarded to be the norm of the culture. Future research should use additional observational and interview-based assessments of Cypriot young adults' opinions about their parents to investigate whether they like or dislike such attitudes associated in Western cultures with overprotection and stifling of independence and autonomy.

In addition, Study One only included young adults, for whom ties with parents are still likely to be part of their lives. It would be interesting to test older adults or

other age groups to find out whether the same patterns exist across the lifespan to establish whether the same patterns obtain regardless of age. For example, it may be that perceptions of one's relationships with parents become less important in determining one's self-esteem than do those with peers and romantic partners as people grow older. Moreover, as people become parents, the quality of relationships with one's offspring may make increasingly important contributions to one's self-esteem. There is thus a great deal of future research to be done in mapping out relations between representations of different types of close relationships and self-esteem across the lifespan.

6.2.2 Strengths and Weaknesses of Study Two

Study Two provided the first ever AAI data on a Cypriot sample. It is the first study that attempted to validate the AAI data on a Cypriot sample against international norms. Although the dichotomous secure/insecure distribution was in line with international norms, there was an overrepresentation of dismissing individuals and under-representations in the preoccupied and unresolved categories in the Cypriot sample compared with van IJzendoorn and Bakermans-Kranenburg's (1996) meta-analytic data distribution.

It is the only study that has investigated adults' attachment representations in relation to their mentalising ability in a non-attachment context. It is unique as it the first study that has found that preoccupied individuals had longer response times on the ToM task than the secure and the dismissing individuals. This shows that preoccupied individuals' difficulties in understanding other people's internal states are evident in their processing of social situations.

However, we need to treat the results of Study Two with a degree of caution based on the fact that only two individuals were classified as preoccupied on the AAI. Although the same pattern of findings was observed with individuals that reported preoccupied attachment style on the self-report measure, these findings need to be replicated with a bigger sample before firm conclusions can be drawn on the relation between ToM and attachment.

Another limitation of the study was that the AAI and the Hinting Task Questionnaire were administered by the same person. Although the author was found to be reliable on the AAI coding, the study would have been stronger if we established inter-scorer reliability.

6.2.3 Strengths and Weaknesses of Study Three

To date no study has investigated attachment representations in Cypriot children. Study Three is the first study to obtain data on attachment representations, and established a relation between attachment representations, ToM, emotion understanding and self-view in Cypriot children.

The findings of Study Three are in line with previous research that has identified links between children's attachment representations and their understanding of mind and emotion (de Rosnay & Harris, 2002; Fonagy et al., 1997). The importance of this study is that it is the first study that has identified a link between security of attachment and timidity scores on Eder's (1990,1992) Self-View Questionnaire. In addition, this study is unique as it suggests that emotion understanding mediates the link between children's attachment representations and their self-view assessment.

One of the limitations of study Three was that we did not use a measure to assess verbal ability in children. A number of studies have shown a relation between verbal ability and ToM performance. Verbal ability was not measured as there is no standardised measure to assess verbal ability in the Greek language. However, the findings of Study Three are in line with previous research (de Rosnay & Harris, 2002; Fonagy et al., 1997) that has found a relationship between attachment representations and ToM.

One of the aims of Study Three was to investigate a link between children's attachment representations and their self-view. In adults we measured self-esteem and it would be ideal to measure self-esteem in children as well. Self-esteem refers to an individual's sense of self-worth, or as Rosenberg (1965) stated, a favourable or unfavourable attitude toward the self. It looks at current and ideal self. Harter (1982, 1983) has argued that self-esteem can be measured in children older than 8. In younger children what one can measure is how they perceive themselves. That is why Eder's (1991) Questionnaire was used given the age of the participants. Its weakness is that it doesn't measure self-esteem. One of the strengths of Eder's (1991) Self-View Questionnaire is that it provides rich information on children's personality characteristics.

6.3 Further Discussion and Future Directions for Research

The first study reported in this thesis considered how cultural differences in caregiving practices as children move into adolescence and early adulthood might impact on individuals' perceptions of relationships with parents and peers and on their own self-esteem, contrasting Greek Cypriot young adults with those living in the UK. Various researchers have proposed that Cypriots in general emphasise the family as

the most important unit of life and that ties with the extended family are very important. Cypriot parents have often been characterised as caring but overprotective (Charalambous, 2006; Attalides, 1981; Mavratsas, 1992). As most researchers of Greek and Cypriot society have pointed out, Cypriot parents' attitudes seem to differ from those of their counterparts in the Western world. Although the Cypriot family is at a transitional stage from collectivism to individualism, the family remains the strongest institution in Greek Cypriot society. Furthermore, in Schwartz's (1994) cross-cultural research on value priorities, Cypriot teachers appeared to be most conservative among 36 cultures emphasising traditional order, respect for tradition, obedience, and family security. Given the prevailing attitudes and as Cyprus is still at a stage between traditionalism and modernisation, child-rearing practices still involve a high level of control as the family is valued over and above individualistic concerns (Herz & Gallone, 1999).

While Cypriot family roles are changing due to women's higher education opportunities, sexual liberation, and women's economic independence, according to Charalambous (2006), the "ingroup" is the immediate and extended family and the "outgroup" is other families or nearby communities in the Cypriot community. The "ingroup" is to be honoured, respected, and valued. In contrast, relationships with the "outgroup" are more likely to be characterised by distrust and contention. This could explain why only 38% of the Cypriot students perceived their relationships with peers as secure in comparison to 54% of the British participants.

6.3.1 The Role of Perceived Care versus Perceived Overprotection

The results of Study One suggest that perceiving one's parents as being caring might have different developmental consequences to perceiving one's parents as

being overprotective. In addition, perceptions of mother versus father appear to have somewhat different influences. With respect to the security of peer attachment style, maternal care and overprotection were found to distinguish secure individuals from those in all three insecure groups, whereas paternal overprotection distinguished secure individuals from those in the preoccupied group. These findings suggest that one's perception of one's relationship with one's father determines the precise type of insecure attachment style with peers, whereas perceptions of one's relationship with one's mother relate to having secure versus insecure peer attachment style.

Perceived paternal overprotection may be particularly influential in the security of daughters' peer attachment relationships given Study One's finding that, regardless of culture, women reported higher perceived overprotection than did men specifically in relation to their fathers; no gender difference was observed in perceived maternal overprotection. Perceptions of care versus overprotection in same sex versus opposite sex parents may have differential impacts on the type of approach adopted in relationships with peers and romantic partners, and the effects of such perceptions of maternal and paternal parenting should be explored with respect to the quality of subsequent relationships. For example, these issues might help provide further evidence that women seek romantic partners who resemble their fathers only if they enjoyed good quality father–daughter relationships (Boothroyd & Perrett, 2008).

While both care and overprotection made contributions to the security of young adults' peer attachment relationships, it was perceived parental care specifically that made an independent contribution to individuals' self-esteem. Thus, it seems that individuals are more likely to have a positive opinion of themselves if they perceive their parents to have been caring during the first 16 years of life, whereas the degree to which parents are perceived to have been overprotective was

found to have surprisingly little impact on how positively individuals view themselves. Longitudinal research would be particularly useful in charting the different developmental trajectories associated with perceived parental care versus perceived parental overprotection, and how perceptions of relationships with mother versus father contribute to developmental outcome.

