Attachment in adults with intellectual disabilities;
The examination of the psychometric properties of the Manchester Attachment Scale- Third Party Observational Measure (MAST)

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ABSTRACT

Introduction: Research indicates that children with an intellectual disability [ID] are at an increased risk of developing attachment difficulties and subsequent affect regulation difficulties. Attachment theory may further understanding of the risk factors for individuals with an ID experiencing mental health problems, challenging behaviour and emotional difficulties. However, there is a paucity of research into attachment and adults with ID and there is a lack of valid and reliable measures for assessing attachment security for this group. The Manchester Attachment Scale-Third Party Observational Measure [MAST] was developed to assess degree of secure attachment behaviour for adults with ID and the current study examined the psychometric properties of the MAST.

Method: Professional carers [N=40] supporting individuals with an ID completed the MAST and other measures related to the construct of attachment theory (subscales of the Edward Zigler-Yale Personality Questionnaire[EZPQ] and Emotional Rating Scale [ERS] as well as the Learning Disability Casemix Scale [LDCS) regarding individuals with an ID they were supporting [N=57]. Individuals with an ID [N=14] completed the Self-report Assessment of Attachment Security [SRAAS].

Results: The MAST was found to have good internal consistency and test-retest reliability. The convergent validity of the MAST was indicated by positive correlation with the EZPQ subscales (negative reaction tendency, obedience, positive reaction tendency and outerdirectedness) and scores on the SRAAS. The MAST was found to be correlated with both levels of ID and presence of challenging behaviour as measured by LDCS scores.

Conclusion: These current results provide preliminary support for the reliability and validity of the MAST as a measure of secure attachment behaviour for adults with ID. The results provide support for previous research that indicates a relationship between attachment security and level of ID and challenging behaviour. The results of the study and the implications of attachment theory for adults with ID are discussed.
DECLARATION

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Chapter one

Introduction
1.1 Introduction

1.1.1 Overview of current study

Bowlby (1977) described attachment theory as a conceptualization of the “propensity of human beings to make strong affectionate bonds to a particular other” (p. 201). He described that infants seek proximity to a primary caregiver through exhibiting attachment behaviour(s). Attachment behaviours aim to maintain proximity to the attachment figure. He described that these behaviours are part of an adaptive behaviour system which has emerged over the course of evolution to increase the likelihood of survival of human infants. There is a wealth of research regarding the clinical implications of attachment theory upon infant development, and the impact of early attachment relationships upon adult relationships. The quality of relationships during childhood, specifically secure attachment relationships to parents are reported to be protective (Carlson & Scroufe, 1995). Attachment relationships promote emotional development (Schore, 2001) and an individual’s ability to regulate their own arousal levels and cope with overwhelming and disturbing emotions (Cassidy, 1994; Schore, 2001). Individuals with an intellectual disability (ID) are more likely to develop mental health problems compared to their non-ID peers (Deb, Thomas & Bright, 2001) and a number of risk factors are hypothesised to contribute to poorer mental health including a lack of meaningful relationships, a lack of intimate relationships and poor social support networks (Deb, Thomas & Bright, 2001; Emerson, Hatton, Felce & Murphy, 2001; Hastings, Hatton, Taylor & Maddison, 2004). Challenging behaviour (CB) is also common amongst adults with ID. Attachment theory may provide further understanding of the risk factors associated with such difficulties for individuals with an ID. However, there is a paucity of research into attachment for adults with ID and there is a lack of valid and reliable measures for assessing attachment security for this group. The Manchester Attachment Scale-Third Party Observational Measure (MAST) was developed to assess the degree of secure attachment behaviour for adults with ID and the current study examined the psychometric properties of the MAST. The introduction of the current study is separated in to four parts. Part 1 reviews the literature regarding what is an ID, the societal attitudes, historical and current service provision for adults
with an ID. Part 2 discusses the attachment literature regarding typically developing children and adults. Part 3 discusses the literature for children and adults with an ID. Part 4 considers the current methods of assessing attachment styles and part 5 outlines the current study. The current study will report the findings regarding the psychometric properties of the MAST. Throughout the study non-secure attachment behaviour refers to all behaviour classified as not secure i.e. insecure attachment, disorganised attachment, ambivalent attachment etc. Staff-client dyad refers to professional staff and the individual with an ID that they support.

1.2 Part 1: Introducing intellectual disability

1.2.1 Diagnosing intellectual disability

Intellectual disability (ID) is the label currently used in the United Kingdom (UK) to describe individuals who have significant impairment of intellectual and adaptive/social functioning that was prevalent before adulthood (British Psychological Society [BPS], 2000). The most widely used definition of ID is the deficit in intelligence (Wright & Digby, 1996). Measuring intelligence in the form of an intelligence quotient (IQ) using the Wechsler Adult Intelligence Scale (WAIS-IV; Wechsler, 2008) is the most frequently used method. The WAIS-IV largely focuses upon assessing cognitive processes such as attention, memory and information processing. The two diagnostic classification systems that are currently used in the U.K. are the International Classification of Diseases-Tenth Edition (ICD-10; World Health Organisation, 1993) and the Diagnostic and Statistic Manual of Mental Disorders-Fourth Edition (DSM-IV; American Psychiatric Association [APA], 1994), both use the criteria of an IQ score below 69 as indicative of an ID. In addition the ICD-10 uses a classification system to classify severity of ID. A mild ID is classified as an IQ score of 50-70; a moderate ID an IQ score of 35-49; severe ID an IQ score of 20-34 and a profound ID an IQ score of 20 or below. However, diagnosing an ID based upon an IQ score is controversial and has been criticised. Anderson (1997) argues that measuring these cognitive processes does not reflect current neuropsychological research and suggests the WAIS-IV may measure aspects of human thinking although it is arguable whether it is a valid measure of
intelligence per se. In addition, IQ is a non-scientific construct that has limited clinical utility (BPS, 2000). For many services a diagnosis of an ID is required in the U.K to receive support from an ID service. However, Lewis (1987) argues that an ID diagnosis based upon an IQ score of 69 or below is “arbitrary” and has wider social and economical implications for individuals and their families. For example, an individual with an IQ score of 70, who may have significant difficulties with adaptive and social functioning is at risk of being denied a service that is likely to be the most appropriate to support their needs.

A person is required to have significant impairment of both intellectual and adaptive/social functioning that was prevalent before adulthood (BPS, 2000) in order to be classified as having an ID. Adaptive and social functioning is related to a person’s performance in coping with the daily demands of their environment (BPS, 2000). The BPS outlines that a person is considered to have a significant impairment of adaptive and social functioning if they require significant assistance to provide for their own survival (e.g., eating and drinking needs) and / or require significant assistance with regards to social/community adaptation (e.g. social reasoning). This term is quite broad and different services often have a range of measures to assess adaptive and social functioning, which may lead to inequitable service provisions in the U.K.

1.2.2 Aetiology

As described above there are difficulties with diagnosing and classifying the severity of an individual’s ID. Using the current diagnostic system the overall prevalence of ID is estimated to be between 1-3% of the population; of those diagnosed with an ID approximately 85% of people fall into the mild range, 10 % of people fall in to the moderate range, 3-4% fall into the severe range and 1-2% fall in to the profound range (APA, 1994). In addition a diagnosis of Autistic Spectrum Disorder (ASD) is reported to be prevalent for approximately 28% of those with an ID (Bryson, Bradley, Thompson, & Wainwright, 2008).
Individuals with a diagnosis of ID are considered to have atypical neurological development (Wyngaarden, 1987). Increasingly many individuals receive specific diagnosis with regards to the genetic and organic cause of their ID; for many this provides information regarding the long term consequences of their ID including the neurological and clinical impact. For example the genetic aetiology Downs Syndrome (DS) provides an understanding of the associated neurological difficulties and behavioural features. However, for a large proportion (approximately 30-50%; estimations vary) of individuals the aetiology of their ID remains unknown (Bhate & Wilkinson, 2006) and is attributed to the consequence of interactional effects of biological, social, behavioural and environmental factors (Hatton, 1998). Consequently, for those individuals the understanding of the neurological impact of their ID is unknown. Individuals with an ID have varied life experiences and the impact of their ID upon their daily lives significantly varies, however, the current diagnostic system leads to a heterogeneous population being given the same label.

1.2.3 Intellectual disability: historical context

In order to have a greater understanding of the needs of individuals who are considered to have an ID, the historical evolution of the label, societal perception and treatment of individuals with an ID will be outlined here. The label ID is a socially constructed term, consequently how it is measured and who is considered to have an ID has changed over time (Wright & Digby, 1996). Sinason (1986) writes “there has been a historical struggle for the correct and humane definition......no speciality has been forced to change its title so frequently” (p.131). The changes in terminology reflect different historical, philosophical and cultural use of the labels (Baum, 2006) and treatment of individuals with an ID. The Industrial Revolution served to highlight the difficulties some people experienced coping with the demands of daily life in the work houses. Consequently new laws were developed such as the Idiots Act of 1886, Local Authorities became responsible for providing “care, education and training in special asylums,” (Race, 2002), “Idiocy” was used describe individuals considered to have an organic incurable disease (Baum, 2006). The Victorian era saw the rise of the eugenics movement and the introduction of the Mental Deficiency Act (1913) this led to routine
segregation and hospitalisation of people with ID due to the fear of “propagation of the unfit” (Race, 2002). The Mental Deficiency Act graded “mental deficiency” (that was apparent at birth) into various “defective” classifications. This classification of “defects” was not based upon any scientific rationale and was used for administrative and societal purposes, not clinical (Baum, 2006). Tizard (1958) suggests that the eugenics movement developed due to two key factors, the development of intelligence testing/ measurement of IQ and Darwinist ideas/ developing genetic science (Race, 2002). Race (2002) reports that as recently as 1952 Tredgold wrote about individuals considered to be “idiots and imbeciles” and that “it would be the only economical and humane procedure were their existence to be painlessly terminated.”

In the 1970’s the term “mental handicap” was introduced by the government White Paper Better Services for the Mentally Handicapped (Department of Health & Social Security [DHSS], 1971). At the same time the work of O’Connor & Tizard (1954) and Clarke & Clarke (1953; 1954) demonstrated the potential of “mental defectives” and that people in institutions had higher than expected IQ scores. In addition research began to demonstrate institutionalised care had devastating effects for individuals, consequently the government White Paper Better Services for the Mentally Handicapped recommended closing down institutions in favour of community based care. The “normalization” agenda (Wolfensberger, 1972) began to shape attitudes regarding service provision and advocacy services began to develop which aimed to empower people to understand their rights. In 1992 the Department of Health (DoH) in the UK introduced the label “learning disabilities.” Until recently the term “mental retardation” was used in North America. Internationally the term “intellectual disability” is increasingly being adopted. The International Association for the Scientific Study of Intellectual Disabilities (IASSID) has promoted this term in an attempt to foster global consistency reading terminology (Baum & Lynggaard, 2006). However the current terminology continues to be controversial, as with previous labels it arguably maintains the devaluation of a group of people.
Wolfensberger (1983) argued that “to over come this [devaluation] is to increase social status” (Baum, 2006). Wolfensberger (1983) suggested this could be achieved through the application of Social Role Valorisation (SRV). SRV is based upon the philosophy that society disables people by the limited and devaluing experiences it offers and that labelling maintains a devalued societal role and legitimises segregation and alienation. Wolfensberger (1992) indicated that continual experience of dehumanisation leads to “wounding” (See Race, 2002 for an overview of the various types of “wounds”). An example of a wound is when an individual has the negative experiences of being institutionalised, this reinforces that the world perceives the individual as negative and reinforces the individual’s negative identity. Segregation results in relegation of social status and a devalued role possibly a non-human role. Segregation also means the loss of autonomy/ freedom and a possible awareness that the individual is a source of anguish for their loved ones (Race, 2002). Wolfensberger (1998) also describes a concept called “death making.” he suggests that the treatment of devalued individuals such as physical abuse of individuals with a disability can lead to premature death / “death making.” It is argued that examples of death making are prevalent today, for example, genetic screening of the “defective” unborn child (Race, 2002) and inequality of health care treatment/ services for people with ID (Emerson & Baines, 2010). Recently the Valuing People: A New Strategy for Learning Disability for the 21st Century (DoH, 2001) emphasised the importance of a person-centred approach. It reinforced that individuals with an ID should have more independence, choice and control over their lives and the services they receive. Despite an improvement in the care provided for individuals with an ID, concerns remain regarding treatment and service provision of individuals with an ID. An audit by the Care Quality Commission (CQC, 2009) highlighted a number of concerns regarding the wellbeing of individuals living in institutional care settings. Concerns were raised regarding poor environment, lack of day activities, poor staffing levels, lack of care planning and people’s basic human rights not being addressed. Wolfensberger (1983) argued that opportunities for individuals to pursue positive social roles and have the opportunity to make a social contribution and experience genuine inclusion will enable individuals living with disability to be truly valued within society.
1.2.4 Attachment theory and individuals with an intellectual disability

The devaluing of individuals with an ID illustrates that the emotional needs of such individuals has historically been neglected. Arthur (1996) argues that considerable attention has been given to the cognitive and behavioural functioning of individuals with ID. However, he suggests there is a reluctance to apply clinical and research methodologies to their emotional needs. Bender (1993) suggests that in the past there has been “‘therapeutic disdain’” regarding offering individual psychotherapy to individuals with an ID, which he referred to as the “unoffered chair”. He suggested this was partly due to therapist fear and dislike of intimately relating to an individual with a disability. Taylor, Lindsay & Willner (2008) report that there has been suggestion that individuals with ID may not be considered to have the cognitive abilities to engage in psychotherapy, however, they indicate that there is an increasing literature base of empirical evidence for psychotherapy demonstrating good outcomes for individuals with an ID (see Taylor, Lindsay & Willner, 2008 for a review of the evidence for CBT for individuals with ID).

Offering individuals with a choice of engaging in psychotherapy is crucial especially when research indicates that having a diagnosis of an ID, is in itself, a risk factor for developing emotional difficulties (Morrison & Cosden, 1997). Individuals with an ID are also more likely to develop mental health problems compared to their non-ID peers (Deb, Thomas & Bright, 2001). Research indicates that the prevalence of mental health problems ranges from 20-39% (Hatton & Taylor, 2005) for individuals with ID compared to the general population 16-25% (Goldberg & Huxley, 1980; Meltzer, Gill, Petticrew & Hinds, 1995). A number of risk factors are hypothesised to contribute to poorer mental health including unemployment, poverty, stressful family circumstances and traumatising abuse. Relationships also appear to be a key risk factor; a lack of meaningful relationships, a lack of intimate relationship and poor social support networks are also reported to contribute to poorer mental health for individuals with an ID (Deb, Thomas & Bright, 2001; Emerson, Hatton, Felce & Murphy, 2001; Hastings, Hatton, Taylor & Maddison, 2004). CB is also common amongst adults with ID and is defined as behaviour of “such intensity, frequency or duration that the physical safety of
the person or others is likely to be placed in serious jeopardy, or behaviour which is seriously likely to limit the use of, or result in the person being denied access to community facilities” (Emerson & Bromley, 1995). It is estimated that approximately 28% of individuals with ID exhibit CB and 15% display severe CB (Harris, 1993; Oliver, Murphy & Corbett, 1987).

The prevalence rates for mental health problems and CB vary significantly. There are a lack of valid and reliable methods for assessing mental illness for adults with ID which contributes to mental health problems being undiagnosed and untreated (Deb et al. 2001). Also current diagnostic criteria for mental illness are based upon criteria for those without ID and CB has also been found to be assessed as a mental health problem (see Hatton, 2002; Kerker, Owens, Zigler & Horwitz, 2004). Finally, “diagnostic overshadowing” occurs (Reiss, Levitan & Szyszko, 1982) where symptoms of mental illness are misdiagnosed and are considered to be an aspect of the individual’s ID.

A number of factors have been found to be protective and reduce the likelihood of poor outcomes under conditions of risk. For example, individual characteristics such as temperament and level of intelligence (Luthar & Zigler, 1992) and systemic factors including schooling, experience living in the local community and family relationships (Deklyen & Greenberg, 2008). The quality of relationships during childhood are also reported to be protective, research indicates that secure attachment relationships to parents (Carlson & Scroufe, 1995) are protective. Attachment relationships promote emotional development (Schore, 2001) and an individual’s ability to regulate their own arousal levels and cope with overwhelming and disturbing emotions (Cassidy, 1994). Empirical research has also indicated associations between attachment difficulties and psychiatric disorders in adults (Dozier, Stovall & Albus, 1999). Attachment theory for individuals with an ID is especially relevant when many experience a lack of meaningful relationships, a lack of intimate relationship and poor social support networks, all of which are reported to contribute to poorer outcomes for people with ID (Deb, Thomas & Bright, 2001; Emerson, Hatton, Felce & Murphy, 2001; Hastings, Hatton, Taylor & Maddison, 2004). A complex model is required to help explain individual differences
that contribute to such difficulties (Rutter, 1981) and attachment theory may provide greater understanding. Currently there is a paucity of research regarding ID and attachment theory.

It is noteworthy that Keogh & Weisner (1993) and Spekman et al. (1993) report that the ID literature typically focuses upon the difficulties associated with ID (as does the current study), however, they report a significant proportion of individuals with an ID have positive outcomes with regards to employment and overall life satisfaction. Shessel & Reiff (1999) also reported that an ID can have a positive influence upon creativity and sensitivity to others. Research indicates that understanding and accepting one's disability and viewing the disability as “circumscribed rather than global and encompassing” is associated with personal satisfaction, vocational success, and college completion (Adelman & Vogel, 1990; Spekman et al., 1992; Vogel & Adelman, 1990; Vogel, Hruby, & Adelman, 1993). Stainton & Besser (1998) interviewed 11 families regarding the positive impact of having children with an ID. Their children were aged between 0 to 35 years of age. During the semi-structured interviews eight core themes emerged regarding having a child with an ID including, children as a “source of joy and happiness; an increased sense of purpose and priorities; expanded personal and social networks and community involvement; increased spirituality; source of family unity and closeness; increased tolerance and understanding; personal growth and strength; positive impacts on others/ community” (p.61).

1.3. Part 2: Introducing attachment theory

1.3.1 Attachment behaviour

Bowlby (1977) described attachment theory as a conceptualization of the “propensity of human beings to make strong affectionate bonds to a particular other.” He proposed that it provides a framework that explains the many forms of emotional distress and personality disturbance that manifest due to separation and loss. It is not feasible to discuss the personality disorder literature here however, it is important to note that there is an increasing research base that demonstrates the association between attachment difficulties and personality disorder particularly borderline personality disorder (for
example, see Fonagy, [2000] for a review of the literature). Bowlby described that proximity-seeking behaviours are part of an adaptive behaviour system which has emerged over the course of evolution as it increases the likelihood of the survival of human infants. He proposed infants are born with a repertoire of “attachment behaviours” that maintain proximity to others. Bowlby viewed proximity seeking an in-born affect-regulation device designed to protect an individual from actual or perceived physical and psychological threats and to reduce distress (Mikulincer, Shaver & Pereg, 2003). Attachment behaviours (e.g. crying, calling, following, clinging and protests when left alone) are any behaviour that results in an individual attaining or retaining proximity to another preferred individual (attachment figure) who is usually perceived to be stronger and/ or wiser. As the infant matures, the intensity of such behaviours diminishes. However, they remain observable throughout adulthood for example being activated in times of distress. The attachment figure in adult relationships is typically an individual’s partner, observable adult attachment behaviour such as attempts to maintain close proximity are directed towards the adult attachment figure (Bowlby, 1969/1971/1982).

1.3.2 Classification of infant attachment security

The Strange Situation Procedure (SSP) was developed by Ainsworth, Blehar, Waters & Wall (1978) and has provided empirical support for Bowlby’s attachment theory measuring observable differences of attachment relationships. The procedure is laboratory based and involves observations of the infant’s (aged between 12 – 20 months) responses to two brief separations and reunions with the infant’s primary caregiver, particular attention is given to episodes of reunion following separation (Ainsworth, 1979). Eight responses can be identified but most attachment research using the SSP has focused on four main classifications namely, Group A, B, C and D.

Group B (secure attachment style) infants are described as using their caregivers as a “safe base” during the pre-separation phase. A safe base is used to describe the nature of the environment that the attachment figure creates that gives the infant a sense of safety and security, in order to feel confident in exploring their environment (Holmes, 1993).
Their attachment behaviour is intensified by the separation episode, exploration reduces and distress increases. During the reunion, Group B infants are observed to seek contact with, proximity to, or at least interaction with their primary caregivers (Ainsworth, 1979). The caregiver’s sensitivity to their infant’s distress is considered a significant factor in determining attachment classification (Ainsworth et al. 1978). For example, during the original SSP Group B mothers were observed to be more sensitively responsive to their infant’s signals, compared to the other groups (Ainsworth et al. 1978).

Group C (ambivalent attachment style) infants are likely to show signs of anxiety during the pre-separation episode and are observed to be intensely distressed by the separation. However, when reunited with their primary caregiver they can appear to be ambivalent towards them, seeking close contact, yet resisting contact/interaction (Ainsworth, 1979).

Group A (avoidant attachment style) infants are observed to rarely cry during the separation episode and when reunited, they are seen to avoid their primary caregiver. Avoidance strategies usually involve a mixture of proximity seeking and avoidant behaviour or completely ignoring their caregiver (Ainsworth, 1979).

Following extensive empirical research Main & Solomon (1990) identified a fourth group, group “D” which they define as a “disorganised” style of attachment. Children considered at high risk of attachment difficulties that were assessed as unclassifiable using the original SSP were re-examined by Main & Solomon (1990). Over 200 strange situation videotapes were reviewed and it was concluded that most of these children lacked an organised strategy for dealing with the stress of separation. Unclassifiable infants were observed to show contradictory intentions for example, they would approach their parents with their heads averted or were observed to be apprehensive e.g., freezing when their parent entered. Main and Soloman (1990) concluded that this was due to an inability to organise a consistent secure, avoidant or ambivalent strategy towards their caregiver when experiencing a need for comfort. They described that “fear
without solution” was central to an infant considered to have a disorganised attachment strategy.

1.3.3 Attachment theory as a framework for reciprocal relationships

Internal working models (IWMs)

Research indicates attachment styles observed early in an infant’s life can persist over time (Main, Kaplan & Cassidy, 1985; Main & Cassidy, 1988). IWMs provide a conceptual framework to understand individual attachment styles across the lifespan. Bowlby argued that emotional distress and personality disturbance develop due to separation and loss. He acknowledged that many people experience adverse circumstances during their lives, yet many will function adaptively and suggested that this is due to the meaning given to their experiences (Holmes, 1993), which are based upon individual internalisation of experience and the resultant IWMs.

Bowlby discussed the concept of IWMs throughout his Attachment and Loss trilogy (1969/1982, 1973, 1980). He hypothesised that IWMs develop as infants develop object permanence (Piaget, 1963), which is arguably a basic cognitive prerequisite to secure base behaviour (Cassidy, 1999). IWMs are based upon the child’s experiences of their primary caregiver(s), the way in which caregiver communicates and behaves towards their child, and the way in which the child interacts with their primary caregiver(s) is internalised. This affects the dynamic interactions between the child and their caregivers, governing how the child feels towards their caregiver(s) and themselves, how she/he expects to be treated by them and how she/he behaves towards them (Bowlby, 1988). The function of IWMs is to interpret and anticipate caregiver behavior and organise one’s own attachment behaviour (Bowlby, 1988).