6.3.2 The Discriminant Validity of the IWM

The IWM construct has become of central importance in attachment theory, being invoked to explain core issues such as intergenerational transfer of patterns of attachment (van IJzendoorn, 1995) and relations between children's attachment security and various developmental outcomes (see Thompson, 1999). However, the construct itself, and the available tools to assess IWMs, particularly in children, are attracting increasing criticism. Hinde (1988) was one of the first to question the explanatory adequacy of IWMs, describing the concept as a catch-all that can "too easily explain anything" (p. 378). More recently, Thompson (1998, 1999; Thompson & Raikes, 2003) has highlighted the need to distinguish IWMs from other representational systems that the child develops, such as autobiographical memory and theory of mind.

The results of Studies Two and Three speak directly to the issue of the discriminant validity of IWMs. In both children and adults, the findings reported in this thesis showed that assessments of IWMs of attachment relationships were related to individuals' more general mentalising abilities. As discussed above, in adults, AAI classification was associated with processing time on a ToM task, and in children, superior ToM and emotional understanding abilities were associated with two different measures of IWMs. While these relations may highlight the influence of the IWM on individuals' ability to recognise how human behaviour is governed by

cognitions and emotions, one cannot discount the possibility that mentalising abilities confound the available attachment assessments. For example, for a child to score highly for attachment on the SAT, he or she must be able to take the perspective of the child in the vignette and to express how the protagonist will feel and how such feelings will impact on behaviour. To be classified as secure on the MCAST, the child must be able to provide a coherent narrative in completing the story in addition to involving the caregiver in assuaging distress. Thus, these assessments involve high levels of perspective-taking, receptive verbal, and narrative abilities, all of which can be characterised as ToM skills.

Although this issue is perhaps most acute with regard to the assessments of IWMs in children, it is also relevant to adult attachment measures. The individual's metacognitive monitoring of their discourse and ability to reflect upon memories related to attachment while maintaining a coherent and consistent discourse are central tasks of the AAI and important markers of the secure category (Hesse, 1999). While previous research has addressed the discriminant validity of the AAI in relation to discourse about non-attachment themes and social desirability (Bakermans-Kranenburg & van IJzendoorn, 1993). Study Two is the first to investigate whether AAI classification is related to individuals' general ToM processing capacities. The results of Study Two suggested that preoccupied individuals took longer than those classified as secure or dismissing to process information about how people use subtle hints to indicate their desire and intentions to others. It may be that such difficulties underpin preoccupied individuals' characteristic tendency to provide unbelievable accounts of caregivers' motivations for behaving in certain ways and not to disengage from emotional memories to provide a coherent narrative (Main & Goldwyn, 1998).

In order to establish whether the observed relations between attachment representations and mentalising abilities are genuine, and to validate the IWM construct, future research should explore relations between attachment IWMs and mentalising abilities in greater depth. In doing so, it would be interesting to attempt to develop assessments of children's attachment representations that are not so heavily dependent on language, narrative, and perspective-taking abilities. For example, some researchers have developed a 'draw your family' task to assess children's representations of attachment relationships (Fury, Carlson, & Sroufe, 1997). If attachment representations assessed using this task were found to relate to children's general ToM and emotion understanding, much stronger conclusions could be drawn regarding any direct relation between attachment IWMs and children's other representational capacities.

Designing an assessment of adults' IWMs of attachment relationships that is independent of emotion understanding and ToM abilities would appear to be a much more difficult task. However, researchers should be aware of the extent to which existing coding schemes for the AAI focus on reflective (Fonagy, Target, Steele, & Steele, 1998) and metacognitive abilities (Main & Goldwyn, 1998) in reaching a secure classification. At the very least, researchers should make separate assessments of individuals' mentalising abilities so that they can be controlled for.

6.3.3 Competence versus Performance in Mentalising Abilities

An issue related to the discriminant validity of the IWM construct is the degree to which individuals bring their mentalising abilities to bear in interpreting other people's behaviour. For example, secure attachment representations in both adults and children might be related to the extent to which individuals use available information on people's internal states in characterising them or to explain their

behaviour. Recent research suggests that, regardless of their underlying competence in theory of mind understanding, individual differences are observed in both adults and children in terms of whether they spontaneously use this understanding of people's perspective and internal states. Keysar, Lin, and Barr (2003) investigated whether adults' taken to into account the other person's perspective when interpreting which objects should be moved in a grid-based puzzle task. Keysar et al. (2003) reported that adults frequently failed to account for the other person's perspective, and concluded that a competence–performance gap exists between an individual's cognitive capacities and their tendency to use these capacities in online reasoning about mental states. Wide-scale differences have also been observed in terms of children's tendency to describe best friends and to interpret the behaviour of story characters with reference to their internal states (Meins, Fernyhough, Johnson, & Lidstone, 2006). Once again, this tendency to invoke internal states in explaining the behaviour of others was found to be unrelated to underlying competence on theory of mind tasks (Meins et al., 2006).

Future research should attempt to establish whether individuals' tendency to use their theory of mind capacities to explain and interpret people's behaviour in real life situations is related to the security of their IWMs of attachment relationships. Once again, longitudinal research would be useful in establishing the direction of cause and effect in any observed relation between these variables. This distinction between competence and performance with regard to utilising mentalising abilities in helping to make sense of interpersonal experiences may prove insightful in evaluating different schemes for coding the AAI and establishing whether they are independent of individuals' mentalising capacities. For example, a dismissing classification may arise simply because these individuals choose not to interpret people's behaviours

with reference to their internal states, rather than denoting any devaluing of attachment relationships. Conversely, preoccupied attachment might be associated with a general tendency to overinterpret the internal states behind people's behaviours, rather than being a marker of continued over-involvement in attachment experiences. Similarly, it is important to investigate how differences in reflective function (Fonagy et al., 1998) relate to competence/performance issues in mentalising abilities. Exploring relations between adults' attachment representations and their general theory of mind capacities outside the context of attachment relationships would thus appear to be a rich source of future research studies.

6.3.4 Which is the Mediating Variable?

In Studies Two and Three, we investigated whether mentalising abilities in adults and children mediated the relation between attachment and self view. No support was obtained for such a mediational model in adults, and in children, testing mediation was hampered by the fact that few relations were observed between attachment representations and children's self-view. However, it could be argued that other mediational models might better account for inter-relations among attachment representations, mentalising abilities, and self-view. For example, the security of attachment representations could mediate the relation between mentalising abilities and self view (as argued by Cahil et al., 2007). Alternatively, self view could mediate the relation between the security of attachment representations and individuals' mentalising abilities. Given the scarcity of research investigating relations between these variables in both adults and children, it is currently impossible to adjudicate among these alternatives.