Cognitive ability is considered important for updating IWMs as they are continually restructured in response to environmental, affective and cognitive stimuli (Main, Kaplan & Cassidy, 1985) and are considered to operate at non-conscious level. For the securely attached child, their current operative working models are a good reflection of the parent
and self interaction. However, Bowlby argues that the process of gradually updating ones working model is impaired for children with a non-secure attachment style. When non-secure children have experiences that are contradictory to their habitual, generalised and largely non-conscious working model it is more likely to remain uncorrected or unchanged. However, attachment strategies may change at any stage of development (Crittenden, 2000).

Empirical support for IWMs comes from a number of studies. For example Main, Kaplan & Cassidy (1985) used a number of measures including the Adult Attachment Interview (AAI; Main and Goldwyn, 1984), which assesses the attachment narratives of adults. They also used the SSP (op. cit.) and the Separation Anxiety Test (SAT; Klagsbrun & Bowlby, 1976). The SAT assesses attachment narratives of young children. The authors defined the IWMs as “a set of conscious and/ or unconscious rules for the organisation of information relevant to attachment and for obtaining or limiting access to that information, that is, to information regarding attachment-related experiences, feelings, and ideations”. The results from the SSP classifications in infancy predicted “mental aspects of security” assessed by the SAT at age 6, demonstrating stability of attachment styles over time. Grossman, Grossman & Kinder (2005) conducted a longitudinal study and reported that the AAI strongly correlated with young adults current relationships, as assessed using observational methods and other narrative attachment assessment methods. Bretherton & Munholland (2008) report that there is consistent evidence that the AAI classifications predict adult supportive and stable behaviour within attachment relationships and that the secure-autonomous AAI classification can be considered as an indicator for a working model that represents a secure self in close relationships.

**Intergenerational transmission of attachment styles**

A primary caregiver’s quality of care is reported to be dependent upon the care they have received themselves (Bowlby, 1973). Bowlby also suggested parenting patterns and attachment styles are transmitted across generations and that IWMs can be passed or
transmitted from caregiver to child through two processes, the quality of interaction and through the open discussion of emotion and relationships (Bowlby, 1973; 1988). Empirical support regarding “intergenerational transmission of attachment” was also demonstrated by Main, Kaplan and Cassidy (1985). They used the AAI and the SSP and reported that parental internal representations / internal working models as assessed using the AAI corresponded with their infant’s attachment behaviour as assessed by the SSP.

1.3.4 Emotion, affect regulation and attachment

Bowlby viewed proximity seeking as an in-born affect-regulation device designed to protect an individual from actual or perceived physical and psychological threats, and to reduce distress (Mikulincer, et al. 2003). The evidence base increasingly supports Bowlby’s early affect-regulation hypothesis. Prior to discussing this, literature regarding emotion will be outlined.

The term emotion is regarded as “being one of the fuzziest concepts in all of the sciences” (Frijda & Scherer, 2009). Lang (2010) suggests that there is increasing agreement amongst researchers that emotions are experienced in relation to the motivation to survive. Lang suggests three factors can be measured: the language of emotion (expressive and evaluative); reflexive physiological changes (somatic and autonomic) and behaviour (approach and avoidance). This conceptual framework for understanding emotion is consistent with attachment theory as a model of promoting human survival. Lang argues emotion reflects the “activation of fundamental motivational circuits in the brain based upon survival goals”. He describes a motivational structure that is divided into appetitive/ life sustaining structure and defensive/ protective structure. The appetitive structure leads to positive affect (e.g., sexual desire, joy, and nurturance) and the defensive structure leads to the experience of negative affect (e.g., fear and anger). The intensity and vigour of emotion that is experienced varies depending upon the assessment of either defensive (threatening) stimuli or appetitive (reward) stimuli. It is important at this juncture to consider Hobson’s work regarding cognition and emotion. Hobson (2008) criticises theorists for
attempting to separate and compartmentalise cognition, affect and motivation. He suggests that it is only in the course of development that thinking, feeling and willing become “partly but never wholly separate components of mental life and that it is not that different parts of mental functioning are co-ordinated but how they we progressively differentiate in thinking, feeling and willing”. He suggests interpersonal relations are critical for the construction of the vehicle of symbolic thought and argues that the development of thinking and feeling is “intertwined with interpersonal relations”. The work of Lang and Hobson support Bowlby’s hypotheses of attachment as the conceptualisation of humans to develop strong affectionate bonds that are intertwined with emotional experiences that promote human survival and regulate affect. Hobson indicates that interpersonal experiences are important for both cognitive and emotional development and there is emerging literature that demonstrates attachment security is important for neurological development and emotional regulation.

Schore (2001) proposes that human development is a progression from external to internal affect regulation and that a secure attachment relationship is crucial for an infants’ continuing neurobiological development. Complex functional brain systems are not fully developed at birth and “are formed in the process of social contact,” which is considered crucial for the infant’s developing brain (Luria, 1980), social contact in the context of an attachment relationship is argued to be crucial. The primary caregiver of the securely attached infant is reported to provide psychobiological attunement or affective synchrony and regulate the infant’s positive and negative affective states (Schore, 2001). It is hypothesised that a secure attachment style is critical to the development of the right hemisphere of the brain which includes the limbic system and regulation of cortisol levels (also known as “stress hormones”) involved in processing emotion, modulating distress and self-regulation (see Schore 1994 for a review of interdisciplinary data that supports his argument). Affect regulation is hypothesised to directly affect the capacity to cope with stress, and regulate attachment functions (Schore, 2001).
Research demonstrates that unmet emotional needs for neurotypical children can have an impact upon neurobiological development and the ability to regulate emotional distress, which may impact upon attachment behaviour (Schore, 1994; Gerhardt, 2004). Schore (1994) suggests that unmet emotional needs are associated with a non-secure attachment style which may have an adverse effect upon the developing brain. An immature brain with underdeveloped coping capacities relies on the primary caregiver to regulate arousal and provide safety. When this is not achieved and threat or danger are experienced, this can disrupt cortical development and in particular the limbic system responsible for regulating cortisol levels and social behaviour. In addition experiencing negative emotional states for long periods is associated with severe alterations of the biochemistry of the developing/immature brain (Schore, 1996, 1997). In summary a secure attachment is important for neurobiological development, affect regulation and social behaviour. Self-regulation is hypothesised to regulate attachment functions. Conversely, a non-secure attachment style is associated with adverse effects upon neurobiological development and is likely to affect attachment behaviour.

**Emotional development**

Lane & Schwartz (1987) propose a cognitive model of emotional development, the Levels of Emotional Awareness (LEA) model. They argue that Emotional Awareness (EA) is a fundamental skill and is the ability to identify and describe one’s own emotions and those of other people’s. The LEA focuses on the structure and complexity of emotion representations and is a developmental process similar to that described by Piaget regarding cognitive development. EA is structured from a cognitive schema and the degree of integration and differentiation of EA differs between individuals. Individual experience of emotional language affects the complexity of the schemata and subsequent EA. Schemata filter and process external and internal emotional stimuli and subsequent individual emotional experience. The LEA describes five levels of emotional experience; bodily sensations, action tendencies, single emotions, blends of emotion and combination of blends of emotion (Lane & Schwartz, 1987). Research indicates that the right hemisphere of the brain is implicated in the ability to perceive the complexity of
processing emotional information (Lane, Kivley, Du Bois, Shamasundara & Schwartz, 1995). The LEA model hypothesises that the development of EA and emotional language corresponds with cognitive development. Research indicates that children’s understanding of two or more emotions occurs around 10 years of age (Harter, 1980). In addition, older children demonstrate a greater understanding of more differentiated emotional states compared to younger children (Harter & Buddin, 1987). Hobson’s (2008) suggestion that we progressively differentiate between thinking, feeling and willing as we develop supports the LEA model, which proposes that as we develop, we become more aware of combinations of blends of emotion. Relationships with others (Hobson, 2008) specifically secure attachment relationships (Schore, 2001), are crucial for cognitive and emotional development and our ability to process emotions and regulate emotional experiences. It is likely that attachment experiences and affect regulation are also associated with LEA.

1.3.5 Attachment theory across the life span

The Dynamic-Maturational Model (DMM)

The DMM (Crittenden, 2005; 2008) builds upon the work of Bowlby and Ainsworth. Crittenden (2000) notes that previous models consider secure attachment to be superior to all other strategies, but notes that when non-American and non-middle class children are classified (including the disorganised classification), fewer than two-thirds are considered secure. When attachment is assessed beyond infancy, even fewer are classified as secure. The DMM thus re-conceptualises attachment behaviour as protecting oneself from danger rather than the traditional Bowlbian theory of attachment behaviour as reflecting safety seeking. Crittenden (2000) proposes a “strategy for maximising the probability of safety, given variation in context” should be the defining characteristic of adaptive attachment, therefore she proposes attachment strategies can change at any stage of development.

The DMM conceptualises attachment behaviour as being based upon the processing of cognitive and affective stimuli in relation to danger, and the attachment figure(s) ability and availability to protect the individual from danger. Cognition refers to learning about
cause and effect from previously experienced events. Affect refers to the desire for comfort (approach), anger (fight), fear of abandonment / abuse (flight/ freeze), pain and post-pubescent sexual desire.

Crittenden proposes that attachment figures provide infants with protection and the meaning of cognitive and affective information. A number of factors lead to effective coping strategies/ protective strategies and promote resilience including; interactions with the attachment figure, individual characteristics such as temperament, the individual’s genetic inheritance, the environment and maturational processes. Crittenden suggests that if protection is inadequate, the infant is at an increased risk of developing maladaptive coping strategies in adverse situations (Crittenden, 2005). DMM attachment strategies are based upon Ainsworth’s original ABC classifications applied to Bowlby’s compulsive and very anxious patterns (Farnfield, Hautamaki, Norbech & Sahhar, 2010). The three basic attachment strategies type A, B and C are also subdivided in to further classifications based upon the organisation of temporal and affective information. DMM attachment strategies provide both a description of interpersonal behaviour and a functional system for understanding psychopathology (Crittenden, 2005).

**DMM attachment strategies**

*Type B* strategies (B1 to B5) are considered a balanced and/ or secure strategy. Individuals are likely to have experienced attachment figures that were able to provide protection and comfort, typically within a safe environment. This is the optimal strategy and is an effective integration of both cognitive and affective information processing. Behaviourally Type B individual’s are observably open, clear and reciprocal in their communication styles and negotiate shared goals and activity.

*Type A* strategies are considered as the organisation of behaviour based upon expected outcome, with a bias of attending to cognitive information with affect information being minimised. The low numbered Type A strategies (A1-2) are considered to develop under
conditions of little threat and the child is usually protected, however, the desire for comfort is discouraged. A3-8 strategies are categorised as false positive affect strategies.

*Type C* strategies are the reliance upon processing affect information and minimising/omitting cognitive information, resulting in the generation of incorrect information. Information regarding feelings of fear, anger and desire for comfort guide behaviour, however, this does not accurately predict safety or danger due to distorted cognitive and affective information processing. Anxiety disorders are more likely to be experienced by individuals adopting a Type C strategy.

The DMM offers a comprehensive approach to the assessment of attachment strategies across the life span. Due to strong face validity it is popular in clinical settings and is widely used by health and social care professionals (Farnfield, et al. 2010). However, research regarding the validity and reliability of the model is limited (see Farnfield, et al. 2010, for a review of the validity of DMM assessments; Crittenden, 2005). The comprehensive nature of the model has resulted in complex DMM assessment tools and considerable training and practice is required which has limited the evidence base regarding the validity of the model. The Infant Care-Index, Preschool Assessment of Attachment and the DMM-Adult Attachment Interview are reported to be valid measures (Farnfield, et al. 2010). However, there are several tools such as the Transition to Adulthood Attachment Interview that require assessment of the psychometric properties. Overall further research is required to determine the validity of the DMM as a model for understanding attachment strategies across the life span.

**1.3.6 Adult attachment**

Researchers have also focused upon adult attachment relationships. For example Bartholomew’s model of adult attachment (Bartholomew 1990; 1997) is defined in terms of two kinds of working models, an internal model of the self (positive vs. negative) and an internal model of others (positive vs. negative). Combinations of these dimensions yields four attachment patterns and include positive working “secure,” a
mixture of negative-positive working model “preoccupied”, positive-negative working model “dismissing” and the negative-negative working model “fearful”.

Secure adults are likely to have experienced consistent and responsive care giving and develop a positive image of themselves and others. Subsequently they have a sense of attachment security and develop adaptive strategies for coping with distress including; develop intimate relationships, experience comfort with closeness and interdependence, behave autonomously and seek support. They are likely to experience low levels of anxiety and avoidance of others.

Preoccupied adults are likely to have experienced inconsistent, intrusive and neglectful parenting. Attachment strategies include increasing negative affect in order to gain proximity towards their attachment figure. Preoccupied adults are likely to develop a negative self-image and a positive image of others, consequently experience high anxiety levels and low avoidance of others. It is hypothesised that they seek approval and acceptance from others, are preoccupied with relationships and become dependant on others.

Dismissing adults and fearful adults: these two styles have a similar view of others, however, differ with regards to their view of themselves. Fearful individuals are likely to have experienced attachment figures as overtly expressing negative affect and are more likely to have a negative self-image believing they are unlovable and others will reject them, subsequently experience high levels of distress. The attachment figures of dismissing individuals are likely to have discouraged expressions of affect and experienced little support regarding emotional development. However, they may have received support in other areas such as schooling leading to a positive self-image and the perception that they are self-reliant and will be unaffected by the rejection of others. They are able to suppress emotional reactions and subsequent attachment behaviour. Consequently dismissing and fearful individuals typically believe that others are uncaring and unavailable, therefore avoid close relationships.
There have been a number of criticisms of Bartholomew’s model. For example it has been suggested the model neglects to include individual differences regarding beliefs and affective and behavioural regulation skills associated with attachment (Mikulincer et al., 2003). In an attempt to address these limitations Mikulincer & Shaver (2003) developed a model of attachment system activation and functioning in adulthood. The model includes three main components:

- **Monitoring and appraisal of threatening events** which leads to activation of proximity seeking
- **Monitoring and appraisal of attachment figure availability and responsiveness**; which accounts for individual differences relating to attachment security and what the model refers to as security-based strategies of affect regulation. The model suggests that individuals may turn to internalised representations of attachment figures or actual supportive others to maintain symbolic or actual proximity to their attachment figures, in an attempt to regulate their emotional distress. Although the model assumes that individuals develop an increased ability to gain comfort from an internalised symbolic attachment figure(s), it is also acknowledged that individuals are always likely to rely on the physical presence of others.
- **Monitoring and appraisal of the viability and likely utility of seeking proximity to an attachment figure**: this refers to individual differences relating to the development of secondary attachment strategies, namely hyperactivating versus deactivating strategies of affect regulation. Hyperactivating strategies may include attempts to elicit care and support from a partner to maintain close proximity in an attempt to regulate affect. If an individual appraises that the attachment figure is unavailable, they may try and deactivate proximity seeking by attempting to inhibit the need for support. This may lead to denial of attachment needs, avoidance of intimacy/ closeness/ dependency of others and thus strive for self-reliance and independence. Individuals may employ a number of cognitive and affective strategies in an attempt to deny their attachment needs, such as inattention to threatening events and/ or personal vulnerabilities to inhibit potential associated distress with such threats.
There is obvious overlap between the DMM and the two adult attachment models discussed above. All three models propose that attachment behaviour is organised based upon cognitive and affective information. However, the DMM re-conceptualises attachment behaviour as protecting oneself from danger rather than the traditional Bowlbian theory of attachment behaviour reflecting safety seeking. It also emphasises that attachment styles are dynamic and adaptive.

1.3.7 Limitations of attachment theory

Bowlby’s early work focused upon the importance of attachment to one caregiver, typically the mother. We now know that infants are capable of forming multiple relationships and that there are no biological constraints that make the bond to the mother exclusive (Schaffer, 1992). However, in the attachment literature there is a bias towards focusing upon a primary caregiver. Also Bretherton & Munholland (2008) express concerns that adult attachment research is increasingly monadic and recommend an increased focus upon dyadic, two-person approaches to attachment. For example attachment measures are often administered to explain an individual’s mental health or affect regulation skills. Bretherton & Munholland (2008) argue that when dyads are examined, assessments are in effect considered individually, rather than examining the relationship functioning to assess individual attachment styles and the impact upon the dyad. They also suggest that an emphasis upon an internalised representation of an attachment figure may lead to an exaggeration of the extent to which attachment representations foster self-reliance in the absence of an actual supportive relationship. In addition further research regarding attachment cross-cultures is required to further our understanding of attachment (Mikulincer et al. 2003). There also remains limited research regarding the development of coregulation to self-regulation, hyperactivating and deactivating attachment strategies (op.cit). Mikulincer et al., (2003) report a paucity of research regarding why some individuals with insecure attachments develop maladaptive coping strategies that require clinical interventions whilst others cope without developing severe psychopathology.
Researchers have also suggested that the outcomes of biologically-related parent-child research should be considered with caution. For example Scarr (1988) argues it is impossible to interpret direction or cause and effect for genetically-related dyads. Rutter (1981) argues that a complex model that includes events, appraisal of such events and the social environment is required to explain individual differences. For example temperament is considered to have an influence upon behaviour and motivation. Chess & Thomas (1984; see Chess & Thomas, 1992 for a review) describe three broad categories of temperament; easy temperament (high adaptability to change, and mild or moderate mood intensity, which is largely positive), difficult temperament (opposite to easy temperament) and slow-to-warm-up temperament (withdrawal, slow to adapt and mild to moderate mood intensity). They suggest that resilience and healthy development is more likely when demands and expectations of caregivers are compatible with the child’s temperament. Conversely, when demands and expectations are excessive and incompatible, this is likely to compromise healthy development as the child is vulnerable to experience excessive stress. Crittenden (1999) suggests that considering the interaction of patterns of attachment with temperament can be conceptualised as the interaction that yields “personality.” The DMM includes such variables and describes the interactional effects of caregivers, child effects and the environment upon attachment styles and subsequent coping strategies and resilience.

There are a number of methods for conceptualising attachment strategies between which there are considerable overlap. Regardless of specific models, two decades of empirical work confirm that attachment theory is a useful framework for understanding affect regulation derived from different patterns of relationships with attachment figures (Mikulincer et al. 2003) and understanding attachment behaviour across the life span. Overall the attachment literature demonstrates that a secure attachment style is a protective factor and promotes reliance and positive coping strategies. Conversely a non-secure attachment style can be associated with neurobiological alterations of the developing brain, poor affect regulation and the ability to cope with stress and regulate attachment behaviour. Attachment research has made important contributions to the
understanding of adaptive and maladaptive functioning for neurotypical developing children and adults. Although there is an emerging literature base, research regarding attachment for adults with atypical neurological development including adults with ID is limited. The next part of this paper will discuss some of the literature in this area.

1.4. Part 3: Introducing attachment theory and ID

Individuals with an ID are more likely to develop mental health problems compared to their non-ID peers (Deb, Thomas & Bright, 2001), CB is also commonly experienced by adults with ID. A number of factors have been found to be protective and reduce the likelihood of poor outcomes under conditions of risk including attachment relationships. Attachment relationships promote emotional development, affect regulation skills (Schore, 2001) and the ability to cope with overwhelming and disturbing emotions (Cassidy, 1994). Attachment theory is likely to provide further understanding of the factors associated with emotional difficulties, mental health difficulties and CB experienced individuals with an ID, and is especially relevant when many experience a lack of meaningful relationships which is reported to contribute to poorer outcomes. However, there is a paucity of empirical research examining attachment difficulties in this population. Much of the current research is theoretical and is often focused upon children with ASD or a diagnosis of Downs Syndrome (DS), therefore generalisability of the research is limited. The lack of research is likely to reflect a lack of valid and reliable measures for assessing attachment styles in adults with ID, and the challenges of working with research participants that are considered vulnerable and the issues of consent and capacity that are raised (see Dye, Hendy, Hare & Burton, 2004). The next section will summarise empirical studies regarding prevalence of attachment difficulties for children with ID and ASD, subsequently the implications of attachment theory for individuals with ID will be discussed.
### 1.4.1 Prevalence of attachment difficulties for children with ID and ASD: a summary of the empirical studies

Table 1 summary of empirical studies regarding attachment and children with ID and/or ASD

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<th>Authors</th>
<th>Participant information</th>
<th>Measures</th>
<th>Results</th>
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16 studies were included (N=287), mean “mental age” was reported and ranged from 16.1 months to 55 months. | The studies classified ASD using DSM-IV or ICD-10 criteria. Attachment was classified using a range of observational measures including the SSP. | Children with ASD were found to be significantly less securely attached to their parents compared to children without ASD. However, secure attached behaviour was observed. When children with ASD had higher mental age there was no significant difference between ASD and attachment security. Children with ASD that were more developmentally delayed were less securely attached that children without ASD. |
| Rutgers et al. (2007)                                                                                                           | N = 89 children aged between 12 – 42 months, were divided in to the following groups:  
ASD group (ASD and Pervasive Developmental Disorder-Not Otherwise Specified)  
Clinical group (ASD, ID and a diagnoses of both ID and ASD)  
Other clinical group (several diagnoses including ID without ASD and language disorders) | The Brief Attachment Screening Questionnaire (Bakermans-Kranenburg et al. 2003). | Clinical group were significantly less securely attached compared to the non-clinical group  
ASD group was less securely attached when compared to the non-clinical children.  
Co-morbid ASD and ID, were reported to be less securely attached compared to children with an ID (without ASD).  
Parents in the other clinical group and parents of the children with ASD were reported to have a less authoritative parenting style.  
Parents of children with ASD and the clinical group |
<p>| Non-clinical (comparison) group | had lower socio-economic status, when compared to parents of the non-clinical group. Overall, higher socio-economic status was associated with more social support. |
| van Ijzendoorn, Schuengel &amp; Bakermans-Kranenburg, (1999) | Meta-analysis of precursors, concomitants and sequelae of disorganised attachment. 80 studies were reviewed, N = 6,282 parent-child dyads. Parent-child dyads/studies were included from North America, Europe and developing countries and from a diverse range of cultural and socioeconomic backgrounds. All studies included in the meta-analysis were empirical studies and disorganised attachment had to be classified by using the Main &amp; Solomon (1990) classification criteria or its equivalent. In samples of atypical neurologically developing children (for example, cerebral palsy, autism and Down’s Syndrome) the percentage of disorganised attachment was 35%, compared to 15% of disorganised attachment reported in samples of middle class/ non-clinical children. |
| van Ijzendoorn, Rutgers, Bakermans-Kranenburg &amp; Daalen et al., (2007) | N = 55 children Infants aged between 16 to 41.6 months Children diagnosed with ASD and ID. SSP (Ainsworth et al., 1978) Richter’s Attachment Security Scale (Richters, Waters &amp; Vaughn, 1988). Parental Sensitivity measure: The Emotional Availability Scale (Biringen, Robinson &amp; Emde, 1988). Sensitivity of parents with children with ASD was similar to those of parents of children without ASD. Sensitive parenting was not associated with greater attachment security for ASD children Children with ASD interacted less with their parents. Co-morbid ASD and ID resulted in lower scores on measures of attachment, compared to control groups. They also were assessed as... |</p>
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<th>3. Vaughn, Goldberg, Atkinson, Marcovitch, MacGregor, &amp; Seifer, (1994)</th>
<th>Sample of children with Downs Syndrome (DS): N = 138 toddlers aged 24 months to 54 months and mothers mean age 34.7 years Control sample: N=146; aged 12-14 months of age; mean age of mothers = 29.85 years</th>
<th>Developmental level data was collected for all the children. A range of instruments were used including Bayley Scales of Infant Development (Bayley, 1969), Gesell Schedules(Knobloch et al., 1980), Vineland Adaptive Behavior Scales (VABS; Sparrow, Balla, &amp; Cicchetti, 1984) Attachment styles were assessed using the SSP (op.cit)</th>
<th>Greater proportion of children with DS were assessed as having a insecure attachment style. This was attributable to the large number of cases categorized as &quot;unclassifiable&quot; and insecure in the sample of children with DS. When the insecure-unclassifiable cases are deleted from the analysis, the proportions of secure versus insecure cases were similar between groups.</th>
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<td>4. Atkinson, Chisholm, Scott, Goldberg, Vaughn, Blackwell, Dickens, &amp; Tam (1999)</td>
<td>N = 53 infant-mother dyads. All infants had a diagnosis of DS. Infants were aged between 14 and 30 months of age and mothers mean age was 33.04 years</td>
<td>Developmental level data was collected for all the children using the Bayley Scales of Infant Development (Bayley, 1969) and (VABS; Sparrow, Balla, &amp; Cicchetti, 1984). Attachment styles were assessed using the SSP and the Attachment Q-set (Waters &amp; Deane, 1985)</td>
<td>Over a two year period the following attachment behaviours were classified as: 40% of children secure behavior 47% unclassifiable behaviour 13% insecure attachment behaviour A similar distribution was reported when the children were re-assessed approximately 16 months later. Mothers of secure children were most sensitive; mothers of insecure children were least sensitive. Mothers of secure children were significantly more sensitive than mothers in the insecure combined with unclassifiable (A, C, D, U) group.</td>
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Children and adults with ID may be at an increased risk of experiencing non-secure caregiver-infant attachment relationships compared to infants without ID (Janssen, Schuengel & Stolk, 2002; Clegg & Sheard, 2002). For example, research indicates that children with Downs Syndrome (DS) are more likely to have an insecure attachment style when compared to their non-ID peers (Vaughn, et al. 1994; Atkinson et al. 1999). Vaughan et al. (1994) reported that a greater proportion of children with DS were assessed as having a insecure attachment style, with a large number of children categorized as "unclassifiable." Atkinson et al. (1999) reported that over a two year period 40% of children with DS exhibited secure behavior, however, a higher proportion were unclassifiable (47%) and a further 13% showed clear signs of insecure attachment behaviour.