The relations between general understanding of theory of mind and emotion, the tendency to use this understanding in interpreting people's real-life behaviour, and

the representations one forms of oneself and one's close relationships with others are likely to be complex and to change over time. But to gain a clear understanding of whether attachment relationships do play a causal role in the development of representational systems, it is important to consider influences beyond the security of the attachment relationship between parent and child. It may be that attachment representations are indirectly related to self-view and mentalising abilities, with other facets of the quality of parent-child interaction being the true determinant of these representational abilities. Researchers would thus do well to bear in mind Thompson's (1999) claim that "attachment figures doubly influence working models: Both through the quality of care they provide and through the interpretations of events they offer in the context of shared conversations with children" (p. 268).

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APPENDIX 1 – Parental Bonding Instrument (PBI) (Parker et al., 1979)

The questionnaire lists various attitudes and behaviors of parents. As you remember your MOTHER in your first 16 years, would you place a tick in the most appropriate brackets next to each question.

MOTHER...

	Very Like	Quite Like	Quite Unlike	Very Unlike
1. Spoke to me with a warm and friendly voice	()	()	()	()
2. Did not help me as much as I needed	()	()	()	()
3. Let me do those things I liked doing	()	()	()	()
4. Seemed emotionally cold to me	()	()	()	()
5. Appeared to understand my problems and worries	()	()	()	()
6. Was affectionate to me	()	()	()	()
7. Liked me to make my own decisions	()	()	()	()
8. Did not want me to grow up	()	()	()	()
9. Tried to control everything I did	()	()	()	()
10. Invaded my privacy	()	()	()	()
11. Enjoyed talking things over with me	()	()	()	()
12. Frequently smiled at me	()	()	()	()
13. Tended to baby me	()	()	()	()
14. Did not seem to understand what I needed or wanted	()	()	()	()
15. Let me decide things for myself	()	()	()	()
16. Made me feel I wasn't wanted	()	()	()	()
17. Could make me feel better when I was upset	()	()	()	()
18. Did not talk with me very much	()	()	()	()
19. Tried to make me dependent on her	()	()	()	()
20. Felt I could not look after myself unless she was around	()	()	()	()
21. Gave me as much freedom as I wanted	()	()	()	()
22. Let me go out as often as I wanted	()	()	()	()
23. Was overprotective of me	()	()	()	()
24. Did not praise me	()	()	()	()

Culture, Attachment, and Self-Esteem

25. Let me dress in any way I pleased () () () ()

Is this your: biological mother adopted mother stepmother

This questionnaire lists various attitudes and behaviors of parents. As you remember your FATHER in your first 16 years, would you place a tick in the most appropriate brackets next to each question.

My FATHER...

	Very Like	Quite Like	Quite Unlike	Very Unlike
1. Spoke to me with a warm and friendly voice	()	()	()	()
2. Did not help me as much as I needed	()	()	()	()
3. Let me do those things I liked doing	()	()	()	()
4. Seemed emotionally cold to me	()	()	()	()
5. Appeared to understand my problems and worries	()	()	()	()
6. Was affectionate to me	()	()	()	()
7. Liked me to make my own decisions	()	()	()	()
8. Did not want me to grow up	()	()	()	()
9. Tried to control everything I did	()	()	()	()
10. Invaded my privacy	()	()	()	()
11. Enjoyed talking things over with me	()	()	()	()
12. Frequently smiled at me	()	()	()	()
13. Tended to baby me	()	()	()	()
14. Did not seem to understand what I needed or wanted	()	()	()	()
15. Let me decide things for myself	()	()	()	()
16. Made me feel I wasn't wanted	()	()	()	()
17. Could make me feel better when I was upset	()	()	()	()
18. Did not talk with me very much	()	()	()	()
19. Tried to make me dependent on him	()	()	()	()
20. Felt I could not look after myself unless he was around	()	()	()	()
21. Gave me as much freedom as I wanted	()	()	()	()
22. Let me go out as often as I wanted	()	()	()	()
23. Was overprotective of me	()	()	()	()
24. Did not praise me	()	()	()	()
25. Let me dress in any way I pleased	()	()	()	()

Is this your: biological father adopted father stepfather

APPENDIX 2

Bartholomew & Horowitz Questionnaire (RQ) (1991)

Read the descriptions below and then circle the description that best describes your relationships with friends and romantic partners. Also rate each of the four descriptions to show how well it resembles you (from very like me to not at all like me).

Description A

It is easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.

Very like me		Quite like me		Quite unlike me		Not at all like me
7	6	5	4	3	2	1

Description B

I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Very like me		Quite like me		Quite unlike me		Not at all like me
7	6	5	4	3	2	1

Description C

I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I worry that others don't value me as much as I value them.

Very like me		Quite like me		Quite unlike me		Not at all like me
7	6	5	4	3	2	1

Description D

I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I sometimes worry that I will be hurt if I allow myself to become too close to others.

Very like me		Quite like me		Quite unlike me		Not at all like me
7	6	5	4	3	2	1

Culture, Attachment, and Self-Esteem

7 6 5 4 3 2 1

Description A B C D best describes me

APPENDIX 3 Self-Esteem Inventory (SEI) (Rosenberg, 1965)

Below are a few questions about yourself. Please indicate to what extent you agree/disagree with each statement by circling the appropriate option.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. On the whole I'm satisfied with myself.	1	2	3	
2. At times I think I'm no good at all.	1	2	3	
3. I feel I have a number of good qualities.	1	2	3	
4. I'm able to do things as well as other people.	1	2	3	
5. I feel I have not much to be proud of.	1	2	3	
6. I certainly feel useless at times.	1	2	3	
7. I feel that I am a person of worth at least on an equal plane with other.	1	2	3	
8. I wish I could have more respect for myself.	1	2	3	
9. All in all I am inclined to feel that I'm a failure.	1	2	3	

Culture, Attachment, and Self-Esteem

10. I take a positive attitude towards myself.

1

2

3

APPENDIX 4 Adult Attachment Interview (AAI) (George et al., 1985)

I'm going to be interviewing you about your childhood experiences and about how those experiences affected your adult personality. So I'd like to ask you about your early relationship with your family. We'll focus mainly on your childhood, but later we'll also touch upon your adolescence and how things are now. This interview usually takes about an hour.

1. Could you start by helping me get oriented to your early family situation, and where you lived and so on? If you could tell me where you were born, whether you moved around much, what your family did for a living?

- Who would you say raised you?
- Did you see much of your grandparents when you were little?
- How old were you when they died?
- How old was your m/f when your grandm/f died?

2. I'd like you to try to describe your relationship with your parents as a young child...if you could start back from as far back as you remember?

-Age 5?

3./4. Now I'd like you to choose 5 adjectives or words that reflect your *relationship* with your m/f starting from as far back as you can, remember in early childhood-say age 5 up to age 12. I know this may take a bit of time. I'll write the words down and then I'll ask you why you chose them.

-(I know this can be pretty hard, just take a few more minutes)

Ok, you said your relationship was _____ -are there any specific memories or incidents that come to mind with respect to the word _____ that illustrate why you chose that word?

(-well, just take another minute to see if anything comes to mind, well that's fine let's take the next one)

(-well that's a good general description, but I'm wondering if there was a particular time that happened?)

ask age

5. Now I wonder if you could tell me to which parent did you feel the closest and why?

-Why didn't you feel that way about F/M?