A meta-analysis of the disorganized/ disoriented attachment style literature indicated that the percentage of children with disorganized/disoriented attachment styles was higher for children with atypical neurological development compared to typical developing children (van Ijzendoorn et al. 1999). A meta-analysis by Rutgers et al. (2004) reported ASD is associated with insecure attachment styles, and adding ID as a confounding factor increased the proportion of insecure attachment. Rutgers et al. (2007) also found that children in the clinical group were significantly less securely attached to their parents, compared to the non-clinical group and a diagnosis of ID was also reported to be confounding factor.

A further study reported children with ASD and ID were more likely to be classified as having a disorganized attachment style compared to controls (van Ijzendoorn, et al. 2007). In addition they reported sensitivity of parents with children with ASD was similar to those of parents of children without ASD. Although sensitive parenting was not associated with greater attachment security for such children, they were found to interact less with their parents. The study by Atkinson and colleagues also examined sensitivity and found that maternal sensitivity was associated with greater infant
attachment security and that there was an interaction effect between maternal sensitivity and child cognitive functioning.

Overall the above literature builds a picture that suggests ID is a risk factor for less secure attachment, which is further compounded when a child has a diagnosis of ID and ASD. Also children are more likely to be classified as displaying disorganised or unclassifiable attachment behaviour compared to controls. In addition caregiver’s sensitivity does not appear to be a protective factor for children with ASD. It is noteworthy that Vaughan et al. (1994) suggests caution is used when using the SSP and questions whether it is a valid measure for assessing infant attachment behaviour for children with atypical development. The above findings indicate that children with both ASD and ID do display secure attachment behaviour, however a high proportion display non-secure attachment behaviour. Crittenden (1999) suggests that instead of classifying attachment behaviour the adaptive function of the behaviour should be assessed. The above studies focused upon children and there is a paucity of research regarding adults with ID and attachment. The implications of attachment theory for children and adults with ID will now be discussed in the next section.

1.4.2 The implications of attachment theory for children and adults with ID

Neurological, cognitive and emotional factors

The factors contributing to the high proportion of infants with an ID exhibiting non-secure attachment behaviour continue to be debated. A concern is that a non-secure attachment is considered to reflect insensitive parenting, however, a more complex picture is required to understand such behaviour (Crittenden, 1999). A core feature of attachment theory is the way in which cognitive and affective information is processed and subsequent attachment behaviour organised. In addition to the applicability of attachment assessments to assess atypically developing children, Crittenden (1999) suggests that the effect of neurological and cognitive deficits and subsequent physiological and sensory deficits are likely to effect information available to the infant and communicated from the infant. This is likely to effect infant attachment signals and
caregiver behaviour. The role of neurological deficits and a number of other factors are discussed regarding the possible impact they may have upon the high proportion of non-secure attachment styles (i.e., unclassifiable, insecure and / or disorganized) amongst children with ID and/ or ASD.

Neurological development

Research indicates that sensitive care giving facilitates caregiver-infant psychobiological attunement / affective synchrony which helps regulate affective states for the infant. Sensitive care giving and a secure attachment facilitate the development of the limbic system and regulation of cortisol levels. Affect regulation and self-regulation skills are hypothesised to regulate attachment behaviour and the capacity to cope with stress (Schore, 2001). Research findings indicate that infants with atypical neurological development may be at an increased risk of a non-secure attachment style (see table 1 for summary of studies) compared to controls. Deficits in neurological functioning may predispose such infants to a non-secure attachment style. In addition difficulties organizing attachment behaviour may exacerbate/ perpetuate neurological deficits for this group and maybe associated with the prevalence of disorganized or unclassified attachment behaviour and possible affect dysregulation. This is especially relevant for individuals with ASD as there is an increasing literature base that indicates atypical development of the right hemisphere of the brain, the limbic system, and subsequent cortisol and beta-endorphin dysregulation (Lathe, 2006). Attachment theory and affect dysregulation may further add to our understanding of such difficulties for individuals with ASD. This is especially relevant when a diagnosis of ASD is reported to be prevalent for approximately 28% of those with an ID (Bryson, Bradley, Thompson, & Wainwright, 2008).

Non-secure attachment behaviour and cortisol dysregulation may also help further understanding of the factors contributing to emotional difficulties and challenging behaviour for adults with ID. Janssen et al. (2002) propose a stress-attachment model for understanding the function and contribution of individual differences of CB exhibited by individuals with severe and profound ID (this will be discussed later in this paper).
Non-secure attachment behaviour and affect dysfunction is also likely to be associated with limited emotional awareness (Lane & Schwartz, 1987) and may perpetuate affect dysregulation.

**Cognitive ability**

Individuals with an ID are considered to have a significant impairment of cognitive functioning (BPS, 2000). Cognitive ability is an important aspect of attachment theory, a number of theorists (for example Bowlby, 1969; Main, Kaplan & Cassidy, 1985) have acknowledged the integral role of cognition in the formation of attachment relations. For example, Cassidy (1999) suggested that object permanence is arguably essential for secure attachment behaviour. Cognitive ability is required to continually update IWMs (Main et al. 1985) and for the organisation of “goal directed behaviour,” which balances attachment needs and exploratory behaviour, whilst interacting with the primary caregiver and the environment (Atkinson et al. 1999). Limited cognitive abilities may help explain the prevalence of disorganized and unclassifiable attachment styles reported for individuals with an ID, and may increase the risk of individuals with an ID developing a non-secure attachment style. A number of studies have reported that lower functioning infants were less frequently classified secure compared to higher functioning individual’s (for example Atkinson et al. 1999; Rutgers et al. 2007). However these studies have demonstrated the ability of children with ID and /or ASD to organise secure attachment behaviour. In addition Atkinson et al. (1999) reported that children assessed as displaying non-secure attachment behaviour were considered to have the cognitive ability to form goal directed partnership. Therefore additional factors that may contribute to non-secure attachment behaviour are considered below.

**Caregiver sensitivity and attachment signals**

Research demonstrates that a number of children with ID exhibit secure attachment behaviour and that some caregivers of children with ID have been found to be attuned and sensitive to their children’s attachment signals (e.g., van Ijzendoorn et al. 2007 and
Atkinson et al. 1999). However for others this is not the case, the association between children’s ID, caregiver sensitivity and attachment behaviour may also further understanding of the prevalence of non-secure attachment behaviour for this group. The diagnosis of ID has been described as the “most stressful inducing life event” for the child’s parents (Baxter, Cummins, & Polak, 1995; Stolk & Kars, 2000). It is reported that parents may experience the diagnosis as a loss of a healthy infant (Hollins & Sinason, 2000), leading to psychological states akin to or even analogous to grief. For some families, such grief could have an impact upon the developing relationship between a caregiver and infant. A study by Esterhuyzen & Hollins (1997) found that an early diagnosis of an ID can be associated with an insecure attachment style. In addition a grief reaction may be re-experienced by families each time the child does not reach the milestones expected for neurotypical developing children, such as their first job and leaving home. Parenting can be a difficult task for parents with a typically developing child and the task can be more complex when the child has an ID. Lewis (1987) reviewed a number of studies regarding children with Down Syndrome (DS) and parent-child interactions, for example Berger and Cunningham (1981) observed interactions between new born babies (infants with and without DS) and their mothers over a six month period. Infants with DS were reported to make eye contact with their mothers at around seven weeks of age, two and a half weeks following children without DS, the frequency of eye contact was also lower than that of the children without DS. They were also observed to smile at aged seven weeks, three weeks later than infants without DS. Mothers of children with DS were also reported to talk more frequently to their infants as they aged (Berger & Cunningham, 1983) compared with mothers of typically developing children and vocalisations of mothers and infants with DS were found to clash and overlap more often compared to children without DS. This indicated limited synchrony between parents and children with DS. Caregiver’s sensitivity is considered a significant factor in determining attachment classification (Ainsworth et al., 1978).

The results of the study by Atkinson and colleagues above demonstrated an interaction between maternal sensitivity and child cognitive functioning. It has been argued that children with DS do not provide their caregivers with the stimuli to foster sensitive care
giving. In the study by Vaughan et al. (1994), they reported that the attachment system for the children with DS “appears to fail to achieve the goal of contact and arousal reduction……even when they approach their caregivers with appropriate attachment signals for contact, mothers and strangers rarely completed contact”. They postulate that this maybe because children with DS are unable to accompany the “approach with the appropriate distress signals at their current level of arousal…that typically elicit being picked up.” In addition Vaughan et al. (1994) reported the children in their study did not seek to maintain contact in reunion episodes, even when seeking proximity or interaction. They appeared to require little or no comforting, which limited the opportunity to observe and classify attachment behaviour. They were observed to “fuss and cry less and achieve/ maintain contact less effectively than children without DS, and were picked up less by their mothers or strangers compared to the children without DS.”

As proposed by Crittenden (1999) neurological deficits may affect physiological and sensory deficits which are likely to affect information available to the infant and communicated from the infant. As demonstrated by Vaughan et al. (op.cit), there appears to be a difference between the arousal levels of children with DS compared to children without ID which seems to affect the attachment system. This leads to potentially less clear attachment signals from with children with DS, which may contribute to difficulties regarding caregiver sensitively, possibly exacerbating difficulties understanding already ambiguous attachment behaviours from children with ID.

However, even when parents are found to be sensitive for example in the study by van Ijzendoorn et al. (2007), sensitivity is not always associated with greater attachment security. Atkinson and colleagues reported the children in their study were considered to have the cognitive and behavioral skills to exhibit secure attachment behaviour and therefore suggest that motivation may be a factor contributing to the high prevalence of non-secure attachment behaviour for such children.
Motivation

Atkinson et al. (1999) argue that children with atypical development may have the cognitive and behavioural skills required for goal directed partnership. However, for those classified as insecure, disorganised or unclassifiable, a contributing factor may be limited cognitive ability which may “undermine the development of shared meanings and consequent motivation to form goal-corrected partnerships which is most powerfully signalled through affective display.” They suggest that this could reduce maternal sensitivity, alternatively less sensitive caregivers may hinder the development of secure attachment behaviour (Atkinson et al. 1999). This hypothesis supports Hobson (2008) who suggests that reciprocal relationships between people are experienced qualitatively differently to the relationships that exist between people and objects, and that in order to understand this contrast we must understand the affective experience of relating to people i.e. relatedness. He postulates that for individuals with ASD it is the affective capacity to experience others that is impaired. Children with ASD have been found to exhibit secure attachment behaviours and demonstrate a clear preference to their primary caregivers compared with strangers (Rutgers et al. 2004), however, they are less likely to seek interaction with their caregivers and their attachment behaviour is often classified as insecure, disorganised or unclassifiable. Hobson (2008) suggests it is important to distinguish between relatedness and relationships / attachment in order to understand the affective capacity to experience others, and the subsequent motivation to engage with others.

Disorganised attachment

Pipp-Siegel, Siegel and Dean (1999) reviewed disorganised attachment classifications and demonstrated that a number of behaviours exhibited by children with atypical neurological development could be attributed to either a disorganized attachment classification or behaviour attributed to neurological deficits. They recommend a number of methods that should be adopted in order to prevent pseudo- disorganized behavior being classified and indicate a number of methods to differentiate between
disorganised behaviours and behaviours attributed to neurological deficits. Crittenden (1999) suggests that instead of classifying attachment behaviour for atypical developing children, the adaptive function of non-secure attachment behaviour should be determined.

**1.4.3 Attachment and adults with intellectual disabilities**

Relationships: helper-helped dyads

A number of risk factors are hypothesised to contribute to poorer mental health for adults with ID including stressful family circumstances, traumatising abuse, lack of meaningful relationships, a lack of intimate relationships and poor social support networks (Deb et al. 2001; Emerson et al. 2001; Hastings et al. 2004). Opportunities for individuals with an ID to develop social networks can be limited, people with ID commonly live with their families or in residential housing and their social networks typically consist of paid professional carers, close family and others with an ID with whom individuals live (DoH, 2007). This has also been the authors’ personal and professional experience when knowing and working with individuals with an ID. Attachment theory provides a conceptual framework for thinking about relationships between individuals receiving care (individuals with ID) and those providing care. Often individuals with an ID require support across the life span in order to have their practical and emotional needs met and are likely to direct their attachment behaviour towards care staff (Sterkenburg, Janssen & Schungel, 2008; De Schipper & Schuengel, 2010, De Schipper, Stolk, & Schuengel, 2006; Clegg & Lansdall-Welfare, 1995). Attachment theory allows us to think about receiving support from others; Crittenden (2005) suggests seeking support from an attachment figure is considered an adaptive response to feeling helpless or threatened and Batholomew (1990) described interdependence an adaptive strategy to cope with distress. Research suggests that seemingly minimally threatening situations can trigger thoughts relating to proximity seeking and mental representations of internalised attachment figures (see Mikulincer, Birnbaum, Woodis &
Nachmias, 2000). Therefore it is not surprising that professional carers are likely to become attachment figures for the people they are supporting.

Carnaby (1998) argues that for individuals with disabilities, living fully autonomous lives may not be achievable. He suggests that social policy should move away from promoting independence, for example as reported in the Valuing People: A New Strategy for Learning Disability for the 21st Century (DoH, 2001) and move towards a helper-helped relational approach, which is more representative of the lives of individuals with a disability. Again attachment theory provides a framework for thinking about relationships in this way as seeking support from an attachment figure is adaptive (Crittenden, 2005). Adopting such an approach may support the implementation of an attachment based approach to care. A number of empirical studies (see Sterkenburg et al. 2008; De Schipper & Schuengel, 2010, De Schipper et al. 2006; Clegg & Lansdall-Welfare, 1995, all of which are discussed in the next section) have indicated that having direct-care staff as a secure base to help promote affect regulation and sense of security has positive outcomes for individual with an ID.

**Attachment and challenging behaviour: a stress-attachment model**

Adults with ID often leave their family home due to a crisis, typically due to carer illness or death (DoH, 2007). Consequently alternative accommodation has to be found in an emergency, therefore appropriate housing, care and support options may not be available (DoH, 2007). Accommodation may be provided based upon availability rather than suitability. Often individuals live with other people with disabilities of whom the majority will be relative strangers. Residential care is often characterised by shift changes and high staff turnover. An audit by the CQC (2009) highlighted a number of concerns regarding the wellbeing of individuals living in institutional care settings. Concerns including poor environment, lack of day activities, poor staffing levels, lack of care planning and people’s basic human rights not being addressed.

Significant life events such as moving home, lack of an attachment figure or limited availability of an attachment figure are likely to lead to emotional distress and an
increase in arousal levels, which may manifest behaviourally. Diagnostic overshadowing may lead to misattribution to such behaviour or such behaviour could be labelled as “challenging.” Janssen et al. (2002) propose that a stress-attachment model can contribute to our understanding of the factors associated with a range of behaviour exhibited by individuals with an ID, such as withdrawal, disassociation, self-soothing, aggressive outbursts or self-harm. Stress is defined as a function of the gap between perceived societal demands and an individual’s competence to cope with the demands (Janssen et al. 2002). Janssen et al. (2002) suggest that individuals with an ID are more likely to experience frequent and sustained stress which are likely to trigger attempts to seek close proximity to an attachment figure. Observable attachment behaviour may be due to protests regarding the loss of an attachment figure (Bowlby, 1969/1971/1982), for example due to moving out of the family home. Attachment behaviour may also be the consequence of unregulated arousal/poor affect regulation skills due to lack of an attachment figure(s) (Clegg and Landsdall-Welfare 1995), for example because of poor staffing levels. This behaviour could be conceptualised as a hyperactivating strategy, i.e., an attempt to elicit care and support from an attachment figure to maintain close proximity (Mikulincer & Shaver, 2003) in an attempt to regulate affect. According to Schore (2001) individual’s with a non-secure attachment behaviour are likely to have limited affect regulating skills, therefore are more sensitive to stimuli and are more easily “over aroused”, leading to an increase in cortisol levels (Lang, 2010) and possible CB (Janssen et al. 2002). The proposal of a stress-attachment model supports the perspective that understanding the function of attachment behaviour is crucial (Crittenden, 1999), and may further understanding of the factors contributing to the prevalence of non-secure attachment behaviour for individuals with an ID.

**Summary**

Research regarding the factors that may increase the risk of a non-secure attachment for individuals with an ID has focused upon children and has largely focused upon children with DS and/or ASD, therefore the findings cannot be generalized to such a heterogeneous group of individuals with an ID. Research regarding attachment and
adults with ID is limited, however the evidence does suggest a combination of factors are likely to contribute to an high proportion of non-secure attachment behaviour for children and possibly adults with atypical neurological development, which may exacerbate atypical neurological development and lead to poorer outcomes for such individuals. The implications of neurological, cognitive and emotional development upon adult attachment behaviour requires further investigation, as does the affective experience of relating to others.

In light of the prevalence of non-secure attachment classifications and unclassifiable classifications for children with atypical development, the application of such classifications for adults with atypical neurological development may require review.

As noted earlier emotional difficulties and CB are commonly experienced by adults with ID, they are also more likely to develop mental health problems compared to their non-ID peers (op.cit.). Undiagnosed mental health difficulties and diagnostic overshadowing continues for individuals’ with an ID. Relationships are protective factors for poor outcomes and many individuals with an ID can have a paucity of meaningful relationships. A complex model is required to help explain individual differences that contribute to a range of difficulties that individuals with an ID experience, attachment theory may provide further understanding of such difficulties within a dyadic, reciprocal framework which is important as many individuals rely upon the support of informal/formal carers throughout the life span. A number of studies are outlined below that indicate the importance of utilising carers as a secure base to promote affect regulation that and that a sense of security has positive outcomes for individuals with an ID.

1.4.4 Clinical interventions and direct carers as attachment figures

A number of empirical studies have examined the relationship between attachment style, ID and CB and carers as attachment figures. These will be discussed below (a summary of the studies is presented in table 2).
Table 2 summary of empirical studies regarding individuals with ID and CB and attachment interventions

<table>
<thead>
<tr>
<th>Study aim and authors</th>
<th>Participant information and diagnosis</th>
<th>Measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clegg &amp; Sheard (2002) Survey exploring the association between attachment relationships and challenging behaviour</td>
<td>Carers completed a survey regarding N=54 school leavers with ID Participants lived in a variety of settings including the parental home (N=41), family home (extended family rather than parents, N=2), supported accommodation (N=5). The living arrangements of six participants were unknown.</td>
<td>Carer survey (Sheard, et al 2001) regarding CB. Residential carers and day service provision carers were asked to complete the survey.</td>
<td>Residential and day services carers (N=16; 34%) were more likely to rate the individual as over-investing in relationships, compared to home carers (N=7; 15%). Individuals with ID that were not considered to over-invest in relationships were significantly less likely to show other types of challenging behaviour.</td>
</tr>
<tr>
<td>2. De Schipper &amp; Schuengel (2010) Examination of the role of support staff as targets for attachment behaviour Support rated attachment behaviour</td>
<td>N =156 young people reported to have moderate to severe ID; 35% of participants had a diagnosis of ASD. Age range from 3 years to 23 years; N=4 older than 18 years of age.</td>
<td>The Secure Base Safe Haven Observation list (SBSHO; De Schipper &amp; Schuengel, 2006). SBSHO assessed the degree to which a person differentiates between carers, a high score indicated that participants differentiated between caregivers (2 caregivers completed measures re: one individual they were supporting) Aberrant Behaviour Checklist (ABC; Aman, Singh, Stewart &amp; Field, 1985)</td>
<td>Young people assessed as exhibiting secure attachment behaviour were found to be less irritable, less lethargic and less stereotypic, less social withdrawal in their behaviour (when controlling for ASD and developmental age). Higher cognitive functioning (reported as developmental age as recorded in participants health records) was associated with secure attachment behaviour and behaviour suggestive of showing preference towards a caregiver</td>
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</table>

Assessment of whether children with ID display attachment behaviour towards their professional caregivers

| N=5 boys and girls aged between 3.4–14.4 years with ID and / ASD and Pervasive Developmental Disorder-Not otherwise specified (PDD-NOS) | Quality of attachment was assessed using the Attachment Q-sort (AQS; Waters & Deane, 1985) completed by two observers and behaviour was rated towards caregivers at the day centre the children attended. In addition the day centre caregivers were asked to complete a brief questionnaire, this was adapted from the AQS regarding attachment behaviour directed at themselves. | Professional caregivers appeared to be a target for attachment behaviour from children with ID. Variation between attachment behaviour between the children was observed (as expected in typically developing children; Bowlby 1969/1971/1982). No clear differences were found between diagnosis or severity of ID |

4. Sterkenburg., et al. (2008)

Measure of the effect of attachment-based behaviour therapy

| N = 6 children with severe ID and visual impairment 5 children lived in residential care and one in a foster home. All assessed as displaying severe CB(self-injurious behaviour, aggression) | Severe CB Census Protocol (CEP; Kramer, 2001). CB Scale for People with an ID (SGZ; Kraijer & Kema,1994). Professional carers recorded frequency of challenging behaviours. Frequency of maladaptive and adaptive replacement behaviour was rated based upon videotaped therapy sessions | Scores on the CEP significantly reduced post-intervention. Observation of the therapy sessions indicated a longer duration of adaptive behaviour was reported for sessions conducted with the attachment therapist compared to the control therapist, and significantly more adaptive behaviour was exhibited with the attachment-based therapist compared to the control therapist. |


N = 6; mean age 15.2; all with a diagnosis of severe ID

| Proximity-seeking behaviour towards the experimental and control therapist was assessed based upon the SSP Psychophysiological | Participants differentiated between the control therapist and the experimental therapist/attachment therapist and sought more close proximity to the |
Support for Janssen et al.’s (2002) stress-attachment model comes from Clegg & Sheard (2002). They conducted a survey that provided preliminary results to suggest an association between attachment relationships and challenging behaviour. Placement carers (N=16; 34%) were more likely to rate individuals as over-investing in relationships, compared to home carers (N=7; 15%). Attachment theory may help explain these findings. Those with a non-secure attachment style and limited affect regulation skills may have been ‘more anxious during their day service provision, and therefore displayed more attachment behaviours. Home carers are more likely to have provided close proximity to individuals, provided more sensitive care giving and therefore be more able to meet the attachment and emotional needs of individuals, compared to carers in an institutional setting. Results also indicated that individuals with ID that were not considered to over-invest in relationships were significantly less likely to show other types of challenging behaviour.