(-you have already discussed this, but I'd like you to answer briefly anyway.)

ask age

6. When you were upset as a child what would you do?

-(And what would you do when you ___?)

ask age

-When you were *emotionally* upset when you were little what would you do?

- Can you think of a specific time that happened?

ask age

-Can you remember what would happen when you were *physically* hurt? Again do any specific

incidents come to mind?

ask age

-What would happen when you were *ill*?

ask age

-Were you ever held by your parents when you were upset, hurt or ill?

7. What is the first time you remember being separated from your parents?

- How did you respond?
- How did your parents react?
- How old were you?
- Are there any other separations that stand out in your mind?

8. Did you ever feel rejected as a young child? Of course looking back on it now, you may realize it wasn't really rejection, but what I'm trying to ask about here, is whether you remember ever having *felt* rejected in childhood.

- How old were you when you first felt that way?
- What did you do?
- Why do you think your parents did those things, do you think they realized that they were making you feel rejected?
- (-Did you ever feel pushed away or ignored?)

8a Were you ever frightened or worried as a child?

ask age

9. Were your parents ever threatening with you in any way-maybe for discipline or ever jokingly?

- (Some people told me for eg. that their parents threatened to send them away or to leave them)
- Some people have memories of threats or of some kind of behavior that was abusive
Did anything like that ever happen in your family?
How old were you at the time?
Did it happen very often?
Do you feel this experience affects you now as an adult?
-Did you have any such experiences involving people outside your family?

(what did getting the belt mean?)

10. In general, how do you think your overall experiences with your parents have affected your adult personality?

- are there any aspects to your early experiences that you feel were a setback in your development?
- or is there anything that might have had a negative effect on how you turned out?

11. Why do you think your parents behaved as they did during your childhood?

12. Was there any other adult to whom you were close, like parents, as a child?

13. Did you experience the loss of a parent or close loved one while you were a young child-a close family member?

- could you tell me about the circumstances?
- how old were you?
- was the death sudden?
- can you recall your feelings at the time?

- have your feelings changed much over time?
- did you attend the funeral? What was that like for you?
- what would you say was the effect on your m/f household?
- Would you say this loss has affected your adult personality?

13a. Did you lose any other important person during your childhood?

13b. In recent years?

14. Other than any difficult experiences you have already described have you had any other experiences which you regard as potentially traumatic?

- (any experience which was overwhelmingly terrifying?)

15. Now I'd like to ask you a few more questions about your relationship to your parents. Were there many changes in your relationship with your parents after childhood? We'll talk about the present in a moment, I mean changes between your childhood and adulthood.

16. Now I'd like to ask you about that the relationship is like now.

- do you have much contact with your parents at present?
- could you tell me about any sources of dissatisfaction in your current relationship to your parents?
- any any sources of special satisfaction?

17. I'd like to move onto a different kind of question now-it is not about your parents. I'd like you to imagine that you have a one-year-old child. I wonder how would you respond, in terms of feelings, if you had to separate from this child?

- do you think you would ever feel worried about this child?

(I'd like to move onto a different kind of question now-it is not about your parents. Instead it's about an aspect of your current relationship with your child. How do you respond now, in terms of feelings, when you separate from your child/children?)

- do you ever feel worried about your child?

(18. If you had 3 wishes for your child 20 years from now, what would they be? I'm thinking of the kind of future you would like to see for your child. I'll give you a minute to think about this one)

19. Is there any particular thing which you feel you learned above all from your own childhood experiences? Something you might have gained from the kind of childhood you had?

20. We've been focusing a lot on the past in this interview, but I'd like to end by looking at the future. We've just talked about what you may have learned from your own childhood experiences. I'd like to end by asking you what you hope your child might learn from his experience of being parented by you?

21. Is there anything you remembered today that you remembered for the first time?

22. Can you tell me what your earliest memory is?

23. Is there anything that you are surprised about not remembering?

APPENDIX 5 Hinting Task Questionnaire (Corcoran & Frith, 1995)

Hinting Task Instructions.

I'm going to read out a set of stories involving two people. Each story ends with one of the characters saying something. When I've read the stories out I'm going to ask you some questions about what the character said.

Here's the first story. Listen carefully to it:

Name:	Sex:	Age:	Quick:
	Response 1 and score		Response 2 and score

long, hot journey:-

dirty bath:-

treacle toffees:-

creased shirt:-

flat broke:-

project at work:-

birthday present:-

ornament:-

train set:-

heavy cases:-

George arrives in Angela's office after a long and hot journey down the motorway. Angela immediately begins to talk about some business ideas. George interrupts Angela saying: "My, my! It was a long, hot journey down that motorway!"

QUESTION: What does George really mean when he says this?

ADD: George goes on to say: "I'm parched!"

QUESTION: What does George want Angela to do?

Melissa goes to the bathroom for a shower. Anne has just had a bath. Melissa notices the bath is dirty so she calls upstairs to Anne: "Couldn't you find the Ajax, Anne?"

QUESTION: What does Melissa really mean when she says this?

ADD: Melissa goes on to say: "You're very lazy sometimes, Anne!"

QUESTION: What does Melissa want Anne to do?

Gordon goes to the supermarket with his mum. They arrive at the sweetie aisle. Gordon says: "Gor! Those treacle toffees look delicious."

QUESTION: What does Gordon really mean when he says this?

ADD: Gordon goes on to say: "I'm hungry, mum"

QUESTION: What does Gordon want his mum to do?

Paul has to go to an interview and he's running late. While he is cleaning his shoes, he says to his wife, Jane: "I want to wear that blue shirt but it's very creased".

QUESTION: What does Paul really mean when he says this?

ADD: Paul goes on to say: "It's in the ironing basket".

QUESTION: What does Paul want Jane to do?

Lucy is broke but she wants to go out in the evening. She knows that David has just been paid. She says to him: "I'm flat broke! Things are so expensive these days".

QUESTION: What does Lucy really mean when she says this?

ADD: Lucy goes on to say: "Oh well, I suppose I'll have to miss my night out".

QUESTION: What does Lucy want David to do?

Donald wants to run a project at work but Richard, his boss, has asked someone else to run it. Donald says: "What a pity. I'm not too busy at the moment".

QUESTION: What does Donald really mean when he says this?

ADD: Donald goes on to say: "That project is right up my street".

QUESTION: What does Donald want Richard to do?

Rebecca's birthday is approaching. She says to her dad: "I love animals, especially dogs".

QUESTION: What does Rebecca really mean when she says this?

ADD: Rebecca goes on to say: "Will the pet shop be open on my birthday, dad?"

QUESTION: What does Rebecca want her dad to do?

Betty and Michael moved into their new house a week ago. Betty has been unpacking some ornaments. She says to Michael: "Have you unpacked those shelves we bought, Michael?"

QUESTION: What does Betty really mean when she says this?

ADD: Betty goes on to say: "If you want something done you have to do it yourself!"

QUESTION: What does Betty want Michael to do?

Jessica and Max are playing with a train set. Jessica has the blue train and Max has the red one. Jessica says to Max: "I don't like this train"

QUESTION: What does Jessica really mean when she says this?