However, the results of Clegg & Sheard’s study should be regarded with caution given a number of methodological limitations. For example, a small sample size and the definition of CB was unclear. In addition, the survey is not included in the paper nor are the psychometric properties reported. Moreover, it could be argued that the measure of attachment is over-simplistic and only measures one type of behaviour, namely jealousy, which is not clearly defined and is a broad subjective term. The authors
discussed the possibility that the survey could have simply assessed poor social skills, but refute this on the basis of the qualitative data accompanying the survey.

Findings from research by De Schipper & Schuengel (2010) support Clegg & Sheard (2002). De Schipper & Schuengel (2010) reported that participants with an ID exhibiting secure attachment behaviour were found to be less irritable, less lethargic and show less stereotypic behaviour and less social withdrawal. They also reported that professional caregivers can be the target of secure attachment behaviour. Direct care staff providing the role of an attachment figure is crucial in helping meet the attachment and emotional needs of individuals with an ID, given that research indicates an association between secure attachment behaviour and less challenging behaviour. The findings from a study by De Shipper et al (2006) also support the findings reported by De Schipper & Schuengel (2010). De Shipper and colleagues reported that professional caregivers appear to be a target for attachment behaviour from children with ID, ASD and PDD-NOS and that typical variation of attachment behaviour between the children was observed.

Research indicates that stereotypic behaviour exhibited by individuals with ID and/ or ASD is socially mediated and is more likely to decrease when individuals are supported by staff that they are familiar with (see Cunningham, & Schreibman, 2008; Durand & Carr, 1987; Runco, Charlop & Schreibman, 1986), and that stereotypic behaviour is associated with anxiety (Joosten, Bundy & Einfeld, 2009). De Schipper & Schuengel (2010) argue that in addition to a possible self-stimulatory function (Rapp & Vollmer, 2005; Cunningham, & Schreibman, 2008), stereotypic behaviour may also reflect poor affect regulation skills. They argue that their findings indicate a negative association between attachment behaviour and irritability, stereotypic behaviour and social withdrawal, providing evidence such behaviour has an emotional component. De Schipper & Schuengel’s (2010) findings also demonstrate that higher cognitive functioning was associated with secure attachment behaviour and behaviour indicating preference towards a caregiver. The findings provide support for the argument that cognitive functioning is associated with attachment behaviour (op.cit).
More recently, research examining the effectiveness of attachment-based interventions upon CB have shown positive results. For example, a study by Sterkenburg, et al. (2008) used an Attachment-based Behaviour Modification Treatment (ABMT; see Sterkenburg et al. 2008 for detailed description of the approach) for children assessed as displaying severe challenging behaviour. ABMT is based on a gentle and gradual build-up of contact and interaction between the participant and therapist with the aim of the participant using the therapist as a secure base in which to explore their environment, thus seeking proximity when distressed. It is also integrated with behavioral interventions. An attachment-based therapist (experimental therapist) delivered the attachment element of the therapy, the behaviour modification was delivered by both the experimental and the control therapist. The results of the study indicated that a longer duration of adaptive behaviour and significantly more adaptive behaviour was exhibited with the attachment-based therapist compared to the control therapist. The authors reported that therapeutic gains can be achieved using attachment-based interventions for children with ID that have previously had their emotional needs severely neglected. However, the mechanism for change is unclear and requires further investigation, therefore, Schuengel et al. (2009) tested the hypothesis that attachment difficulties and associated affect regulation difficulties are likely to contribute to challenging behaviour. They also used ABMT alongside a control condition (control therapist offered positive attention and opportunities of verbal activities to facilitate interaction, such as story telling rather than an attachment-based approach). Both therapists provided behaviour modification therapy. The results indicated that children with multiple disabilities that previously had not experienced an attachment figure displayed secure attachment behaviour following the intervention. The participants also sought more close proximity to the attachment-based therapist compared to the control therapist. The measurement of arousal level indicated that a therapeutic relationship facilitated improvement in the participants and that during the behaviour modification therapy, participant arousal levels were lower with the attachment-based therapist compared to the control therapist. Together the above studies support the hypothesis that attachment difficulties and associated affect regulation difficulties are likely to contribute to challenging behaviour.
It also seems reasonable to propose that the development of an attachment relationship is likely to have provided children with a safe base which is likely to have improved affect regulation skills (Schore, 2001), possibly fostering the setting conditions to teach adaptive behavioral strategies (Schuengel et al. 2009). However, the above studies should be interpreted with caution given a number of methodological limitations including small sample sizes. Also, the experimental and control therapist both had contact with the participants during the same time period therefore a number of factors may confound the findings, such as individual therapist effects, social reinforcement etc. However, the results do provide evidence to suggest that children with severe ID can effectively organise their attachment behaviour which is associated with effective affect regulation skills. This raises questions regarding the cognitive ability of individuals with severe ID to develop IWMs and the ability to gain comfort from an internalised symbolic attachment figure(s).

Summary

The emerging literature base suggests that non-secure attachment styles are more likely to be observed for individuals with ID compared to their non-ID peers. A number of factors may contribute to an increased risk in attachment difficulties for this group such as neurological development, cognitive ability, motivation to relate to others and caregiver sensitivity to name a few. Research into attachment difficulties and ID is limited, however, evidence indicates that attachment theory can provide a greater understanding of the individual differences associated with emotional and behavioural difficulties. One of the factors contributing to limited research in this area this is the lack of validated measures which directly assess adult attachment behaviour for individuals with ID. The current methods of assessing adult attachment are discussed below.

1.5. Part 4: Assessing adult attachment

There are a number of methods that can be used to assess attachment security, including Q sorts and behavioural assessments (for a review see Crowell, Fraley & Shaver, 1999).
The two main approaches for assessing adult attachment, namely the self-report method and the narrative method, are outlined below.

**Narrative approach**

The narrative approach uses face to face interviews to gain an understanding of individual attachment experiences. Narrative approaches are based upon the assumption that securely attached individuals are able to effectively use an attachment figure as a “secure base” from which to explore and a “safe haven” when distressed or in danger (Crowell, Fraley & Shaver, 1999). The use of an individual’s narrative is based upon the notion that “mental processes vary distinctively as do behavioural process” (Main et al. 1985), and that organised behaviour and representational processes are reflected in coherent and organised language. The validity of narrative approaches in assessing attachment comes from observations of attachment behaviour in natural settings (Crowell et al. 1999). A common narrative tool is the Adult Attachment Interview (AAI, Main & Goldwyn, 1984) which is a semi-structured interview that focuses on parental-child relationships during childhood. The interviewee is asked about their view of their parental relationships and experiences with parents in which the attachment system is expected to have been activated, such as when upset, injured and/ or experiences of loss. Finally the meaning the interviewee attributes to these experiences in terms of their parents behaviour and if applicable the development of the interviewee’s own parental personality and behaviour are evaluated. The transcript is then scored based upon three areas; firstly, the coder’s assessment of the interviewee’s childhood experiences with parents, secondly the language used by the individual and thirdly the interviewee’s ability to give an integrated believable account of their experiences and meaning of such experiences. The AAI classifies individuals as being secure-autonomous, dismissing, or preoccupied. Initially the AAI classifications were considered to reflect IWMs (Main et al 1985), however, Main (1995; 1999) later described the classification as reflecting attachment “states of mind” and the organisation of attention regulation when triggered by attachment cues during the course of the interview, interpersonal interactions and intrapersonal reflection. Individuals classified as secure have “states of mind” that are a
good reflection of their experiences, dismissing individuals are rated as having an incoherent narrative that is contradictory, and also minimise significant attachment-related experiences. Individuals classified as preoccupied appear to find it difficult to contain their responses to specific questions and appear overwhelmed by attachment-related experiences (Hesse, 1999). The AAI classification system can also include a fourth unresolved category, an unresolved narrative is characterised by confusion and disorganisation and contains experiences of loss or abuse (Crowell et al. 1999). The AAI has good reliability and predictive validity (Hesse, 1999), however, requires extensive training and is time consuming to administer and score (Crowell et al. 1999).

Self-report approach

Several multi-item continuous self-report measures have been developed to assess adult attachment styles, for example the Relationships Questionnaire (Bartholomew & Horowitz, 1991) and the Adult Attachment Styles Scale (Hazan & Shaver, 1987). Hazen and Shaver (1987) developed a self-report rating scale based upon the SSP classifications. The rating scale aims to assess the way in which adults think, feel and behave in romantic relationships. Bartholomew and Horowitz (1991) also developed a self-report Relationships Questionnaire based upon Bartholomew’s model of adult attachment (Bartholomew 1990; 1997). The questionnaire contains multi-sentence descriptions of each of the four patterns secure, preoccupied, dismissing and fearful and respondents chose the descriptions that best describe them.

The existing measures for adults rely on the individual’s ability to reflect upon childhood events, relationships with parents and current interpersonal relationships (Smith & McCarthy, 1996). Therefore require individuals to have a good level of verbal comprehension and receptive language skills, thereby excluding participants with limited verbal and comprehension skills. Adult attachment measures also rely on the ability to reflect and remember past childhood experiences and often require individuals to be able to reflect upon friendships and adult romantic/intimate relationships. For many individuals with ID their cognitive difficulties may impact upon their ability to recall such information. In addition opportunities for individuals with an ID to develop
social networks can be limited and social networks can typically be paid professional carers, close family and others with an ID with whom individuals live (DoH, 2007). It is also the researcher’s experience that it can be difficult for adults with ID to develop meaningful peers friendships and/or romantic/intimate relationships. The current adult attachment measures are limited in assessing attachment experiences for adults with ID. Smith & McCarthy (1996) suggest that child attachment measures may be considered more developmentally appropriate, however, such methods are unsuitable for assessing adult experiences of relationships for people with ID.

**Existing methods of assessing attachment in people with ID**

The researcher is aware of the Self-report Assessment of Attachment Security (SRAAS), which is a measure of comfort seeking behaviour developed by Smith & McCarthy (1996). The authors argue that comfort seeking behaviour is a “key component of attachment-related experiences” (Smith & McCarthy, 1996). It is an interview tool that is completed directly with an individual with an ID to assess whether they engage in comfort seeking behaviour to help regulate negative affect. It is hypothesised that individuals who seek comfort from a significant other at times of “low felt security” are likely to feel secure in their attachment relationships (Smith & McCarthy, 1996). This is supported by Bartholomew’s (1990; 1997) model of adult attachment and individual’s classified as “secure adults” and Lang’s suggestion of a motivational structure of emotion.

The SRAAS asks participants what they would do when experiencing three different negative affective states; miserable, worried and frightened. Each affective state is accompanied by three choices; firstly tell somebody about the way they were feeling, secondly not tell anyone about the way they were feeling (e.g. cope alone, avoid people, keep it to themselves) and thirdly express the feelings in an uncontrolled way (e.g. throw things, scream and shout).

Smith & McCarthy (op. cit.) assessed the convergent and divergent validity of the SRAAS. The relationship between the SRAAS and measures of self-esteem, functional
independence and general ID were explored. It was reported that the SRAAS has good test-retest reliability and was related to a measure of self-esteem. It was not found to be related to functional independence or general intellectual ability, supporting the divergent validity of the measure. The authors report that the tool is a simple interview tool and is useful for examining attachment–related experiences for adults with ID. However, they acknowledge that the tool is limited for a number of reasons, for example it is limited to measuring comfort seeking behaviour/proximity seeking behaviour to others. It also fails to measure any other aspects of adult attachment relationships. Secondly, it employs a simple procedure for classifying participants’ responses/attachment-related experiences as secure or insecure attachment style. The tool also requires participants to have a good level of verbal comprehension and receptive language skills in order to complete the measure, thereby excluding participants with limited verbal skills and a more severe ID. The authors recommend that further assessment procedures are developed in order to study the close relationships of adults with a range of intellectual disabilities.

The researcher is unaware of any further measures that directly assess attachment for adults with ID. However, the Edward Zigler-Yale Personality Questionnaire (EZPQ, Zigler & Bennett-Gates, 1999) is considered relevant to the construct of attachment theory as it emphasises the role of parent-child interactions upon the impact upon personality development. The EZPQ is a 37 item questionnaire measuring seven personality-motivational traits based upon the motivational based theory of personality. Research findings indicate performance on cognitive tasks for people with ID is often below the expected level of their intellectual functioning (Haywood, 1987). Edward Zigler and colleagues have argued for several decades that a motivational perspective is essential in providing a more holistic understanding of such findings and that personality development for individuals with an ID is a key factor.

The motivational based theory of personality proposes that most children with ID are more likely to have specific life experiences that affect personality development which children without an ID are less likely to experience. The theory encompasses three
significant areas that are considered to affect personality development; intellectual impairment, differences in mother-child interaction and the effects of genetic disorders (Hodapp & Fidler, 1999).

The motivational based theory of personality postulates that maternal directiveness/parental interactions with children that have an ID are different compared to parent-child interactions of non-ID children. It is hypothesised that parents are more likely to excessively try and enhance their child’s intellectual development which may reduce the child’s motivation to succeed. In addition, parents are reported to be more directive, didactic, and initiate more interaction compared to parents of children without an ID. Evidence for such assertions comes from the findings of studies by Tannock (1988) which indicate parents of children with ID are more likely to dominate interactions with their children, in addition studies by Berger & Cunningham (1981;1983) indicated limited synchrony between parents and children with DS.

As discussed above there are no validated measures that directly assess attachment in adults with ID. However, the motivational theory of personality development emphasises the role of parent-child interactions upon personality development for individuals with ID. Therefore the theory is considered relevant to attachment theory. Also, the EZPQ was developed for individuals with ID and the measure has good face validity as several of the items appear to measure constructs similar to attachment theory.

1.6 Part 5: The current study

1.6.1 Background to the current study

Due to the lack of appropriate attachment style assessment measures for adults with ID, Walker (2009) carried out research using Q methodology with the aim of identifying what constitutes a secure attachment in adults with ID.

Q methodology is concerned with the application of a sample of people to a set of statements rather than the traditional “R” method that applies tests to a sample of people.
The Q approach has been described as making “subjectivity” “operant” as participants rank opinions and communicate a pattern of choices (Stephenson, 1970). This often reveals a diverse range of views expressed rather than making claims about the percentage of people expressing them (Kitzinger, 1987). The research methodology derived from Q is the Q sort. This requires participants to sort statements, which comprise a Q set containing the range of opinion on a given topic, by placing them on a structured response grid. Once the statements are sorted, the resultant Q sort is factor analysed and each person’s sort is correlated with all the other sorts. The resultant factors thus consist of clusters of individuals who sorted the Q set statements in similar ways. Walker’s (2009) study included 34 professionals working in the field of ID, who had a working knowledge of attachment theory. They completed a Q sort to answer the question “To what extent do you agree with the following statement when thinking about someone who is securely attached and has an intellectual disability”. Statements were derived from a thematic analysis of attachment assessment measures and literature. 105 statements were chosen and presented to participants.

Walker’s (2009) results indicated there was a high agreement in the resultant Q sorts across participants, with 16 items identified as central to the construct of secure attachment in individuals with ID.

1.6.2 Aims of the current study

As discussed, there is a paucity of current research relating to attachment in adults with ID. In particular, the lack of a valid and reliable measure that directly assess attachment security specifically for people with an ID hampers research and clinical work. The aim of the current study is to build upon Walker’s (2009) study and will use the 16 items identified as central to the construct of secure attachment to develop a third-party observational measure of secure attachment, namely the Manchester Attachment Scale – Third party observational measure (MAST), and to examine the psychometric properties of the MAST. The aims of the present study are therefore as follows:
Primary aims:

Internal consistency and test-re-test reliability of the MAST will be examined. In addition the validity of the MAST will be examined to determine the degree to which the MAST measures secure attachment behaviour. Further aims related to validity will be (1) to assess whether the MAST is measuring attachment behaviour or whether it is simply measuring staff reported relationship quality between staff and the individual with an ID being supported (2) whether the MAST is a measure of attachment behaviour or a measure of staff reported emotional closeness/relatedness between staff and the individual with an ID being supported.

Secondary aims:

The association between MAST scores and level of CB and the association between level of ID and MAST scores will be examined.

In order to examine the research aims, the following hypotheses will be examined:

Hypothesis 1: The MAST will be internally consistent. Internal consistency is considered adequate when a correlation of above 0.7 and below 0.9 is achieved (Field, 2009).

Hypothesis 2: MAST total scores will be stable over time.

Hypothesis 3: MAST total scores will be positively correlated with:

3.1) Negative reaction tendency EZPQ subscale

3.2) Positive reaction tendency EZPQ subscale

3.3) Obedience EZPQ subscale
3.4) Outerdirectedness EZPQ subscale

Hypothesis 4: MAST total scores will be positively correlated with SRAAS scores.

Hypothesis 5.1: there will be a positive correlation between MAST scores and the reported quality of relationship between individual staff and the individual with an ID they are supporting, as measured by the Emotional Rating Scale (ERS) item 1 and item 2 scores.

Hypothesis 5.2. There will be no significant correlation (p>0.05) between MAST scores and staff reported emotional closeness as measured by ERS item 3 scores.

Hypothesis 6: there will be a negative correlation between MAST total scores and (a) levels of CB as measured by part C of the Learning Disability Casemix Scale (Pendaries, 1997) (b) level of ID as measured part A of the Learning Disability Casemix Scale (Pendaries, 1997)
Chapter Two

Methodology
2 Overview of method

The current chapter will discuss the study design and research and development governance aspects of the study, followed by discussion of the types of reliability and validity assessment available, and the specific reliability and validity assessments chosen to examine the psychometric properties of the MAST. The range of measures used in the study are then outlined, followed by the recruitment of participants and the process of data collection.

2.1 Study design

The current study is a cross sectional survey design. Participants were recruited from a subset of the required population i.e., people with ID. In addition validity data was collected at one time point.

2.2 Study approval

The study design was independently reviewed by the Division of Clinical Psychology research sub-committee. Following approval from the research sub-committee (Appendix 1) the researcher applied for multi-site ethical approval, which was granted from the North West Research Ethics Committee (Appendix 2). R&D approval was granted (Appendix 3) from two NHS trusts in the North West and one NHS trust in the North East. Due to time constraints participants were only recruited from the two North West NHS sites.

2.3 Method for assessing psychometric properties of the MAST

2.3.1 Reliability

Reliability refers to how consistently a test measures what it claims to measure and it is concerned with reducing measurement error or error variance (Jenson, 2003). The present study assesses internal consistency and test-re-test reliability, which are the two most frequently used measures of reliability (Jenson, 2003; please see 2.4 Description and administration of measures and interview tools for further details regarding assessment of reliability).
2.3.2 Internal consistency

Internal consistency is related to the homogeneity of the items within a questionnaire and/or its subscales (DeVellis, 1991). A questionnaire is considered to be internally consistent when subscale items are highly positively associated with one another.

2.3.3 Test – retest reliability

Test – retest reliability refers to the stability of a questionnaire overtime (Jenson, 2003). It is expected that a reliable measure will be stable over time and produce similar results (Clark-Carter, 1997). This is usually assessed by administering the same questionnaire at two time points and assessing whether the scores obtained are positively associated with one another.

2.3.4 Validity

Questionnaire validity is described as the extent to which an instrument measures what it intends to measure, therefore the information provided is true information about the subject of the questionnaire (Anastasi, 1982). There are several types of validity that can be assessed. The present study examines content validity, face validity and criterion validity.

2.3.5 Content validity

Content validity refers to the degree the items within the questionnaire represent the defined domains they characterise (Barker, Pistrang & Elliot, 2002). Therefore, the questions on the MAST should capture the domain they represent i.e., secure attachment. Content validity is commonly determined by asking relevant experts to judge to what degree the questions represent the defined domain to which they relate (Jensen, 2003). The content validity of the MAST was determined as part of Walker’s (2009) study during the development of the Q concourse and the Q set. The Q set was
developed from the existing attachment literature including other Q sorts relating to attachment. The Q set was finalised following a five stage process, and conducted by three researchers working in the field of attachment. The results of the study indicated there was high agreement between participants that the 16 items used in the MAST are central to the construct of secure attachment in individuals with ID.

2.3.6 Face validity

Face validity ensures that the instrument appears to measure what it states to measure i.e., that the surface features meet the expectations of the respondents’ view of what a particular research instrument should look like (Barker et al. 2002). In the present study face validity was assessed by asking participants for feedback throughout the recruitment process.

In addition, the readability of the MAST was examined using the Flesch Reading Ease Score (Flesch, 1948). The Flesch Reading Ease Score is a rating on a 100-point scale and the higher the score, the easier the readability of a document. It is recommended documents aim for a Flesch Ease Score of between 60 to 70. The MAST Flesch Reading Ease Score is 46.4 %. An associated measure is the Flesch-Kincaid Grade Level Score which rates text in relation to the United States school grade levels. For example, a score of 0.8 means that the document has suitable readability rating for child in the eighth grade (aged 13 to 14 years). It is recommended that documents aim for a Flesch-Kincaid Grade Level Score of 7.0-8.0. The Flesch-Kincaid Grade Level Score of the MAST is 8.6 %.

2.3.7 Criterion validity

Criterion validity involves testing the hypothesised relationship of the test (i.e. the MAST in the current study) with external criteria (Breakwell, Hammond & Fife-Schaw, 2000). Criterion validity may be conducted under a number of headings, namely
convergent and divergent validity, concurrent validity and predictive validity. The current study assesses the concurrent and predictive validity of the MAST.

Concurrent validity usually involves observing the relationship between the test and other criteria measured at the same time, for which a hypothesised relationship is posited (Breakwell et al. 2000). As discussed above, there are no pre-existing validated measures that directly assess attachment behaviour in adults with ID. Therefore, two measures considered to assess constructs related to attachment theory were used. The main investigation of criterion validity involves assessing the degree to which the EZPQ (Zigler & Bennett-Gates, 1999) and the MAST are associated. The measure was adapted for the current study and 21 items were included, measuring four personality subscales. The EZPQ will be further discussed later in this chapter (see Description and administration of measures and interview tools).

The second measure of concurrent validity is the SRAAS (Smith & McCarthy, 1996). The degree of association between the MAST and the SRAAS will be examined. The SRAAS is a brief self-report measure that uses comfort seeking behaviour as an indicator for attachment security. Examination of the validity of the MAST will also include assessing whether the MAST is measuring attachment behaviour or whether it is merely measuring the perceived quality of the relationship between two people, i.e. the staff member completing the MAST and the individual they are completing the MAST regarding (staff-client dyad). In addition, the degree of emotional closeness between staff-client dyad will be assessed to determine whether the MAST is merely a state measure and is measuring perceived emotional closeness or whether it is actually measuring attachment behaviour. Therefore the association between the degree of association between the MAST and the three items of the ERS will be assessed.

Predictive validity is concerned with how well the test predicts or is an indicator of an external criterion (Mosser & Kalton, 2001). In the current study the degree to which level of ID (as measured by Part A of the LDCS) is associated with and predicts MAST
total scores will be examined, and the degree to which MAST total scores are associated with/ predict with Part C of the LDCS (measure of CB) will be examined.

2.4 Description and administration of measures and interview tools

2.4.1 The MAST

As noted earlier the MAST (Appendix 4) is comprised of 16 items, individuals completing the MAST indicate how much they agree with each item using the likert scale. The majority of the items require the third party to rate observable behaviour. Each item is accompanied by a 4 point likert item, ranging from 1 = strongly agree, 2 = agree, 3= disagree, 4= strongly disagree. The MAST total score is calculated by summing together each item score, negatively worded items are reversed scored.

2.4.2 The Emotional Rating Scale (ERS)

The ERS (Appendix 5) is a simple analogue measure that was developed specifically for the present study to measure the perceived quality of the relationship of individual staff and the individual they are supporting, and the perceived emotional closeness of individual staff and the individual they are supporting. Staff were asked to rate their responses of the following items using a 4 point likert scale:

- “In general I have a good relationship with this person
- Today I have a good relationship with this person
- How emotionally close do you feel to the person today?”

2.4.3 The Learning Disability Casemix Scale (LDCS)

The LDCS (Pendaries, 1997; Appendix 6) is a brief 23 item questionnaire that is completed by a third party. All items are rated on a 0-3 scale. The scale is quick to administer and establishes the severity of an individual’s ID and CB. Part A of the scale comprises of 14 items that assess level of ID by determining physical, cognitive and functional aspects of ID. Part B comprises of nine items relating to CB. Scoring
guidelines are provided and scores correspond with descriptive levels of severity of ID and CB. The descriptions fall within three categories; mild, moderate or severe ID; no CB, mild CB and severe CB. The LDCS was used in the current study to assess the severity of ID and to determine whether level of ID and CB are associated with scores on the MAST. In the current study a total score was calculated for Part A (level of ID) and Part C (severity of CB) of the LDCS. A low ID score reflects a mild ID and a low CB score reflects low levels of CB. Part A of the scale has been assessed to have good reliability and validity (Pendaries, 1997). Validity of Part C of the scale is assessed to be fair (Pendaries, 1997).

2.4.4 The Edward Zigler-Yale Personality Questionnaire (EZPQ)

The EZPQ (Zigler & Bennett-Gates 1999; Appendix 7) is a 37 item questionnaire measuring seven personality-motivational traits based upon the motivational based theory of personality. As discussed above there are no validated measures that directly assess attachment in adults with ID. However, the motivational theory of personality development emphasises the role of parent-child interactions upon personality development for individuals with ID. Therefore the theory is considered relevant to attachment theory. Also, the EZPQ was developed for individuals with ID and the measure has good face validity as several of the items appear to measure constructs similar to attachment theory. Permission was granted from the authors to adapt the measure for the current study. The adapted version of the EZPQ uses 21 items (four subscales) from the original 37. Scales considered most relevant to attachment theory were included and rated on a 4 point likert scale ranging from 1 = strongly agree, 2 = agree, 3= disagree, 4= strongly disagree; negatively worded items are reversed scored. Due to an unequal number of items on each scale, mean scale scores are computed. The authors recommend using individual subscale mean scores rather than an overall mean total score as not all of the subscales are highly correlated. The included items and the rationale for the items are discussed below.

1 Personal communication from Chris Henrich, 29th November 2010
2 Personal communication from Chris Henrich, 19th November 2009
• **Positive-reaction tendency** – is defined as a desire for social reinforcement from a supportive adult and high levels are associated with social deprivation and institutionalisation. Stevenson & Zigler (1957) found that task performance of individuals with an ID was associated with the social deprivation they had experienced. Findings from a study by Zigler & Williams (1963) concluded that positive-reaction tendency increased with the length of time spent living in an institution which is typically associated with high levels of peer contact and low rates of adult contact. Zigler, Balla & Butterfield (1968) also found that low harmony and richness of family life were associated with higher levels of positive-reaction tendency.

• **Negative-reaction tendency** – Zigler (1958) suggested that individuals with ID have an increased desire for positive adult interaction (positive-reaction tendency). However, individuals were also found to simultaneously demonstrate an initial wariness and reluctance to interact with strangers (negative-reaction tendency). It was hypothesised this was due to individuals with an ID being more likely to have unpleasant experiences with strangers compared to non-ID individuals. Support for this hypothesis came from a study by Zigler (1958). He found that children with ID initially approached a cognitive task with a high degree of negative-reaction tendency when supported by an unfamiliar experimenter. However, during the task negative-reaction tendency reduced and high levels of positive reaction tendency were observed. Comparatively, children without an ID initially demonstrated lower levels of negative-reaction tendency and as children became fatigued positive-reaction tendency reduced. It is hypothesised that the findings indicate that due to the unfamiliar experimenter children with ID approached the task with caution, however, due to a stronger desire for adult interaction, positive-reaction tendency increased during the experiment. Levels of negative-reaction tendency are found to be related to parental mental health, marital relationships and parental attitude towards their children. In addition, changes in primary caregiver are associated with increased levels of positive and negative-reaction tendency.
Leonard (2008) suggested that the constructs positive-reaction tendency and negative-reaction tendency appear related to attachment theory and that considered together, both constructs reflect ambivalent attachment behaviours as described by Ainsworth (op.cit.).

- **Outerdirectedness** – is defined as the tendency to look to others for a solution to a problem when experiencing an ambiguous/ novel task or an unfamiliar situation, rather than relying on internal cognitive solutions (Bybee & Zigler, 1999). Outerdirectedness has been measured as present in individuals with an ID in a number of research studies (for a review see Zigler & Bennett-Gates, 1999). It is argued this tendency is related to experiences of failure, leading to less conviction in the belief that the individual can effectively problem solve (Bybee & Zigler, 1999). It is hypothesised that the trait develops because individuals with an ID repeatedly experience failure and expectations of failure. Therefore, individuals lack confidence of their own solutions to a problem, and rely on external cues whenever they are available.

The outerdirectedness subscale was included in the adapted EZPQ for the current study as it has good face validity with the MAST. The MAST includes items associated with high outerdirectedness, such as help seeking. In addition research suggests attachment security is associated with persistence in solving difficult problems and general problem solving ability (Bretherton, 1985). This could be likened to low levels of outerdirectedness.

- **Obedience** – is defined as a tendency for individuals to follow directions rather than generating their own internal guidance and subsequent behavioural responses, in a specific situation. It is a reliance on directions and it is proposed that individuals with an ID will demonstrate higher levels of obedience (Zigler & Bennett-Gartes 1999). Obedience was included in the adapted EZPQ for the current study as the original items within this subscale were constructed as part of the outerdirectedness subscale.
2.4.5 Self-report Assessment of Attachment Security (SRAAS)

The SRAAS (Smith & McCarthy, 1996; Appendix 8) is a measure developed for individuals with an ID. The SRAAS is a brief self-report measure that uses comfort seeking behaviour as an indication of secure attachment. The SRAAS assesses how people cope with feeling a range of negative emotional states (miserable, worried and frightened) considered to activate comfort seeking behaviour. Participants are provided with three choices; a) tell somebody, b) not tell anyone about the way you are feeling (cope on your own, avoid people, keep it to yourself), c) express the feelings in an uncontrolled way (throw things, scream, shout, hurt myself). Participants are also asked to give an example of such an experience. Responses are recorded verbatim and coded as follows:

1 = tells no one when distressed
2 = tells parents
3 = tells significant other (staff/ partner)
4 = denies feelings
5 = expresses feelings in an uncontrolled way (shouts, throws things)
6 = no response/ response frequently changes (is invalid).

A total frequency score is calculated on the basis of 1 point allocated for every “tells significant other” response (i.e., codes 2 and 3) and 0 for all other responses. Frequency scores range from 0 to 3. A score of 2 or above indicates that the individual has an expectation that they are able to confide in someone in most instances of low felt security, which is a sign of a more secure attachment experience.

2.4.6 The British Picture Vocabulary Scale-Second Edition (BPVS II)

The BPVS II (Dunn, Dunn, Whetton & Burley, 1997) is a standardised test of receptive language development. It is quick and easy to administer and no reading or writing is required to complete the test. It is considered to have good reliability (Dunn et al. 1997). The BPVS II is designed for use with children and adolescents aged up to 17 years.
However, it has been widely used in clinical and research work with adults with ID e.g., Ball, Holland, Treppner, Watson, & Huppert (2008) and Leonard (2008). An item on the BPVS II contains four pictures. For each item the participant is asked to point to the picture that best illustrates the word. There are 12 items in each set and 14 sets in total. Items become progressively more difficult.

2.5 Recruitment procedure

2.5.1 Recruitment of participants

Participants were recruited from services providing support to adults with an ID within a forensic inpatient secure service, an assessment and treatment service and a community service. Participants included individuals in receipt of learning disability services and their carers. Carers were members of staff employed by the NHS to support individuals with an ID.

2.5.2 Participants with an ID

In the first instance team managers/staff teams were approached and informed about the research. Services that agreed to support the research approached participants with an ID to offer a brief explanation of the study. Those interested in participating were asked whether they would like to meet the researcher, and the researcher met individually with interested participants. Individuals chose whether they wanted a staff member to be present. During the first meeting the researcher went through information sheet 2 (Appendix 9) and demonstrated all the tasks required for each participant (i.e. BPVS II and SRAAS). Participants were informed they had a minimum of seven days to consider participating in the study. The researcher encouraged participants to discuss participation with other people to facilitate consideration of the advantages and disadvantages of participating in the study. Potential participants also had the option of taking an information sheet to show their family/carers (information sheet 3; Appendix 10). The researcher arranged a further meeting with each participant following a minimum of
seven days. Data was collected from participants that gave informed consent (please see section 2.7 Data Collection Procedure for details).

2.5.3 Staff participants

The researcher met with team managers to inform them about the research and presented them with information about the study and gave them a staff information sheet (information sheet 1; Appendix 1). In the event that the research was supported by the team manager, the researcher acted upon the mangers advice with regards to the most effective and least time demanding recruitment strategy. Typically, the researcher arranged individual appointments with staff members and provided them with information sheet 1. Staff that agreed to participate were asked a number of questions to ensure that consent was voluntary and fully informed. Data collection commenced. Following completion of the measures at time point 1, where possible the researcher made an appointment to visit the same participant two weeks later to repeat the MAST and the ERS. This was not possible for all participants for a variety of reasons, such as staff turnover, annual leave and shift patterns.

2.6 Participation criteria

2.6.1 Inclusion criteria for participants

All participants were required to be aged between 18 to 70 years of age and had to be able to communicate using English (including verbal communication and/ or British Sign Language/ Makaton etc). Staff participants were required to have supported the individual for a minimum of one month in order to complete the MAST and additional measures. Individuals with an ID were required to be in receipt of support from a learning disability service. Participants with ID also had to obtain an age equivalent of 4 years on the BPVS II, or achieve Confidence Intervals that included 4 years, as required receptive language ability. The BPVS II inclusion criteria were based upon previous research that has recruited adults with ID, for example Leonard (2008). The researcher aimed to assess whether participants met the inclusion criterion whilst ensuring
minimum demands were placed upon participants. Therefore the set that assessed receptive language skills of four years was administered and participants that completed the set successfully (i.e. maximum of one error) were included in the study.

2.6.2 Exclusion criteria for participants

Individuals with ID were excluded if they met any of the exclusion criteria as determined by qualified staff supporting the individual. The exclusion criteria was as follows: individuals who were actively psychotic were excluded from the study, that displayed severe challenging behaviour, were assessed to have insufficient receptive language skills (as determined by the BPVS II) and/ or were unable to communicate using English.

2.7 Data collection procedure

2.7.1 Validity data sample

The researcher aimed to recruit staff-client dyads to assess validity against the secondary external criterion validity measure (SRAAS). However, due to time constraints equal number of clients and carers was not collected. The number of participants that completed the SRAAS was N = 14, 6 participants did not meet the inclusion criteria and were excluded from the study and a further 5 participants with ID declined to meet with the researcher. N = 40 staff participants were recruited and completed measures regarding N=57 participants with ID.

2.7.2 Individuals with an ID (N=14)

Meeting 1:

Prior to the meeting the researcher discussed with staff the impact of each participants’ ID and communication needs. Participants’ chose whether they wanted a staff member present. During the meeting participants were shown a “STOP” card that could be used
to signal they wanted to end the meeting. This was placed in view of both the researcher and participant throughout the meeting. Participants were given the choice to read the information sheet (information sheet 2), or for the researcher to read the information sheet aloud. Participants were also given the choice of using pictures to supplement information at relevant points of the information sheet. The researcher used her clinical judgement and informally asked a number of questions at appropriate time points to assess understanding of the information presented. Participants were also shown the BPVS II and the SRAAS in order to demonstrate the requirements of participation. There was also opportunity to ask questions and feedback was obtained regarding what participants thought about the study. Participants that continued to express an interest in participating were informed that the researcher would return in approximately seven days to complete the research tasks. The researcher liaised with individuals with ID and staff to arrange a convenient second meeting.

Meeting 2:

During the second meeting the above procedure was repeated. The researcher went through information sheet 2 again with each participant and answered any questions. Participants were asked a number of questions to ensure they gave consent that was voluntary and fully informed. During this meeting, participants that gave informed consent to participate were asked to check and sign the consent form (Appendix 12). Participants then completed the BPVS II to assess receptive language skills. Participants that satisfied the inclusion criteria were then invited to complete the SRAAS. The researcher interviewed each participant using the SRAAS, reading each question aloud and recorded participants’ responses verbatim. Pictures representing the emotions miserable, worried and frightened were used to supplement the questions. Throughout the process participants were continually asked whether they wanted to participate and reminded that they could leave the study at any time.
2.7.3 Staff participants; N = 40

The researcher was flexible in her approach and was guided by the individual staff members as to what was the best course of action for data collection. The researcher either remained with the staff participant whilst staff completed the measures (the MAST, ERS, LDCS and the EZPQ) or arranged to collect the measures from the staff participants place of work. Staff participants had the choice of completing the measures independently or with support from the researcher. Typically staff completed them independently and the researcher returned to collect them. Staff participants were usually a key worker for the individual they completed the measures regarding, and were therefore considered to know the individual well.

2.7.4. Test re-test reliability data sample; staff N = 30

Again the researcher was flexible and arranged with participants the most convenient method of collecting the test re-test reliability data. Typically this involved giving participants the reliability measures (MAST and ERS) and returning to collect them.
Chapter Three

Results
3.1 Results overview
The following chapter will give a brief description of the data analyses conducted, the demographic details for participants with an ID will be described and then the data analysis and findings relating to internal consistency, test re-test reliability and validity of the MAST.

3.2 Statistical Analysis

All data were analysed using Statistical Package for the Social Sciences (SPSS) version 16.0. Prior to conducting the analyses, data sets were screened for normality and outliers (see Appendix 13 for SPSS output of tests of normality). Where the data was normally distributed parametric tests were conducted, where the data was not normally distributed equivalent non-parametric tests were used. Internal consistency was assessed using Cronbach’s α. Test re-test reliability examined the reliability between individual MAST items and MAST total scores at time point 1 and time point 2, using three methods namely Pearson’s correlation coefficient and paired t-test and computation of proportion of MAST scores at time point 2 that fell within 10% of scores at time point 1. Correlations between continuous variables were examined using Pearson’s correlations when data were normally distributed or Spearman’s rank correlations for non-normally distributed data. Linear regression was used to examine the relationship between level of ID (as measured by Part A of the LDCS) and MAST total scores. For the purpose of statistical analysis the likert scales for the MAST, EZPQ and ERS were reversed resulting in a high score being indicative of more of the construct. Due to the unequal number of items on each EZPQ subscale mean scale scores were computed. Maladaptive subscales (positive-reaction tendency, negative-reaction tendency and outerdirectedness) were scored by subtracting each mean scale score from 5, resulting in a higher score representing more adaptive behaviour.
3.3 Demographical data

A total of N=40 staff participants completed data sets regarding 57 individuals with an ID. A small proportion of staff (N=10) completed more than one data set per participant with ID.

**Table 3 demographic data: participants with ID**

<table>
<thead>
<tr>
<th>Demographic data</th>
<th>Total sample</th>
<th>Self-report measure (SRAAS) sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 57 (%)</td>
<td>N = 14 (%)</td>
</tr>
<tr>
<td><strong>Age in years</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>18-63</td>
<td>21-47</td>
</tr>
<tr>
<td>Mean</td>
<td>32.7</td>
<td>29.4</td>
</tr>
<tr>
<td>Data missing</td>
<td>6 (10.5)</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (%)</td>
<td>44 (77.2)</td>
<td>14 (100)</td>
</tr>
<tr>
<td>Female (%)</td>
<td>11 (19.3)</td>
<td></td>
</tr>
<tr>
<td>Data missing</td>
<td>2 (3.5)</td>
<td></td>
</tr>
</tbody>
</table>

All scores on part A of the LDCS fell within the mild ID range. Scores on the CB measure/ part C of the LDCS are shown in table 4 below.

**Table 4 levels of challenging behaviour**

<table>
<thead>
<tr>
<th>Part C: Levels of challenging behaviour N=57</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>26 (45.6)</td>
</tr>
</tbody>
</table>
A proportion of participants with ID (100%) had other diagnoses in addition to having an ID (Table 5), with N= 15 participants (26.3%) being diagnosed with a mental health problem and/or personality disorder.

**Table 5 summary of diagnoses**

<table>
<thead>
<tr>
<th>Participants with ID; additional diagnosis information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention Deficit and Hyperactivity Disorder (ADHD)</td>
<td>2 (3.5%)</td>
</tr>
<tr>
<td>Autistic Spectrum Disorder</td>
<td>6 (10.5%)</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>1 (1.6%)</td>
</tr>
<tr>
<td>Pervasive Developmental Disorder- unspecified</td>
<td>3 (5.3%)</td>
</tr>
<tr>
<td>Cerebral Palsy &amp; Bulbar Palsy</td>
<td>1 (1.6%)</td>
</tr>
<tr>
<td>Connelia de Lange Syndrome</td>
<td>1 (1.6%)</td>
</tr>
<tr>
<td>Down’s Syndrome</td>
<td>1 (1.6%)</td>
</tr>
</tbody>
</table>

A total of 40 staff participants working in a range of clinical roles were recruited from both community (N=12; 30%) and forensic (N=28; 70%) NHS settings (table 6), 27 (67.5%) of staff participants were female and 13 (32.5%) of staff participants were male.

**Table 6 Staff participant job title and/or role**

<table>
<thead>
<tr>
<th>Job title/ role</th>
<th>Community</th>
<th>N (%)</th>
<th>Forensic</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse</td>
<td>1 (2.5)</td>
<td>Nurse</td>
<td>13 (32.5)</td>
<td></td>
</tr>
<tr>
<td>Support worker</td>
<td>4 (10)</td>
<td>Support worker</td>
<td>11 (27.5)</td>
<td></td>
</tr>
</tbody>
</table>
Clinical Nurse Specialist 1(2.5)  Clinical Nurse Specialist 1(2.5)
Assistant psychologist 1(2.5)  Assistant psychologist 1(2.5)
Consultant Clinical Psychologist 1(2.5)  Consultant Psychiatrist 1(2.5)
Occupational Therapist 2 (5)  Trainee Clinical Psychologist 1(2.5)
Speech and Language Therapist 1(2.5)
Specialist Advanced Physiotherapist 1(2.5)

3.4 Descriptive Statistics

Table 7 below shows the scores for each for the 57 data sets completed. The mean and standard deviation is displayed for data that is normally distributed and the median and the range are displayed for the data not normally distributed.

**Table 7 Descriptive statistics**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAST (time point 1; validity study)</td>
<td>45.35</td>
<td>5.19</td>
</tr>
<tr>
<td>MAST (time point 2; reliability study)</td>
<td>45.93</td>
<td>6.48</td>
</tr>
<tr>
<td>LDCS: ID</td>
<td>5.33</td>
<td>3.65</td>
</tr>
<tr>
<td>EZPQ: Positive-Reaction Tendency Mean Scale Score</td>
<td>2.75</td>
<td>1-4</td>
</tr>
<tr>
<td>EZPQ: Obedience Mean Scale Score</td>
<td>2.75</td>
<td>1-3</td>
</tr>
</tbody>
</table>
### EZPQ: Outerdirectedness

<table>
<thead>
<tr>
<th>Mean Scale Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.57</td>
</tr>
</tbody>
</table>

### EZPQ: Negative Reaction Tendency

<table>
<thead>
<tr>
<th>Mean Scale Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.67</td>
</tr>
</tbody>
</table>

### LDCS: CB

<table>
<thead>
<tr>
<th>Scale Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
</tr>
</tbody>
</table>

### ERS 1

<table>
<thead>
<tr>
<th>Scale Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
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</tbody>
</table>

### ERS 2

<table>
<thead>
<tr>
<th>Scale Score</th>
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</thead>
<tbody>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

### ERS 3

<table>
<thead>
<tr>
<th>Scale Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

### SRAAS total frequency

<table>
<thead>
<tr>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

## 3.5 Internal consistency

Hypothesis 1: A total of 57 questionnaires were collected at time-point 1 and were included in the internal consistency data set. A correlation coefficient > 0.7 and < 0.9 is considered adequate to demonstrate whether a scale is internally reliable (Field, 2009). Cronbach’s $\alpha$ indicated that the MAST has adequate internal consistency ($\alpha = 0.750$) with no evidence of multi-collinearity. *Cronbach’s $\alpha$ if item deleted* was also computed (Appendix 14) and $\alpha$ coefficients ranged from 0.711 to 0.764. *Item-total correlations* for each item were also computed (Appendix 14). The results indicated that removing items 1, 2, 4, 6 and 15 from the MAST would slightly increase the internal consistency of the scale, but the overall improvement in the overall $\alpha$ would be negligible.
3.6 Test re-test reliability

MAST total scores

Hypothesis 2: Reliability of the MAST total scores was examined with N= 30 staff participants completing the MAST on two occasions (time point 1 and time point 2), with a mean of 18 (range of 14 to 29) days between time point 1 and 2. Pearson’s correlation indicated a significant positive correlation between the MAST total scores at time point 1 and time point 2 (r=0.807; p = 0.001). A paired t-test indicated no significant difference between the MAST total scores at the two time points (t=1.429; df = 29; p=0.164). In addition, the MAST total scores were calculated and compared for time point 1 and time point 2 for each individual participant. This indicated that there was less than a 10% difference between MAST total scores at time point 1 and time point 2 for 76.67% (N=23) of participants, further indicating that MAST total scores were consistent overtime.

Pearson’s correlation indicated that scores of 14 out of the 16 items of the MAST were significantly positively correlated between time points 1 and 2 (Appendix 15). The results of a paired t-test showed no significant difference between the majority (14/16) of MAST items between time points 1 and 2 (Appendix 15). The results indicate that both the MAST total scores and the majority of the MAST individual items were reliable overtime.

3.7 Validity

3.7.1 Face validity

The MAST is a brief measure and staff participants reported it to be simple to complete and reported feeling confident in completing it independently. There were no reported problems completing the measure.
3.7.2 Concurrent validity

Primary assessment of concurrent validity: The MAST and the EZPQ

Hypotheses 3.1 to 3.4: MAST total scores were compared to the individual EZPQ subscale mean scale scores positive-reaction tendency, negative-reaction tendency, outerdirectedness and obedience (Table 8).