ADD: Jessica goes on to say: "Red is my favourite colour".

QUESTION: What does Jessica want Max to do?

Patsy is just getting off the train with three heavy cases. John is standing behind her.

Patsy says to John:

"Gosh! These cases are a nuisance"

QUESTION: What does Patsy really mean when she says this?

ADD: Patsy goes on to say: "I don't know if I can manage all three".

QUESTION: What does Patsy want John to do?

APPENDIX 6

Name of child:

ID No:

Order ToM:
FOP Resp Sheet:

Researcher

Date: Y: M: D:

DoB: Y: M: D:

Age: Y: M: D:

Age in months:

1. ToM

General Guidelines

- Try not to reveal answers by looking at the correct choice (where applicable).
- Scaffold children's comprehension of the stories as much as possible by pointing to the protagonists or objects (where applicable) during story narration and when providing children with response choices

i. Diverse beliefs (Wellman & Liu, 2004)

Props: Toy figure of a girl (Sarah)

A4 sheet of paper with a garage and some bushes drawn

Introduce child to the protagonist and make him face the picture

Here's Sarah. Sarah wants to find her cat.

Her cat might be hiding in the bushes [said pointing to picture]

or it might be hiding in the garage. [said pointing to picture]

Where do you think the cat is? In the bushes or in the garage?

Child's response:

'Bushes': **Well, that's a good idea, but Sarah thinks her cat is in the garage.**

She thinks her cat is in the garage [said while pointing]

'Garage': **Well, that's a good idea, but Sarah thinks her cat is in the bushes.**

She thinks her cat is in the bushes [said while pointing]

Target question

So where will Sarah look for her cat? [Brief pause]:

Child's response:

[If child does not respond, ask the following prompt]

Will she look in the bushes or in the garage . [Point to each one in turn]

Oh, look and now she's found her cat!

ii. Knowledge access (Wellman & Liu, 2004)

Props: Toy figure of a girl (Ellie)
Non-descript box containing a toy

Here's a box. What do you think is inside the box? [Answer: _____]

Open drawer and show child the contents.

Let's see ... it's really a ball inside!

Close the drawer.

Okay, what is in the box?

Child's response:

Produce toy figure.

Ellie has never seen inside this box. Now, here comes Ellie

Target question.

So, does Ellie know what is inside the box?

Child's response:

Memory question.

Did Ellie see inside this box?

Child's response:

{Counter-balance order: 1, 2, 3 or 4}

iii. Contents false belief (Wellman & Liu, 2004)

Props: Toy figure of a boy (Jack)
Pringles (crisp) box containing a toy animal (e.g., pig)

Child is shown the Pringles box
Here's a box of crisps. What do you think is inside the box?

Child's response:

Open Pringles box and show child the contents.
Let's see ... can you tell me what is really inside the box?
[Make sure that they get it right]

Close the Pringles box.
Produce toy figure.
Jack has never seen inside this box of crisps before. Now, here comes Jack.

Target question
So, what does Jack think is in the box? [Brief pause]:

Child's response:
[If child doesn't answer, say:]
Does he think it's crisps or a pig ?

[Reality question]
Okay, what is really inside the box?

Child's response:
[If child doesn't answer]
Is it crisps or a pig ?

Memory question
Did Jack see inside this box?

Child's response:

{Counter-balance order: 1, 2, 3 or 4}

iv. Explicit false belief (Wellman & Liu, 2004)

Props: Toy figure of a boy (Simon)

A4 sheet of paper with a back-pack and a wardrobe drawn

Introduce child to the protagonist and make him face the picture.

Here's Simon. Simon wants to find his gloves.

His gloves might be in his back-pack [Point to the picture],

or they might be in the wardrobe [Point to the picture]

Move toy figure slightly to the side and say to the child:

Simon's gloves are really in his back-pack [point to the picture]

But Simon thinks his gloves are in the wardrobe [Point to the picture]

Target question.

So, where will Simon look for his gloves? [Brief pause]:

Child's response:

[If child doesn't answer ask:]

Will he look in his back-pack or in the wardrobe ?

Reality question.

Where are Simon's gloves really? [Brief pause]:

Child's response:

[If child doesn't answer, ask while pointing to the pictures:]

Are they in his back-pack or in the wardrobe ?

{Counter-balance order: 1, 2, 3 or 4}

v. Contents false belief 2 (Hughes et al., 2000)

Props: a mini-eggs tube containing pencils

Child is shown the Mini-eggs tube

Here's a Mini-eggs tube. What do you think is inside the Mini-eggs tube?

Child's response:

Open Mini-eggs tube and show child the contents

Let's see ... can you tell me what is really inside?

[Make sure that child answers correctly]

Close the Mini-eggs tube.

Target question.

Okay, before you saw inside the Mini-eggs tube, what did you think was in the tube?

Child's response:

[If child doesn't answer, ask:]

Did you think it was Mini-eggs or Pencils ?

[Reality question]

What is really inside the tube? [Brief pause]:

Child's response:

[If child doesn't answer, ask:]

Is it Mini-eggs or Pencils ?

{Counter-balance order: 1, 2, 3 or 4}

vi. Unexpected transfer (Hughes et al., 2000)

Props: Four illustrated sheets showing story material

[Show child the first sheet – point as appropriate]

Now, let's have a look at this story

This is Andy. Andy has an apple and a bag

This is Sally. Sally has a box

[Show child second sheet]

Andy puts his apple in this bag to keep it safe and he goes outside to play

[Show child third sheet]

**While Andy is outside playing, Sally puts the apple in the box
and then she goes outside to play**

[Show child fourth sheet]

Andy comes back because he wants to have a bite of his apple

[Target question]

Where will Andy look for his apple? [Brief pause]:

Child's response:

[Will he look] in the bag or in the box ?

[Reality question]

Where is the apple really? [Brief pause]:

Child's response:

[If child doesn't answer, ask:]

Is it in the bag or in the box ?

[Memory question]

Where did Andy put his apple first of all? [Brief pause]:

Child's response:

[If child doesn't answer, ask:]

Was it in the bag or in the box ?

Appendix 7

SELF-VIEW (EDER, 1990, 1992)

I'm going to show you a video now - in the video there are two puppets: Mr/Miss Frog and Mr/Miss Monkey. They are writing a story about children your age. They want to learn about you. They will tell you about themselves, and then you tell them about yourself.

After each video segment press pause and ask child: What about you? And repeat the two options (e.g., "Do you go to school or do you not go to school?").

Practice trials 1 and 2.