Table 8 MAST and EZPQ results

<table>
<thead>
<tr>
<th></th>
<th>Spearman’s rank correlation coefficient</th>
<th>p – value</th>
<th>Shared variance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative-reaction tendency</td>
<td>0.415</td>
<td>0.001</td>
<td>17.22</td>
</tr>
<tr>
<td>Obedience</td>
<td>0.323</td>
<td>0.007</td>
<td>10.43</td>
</tr>
<tr>
<td>Positive-reaction tendency</td>
<td>0.221</td>
<td>0.049</td>
<td>4.88</td>
</tr>
<tr>
<td>Outerdirectedness</td>
<td>0.142</td>
<td>0.146</td>
<td>2.02</td>
</tr>
<tr>
<td>Total shared variance</td>
<td></td>
<td></td>
<td>34.55</td>
</tr>
</tbody>
</table>

The MAST total score was significantly positively correlated with mean subscale scores for negative-reaction tendency, obedience and positive reaction tendency, indicating that as these scores increase the MAST total scores also increase. The results also show a positive but non-significant correlation between outerdirectedness mean scale scores and the MAST. The results indicate a medium effect size for negative reaction tendency and obedience (a medium effect size is > 0.3 and < 0.5, Cohen, 1988; 1992) and a small effect size (a small effect size is >0.10 < 0.3, Cohen, 1988; 1992) for positive reaction tendency and outerdirectedness. The results demonstrate that the individual EZPQ subscale scores cumulatively share 34.55% of the variance with the MAST total score.
Secondary assessment of concurrent validity: The MAST and the SRAAS

Hypothesis 4: A total of 14 staff-client dyads completed the MAST (staff) and SRASS (client) measures. Spearman’s rank correlation coefficient indicated a significant positive correlation between MAST total scores and total frequency scores on the SRAAS ($r_s = .504; p = 0.033$), taken as a large effect size ($> 0.5$, Cohen, 1988; 1992). The MAST and the SRAAS scores shared 25.4% of the variance.

Correlations between the MAST and the Emotional Rating Scales
Hypothesis 5 to 5.2: Table 9 shows the correlations between the MAST and the three items of the ERS.

Table 9 MAST and ERS results

<table>
<thead>
<tr>
<th></th>
<th>MAST total scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spearman’s</td>
</tr>
<tr>
<td></td>
<td>correlation</td>
</tr>
<tr>
<td></td>
<td>coefficient</td>
</tr>
<tr>
<td><strong>ERS 1</strong></td>
<td></td>
</tr>
<tr>
<td>“In general I have a good relationship with this person”</td>
<td>0.295</td>
</tr>
<tr>
<td><strong>ERS 2</strong></td>
<td></td>
</tr>
<tr>
<td>“Today I have a good relationship with this person”</td>
<td>0.199</td>
</tr>
<tr>
<td><strong>ERS 3</strong></td>
<td></td>
</tr>
<tr>
<td>“How emotionally close do you feel to the person today?”</td>
<td>0.159</td>
</tr>
<tr>
<td><strong>Total shared variance</strong></td>
<td></td>
</tr>
</tbody>
</table>
There was a significant positive correlation between staff perceptions of a good general relationship with the client about whom they completed the MAST regarding. There was also a positive but non-significant correlation between staff perceptions of a good relationship with the person at the time of completing the MAST. Finally there was a positive but non-significant correlation between staff reported degree of emotional closeness felt towards the individual they completed the MAST regarding. All three ERS items indicated a small effect size and the proportion of variance shared between the MAST and the ERS items was modest (15.19%).

**Correlations between the MAST, intellectual disability and challenging behaviour**

Hypothesis 6: Table 10 shows the results of the correlation analysis between MAST total scores and the LDCS A and C subscales.

**Table 10 MAST and LDCS results**

<table>
<thead>
<tr>
<th></th>
<th>MAST total scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spearman’s</td>
</tr>
<tr>
<td></td>
<td>correlation</td>
</tr>
<tr>
<td></td>
<td>coefficient</td>
</tr>
<tr>
<td>Part C LDCS: challenging behaviour</td>
<td>-0.358</td>
</tr>
</tbody>
</table>

|                         | Pearson’s         | p – value | Shared variance |
|                         | correlation       |           |                |
|                         | coefficient       |           |                |
| Part A LDCS: level of intellectual disability | -0.289           | 0.015     | 8.35           |

There was a significant negative correlation between scores on part A and C of the LDCS and the MAST. This indicates that lower levels of ID as measured by the LDCS and lower levels of CB are associated with high scores on the MAST. The results indicated a medium effect size for both levels of ID and CB. The proportion of variance
shared by part C of the LDCS and the MAST (12.8%) and part A of the LDCS and the MAST (8.4%) were small.

In addition a linear regression was conducted to test whether levels of ID (as measured by the Part A of the LDCS) predicted MAST scores. The MAST total score was the dependent variable and the level of ID/ LDCS scores was the predictor variable. The results indicated that scores on Part A of the LDCS made a significant contribution to predicting scores on the MAST ($r^2 = 0.083; F = 4.995, p = 0.03; \beta = -0.410 p = 0.03$). Part C LDCS CB data was not normally distributed therefore it was not possible to conduct a linear regression.
Chapter Four
Discussion
4. Discussion

4.1 Overview of study
Research suggests that the prevalence of non-secure attachment behaviour is higher for children with ID compared to non-ID peers (op.cit.). Research also suggests that attachment theory can add to our understanding of the emotional and behavioural difficulties experienced by adults with ID. However, there is a paucity of empirical research regarding ID and attachment theory. In addition, there is a lack of valid and reliable measures to assess attachment behaviour for adults with ID. The aim of the current study was to assess the psychometric properties of the Manchester Attachment Scale – Third party observational measure [MAST], specifically the study aims were:

**Primary aims:**
The primary aims of the current study were to examine the validity and reliability of the MAST, specifically in terms of internal consistency, test-re-test reliability, face, concurrent and predictive validity, in order to assess to what degree the MAST measured secure attachment behaviour. A further aim of the study was to assess whether the MAST was measuring attachment behaviour or whether it was simply measuring quality of the relationship between staff-client dyads as rated by staff using the ERS items 1 and 2. In addition, it was assessed whether the MAST was measuring secure attachment behaviour or the degree of emotional closeness between staff-client dyads as rated by staff using item 3 of the ERS.

**Secondary aims:**
Research indicates that attachment behaviour is associated with CB and level of ID (op.cit.). Therefore, the correlation between MAST scores and level of CB and the correlation between level of ID and MAST scores were examined.

4.2 Summary of results
The results indicated that the MAST has adequate internal consistency and is reliable over time. In addition, the MAST appears to demonstrate good face validity and is a
simple, time efficient measure to complete. The MAST shared 34.55% of total variance with the individual subscale scores (negative-reaction tendency, obedience, outerdirectedness and positive-reaction tendency) of the EZPQ and 25.4% of variance with the SRAAS, which can be taken as indicative of a degree of convergent validity. The MAST was also significantly positively correlated with the general quality of the relationship between staff-client dyads as measured by ERS item 1. A positive but non-significant correlation was reported regarding quality of the relationship at the time of completing the MAST (as measured by ERS item 2) and there was a positive but non-significant correlation between levels of emotional closeness between staff-client dyads as measured by the ERS item 3. This provides support that MAST scores are independent of relationship quality and level of emotional closeness at the time of completing the MAST, as measured by ERS items 2 and 3. Level of ID and CB were also significantly negatively correlated with MAST scores. In addition levels of ID were found to make a significant contribution to predicting MAST scores. Overall the results provide preliminary support for the reliability and validity of the MAST as a measure of secure attachment behaviour.

4.3 Interpretation of results

4.3.1 Internal consistency

The results demonstrated adequate internal consistency of the MAST, with no evidence of multicollinearity. Further support for internal consistency comes from the results from the Cronbach’s Alpha if Item Deleted and Item-total correlations. The results indicated that the MAST items are associated with one another, supporting hypothesis 1. The results indicated that removing items 1, 2, 4, 6 and 15 from the MAST would slightly increase the internal consistency of the scale, but the improvement in the overall \( \alpha \) would be negligible, therefore the items remain part of the MAST. Replication of the study with a larger sample size would also allow for further reliability assessment of these item. It would also have been beneficial to have conducted a factor analysis of the data as this would have revealed whether the measure has a clear factor structure, adding
to the strength of internal consistency. It is recommended in order to assess the factor structure of a questionnaire there should be at least 5-7 participants per item on the questionnaire (Kline, 2000), due to the limited sample size of the study this was not feasible.

4.3.2 Test re-test reliability

It is expected that a reliable measure will be stable over time and produce similar results (Clark-Carter, 1997), therefore it was predicted that the MAST total scores would remain stable over time. As predicted the results indicated that the MAST total scores remained stable between time point 1 and 2 (mean number of days 18; range =14 to 29). The results also indicated that overtime there was a significant positive correlation between the majority of individual MAST item scores and there was no significant difference between the majority of item scores (14/ 16). However, Pearson’s correlation indicated a weak correlation between scores for items 1 and 14 of the MAST, conversely, a paired t-test indicated scores for these items were stable between time point 1 and 2. In addition a paired t-test indicated that there was a significant difference between time point 1 and 2 for scores on items 2 and 12. However, the results of the Pearson’s correlation indicated that the scores for these items were stable over time. The results provide support for hypothesis 2 as MAST total scores remained stable over time. In addition the results indicate that the majority of items were stable overtime. The results also provide further support that the MAST is measuring a stable construct.

4.3.3 Validity

Face, concurrent and predictive validity were examined. Overall, the MAST appears to have good face validity, staff reported it was quick and simple to use. Several staff participants did report that they would have preferred a larger likert scale. On one occasion a staff participant asked for further explanation regarding item 2 “the individual actively solicits comforting when distressed” and said they were unclear about the term distressed and queried whether this suggested challenging behaviour or not.
Concurrent validity: the MAST and EZPQ

Concurrent validity usually involves observing the relationship between the test and other criteria measured at the same time, for which a hypothesised relationship is posited (Breakwell et al. 2000). The primary investigation of concurrent validity involved assessing the degree of correlation between the MAST total scores with EZPQ (Zigler & Bennett-Gates, 1999) individual subscale scores for positive-reaction tendency, negative-reaction tendency, outerdirectedness and obedience. The SRAAS (Smith & McCarthy, 1996) was also included as part of the validity assessment of the MAST, this was used as a secondary measure of concurrent validity. It was predicted that the MAST total scores would be associated with each of the EZPQ subscale scores (hypothesis 3.1-3.4), and that the MAST total scores would be positively correlated with SRAAS total frequency scores (hypothesis 4).

The MAST has been developed as a measure of secure attachment behaviour. A high MAST score reflects a higher frequency of secure attachment behaviour, similarly high scores on the EZPQ represent better functioning (lower degree of the construct). The results indicated that negative-reaction tendency, positive reaction tendency and obedience mean scale scores were significantly positively correlated with MAST total scores, indicating that as the MAST total scores increased so did the EZPQ subscale scores. Outerdirectedness was positively correlated with the MAST total scores, however, it was not significantly correlated. The individual mean scale scores (negative-reaction tendency, obedience, outerdirectedness and positive-reaction tendency) variance was calculated and summed and demonstrated that 34.55% of the variance was shared between the EZPQ individual subscale mean scores and the MAST total score.

The EZPQ individual mean scale scores are reported to reflect adaptive behaviour, the higher the score the more adaptive the functioning. Therefore the significant correlation between the EZPQ individual subscale scores and the MAST total score provides support that the MAST is measuring adaptive behaviour. Individuals with an ID have been found to demonstrate higher levels of negative-reaction tendency (described as an
initial weariness and reluctance to interact with strangers) due to individuals with an ID being more likely to have unpleasant experiences with strangers, compared to individuals in the general population (Zigler, 1958). The results indicate that individuals with an ID who were reported to have a higher frequency of observed secure attachment behaviour (high MAST scores) were also likely to demonstrate lower levels of negative-reaction tendency (high mean scale scores)/ lower levels of initial weariness and reluctance to interact with strangers. The shared variance between the MAST total score and negative-reaction tendency scale score and the medium effect size could be attributed to the theoretical link between the two constructs. Individuals demonstrating secure attachment behaviour are likely to experience low levels of avoidance of others (Bartholomew, 1990; 1997). This could be associated with negative-reaction tendency i.e., lower levels of initial weariness/ reluctance to interact with strangers found in the current study.

Individuals with an ID are reported to demonstrate higher levels of positive-reaction tendency (low mean subscale scores) which is defined as a desire for social reinforcement from a supportive adult. The results indicate that individuals with an ID who were reported to have a higher frequency of observed secure attachment behaviour were also likely to demonstrate lower levels of positive-reaction tendency. The significant positive correlation between the MAST total score and positive-reaction tendency subscale scores could be attributed to the theoretical link between the two constructs. Individuals demonstrating secure attachment behaviour are likely to be more adaptive regarding the levels of social reinforcement they desire, rely less on the approval of others through achieving interdependence. For example, Bartholomew (1990; 1997) reported that secure adults with a sense of attachment security develop adaptive strategies for coping with distress. They are able to seek support from others, develop intimate relationships and experience comfort with closeness, whilst behaving autonomously.

The results also demonstrate that there was a significant positive correlation between MAST total scores and obedience mean scale scores. Obedience is defined as a tendency
for an individual to follow directions rather than generating their own internal guidance and subsequent behavioural responses in a specific situation. The results indicate that individuals with an ID that were reported to have a higher frequency of secure attachment behaviour were also likely to demonstrate lower levels of obedience i.e., they were less likely to be reliant on the support of others, and are more likely to generate their own internal guidance and subsequent behavioural responses. The significant positive correlation, medium effect size and shared variance between the MAST total score and obedience subscale score, could also be attributed to the theoretical link between attachment theory and the obedience scale. Individuals demonstrating secure attachment behaviour are likely to be confident in their own abilities and are likely to be adaptive (Bartholomew, 1990; 1997; Crittenden, 2005) and generate their own solutions, which may be associated with lower levels of obedience (high obedience scale scores).

Hypothesis 3.1 to 3.4 were supported by the results. However, as discussed above despite the significant correlations, shared variance was modest and effect sizes were small to medium. In addition, the outerdirectedness subscale was not found to be significantly positively correlated with the MAST total scores, subsequently a large degree of variance remains unexplained. A number of factors may explain the degree of unexplained variance, for example complete agreement between the measures was not expected as the measures have been designed to measure different constructs. Also a degree of unshared variance could be attributed to individual characteristics, such as the temperament (Chess & Thomas, 1994), the impact of an individual’s mental and physical health and environmental factors as well as a modest sample size. An example of an environmental factor includes items of the EZPQ. For example item 11 is “the individual does something just because social custom dictates.” Forensic support staff suggested this question was difficult to answer as most of the participants were aware that attending various therapy programmes was beneficial for moving through the care pathway, therefore, social custom dictated that they attended various sessions.
Concurrent validity: the MAST and SRAAS

The Self-report Assessment of Attachment Security (SRAAS; Smith & McCarthy, 1996) was also used to assess validity. The SRAAS is a brief self-report measure that uses comfort seeking behaviour as an indication of secure attachment (Smith & McCarthy, 1996). A SRAAS frequency score of 2 or above indicates that the individual has an expectation that they are able to confide in someone in most instances of “low felt security”, which is a sign of a more “secure attachment experience” (Smith & McCarthy, 1996). The degree to which this measure was correlated with the MAST was used as a secondary external criterion to assess concurrent validity. As predicted the results indicated that there was a significant positive correlation between the MAST total scores and self-report comfort-seeking behaviour as measured by the SRAAS. In addition, a large effect size was reported and the MAST and the SRAAS shared 25.4% of the variance. The results indicated that as MAST scores increased so did SRAAS total frequency scores, therefore higher MAST scores indicating secure attachment behaviour were significantly positively correlated with higher total frequency scores on the SRAAS i.e. more comfort-seeking behaviour.

Despite the degree of correlation and the large effect size, the results should be interpreted with caution due to the small sample size. In addition a large proportion of the variance remains unexplained. This could be due to several factors such as the small sample size and the limitations of the SRAAS. The SRAAS is limited to assessing comfort seeking behaviour in response to affective experience. It also requires participants to have a good level of verbal comprehension and receptive language skills in order to complete the measure. The results are encouraging and support the validity of the MAST as a measure of secure attachment behaviour. The results also provide support for the use of self-report measures for assessing comfort seeking behaviour.
**Additional hypotheses: the MAST and the ERS: measuring relationship quality and emotional closeness**

A secure adult attachment style is associated with a positive image of others, low avoidance of others and the ability to relate to others (Bartholomew, 1990; 1997). Therefore it was hypothesised that there would be a positive correlation between MAST scores and the reported quality of relationship between staff – client dyads as measured by ERS item 1 scores. The results indicated that staff perception of the quality of the relationship as measured by the ERS 1 ("in general I have a good relationship with this person") was significantly positively correlated with MAST total scores. This indicated a correlation between a “good” relationship between staff and individuals with ID, and high MAST scores. The results also indicated that there was a positive but non-significant correlation regarding staff perception of the quality of relationship between staff – client dyads at the time of completing the MAST as measured by the ERS 2 ("today I have a good relationship with this person"). The variance shared between the ERS 2 and the MAST was minimal (3.96%) and the effect size was small. This provides further support that the MAST is measuring secure attachment behaviour and is not simply a measure of the relationship quality at the time of completing the MAST. In an attempt to rule out that the MAST was simply a measure of perceived emotional closeness / relatedness it was also predicted that there would be no significant positive correlation (p>0.05) between the ERS 3 scores ("how emotionally close do you feel to the person today?") and MAST total scores. The results supported the hypothesis, there was a positive but non-significant correlation between emotional closeness and MAST total scores, the proportion of variance shared by the variables was minimal (2.53%) and the effect size was small. The results provide further support that the MAST is measuring secure attachment behaviour rather than subjective emotional closeness. There was a degree of correlation between scores on ERS and the MAST total scores, this indicates that individuals with a higher MAST score / exhibiting more secure attachment behaviour are more likely to have positive reciprocal interactions with others.
i.e., are more likely to be reported to have a good relationship with the member of staff supporting them.

**Validity: the MAST, levels of challenging behaviour and intellectual disability.**

It was also predicted that there will be an correlation between MAST total scores and levels of CB and level of ID (hypothesis 6). The results demonstrated that there was a significant negative relationship between scores on the MAST and scores on the LDCS for level of ID and level of CB. The result also indicated that the MAST total scores and the LDCS measure of CB shared 12.8% of the variance and a medium effect size, and the MAST total scores and LDCS measure of ID shared 8.4% of the variance, a small effect size. In addition levels of ID were found to make a significant contribution to predicting MAST scores. The results provide further support for previous research regarding attachment and ID and attachment and CB. For example, Clegg and Sheard (2002), De Shipper & Schunegel (2010) reported that a secure attachment style was associated with lower levels of CB. In addition research examining the effectiveness of interventions aimed at improving attachment security found that CB reduced as measured by the CEP and SGZ challenging behaviour measures (Sterkenburg, Janssen & Schungel, 2008). The relationship between MAST scores and level of ID as measured by the LDCS also provide support for previous research indicating a correlation between level of ID and attachment behaviour (e.g. Rutgers, et al. 2007, Atkinson et al. 1999, van IJzendoorn, et al. 2007). However, a large proportion of variance remains unexplained, therefore the results should be interpreted with caution. The unexplained variance could be attributed to a number of factors; a modest sample size, individual characteristics, such as the temperament (Chess & Thomas, 1994), the impact of an individual’s mental and physical health and environmental factors.

**4.3.4 Summary**

The MAST was found to have good internal consistency and test-retest reliability. The convergent validity of the MAST was indicated by positive correlation with the EZPQ
subscales negative reaction tendency, obedience, positive reaction tendency and outerdirectedness and scores on the SRAAS. The MAST was also found to be correlated with both levels of ID and presence of CB as measured by LDCS scores. In addition, positive but non-significant correlations were reported between the MAST total scores and ERS item 2 and MAST total scores and ERS item 3. This supports the hypothesis that the MAST is a measure of secure attachment behaviour rather than a measure of relationship quality or emotional closeness. Overall the results provide preliminary support for the reliability and validity of the MAST as a measure of secure attachment behaviour.

4.3.5 Methodological limitations

Despite the encouraging results significant correlations were typically modest and proportion of shared variance was limited. This could in part be associated with a number of limitations of the current study which are discussed below.

Participants

The sample was one of convenience and therefore unrepresentative and recruitment numbers were modest. In particular the recruitment of individuals with an ID to complete the SRAAS was limited, this restricts generalisation of the findings. Most of the staff participants were forensic nursing staff and the majority of individuals with an ID were young men with a forensic history. It would be beneficial to replicate the study with a larger staff sample and ID sample size; recruiting staff from a range of professional backgrounds and recruiting larger number of individuals with an ID including older individuals, more female participants and those with a non-forensic background.

Demographic data collected from staff was minimal, it would have been beneficial to have collected information regarding staff level of knowledge of attachment theory. Self-reports suggest knowledge of attachment theory was minimal, future research regarding whether the MAST is a reliable tool across professional groups with a varied
level of attachment knowledge maybe beneficial. This would also allow for the assessment of inter-rater reliability between professionals. Recruiting family members may also be beneficial, this would allow for the assessment of the validity and reliability of the MAST to be assessed based upon family perceptions of secure attachment behaviour for adults with ID. Again this would enable assessment of inter-rater reliability between professional and non-professional carers. Also investigating whether individuals with ID personally identify with the items of the MAST, i.e. whether they think the items apply to other people they know with an ID will further enable assessment of the validity of the MAST. A method such as repertory grid technique would facilitate such a study.

In addition a small number of staff participants completed measures regarding more than one individual with an ID. Therefore it could be argued that the data cannot be considered as independent which is a requirement for the statistical analysis performed. However, this was a small proportion of data (N=10) and is likely to have had a minimal effect upon the results as the majority of the measures included in the study are objective rating scales.

**Design**

As with all naturalistic research, the causation of the correlations between variables can not be establish, a strength of the study is that attachment behaviour was measured over time and this indicated that attachment behaviour was stable over time for individuals with an ID. However, the follow-up period was relatively short and limited to one time point. A longitudinal study assessing attachment behaviour over multiple time points would allow for further assessment of the stability of attachment behaviour.

In a small number of incidents the researcher was present when staff participants completed their measures and the researcher directly interviewed all individuals with an ID in order to complete the SRAAS. In these instances it is important to consider the possible impact of demand characteristics (Orne, 1962).
The measures used to assess concurrent validity were limited, the EZPQ (Zigler & Bennett-Gates 1999) measures personality-motivational traits based upon the motivational theory of personality, and is not a measure of attachment behaviour. This may have contributed to the modest proportion of shared variance between EZPQ subscales and the MAST and the small to medium effect sizes reported. However, adult attachment measures are inappropriate for this population and therefore could not be used to assess concurrent validity of the MAST. The EZPQ was considered relevant to the construct of attachment theory as it emphasises the impact of parent-child interactions upon personality development. It is also a tool for assessing adaptive behaviour in individuals with an ID, therefore it was hypothesised that as the MAST is a measure of secure attachment behaviour that scores on the EZPQ would be associated with the MAST. In addition the EZPQ was adapted for use in the current study which may have affected the sensitivity of the measure. Alternative measures were considered for example the Emotional Problem Scale (Prout & Stohner, 1991). This includes constructs related to attachment theory such as self-esteem, it also has a third-party and self-report method. However, it is resource intensive and was considered unfeasible due to the demands it would have placed upon both staff and individuals with an ID. There are a number of child attachment measures that have been adapted for children with ID however, Smith & McCarthy (op.cit) suggest that although child attachment measures may be considered more developmentally appropriate, such methods are inappropriate as adult experiences of relationships for people with ID can not be assessed using child measures. As the EZPQ was limited as a measure of concurrent validity, the SRAAS was also used as a secondary measure of concurrent validity. However, Smith and McCarthy (op.cit) reported that the measure is limited as it measures comfort seeking behaviour as a way of assessing attachment security, and fails to measures any other aspects of adult attachment relationships. It could also be considered a measure of relatedness and the motivation of individuals to relate to others as described by Atkinson, et al. (1999) and Hobson (2008). Secondly it employs a simple procedure for classifying participants’ responses/attachment-related experiences as secure or insecure attachment style. The tool also requires participants to have a good level of verbal
comprehension and receptive language skills in order to complete the measure, thereby excluding participants with limited verbal skills and a more severe ID. Finally the sample size was small, therefore the SRAAS results should be interpreted with caution.