Items:

- 1 Monkey I like to climb on things that are high
 Frog I don't like to climb up on things that are high
- 2 Monkey I don't like to do what my friends tell me to do
 Frog I like to do what my friends tell me to do
- 3 Frog I get scared a lot
 Monkey I don't get scared very often
- 4 Frog I care about doing a really good job on everything I do
 Monkey I don't care about doing a good job on everything I do
- 5 Monkey It's fun to scare people
 Frog It's not fun to scare people
- 6 Monkey I don't have a best friend
 Frog I have a best friend
- 7 Frog I don't get cross very often
 Monkey I get cross a lot
- 8 Frog I don't usually do what my Mummy or my teacher says
 Monkey I usually do what my Mummy or my teacher says
- 9 Monkey I don't think it would be fun to hang upside down on a climbing frame
 Frog I think it would be fun to hang upside down on a climbing frame
- 10 Frog When new people come to my house, I don't show them my toys
 Monkey When new people come to my house, I show them my toys
- 11 Monkey I don't like it when people look at me
 Frog I like it when people look at me
- 12 Monkey Most days I don't get grumpy

- Frog Some days *everything* makes me grumpy
- 13 Frog I like to tease people
 Monkey I *don't* like to tease people
- 14 Frog People *want* to spend time with me
 Monkey People *don't* want to spend time with me
- 15 Monkey When I hear lightening and thunder, I would *always* run to look out of the window
 Frog When I hear lightening and thunder, I would *never* run to look out of the window
- 16 Monkey I *don't* share toys with kids I don't know
 Frog I share toys with kids I don't know
- 17 Frog I *don't* like to watch other people fight
 Monkey I like to watch other people fight
- 18 Monkey People *always* say mean things to me
 Frog People *never* say mean things to me
- 19 Frog I like to show things in "show and tell" at school
 Monkey I *don't* like to show things in "show and tell" at school
- 20 Frog *Not many* things make me upset
 Monkey *A lot* of things make me upset
- 21 Monkey I am *not* a good girl/boy
 Frog I am a good girl/boy
- 22 Monkey I try hard in school
 Frog I *don't* try hard in school
- 23 Frog People like me
 Monkey People *don't* like me
- 24 Frog When I see something scary on TV I cover my face
 Monkey When I see something scary on TV I *don't* cover my face
- 25 Monkey I would play with a new kid in my school
 Frog I *wouldn't* play with a new kid in my school
- 26 Frog I like to boss people around
 Monkey I *don't* like to boss people around
- 27 Frog I am grumpy *a lot* of the time
 Monkey I am *hardly ever* grumpy
- 28 Monkey I *hardly ever* get sad

Frog I get sad *a lot*

29 Monkey It's not fun riding in a fast car

Frog It is fun riding in a fast car

30 Frog I cry when I am upset

Monkey I *don't* cry when I am upset

31 Monkey I feel good inside

Frog I don't feel good inside

Give child a stamp for completing this task

Timidity scale consists of items 1, 5, 9, 13, 15, 17, 24, 29

Agreeableness scale consists of items 2, 4, 6, 8, 10, 11, 14, 16, 19, 21, 22, 23, 25, 31

Negative affect consists of items 3, 7, 12, 18, 20, 26, 27, 28, 30.

APPENDIX 8

Test of Emotion Comprehension (TEC) (Pons & Harris, 2000) **PROCEDURE**

Preliminary remarks

- The tone of story presentation should be emotionally neutral.
- Always report on-line the child's answer in the score sheet. If the child gives more than one answer note their order.
- Never ask the child to justify his/her answer (only at the end if necessary)
- Component I: If the child fails to produce a response then the examiner points to each picture in turn (left to right, top to bottom) and asks, while pointing: *Is this one* (target emotion)?
- Component I: If the child responds positively to two or more of the pictures then the examiner asks, while pointing to the options: *Choose the best one for* (target emotion)!
- Components II to IX: Always point the different characters and objects involved in the story. In the current procedure names have been attributed to the characters (e.g. Tom, Sarah). However, that's optional.
- Components II to IX: Always point and name the four possible answers.
- Components II to IX: If the child just names the answer then the experimenter has to ask him/her to point the answer. The child does not need to name the answer.
- Components II to IX: Always show the possible answers after the presentation of the story.
- Components II to IX: If the child fails to procedure a response then the examiner points to each picture in turn (left to right, top to bottom) and asks, while pointing: *Do you think he (she) is...?*
- Components II to IX: If the child responds positively to two or more of the pictures then the examiner asks, while pointing to the options: *Choose the one that you think is best!*

Introduction

Thank you for helping me with my work. I am going to show you some pictures and then ask you some questions. For every question give me the answer that you thinks is best by pointing to the picture that you choose. If there is something that you don't understand just tell me, okay? (go to page 1)

Component I: Recognition (pp. 1-5)

Let's look at these four pictures. Can you point to the person who feels:

(p.1) sad?

(p.2) happy?

(p.3) angry?

(p.4) alright?

(p.5) scared?

Transition

Okay, now we are going to see some stories. I want you to listen to the whole story and then I'll ask you a question. Wait until I've shown you all the picture before you point the answer. (go to page 6)

Component II: External causes (pp.6-10)

(p.6) Turtle

This boy (girl) is looking at his (her) little turtle, which has just died.

How is this boy (girl) feeling? Is he (she) happy, sad, angry or alright?

(p.7) Birthday

This boy (girl) is getting a birthday present.

How is this boy (girl) feeling? Is he (she) happy, sad, alright or scared?

(p.8) Brother

This boy (girl) is trying to do a drawing but his (her) little brother (sister) is stopping him (her).

How is this boy (girl) feeling? Is he (she) happy, alright, angry or scared?

(p.9) Bus

This boy (girl) is standing at the bus stop.

How is this boy (girl) feeling? Is he (she) happy, sad, angry or alright?

(p.10) Monster

This boy (girl) is being chased by a monster.

How is this boy (girl) feeling? Is he (she) happy, alright, angry or scared?

Component III: Desires (pp.11-12)

(p.11) Coca-cola

This is Tom (Sarah) and this is Peter (Helen). Tom (Sarah) and Peter (Helen) are very thirsty. Tom (Sarah) likes Coca-Cola very much and Peter (Helen) hates Coca-Cola

Control question

Does Tom (Sarah) like Coca-Cola?

Does Peter (Helen) like Coca-Cola?

Positive feedback: **That's right, Tom (Sarah) likes Coca-Cola/That's right Peter (Helen) doesn't like Coca-Cola.**

Negative feedback: **Well actually, Tom (Sarah) likes Coca-Cola (help)/ Well actually, Peter (Helen) doesn't like Coca-Cola (help).**

Can you open the box for me? There is Coca-Cola in the box!

How is Tom (Sarah) feeling when he (she) sees Coca-Cola? Is he (she) happy, sad alright or scared?

How is Peter (Helen) feeling when he (she) sees Coca-Cola? Is he (she) happy, sad alright or scared?

(p.12) Salad

This is Tom (Sarah) and this is Peter (Helen). Tom (Sarah) and Peter (Helen) are very hungry. Tom (Sarah) hates lettuce and Peter (Helen) likes lettuce very much.

Control question

Does Tom (Sarah) like lettuce?

Does Peter (Helen) like lettuce?

Positive feedback: **That's right, Tom (Sarah) doesn't like lettuce/That's right Peter (Helen) like lettuce.**

Negative feedback: **Well actually, Tom (Sarah) doesn't like lettuce (help)/Well actually, Peter (Helen) likes lettuce (help).**

Can you open the box for me? There is lettuce in the box!

How is Tom (Sarah) feeling when he (she) sees lettuce? Is he (she) happy, sad alright or scared?

How is Peter (Helen) feeling when he (she) sees lettuce? Is he (she) happy, sad alright or scared?

Component IV: Beliefs (p.13)

(p.13) This is Tom's (Sarah's) rabbit. It is eating a carrot. It likes carrots very much. Can you look behind the bushes? It's a fox. The fox is hiding behind the bushes because he wants to eat the rabbit. Can you put the bushes back on so the rabbit can't see that the fox is hiding behind the bushes?

Control question

Does the rabbit know the fox is hiding behind the bushes?

Positive feedback: That's right, the rabbit doesn't know the fox is hiding behind the bushes.

Negative feedback: Well actually, the rabbit doesn't know the fox is hiding behind in the bushes ("help")

How is the rabbit feeling? Is it happy, alright, angry or scared.

TEST OF EMOTION COMPREHENSION (TEC)
Score sheet

School/Nursery:	Date of examination:
Degree:	Examiner:
Participant:	Duration of examination:
Gender:	
Age:	

Remarks:

Pages	Component	Answers				Remarks
1	Ia Sad	Happy	Sad	Angry	Alright	
2	Ib Happy	Happy	Sad	Alright	Scared	
3	Ic Angry	Happy	Alright	Angry	Scared	
4	Id Alright	Happy	Sad	Angry	Alright	
5	Ie Scared	Happy	Alright	Angry	Scared	

6	Iia Turtle	Happy	Sad	Angry	Alright	
7	Iib Gift	Happy	Sad	Alright	Scared	
8	Iic Brother	Happy	Alright	Angry	Scared	
9	Iid Bus	Happy	Sad	Angry	Alright	
10	Iie Monster	Happy	Alright	Angry	Scared	

11	III control	T(S) likes coca (help)/P(H) doesn't like coca (help)				
11	IIIa T.coca	Happy	Sad	Alright	Scared	
11	IIIb P.n-coca	Happy	Sad	Alright	Scared	
12	III control	T(S) doesn't like salad (help)/P(H) likes salad (help)				
12	IIIc T.n-salad	Happy	Sad	Alright	Scared	
12	IIId P.salad	Happy	Sad	Alright	Scared	

13	IV control	Rabbit doesn't know (help)				
13	IV fox rabbit	Happy	Alright	Angry	Scared	

14-16	V control	T(S) is happy (help if sad, alright, scared)				
17	V Photo	Happy	Sad	Alright	Scared	

18	VI Regulation	Hands	Do	Think	Nothing	
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19	VII Marbles	Happy	Alright	Angry	Scared	
----	-------------	-------	---------	-------	--------	--

20	VIII Mixed	Happy	Sad Scared	Hap. Scar.	Scared	
----	------------	-------	------------	------------	--------	--

21	IX control	It's naughty (help)				
22	IXa Resist	Happy	Sad	Angry	Alright	
22-23	IXb Mother	Happy	Sad	Angry	Alright	

APPENDIX 9

DENHAM's (1986) Affective Labeling and Affective Perspective Ability Test

Section A

Props A boy (Peter) doll without any facial expression (blank faced)
Four felt faces showing happy, sad, cross/angry and scared/afraid expressions

- Expressive procedure. Point to each facial expression in turn and act out the emotion
(i.e. for happy say "how does he feel here?" while smiling)
- Expressive response should be recorded *in vivo* and corrective feedback provided
- Make sure the child accepts or agrees with the correction
- Partially correct answers get 1 (e.g. good for happy and bad/scared for sad)
- Synonyms are scored as correct (e.g. frightened for scared, angry for cross)
- If the child provides a synonym try to use it throughout in place of the label indicated

1. Expressive - *give corrective feedback

Shuffle and place faces in front of the child

Pick up the doll and say to the child

Here are some faces for Peter

For each face in turn, ask while pointing

How does he feel here?

answer	Child	Correct		Wrong
Happy		2	1	0
Sad		2	1	0
Cross		2	1	0
scared		2	1	0

2. Receptive

Shuffle faces again

Ask child using their terms from above

Show me where he feels happy/sad/cross/scared

happy	2	1	0
sad	2	1	0
cross	2	1	0
scared	2	1	0

3. Consolidation

Use doll and faces

For each emotion, put face on doll and say

See, now he feels...

For section A (based on 1 and 2)

Total positive responses _____

Total negative responses _____

Total 'happy' responses _____

Total 'sad' responses _____

Total 'cross' responses _____

Total 'scared' responses _____

Total '0' responses _____

Total (simply add up (1) and (2)):
/16)

(

¹'sad', 'scared' and 'cross' all count as negative valence emotions.
Therefore, give '1' when child uses a non-correct negative valence emotion

Section B

Props A boy (Peter) doll without any facial expression (blank faced)
Four felt faces showing happy, sad, angry and afraid expressions
The sibling doll is opposite sex doll (no additional dolls are required)
Four small stackable blocks (story 3).

1. Ice-cream

Peter says:

Hi, I'm Peter. Here is my sister.

*Peter says in a HAPPY voice:

Ah! She gave me an ice-cream. Yum yum!

child's judgment				
happy	sad	angry	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

2. Walking home

Peter says:

We are walking home.

Sibling says:

I'm going to push you over.

Indicate that Peter is down.

*Peter says in SAD voice:

Oh that hurts! Owwww!

child's judgment				
happy	sad	angry	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

3. Stacking blocks (build real tower with blocks)

Peter says:

I just finished building this tower and I like it.

It's a good one isn't it?

Older sister says:

No! I think it looks horrible. I'm going to knock it over.

[knock over tower] **Crash!**

*Peter says in an ANGRY voice:

What did you do that for?

child's judgment				
happy	sad	angry	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

4. Nightmare (no sibling doll)

Shh! Peter is asleep

*Peter says in a SCARED voice:

Ooh I'm dreaming. There's a big tiger chasing me.. Oh no!

child's judgment				
happy	sad	angry	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

Total ('2' for correct emotions, '1' for correct valence but wrong emotion)

(/18)

Section C

Props Same dolls and faces as Section B

A mummy doll with a neutral or generic facial expression

- This section is based on a maternal interview preferably conducted over the telephone pre-arrival
- These stories cover five emotion contrasts: happy/sad, happy/angry, happy/scared (two times), sad/angry (two times)
- When reading the story to the child, the researcher should use the OPPOSITE response to that predicted by the mother.
- All the items have been modified to some extent by Hughes et al. these changes are appropriate.

****Indicate on the protocol which emotion to use for each story**

(i.e., the OPPOSITE of the emotion given by the mother in the parental interview)

1. School

Mummy doll says:

Here we are at school.

Peter says:

Either HAPPY voice: I love school, we have such fun here.

or SAD voice: I hate it her, I miss my mummy.

child's own expected response				
happy	sad	cross	scared	0
child's judgment				
happy	sad	cross	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

1. Cooking favorite food

Mummy is cooking (child's favorite food).

Peter says:

ANGRY voice: Urgh, yuck! I won't eat it. Yuck!

child's own expected response				
happy	sad	cross	scared	0
child's judgment				
happy	sad	cross	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

1. Big dog

Here comes a big dog. Grrr!