The MAST could also be criticised as a measure of the relationship between an individual and their carer, or a measure of relatedness and the motivation of individuals to relate to others (Atkinson, et al. 1999; Hobson, 2008), rather than a measure of secure attachment behaviour. In reference to this the MAST was developed from the existing attachment literature; in addition the results from Walker’s (2009) study indicated the MAST has good content validity. It could be argued that the measure is limited to assessing secure attachment. Currently the MAST does not assess a range of adult attachment styles as identified by Bartholomew (1990; 1997), Mikulincer and Shaver (2003) or Crittenden (2005; 2008). The study by Walker (2009) from which the MAST items were derived used secure attachment as secure attachment is “better defined across models.” Future research into attachment theory and adults with ID will allow for understanding of differing attachment behaviour in this population to be examined. Previous research regarding children with ID indicates that large proportions are classified as displaying non-secure attachment behaviours. This suggests that further research is required to examine whether current classifications are appropriate for adults with ID and whether the MAST is used to support a more adaptive assessment of the function of attachment behaviour as proposed by Crittenden (2005; 2008). Although face validity of the MAST was reported to be good staff did report they would have preferred a larger likert scale. Expanding the likert scale may increase the sensitivity of the MAST as a clinical tool, further research in to the psychometric properties of the MAST using an expanded likert scale maybe beneficial.

4.3.6 Strengths of the study, clinical implications and future research

There are a number of strengths of the current study. Firstly the MAST was developed based upon the attachment and ID literature therefore has good content validity. In addition the majority of the items are rated based upon observable attachment behaviour,
which is a strength of the MAST as a third party measure. The MAST also requires the user to make inferences about the internalised states, needs and feelings of individuals with ID. Also the data for the MAST was normally distributed, suggesting the scores relate to the sample and not individual characteristics of staff or individuals with an ID. Typically attachment measures are usually seen as categorical. However, the MAST is intended for us as a continuous measure of secure attachment. The results also suggest that attachment behaviour is stable over time, supporting previous research (Main & Cassidy, 1988). In addition multiple measures were used to assess validity including the EZPQ, SRAAS, ERS, and the LDCS. The study also demonstrated the importance and clinical utility of self-report measures in assessing the emotional needs of adults with ID, and provided support for the SRAAS as a valid clinical tool for assessing self-reported comfort seeking behaviour.

The MAST does not requires extensive training to use and can be completed with direct care staff, this will enable greater consideration for individual differences when assessing the emotional and behavioural needs of individuals with ID. Clinically the MAST could be used as part of the assessment process for individuals with an ID presenting to services with emotional and behavioural difficulties. The MAST will allow clinicians to assess attachment security and consider whether attachment difficulties are a factor contributing to the individual’s current difficulties. As a clinical tool it will be beneficial for the MAST to be accompanied by guidance notes which inform the user that the tool involves rating observable behaviour including rating interactions with others, and making inferences regarding an individual’s internal states.

The MAST can be used to further understanding of attachment security for individuals with an ID. Crittenden (2005; 2008) suggests that the examination of attachment behaviour classified as non-secure should be considered in terms of adaptive functioning. The MAST is an objective rating scale that will facilitate discussion and examination of attachment behaviour and the assessment of the adaptive function of such behaviour. Research regarding the factors associated with less secure attachment (i.e. low MAST scores) can be further examined. For example, research regarding the
impact of various diagnosed conditions such as ASD and genetic conditions such as Down’s syndrome or Smith Magenis Syndrome may help further understanding of the impact of atypical neurological development upon attachment behaviour. The assessment of the shared meaning of reciprocal relationship and the individual affective experience of relatedness (Atkinson, et al. 1999; Hobson, 2008) may provide further understanding of the individual differences that contribute to attachment behaviour.

Crittenden (1999) suggests the ability to process cognitive and affective information affects attachment behaviour and a number of studies (see table 1 for a review of the studies) including the current study, have reported an association between level of ID and attachment behaviour. Research regarding degree of cognitive development upon attachment security would be beneficial. The children’s ID and attachment literature reports a high prevalence of non-secure attachment behaviour, especially disorganised attachment behaviour. Longitudinal research regarding the developmental trajectory of individual attachment styles may be beneficial. It may be that as children age and their level of cognitive and/or emotional development changes so does their attachment behaviour. Understanding of the impact of development upon attachment behaviour in adulthood is essential. For example, assessing levels of cognitive development based upon Piaget’s stages of cognitive development, including evidence of goal directed behaviour, Levels of Emotional Awareness (Lane & Schwartz, 1987) and affect regulation skills (Schore, 2001) would provide a greater understanding of the factors affecting adult attachment behaviour as measured by the MAST. Research regarding secure attachment and whether it is a mediator for the development of affect regulation skills and emotional development for adults with ID may also provide further understanding of the factors associated with mental health and challenging behaviour.

Parenting patterns and attachment styles are transmitted across generations (Bowlby, 1973). Empirical support regarding “intergenerational transmission of attachment” was demonstrated by Main, Kaplan and Cassidy (1985). A parental “state of mind” as assessed using the AAI corresponded with their infant’s attachment behaviour as assessed by the SSP. Identifying those individuals who provided care for adults with ID
during their childhood and assessing their particular attachment styles may provide information regarding the intergenerational transmission of attachment styles for those adults with ID. For example, the AAI could be used to classify the primary caregivers’ attachment style, which could then be correlated with MAST total scores.

Bretherton & Munholland (2008) recommend that future attachment research focuses upon attachment dyads. Research regarding attachment within a dyadic framework is especially relevant for this group. Carnaby (1998) argues that for many individuals with disabilities living fully autonomous lives may not be achievable and a helper-helped relational approach should be adopted. Many adults with ID are likely to receive support for their physical and emotional needs throughout their lives, often from professional/paid carers. Future research for adults with ID may include assessing adult attachment styles of direct carers using the AAI (Main and Goldwyn, 1984), and assessing whether the AAI classifications correspond with attachment behaviour (MAST scores) of the individuals’ they are supporting. This may provide a greater understanding and awareness of reciprocal relationships upon attachment behaviour and importance of carer attachment styles upon the individuals they support. This may facilitate the development of attachment interventions with/through carers. The children’s literature indicates that carer sensitivity is important for attachment security (Ainsworth et al. 1978; van Ijzendoorn et al. 2007 & Atkinson et al. 1999). Research by De Shipper et al (2006) and De Schipper & Schungel (2010) reported that young people with IDs showed preference towards a caregiver and that attachment behaviour is likely to be directed towards direct care staff. Conducting a similar study with adults with ID using the MAST would enable research into whether adults with ID direct their attachment behaviour towards carers both family and/or professional carers.

Residential care for adults with ID is often characterised by poor staffing levels (CQC, 2009). Clegg and Lansdall-Welfare (1995) suggest that challenging behaviour could be due to the lack of an attachment figure and unregulated arousal. Therefore, research regarding whether poor staffing levels lead to reduced availability of attachment figures and subsequent changes in attachment behaviour would be beneficial. The examination
of the impact of carer sensitivity for adults with ID is crucial when individuals with an ID are likely to be supported throughout their life span. In addition research indicates that children with ID may exhibit unclear attachment signals affecting carer sensitivity (Vaughn et al. 1994). Research examining adult attachment behaviour using the MAST would enable carer interpretation of attachment behaviour to be examined. This may indicate whether carers have difficulty understanding adult attachment behaviour of the individuals they are supporting and how this may impact upon attachment behaviour.

Research by Sterkenburg et al. (2008) and Schuengel et al. (2009) examined the effectiveness of therapeutic relationships as attachment interventions and their impact upon attachment behaviour. Clinical intervention aimed at enhancing adaptive attachment behaviour and evaluation of the impact of such interventions upon emotional development and affect regulation skills is essential. The MAST would also allow clinicians to develop clinical formulations and interventions that aim to improve attachment security for adults with ID. The MAST could be used to evaluate the effectiveness of interventions and examine whether secure attachment behaviour has increased post intervention.

The MAST could also be used to examine the prevalence of attachment strategies as described by Mikulincer and Shaver (2003) such as hyperactivating or deactivating strategies of affect regulation. The MAST could be adapted to assess the intensity of various behaviours, for example the adaptive function of item 2 “the individual actively solicits comforting when distressed” could be examined and intensity of the behaviour rated.

Further research is required to further assess the psychometric properties of the measure. Replicating the study with a larger sample size will allow for assessment of the factor structure of the MAST and recruiting staff from a range of professional backgrounds and family members would allow for further assessment of the psychometric properties including inter-rater reliability. In addition adding a larger likert scale and removing items 1 and 2 as indicated by results of the Cronbach’s α and reassessing the validity of
the amended scale would be beneficial. Future research aimed at further examination of the psychometric properties of the MAST should prioritise assessing the validity of the MAST against the SRAAS. Also investigating whether individuals with ID personally identify with the items of the MAST, i.e. whether they think the items apply to other people they know with an ID will further enable assessment of the validity of the MAST. A method such as repertory grid technique would facilitate such a study. The current sample was largely based upon young men in a forensic ID inpatient service. Recruiting staff to complete the MAST regarding a more representative sample of individuals with a range of level of ID would also be beneficial. The clinical utility of the MAST for assessing attachment behaviour for varying levels of ID including mild to severe ID and consideration of whether the MAST requires adaptation for individuals with a more severe ID is required.

4.3.7 Conclusions

Overall the results provide preliminary support for the reliability and validity of the MAST as a measure of secure attachment behaviour, and indicates that the SRAAS is a useful clinical tool to assess self-reported comfort seeking behaviour. Attachment behaviour was also found to be stable overtime and was associated with levels of CB and ID.

Further research regarding the prevalence of attachment difficulties and the factors increasing individual risk of attachment difficulties is essential. In order to meet the emotional needs of adults with ID the development of interventions that offer a reciprocal focus and emphasise the role of others, especially professional carers in meeting the attachment needs of individuals is crucial in promoting emotional development and affect regulation skills. This may facilitate the development of adaptive attachment behaviour for adults with ID for those with attachment difficulties. Research that evaluates the effectiveness of attachment interventions that aim to create a “safe base” for individuals with an ID who have attachment difficulties is required. Further emphasis upon the attachment needs when supporting adults with ID and the
value of meaningful reciprocal relationships are key for promoting psychological and emotional wellbeing.
5 References


Mental Deficiency Act. (1913). London: HMSO.


6 Appendices

Appendix 1 – Division of Clinical Psychology Research Sub-Committee study approval letter

Ms Victoria Penketh

16th November 2009

Dear Victoria

Re: Feedback from Research Sub-Committee 16th November 2009

Thank you for your revised research proposal which was considered by the Research Sub-Committee Meeting on 16th November 2009. The committee were satisfied that the revisions made were appropriate and in accordance with the feedback from the meeting of 12th October 2009 and you may now proceed with the research project as set out in your revised proposal.

For the purposes of ethical scrutiny by relevant NHS and/or University bodies, this letter may be taken as confirmation that your research proposal has been independently reviewed and that it is considered to meet necessary scientific and methodological standards.

On behalf of the Research Subcommittee, we wish you good luck with your research work.

Yours sincerely

Dr Dougal Hare
Research Director
Panel Chair, Research Sub-Committee
02 June 2010

Miss V Penketh

Dear Miss Penketh

Study Title: Development of a third-party observational measure of attachment
REC reference number: 10/H1008/30
Protocol number:

Thank you for your letter of 22 May 2010, responding to the Committee’s request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS HSC R&D office prior to the start of the study (see “Conditions of the favourable opinion” below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research (“R&D approval”) should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.reforum.nhs.uk. Where the only involvement of the NHS organisation is as a Participant Identification

This Research Ethics Committee is an advisory committee to North West Strategic Health Authority

The National Research Ethics Service (NRES) represents the NRES Directorate within the National Patient Safety Agency and Research Ethics Committees in England
Centre, management permission for research is not required but the R&D office should be notified of the study. Guidance should be sought from the R&D office where necessary.

Sponsors are not required to notify the Committee of approvals from host organisations.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

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<tr>
<th>Document</th>
<th>Version</th>
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<td>04 March 2010</td>
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<td>05 March 2010</td>
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<td>05 March 2010</td>
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<td>for staff participants/ services</td>
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<td>Scale</td>
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<td>Questionnaire: MAST</td>
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<tr>
<td>Questionnaire: Emotional Scale Rating</td>
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<tr>
<td>Response to Request for Further Information</td>
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Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document ‘After ethical review – guidance for researchers’ gives detailed guidance on reporting requirements for studies with a favourable opinion, including:
Notifying substantial amendments
Adding new sites and investigators
Progress and safety reports
Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk

10/H1008/30 Please quote this number on all correspondence

Yours sincerely

Enclosures: "After ethical review – guidance for researchers"

Copy to:
Appendix 3 - NHS Trust Research and Development approval letters.

Approval letter / NHS Trust 1.

21.06.2010

Victoria Penketh

Re: Research Governance Decision Letter

Project Title: Development of a third party observational measure of attachment

Further to your request for research governance approval, we are pleased to inform you that the Research Governance Board of the NHS Foundation Trust has approved the study. Please note when contacting the R&D office about your study you must always provide the project reference numbers provided above.

Trust R&D approval covers all locations within the Trust; however, you should ensure you have liaised with and obtained the agreement of individual service/ward managers before commencing your research.

Your responsibilities:

As a researcher you are responsible to comply with research governance procedures and your study may be monitored by the R&D EBP service. Should you wish to publish your results, approval must be sought to protect the trusts’ corporate identity and any information going into the public domain needs to be screened. We request that you submit your recruitment figures to a monthly basis and inform the R&D EBP service once you have finished recruiting in the trust so that your records can be updated. Upon completion of your research, please submit a final summary report.

Please take the time to read the attached ‘Information for Researchers – Conditions of Research Governance Approval’ leaflet, which gives the conditions that apply when research governance approval has been granted. Please contact the R&D Office should you require any further information. You may need this letter as proof of your approval.

We would like to point out that hosting research studies incurs costs for the Trust such as: staff time, usage of rooms, arrangements for governance of research. We can confirm that in this instance we will not charge for these. However we would like to remind you that Trust costs should be considered and costed at the earliest stage in the development of any future proposals.

May I wish you every success with your research.

Yours sincerely

[Signature]
Appendix 3 - NHS Trust Research and Development approval letters.

Approval letter/ NHS Trust 2.

12/11/2010

Vicky Penketh
Research Clinical Psychologist

Re: Development of a third-party observational measure of attachment

The Trust Research & Clinical Effectiveness Department is prepared to approve and support this project under the UK Regulations and according to the Research Governance Framework. Approval is provided on the basis that CI adheres to National Policy and Research Governance Framework and that Ethics Committee favourable opinion is in place.

It is a condition of our approval that Trust’s Research & Clinical Effectiveness Department is notified of the following:

- Commencement and completion of the study.
- Any significant changes/amendments to the study design/protocol.
- Any adverse events or complaints from participants recruited from.
- Any suspension or abandonment of the study.
- Copy of the annual report and end of project which will be submitted to Ethics.
- All publications and/or conference presentations of findings of the study.

It is the principal investigator’s responsibility to ensure that all staff involved in the research have Honorary Research contracts or the necessary letters of access. These need to be issued prior to commencing of the research project.

Chaired: [Name]
Signed: [Name]
Appendix 3 - NHS Trust Research and Development approval letters.
Approval letter/ NHS Trust 2.

In addition, unless otherwise agreed with the Trust, the research will be covered for negligence under the Trust's insurance policy. However, cover for no-fault harm is the responsibility of the Principal Investigator to arrange if required.

Please note that it is recognised that for any Intellectual Property generated by Trust employees in their normal course of duties, the IP rights remain with the employer and not the employee.

The Trust will not give approval for any NHS Research work that does not comply with Research Governance Framework.

Yours sincerely
Appendix 3 - NHS Trust Research and Development approval letters. Approval letter/ NHS Trust 3.

Dear Victoria,

Project 2010- 02: Development of a third party measure of secure attachment.

Following the approval by the [redacted] and [redacted] Research and Development Committee and Trust Research Approval Committee, I am pleased to confirm that your proposed research study within [redacted]

I would bring your attention to the responsibilities of researchers and principal investigator required by this Trust in accordance with the Department of Health’s Research Governance Framework. All research conducted within this Trust must comply with the full requirements of the Research Governance Framework for Health and Social Care (www.doh.gov.uk) and fully adhere to the submitted project protocol approved by [redacted] and the relevant Research Ethics Committee.
This letter provides proof that the relevant Trust committee has formally reviewed your project and that the R&D Lead has formally approved your project. Members of staff from other Trusts are fully entitled to ask to see your formal letter of approval before they agree to allow you to access a ward or have any contact with other members of staff or service users or carers from the Trust.

A representative from the Research Department will continue to contact you in the near future to monitor the progress of your research. Please inform the department immediately of any proposed changes, amendments to or deviations from the ethics committee and research governance approved protocol. On completion of the research, you will be requested to forward a copy of your final report and complete any relevant feedback and summary information as required by the Trust and specific directorates involved in hosting your research. In the dissemination of the research, the Trust may request you to present your research study and findings.

May I remind you that it is the responsibility of the investigator/s carrying out projects such as this to ensure that any service user that is recruited into a study completes a written consent form and that a copy of the form is kept in that client’s medical notes. An entry must be made in the service user’s electronic patient records following contact with a researcher.

Best wishes for your research and I look forward to finding out more about the progress and
The Manchester Attachment Scale-Third Party Observational Measure (MAST)

Date of completion:
Staff identification number:
Participant with ID identification number:

The following statements are intended to describe the person that you are supporting with a Learning Disability.

Please read the following statements and circle the number that best describes how much you agree with each statement.

1 2 3 4

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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1. If carer/other people reassures the individual saying "It's OK" or "it won't hurt you", he/she will approach new things that initially made him/her cautious or afraid

2. The individual actively solicits comforting when distressed

3. The individual accepts carer's attention to others

4. The individual views self as worthwhile

5. The individual leaves carer/other people easily when he/she wants to do an activity

6. When the individual is upset or injured, they will accept comforting from another person other than carer

7. The individual acts to maintain social interaction

8. The individual is direct and active in seeking help and cooperation from their carer

9. The individual values and seeks improved availability of and connection with other people

10. The individual accepts assistance

11. The individual is willing to talk to new people, show them belongings, or show them what he/she can do, if carer/other people asks him/her to

12. The individual responds at an appropriate level of intensity to other people

13. The individual readily shares with other people

14. The individual tends to arouse liking and acceptance in other people

15. The individual doesn't accept assurances when wary in familiar contexts

16. The individual is basically distrustful of people in general

Version 2; 22nd May 2010
Emotional rating scale

Please think about the person you are supporting and are completing the questionnaires regarding, and answer the following questions.

In **general** I have a good relationship with this person

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<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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**Today** I have a good relationship with this person

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<tbody>
<tr>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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How emotionally close do you feel to the person **today**?

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<tr>
<td>A great deal</td>
<td>Much</td>
<td>Little</td>
<td>Not at all</td>
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</table>

Version 2; 22nd May 2010
Appendix 6

Learning Disability Casemix Scale

(Invicta Community Care NHS Trust)

For each of the following, write the most appropriate number in the blank before the item and tick the appropriate box after the item.

A1___ Sensory Impairment
0 = Good vision and hearing even if wearing glasses or aides
1 = Impairment of vision even when wearing glasses and/or minor impairment of hearing which does not affect personal safety (e.g. crossing a road)
2 = Significant impairment of vision or hearing which can, in certain circumstances, affect personal safety
3 = Totally blind or totally deaf or both

☐ Any significant changes in sensory impairment over the past six months? Yes / No

A2___ Comprehension
0 = Able to understand a relatively complex conversation (e.g. planning an outing)
1 = Able to understand the gist of a simple conversation
2 = Able to understand simple commands (words or signs)
3 = None or little understanding

Any significant changes in comprehension over the past six months? Yes / No

A3___ Expression
0 = Able to participate in a relatively complex conversation (for example, commenting on a planned outing or expressing preferences when buying an article of clothing)
1 = Able to relate a simple practical experience either verbally or by using sign language
2 = Able to communicate basic needs such as hunger, fear, pain etc with words or signs
3 = Totally unable to communicate

Any significant changes in expression over the past six months? Yes / No

A4___ Mobility
0 = Totally mobile
1 = Mobile but not for long distances and/or unable to manage stairs easily
2 = Mobile but with aids only (e.g. canes, frame, support)
3 = Wheelchair bound

Any significant changes in mobility over the past six months? Yes / No

A5___ Toileting
0 = Completely continent day and night at all times
1 = Has occasional accidents
2 = Able to exercise reasonable control of sphincters if taken to the toilet at regular intervals
3 = Totally unable to control sphincters even when taken to the toilet frequently

Any significant changes in toileting over the past six months? Yes / No

A6___ Personal Hygiene
0 = Can look after personal hygiene competently
1 = Can wash self but needs assistance or reminders when washing hair, taking a bath or changing sanitary towel
2 = Able to perform some small tasks (e.g. drying face with towel) with help and support from carers
3 = Totally dependent on carers for all aspects

Any significant changes in personal hygiene over the past six months? Yes / No

A7___ Dressing
0 = Can dress appropriately by self
1 = Can dress without any physical assistance but not always appropriate for the season
2 = Can dress with assistance from carers
3 = Needs to be dressed by carers

Any significant changes in dressing over the past six months? Yes / No

A8___ Eating
0 = Can feed self with knife and fork in a socially acceptable manner
1 = Can feed self with knife and fork but tends to be messy
2 = Can feed self only once food has been cut / prepared
3 = Has to be fed by carer, cannot feed self even with a spoon

Any significant changes in eating over the past six months? Yes / No

A9___ Time
0 = Can tell the time, date and season
1 = Understands the concept well (hours, day, year) but cannot read the clock
2 = Can tell morning from afternoon or today from yesterday / tomorrow
3 = No concept of time

Any significant changes in time understanding over the past six months? Yes / No

A10___ Money / Numeracy
0 = Competent at managing bills and/or bank account, cashing allowances etc.
1 = Can give correct amount, check change, but still needs support / help to manage bank account, bills etc. even when systematically involved by carer
2 = Knows what money is for but needs support / help when purchasing small items
3 = Has no concept of money

Any significant changes in numeracy over the past six months? Yes / No
A11__ Literacy
0 = Enough reading and writing ability to cope with everyday situations
1 = Can read short, simple sentences but cannot write
2 = Can recognise some written words when printed or the most commonly used symbols such as those used for men's or ladies toilets
3 = No understanding of the most commonly used symbols of the social sight vocabulary

Any significant changes in literacy over the past six months? Yes / No

A12__ Road Sense
0 = Competent even in unfamiliar surroundings
1 = Competent in familiar surroundings only
2 = Has some limited idea of road sense but cannot be trusted on his/her own
3 = No idea of danger

Any significant changes in road sense over the past six months? Yes / No

A13__ Self Initiated Activity
0 = Enjoys being engaged in activities, usually initiated by self
1 = Shows occasionally that he/she can take initiative and participate in simple but purposeful activities
2 = Usually passive, needs constant encouragement to take part even in very simple activities, usually not for very long
3 = Resists engagement even into very simple activities either passively (stubbornness) or actively (protests)

Any significant changes in self-initiated activity over the past six months? Yes / No