Peter says:

Either SCARED voice: He looks really nasty, his teeth are so big.

or HAPPY voice: He looks nice, he's smiling at me with his teeth.

child's own expected response				
happy	sad	cross	scared	0
child's judgment				
happy	sad	cross	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

1. Ice-cream shop

Mummy doll says:

We are going to get some ice-cream at the shop.

But you are going to have to stay at home. Bye!

Peter says:

Either CROSS voice: That's not fair, I want to come!

or SAD voice: I wish I could go too.

child's own expected response				
happy	sad	cross	scared	0
child's judgment				
happy	sad	cross	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

1. Swimming pool

Peter is going to the swimming pool.

Peter says:

Either HAPPY voice: Oh, I love the water! Yipee!

or SCARED voice: I don't want to go in the pool.

It's so deep!

child's own expected response				
happy	sad	cross	scared	0
child's judgment				
happy	sad	cross	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

1. Building blocks

Peter and another child puppet are playing

Peter says:

We're building with blocks...

We're building a house together.

Other child says:

I'm not playing with you any more, I'm going to play with Billy and you can't come.

Peter says:

Either CROSS voice: **I don't care! I didn't want to play with you anyway.**

or SAD voice: **I wish you would stay and play with me.**

child's own expected response				
happy	sad	cross	scared	0
child's judgment				
happy	sad	cross	scared	0

What does Peter feel now? [Brief pause] Which face does he have?

Total ('2' for correct emotions, '1' for correct valence but wrong emotion)

(/12)

Grand total (Sections A, B and C):

(/36)

Give child a sticker for completing this task

APPENDIX 10

The Manchester Child Attachment Story Task (MCAST; Green et al., 2000)

MATERIALS

Dolls House

Furniture and Toys

Doll figures – appropriate racial group and selection of child and adult dolls.

Video camera.

ROOM SETUP

SEQUENCE

1) FAMILY PICTURE (optional)

Pencils and paper.

"Show me/ draw me who's in your family."

2) SET OUT TOYS AND CHOOSE DOLL

The child is offered a range of figures from which to choose a 'child-doll' and a 'mother-doll'. It is important that identification is made between 'child-doll' and child and between 'mother-doll' and the child's mother. The 'child-doll' should be called by the same name as the child.

3) INTRODUCING THE STORIES

What we're going to do is this. Firstly I'm going to tell you the beginning of a story with you and mummy in it. Then when we get into the story I'm going to ask you to show me with the dolls what happens next.

4) CONTROL VIGNETTE-BREAKFAST

The aim of this vignette is to familiarize the child with the procedure. It will also give incidental information about home structure, parenting style characteristic child reaction patterns.

The Parent doll and child are in bed asleep. The alarm goes off in parents' room-parent gets up and goes down stairs to start with the breakfast. Then calls up to the child:

"Time to get up... "

What happens next?

5) TEST VIGNETTES

VIGNETTE 1 – NIGHTMARE

It's nighttime and here you doll and mum doll are in bed asleep.

Child can help you place the dolls where he/she thinks they should be.

It's in the middle of the night and everyone is fast asleep very quiet. Everything is very dark.

Then suddenly X doll wakes up (act this out with the doll).

She says oohh.. I've had a horrible dream..oohh...horrible dream. And she starts to cry and she says ...oohhh...horrible dream...

Now you show me what happens next.

VIGNETTE 2 – HURT KNEE

For this story it's daytime and mummy's inside the house – what do you think she's doing there?

Child can place the parent doll as they see fit.

X doll is outside playing in the garden. What does X like to play – what would he be playing?

Ok (whatever it is – act in out – say football) He's playing football in the garden running around – kicking it here and there (room for creativity as the game is set up but not too elaborate and not showing involvement of anyone else).

He's running along and suddenly...oohh he falls over,,, and ...oowww! He's hurt his knee and he looks down and he sees it's bleeding... and it hurts... and he says "ooww my knees hurt... my knees hurt..."

What happens next in the story?

VIGNETTE 3 – ILLNESS

In this story X doll is at home watching TV. What's your favourite TV programme?

X is watching that. Mum is next door – where do you think that she is?

Suddenly X has a pain in the tummy. And it gets worse and she says "oohhh... I've got a pain in my tummy oowww it's getting worse". And she feels her tummy – it's a horrible pain. "Oowww"

What happens next in the story?

VIGNETTE 4 – SHOPPING

In this vignette, the child finds him or herself separated from mother in a crowd while shopping.

To set up the vignette the doll's house is taken away and furniture from the house or other props are used to create a shopping center with buildings and streets. This only has to be schematic.

The essential requirement is that it needs to be possible for the child not to be able to see the mother doll at the trigger point of the vignette. From experience, during this vignette, it is best not to identify shops specifically during the story. In particular, do not to identify sweet shops since this introduces some powerful conflicting themes!

In this story, X doll and mum are going shopping. Here they go into the shopping center and look at all the shops and there are lots of people around and they have to hold on tight to each other. They look in this shop here and this shop here. X doll is looking in this shop here... At this point, show the child looking at a shop window and then take the mother doll around to another place that is out of sight of the child doll and leave her there. And X doll looks around with all the people there and she can't see her mummy and there are all the people around but mummy's not there. She looks around and can't see her... then she feels very scared and she say's "where's my mummy, where's my mummy..." "

What happens next in the story?

CLOSURE VIGNETTE (FAMILY TRIP)

This final story should not relate to attachment themes but is a closure story. The child can suggest a typical family trip that the family would do together. Other family members can be brought on to the scene and the child can act out a typical trip. It is valuable if the child is allowed to play naturally for some time until there seems a natural closure. During this phase, the examiner should not be rating but should be ordinarily responsive to the child and encouraging of them. The examiner, thus at this point, steps out of the role that they have maintained through the rest of the interview.

MCAST Text 7 Revised December 2003

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APPENDIX 11

Separation Anxiety Test (Klagsbrum & Bowlby, 1976; Main et al., 1985; Slough & Greenberg, 1990)

Introduce the overall situation

I'm going to show you some pictures of a boy about your age, whose parents are going away for different amounts of time.

A lot of parents wonder about how their kids feel when they go away, and we thought we would ask kids about what they might feel or do when their parents go away.

i. Parents going out for the night.

**So this is the first picture,
Show CHILD first picture.**

**This is a boy about 4 years old and his mummy and daddy are going out for the evening.
(pause).**

- 1. How do you think the boy in the picture feels?
- 2. Why is he feeling that?
- 3. What is he going to do?

- 4. What if you were in this situation, how would you feel?
- 5. Why would you feel that way?
- 6. What would you do?

ii. Parents going away for two weeks and giving child a gift.

**In this picture,
Show CHILD second picture.**

**This boy's mummy and daddy are going away for two weeks.
Before they go away they are giving him a present. (pause)**

- 1. How do you think the boy in the picture feels?
 - 2. Why is he feeling that?
 - 3. What is he going to do?

 - 4. What if you were in this situation, how would you feel?
 - 5. Why would you feel that way?
 - 6. What would you do?
-

Give child a sticker for completing this task.