A14__ Sustaining Attention
0 = Ability to sustain attention is sufficient for completing a relatively complex task, such as playing a team game
1 = Ability to sustain attention is sufficient to complete a relatively complex task as long as she/she is helped to re-focus by staff
2 = Ability to sustain attention is limited to simple and short tasks
3 = Unable to concentrate, even on simple tasks. Needs constant reminders by staff and/or physical prompts

Any significant changes in sustaining attention over the past six months? Yes / No

C1__ Offensive Behaviours Any one or combination of the following: screaming, regurgitating, noisy behaviour, smearing with saliva or faeces, pica, drooling or any similar offensive or antisocial habits.
0 = None present
1 = Observed by at infrequent intervals
2 = Observed often
3 = Chronic condition

Any significant changes in offensive behaviours over the past six months? Yes / No
C2___ **Self Injurious Behaviours**  Any one or combination of the following: biting self, eye-poking, scratching self, picking at sores, slapping self or similar behaviours resulting in self harm.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Above behaviours not observed</td>
</tr>
<tr>
<td>1</td>
<td>Above behaviours observed occasionally</td>
</tr>
<tr>
<td>2</td>
<td>Above behaviour often observed with no or little danger for the person</td>
</tr>
<tr>
<td>3</td>
<td>Above behaviours are chronic and are potentially harmful for the person</td>
</tr>
</tbody>
</table>

Any significant changes in self-injurious behaviours over the past six months? Yes / No

C3___ **Aggression towards Others**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Aggressive behaviour never or very rarely observed</td>
</tr>
<tr>
<td>1</td>
<td>Occasional verbal aggression and/or threats</td>
</tr>
<tr>
<td>2</td>
<td>Frequent verbal aggression and/or occasional physical aggression not resulting in serious injury</td>
</tr>
<tr>
<td>3</td>
<td>Frequently involved in physical assaults but without a risk of serious injury</td>
</tr>
<tr>
<td>4</td>
<td>Has been involved in physical aggression resulting at least once in the past 3 years in grievous bodily harm (with or without a weapon)</td>
</tr>
</tbody>
</table>

Any significant changes in aggression towards others over the past six months? Yes / No

C4___ **Destructive Behaviour**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Behaviour not observed</td>
</tr>
<tr>
<td>1</td>
<td>Careless with personal and/or other peoples property</td>
</tr>
<tr>
<td>2</td>
<td>Frequently damages personal and/or other peoples property</td>
</tr>
<tr>
<td>3</td>
<td>Substantial damage caused on several occasions to furniture, fittings, building, vehicles etc. if left unsupervised</td>
</tr>
<tr>
<td>4</td>
<td>Arson or act of similar gravity towards properties or vehicles</td>
</tr>
</tbody>
</table>

Any significant changes in destructive behaviour over the past six months? Yes / No

C5___ **Inappropriate Sexual Behaviour**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Sexual behaviour is socially acceptable</td>
</tr>
<tr>
<td>1</td>
<td>Sometimes undresses in public if not supervised</td>
</tr>
<tr>
<td>2</td>
<td>Inappropriate sexual conduct involving self only (e.g. exposes self, masturbates in public) if left unsupervised</td>
</tr>
<tr>
<td>3</td>
<td>Inappropriate sexual behaviour involving a member of the public (e.g. groping, grabbing etc.) Or explicit sexual threats</td>
</tr>
<tr>
<td>4</td>
<td>Rape, attempted rape, paedophile conduct at least once in the past 3 years</td>
</tr>
</tbody>
</table>

Any significant changes in inappropriate sexual behaviour over the past six months? Yes / No

C6___ **Repetitive Behaviour**  Any one or combination of the following: rocking of body back and forth, flapping hands, flicking fingers, pacing up and down, constant running, echolalia or similar stereotyped behaviours.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Above behaviour(s) not observed</td>
</tr>
</tbody>
</table>
1 = Above behaviour(s) observed rarely and not for long
2 = Above behaviour(s) often observed but with regular periods of calm when
    behaviour is normal or near normal
3 = Above behaviour are virtually chronic

Any significant changes in repetitive behaviour over the past six months? Yes / No

C7___ Disruptive Unreasonable Behaviour Any one or combination of the following:
bickering, frequently involved in disputes, uncooperative, bad tempered, jealous,
possessive.
0 = Above behaviour(s) not observed
1 = Above behaviour(s) observed rarely, usually not for long
2 = Above behaviour(s) observed regularly in certain situations only
3 = Above behaviour(s) are frequent, even when reasonable demands are made

Any significant changes in disruptive unreasonable behaviour over the past six months?
Yes / No

C8___ Dealing with Frustration
0 = Able to cope with frustration in a way which is appropriate to the situation
1 = Easily frustrated but easily calmed down
2 = Easily frustrated, needs a lot of attention/reassurance to calm down
3 = Frequently unable to control emotions, crisis point is reached quickly, frustration is
    spectacular, the crisis tends to take a long time to resolve

Any significant changes in dealing with frustration over the past six months?

C9___ Excess or Deficit of Social Interaction Excess: Any one or combination of the
    following: attention seeking, over friendliness, touching people inappropriately, talking too
    much or any similar social excesses. Deficit: Any one or combination of the following:
    Withdrawn, unresponsive, indifferent, shy, prone to avoid social contact, or any similar
    social deficits
0 = Social behaviour is good in most circumstances
1 = Can display social excesses or social deficits in certain circumstances and usually not
    for long
2 = Prone to display social excesses or deficits but usually tends to respond positively
    when encouraged or corrected by amending behaviour accordingly
3 = Prone to display social excesses or deficits but does not respond to encouragement
    or prompting etc.

Any significant changes in excess /deficit social interaction over the past six months? Yes / No
### Suggested Scoring

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Challenging behaviour (Sum of scores on Items C1-C9)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-6</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Learning disability (Sum of scores on Items A1-A14)</td>
<td></td>
</tr>
<tr>
<td>0-13</td>
<td>A A0 (Mild disability, no challenging behaviour)</td>
</tr>
<tr>
<td>14-24</td>
<td>B B0 (Moderate disability, no challenging behaviour)</td>
</tr>
<tr>
<td>25-42</td>
<td>C C0 (Severe disability, no challenging behaviour)</td>
</tr>
</tbody>
</table>

Version 2: 22nd May 2010
**EZ-Yale Personality Questionnaire**

(Adapted from Ziger et al 2002)

Please read the following statements and circle the number that best describes how much you agree with each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>The individual tends to keep thoughts, feelings, or products to him/herself</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>The individual accepts imposed limits</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual spends more time alone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual imitates others’ work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual is too familiar with strangers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual is a follower</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual tends to withdraw and isolate him/herself when supposed to be in a group</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual is disobedient and doesn’t mind well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual seeks physical contact with others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual does something just because social custom</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual isolates him/herself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual is constantly seeking attention and praise</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual is apt to pass up something</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual wants help from others even when it’s not really needed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual could be more friendly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual does not listen to rules</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual usually does as told</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual usually doesn’t trust others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual likes to be given a lot of direction</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The individual observes what others are doing to guide his/her own actions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Version2; 22nd May 2010
Appendix 8

SRAAS – Self–Report Assessment of Attachment Security
(Adapted from Smith and McCarthy 1996)

Participant identification number:
Date of completion:

1. What would you do if you were feeling miserable?

A) Tell somebody
B) Not tell anyone about the way you are feeling (cope on your own, avoid people, keep it to yourself)
C) Express the feelings in an uncontrolled way (throw things, scream, shout, hurt myself)

Please give an example

2. What would you do if you were feeling worried?

A) Tell somebody
B) Not tell anyone about the way you are feeling (cope on your own, avoid people, keep it to yourself)
C) Express the feelings in an uncontrolled way (throw things, scream, shout, hurt myself)

Please give an example

3. What would you do if you were feeling frightened?

A) Tell somebody
B) Not tell anyone about the way you are feeling (cope on your own, avoid people, keep it to yourself)
C) Express the feelings in an uncontrolled way (throw things, scream, shout, hurt myself)

Please give an example
Short title of study: Development of a questionnaire for secure attachment

Please read this sheet carefully. (NB to be read aloud if the person has any literacy difficulties)

I am a Trainee Clinical Psychologist, based at the University of Manchester. As part of my training I am doing some research. I would like to invite you to take part in the study.

Before you decide I would like you to understand why the research is being done and what it would involve for you. I will go through the information sheet with you and answer any questions you have. This should take about 10 minutes. Please feel free to talk to others about the study if you wish and ask me if there is anything that is not clear. There is also a research protocol that you can look at that provides more detailed information.

We are asking people to take part in a study about how people with Intellectual Disabilities (including people with Intellectual Disabilities and Autistic Spectrum Disorders), cope with different feelings.

What is the research study about?
The study aims to develop a new questionnaire called the Manchester Attachment Scale – Third Party measure, or the MAST. The questionnaire is designed to help staff have a better understanding of how to help people with Intellectual Disabilities cope with their emotions.

Reason for the study
Infants develop a relationship with their main caregiver during the first year of life called ‘attachment’. This attachment relationship helps us develop ways to cope with our emotions. We know a lot about attachment in children and adults, but we know very little about attachment in adults with Intellectual Disabilities.

The study will help us understand more about attachment and how people with Intellectual Disabilities cope with their feelings. This will help us understand how to support people with Intellectual Disabilities in the best way.

Who is organising and funding the study?
The University of Manchester.

Why have I been asked to take part?
You have been asked to take part in the study because you are being supported by a learning disability service and you are considered to have a Learning Disability or Intellectual Disability. The aim is to recruit 122 people with Intellectual Disabilities and their carers.

Do I have to take part in the study?
No, participation is voluntary. If you do agree to participate, you can leave the study at any time without giving any reasons. This will not impact on you, or the service you are receiving.
**What does the study involve?**
I will meet with you to explain the study. You will then be asked to think about whether you want to take part.

If you decide to take part, I will ask you to do some assessments.

There are 2 assessments. The first assessment involves listening to some words, then looking at 4 pictures and pointing to the picture that matches the words. The second assessment asks you about your feelings, and what you do when you feel different emotions. It is not a test and there are no right or wrong answers.

**How long will the study last?**
In total the study will last for 12 months. Each person will be in the study for about 2 weeks.

Step 1 - You will be asked to complete 2 assessments. This will take about ½ an hour.

Step 2 – two weeks later, I will come back and ask you to do the assessment about your feelings again. This will take about 15 minutes.

**Risks of participating in the study**
It is unlikely that taking part in the study will cause you any harm. As the study asks you about your feelings, you may find this difficult and upsetting. Sometimes we all feel upset, this is ok. If during the study you become very upset, you will stop doing the assessments. The researcher will support you when you are upset and ask you what would help feel better. She will also offer to talk and listen to you.

The researcher may also speak to their supervisor for advice about how to help you when you are upset. She may also talk to support staff so that they can help you. The researcher will always try and ask your permission before she speaks to anyone else about you. The researcher may also ask you if you want to see a psychologist so that you can talk about any worries you have.

**Will my personal details be confidential?**
All records will be kept confidential. Names will not be recorded on any of the questionnaires that you complete, so that your identity will be private. If you decide to take part, you will be asked to complete a consent form, which will have your name on it. This will be separated from the questionnaires, so that your answers on the questionnaires can not be identified. Only I and my research supervisors will see the completed questionnaires.

**What happens to the information collected and when they study finishes?**
I will offer to present the general findings of the study. The results of the study will form part of a report that the University of Manchester will examine as part of my training course. Once the report has been examined the findings will be published.

**What if I have a problem about the study?**
Complaints
Please speak to me about any concerns you may have about this study. I will do my best to answer your questions. If I am unable to help, or you wish to make a complaint
about the study, please contact a member of the University research team on 0161 2757583 or 0161 2758093 or by email to research-governance@manchester.ac.uk.

**Harm**

In the event that you are harmed during the study you may have grounds for a legal action for compensation against The University of Manchester. You may have to pay your legal costs. The normal National Health Service complaints method will still be available to you.

The University of Manchester has cover for no fault compensation for bodily injury, mental injury or death where the injury resulted from a procedure as part of the study. This would be subject to policy terms and conditions.

Any payment would be without legal commitment. (Please ask if you wish more information on this).

The University would not be bound to pay this compensation where the harm resulted from a procedure when the study protocol was not followed.

**How do I get involved with the study?**

I will visit you and explain the purpose of the study.

You will have a minimum of 7 days to consider whether you wish to participate in the study.

When you have decided if you would like to participate in the study or not, you will be asked a number of questions to check you are fully aware of what the study involves. You will then be asked to sign a consent form.

**Who can I contact for further information?**

Vicky Penketh  
Trainee Clinical Psychologist  
University of Manchester  
Division of Clinical Psychology  
Second Floor, Zochonis Building  
Brunswick Street  
Manchester  
M13 9PL  
Tel: 0161 306 0400  
Email: Victoria.penketh@postgrad.manchester.ac.uk

Please do not hesitate to contact me if you have any questions.

**Thank you for taking the time to read this information sheet.**

Version2; 22nd May 2010
Information sheet 3 - Information for family/ carers

Short title of study: Development of a questionnaire for secure attachment

Aim of the research study
I am a Trainee Clinical Psychologist, based at the University of Manchester. As part of my training I am conducting a research study. The study aims to develop a new measure of secure attachment, called the Manchester Attachment Scale-Third party observational measure (MAST). The MAST is for staff to use with individuals with Intellectual Disabilities. The study also hopes to assess whether the MAST is a valid measure, i.e. that it measures what it intends to measure, and whether it is a reliable measure, i.e. that it produces consistent results over time. There is also a research protocol that you can look at that provides more detailed information.

Reason for the study
Infants develop an affectional bond with their main caregiver during the first year of life called ‘attachment’. This attachment relationship helps us develop ways to cope with our emotions. We know a lot about attachment in children and adults, but our knowledge of attachment in adults with Intellectual Disabilities is limited.

There is increasingly more research examining Intellectual Disabilities and attachment. For example, one study suggests that challenging behaviour presented by people with Intellectual Disabilities may be associated with attachment difficulties. Developing a greater understanding of attachment is crucial, as this will help plan future interventions and improve outcomes for individuals with Intellectual Disabilities.

There is a significant lack of questionnaires/ measures to assess attachment security in individuals with Intellectual Disabilities. The MAST is a third-party observational measure; therefore, it will be used by staff to help guide their clinical judgement as to what degree an individual has a secure attachment. This will enable staff to have a greater understanding of peoples needs and provide person-centred interventions aimed at improving quality of life.

Who is organising and funding the study?
The University of Manchester.

What does the study involve?
I will be visiting Intellectual Disability services across the North West to discuss the study with staff teams and people with Intellectual Disabilities. They will be given 7 days to consider whether they wish to support the research and participate in the study.

People that are interested in participating will be asked a number of questions to check they are fully aware of what the study involves, and be asked to sign a written consent form.
How long will the study last?
People with Intellectual Disabilities will be asked to complete 2 questionnaires on two different occasions.
Time point one – 2 questionnaires will be completed.
Time point two – two weeks later, 1 questionnaire will be completed.

Risks of participating in the study?
Risks - There is low risk of negative consequences resulting from participating in the research. As the questionnaires take 30 minutes to complete, it may be difficult to have the time to complete the questionnaires. One of the questionnaires asks participants about their feelings and how they cope with their emotions. There is a small chance some individual’s could find this upsetting. If this does happen, the person will be withdrawn from the study. I will use my Clinical Psychology training and provide each person with support, they will also be offered support by the Intellectual Disability service if appropriate.

Benefits of participating in the study
Due to the significant lack of research in this area, there are considerable potential research benefits to others gained from the results of the study. The research will add to our understanding of Intellectual Disabilities, attachment and challenging behaviour. This will help plan services to meet the needs of individuals with Intellectual Disabilities.

Do people have to take part in the study?
No, participation is voluntary. Participants can withdraw from the study at any time without giving any reasons. This will not impact upon the services they are receiving.

Will personal details be confidential?
All records will be kept confidential. Names will not be recorded on any of the questionnaires completed, so that each participant’s identity will remain private throughout the study. Participants will be asked to complete a consent form, which will have their name on it. This will be separated from the questionnaires, so that the questionnaires are looked at anonymously. Only I and my research supervisors will see the completed questionnaires.

In light of the questionnaires being confidential, I will be unable to give feedback regarding the information collected concerning people with Intellectual Disabilities.

What happens when the study finishes?
I will offer to present the general findings of the study and information about attachment to the participants and their carers (if consent is gained to do so). The results of the study will form part of a report that will be submitted to the University of Manchester and examined as part of my training course. Once the report has been examined the findings will be published in a peer reviewed journal.

What if I have a problem about the study?
Complaints
Please speak to me about any concerns you may have about this study. I will do my best to answer your questions. If I am unable to help, or you wish to make a complaint about the study, please contact a member of the University research team on 0161
Harm
In the event that you are harmed during the study you may have grounds for a legal action for compensation against The University of Manchester. You may have to pay your legal costs. The normal National Health Service complaints method will still be available to you.

The University of Manchester has cover for no fault compensation for bodily injury, mental injury or death where the injury resulted from a procedure as part of the study. This would be subject to policy terms and conditions.

Any payment would be without legal commitment. (Please ask if you wish more information on this).

The University would not be bound to pay this compensation where the harm resulted from a procedure when the study protocol was not followed.

How do I get involved with the study?
I will visit your service to tell you more about the study and answer any questions. You will then have a minimum of 7 days to consider whether you wish to support the research and participate in the study.

When you and your service have decided whether they would like to participate, you will be asked a number of questions to check you are fully aware of what the study involves, and will be asked to sign a consent form.

Who can I contact for further information?
Vicky Penketh
Trainee Clinical Psychologist
University of Manchester
Division of Clinical Psychology
Second Floor, Zochonis Building
Brunswick Street
Manchester
M13 9PL
Tel: 0161 306 0400
Email: Victoria.penketh@postgrad.manchester.ac.uk

Please do not hesitate to contact me if you have any questions.

Thank you for taking the time to read this information sheet.
Information sheet 1 - Information for staff participants/servicestes

Short title of study: Development of a questionnaire for secure attachment

I am a Trainee Clinical Psychologist, based at the University of Manchester. As part of my training I am conducting a research study. I would like to invite you to take part in the study. Before you decide I would like you to understand why the research is being done and what it would involve for you. I will go through the information sheet with you and answer any questions you have. This should take about 10 minutes. Please feel free to talk to others about the study if you wish and ask me if there is anything that is not clear. There is also a research protocol that you can look at that provides more detailed information.

Aim of the research study
The study aims to develop a new measure of secure attachment, called the Manchester Attachment Scale—Third party observational measure (MAST). The MAST is for staff to use with individuals with Intellectual Disabilities. The study also hopes to assess whether the MAST is a valid measure, i.e. that it measures what it intends to measure, and whether it is a reliable measure, i.e. that it produces consistent results over time.

Reason for the study
Infants develop an affectional bond with their main caregiver during the first year of life called ‘attachment’. This attachment relationship helps us develop ways to cope with our emotions. We know a lot about attachment in children and adults, but our knowledge of attachment in adults with Intellectual Disabilities is limited.

There is increasingly more research examining Intellectual Disabilities and attachment. For example, one study suggests that challenging behaviour presented by people with Intellectual Disabilities may be associated with attachment difficulties. Developing a greater understanding of attachment is crucial, as this will help plan future interventions and improve outcomes for individuals with Intellectual Disabilities.

Due to the lack of research in this area, there are considerable potential research benefits to others gained from the results of the study. The MAST is a third-party observational measure; therefore, it will be used by staff to help guide their clinical judgement as to what degree an individual has a secure attachment. A greater understanding of Intellectual Disabilities, attachment and challenging behaviour will help plan services to meet the needs of individuals with Intellectual Disabilities.

Who is organising and funding the study?
The University of Manchester.

Why have I been asked to take part?
You have been asked to take part in the study due to your experience of working with individuals with Intellectual Disabilities. The aim is to recruit 122 people with Intellectual Disabilities and their carers.
Do I have to take part in the study?
No, participation is voluntary. If you do agree to participate, you can leave the study at any time without giving any reasons; this will not impact upon you or your job role.

What happens if I take part?
You will be asked to complete 4 brief questionnaires:
- The MAST
- EZ-Personality Questionnaire (Zigler et al 2002)
- Casemix Scale (Pendaries 1997)
- Subjective analogue scale
(Copies of the questionnaires are attached to this sheet). You will be asked to complete the above questionnaires based upon the knowledge you have of an individual you are supporting with an Intellectual Disability. The individual does not have to be present when you fill out the questionnaires. It will take approximately 30 minutes to complete all the questionnaires.

How long will the study last?
The study will last about 12 months. You will be asked to participate for approximately 2 weeks. You will be asked to complete all 4 questionnaires on two different occasions.
Time point one - you will complete all 4 questionnaires.
Time point two – two weeks later, you will be asked to complete the same questionnaires, based upon the same individuals.

Risks of participating in the study
Risks - There is low risk of negative consequences resulting from participating in the study. As the questionnaires take 30 minutes to complete it may be difficult to have the time to complete them. Following completion of questionnaires, you will be offered the opportunity to have a debriefing session with the researcher, to answer any questions or concerns. In the unlikely event you become distressed during participation, you will be withdrawn from the study and the researcher will provide you with support.

Will my personal details be confidential?
All records will be kept confidential. Names will not be recorded on any of the questionnaires that you complete, so that your identity will be anonymous and private throughout the study. If you decide to take part, you will be asked to complete a consent form which will have your name on it. This will be separated from the questionnaires, so that participants cannot be identified from their responses on the questionnaires. Only I and my research supervisors will see the completed questionnaires.

What happens to the information collected and when the study finishes?
I will offer to present the general findings of the study and information about attachment. The results of the study will form part of a report that will be submitted to the University of Manchester and examined as part of my training course. Once the report has been examined the findings will be published in a peer reviewed journal. In light of the questionnaires being confidential, I will be unable to give individual feedback regarding the questionnaires completed concerning people with Intellectual Disabilities.
**What if I have a problem about the study?**

**Complaints**
Please speak to me about any concerns you may have about this study. I will do my best to answer your questions. If I am unable to help, or you wish to make a complaint about the study, please contact a member of the University research team on 0161 2757583 or 0161 2758093 or by email to research-governance@manchester.ac.uk.

**Harm**
In the event that you are harmed during the study you may have grounds for a legal action for compensation against The University of Manchester. You may have to pay your legal costs. The normal National Health Service complaints method will still be available to you.

The University of Manchester has cover for no fault compensation for bodily injury, mental injury or death where the injury resulted from a procedure as part of the study. This would be subject to policy terms and conditions.

Any payment would be without legal commitment. (Please ask if you wish more information on this).

The University would not be bound to pay this compensation where the harm resulted from a procedure when the study protocol was not followed.

**How do I get involved with the study?**
I will visit your service to tell you more about the study and answer any questions. You will then have a minimum of 7 days to consider whether you wish to support the research and participate in the study.

When you and your service have decided whether they would like to participate, you will be asked a number of questions to check you are fully aware of what the study involves, and will be asked to sign a consent form.

**Who can I contact for further information?**
Vicky Penketh
Trainee Clinical Psychologist
University of Manchester
Division of Clinical Psychology
Second Floor, Zochonis Building
Brunswick Street
Manchester
M13 9PL
Tel: 0161 306 0400
Email: Victoria.penketh@postgrad.manchester.ac.uk

Please do not hesitate to contact me if you have any questions.

**Thank you for taking the time to read this information sheet.**
Consent form

Short title of study: Development of a questionnaire for secure attachment

Researchers: Vicky Penketh, Dr Dougal Julian Hare, Dr Steve Hendy, Dr Sam Walker and Professor John Taylor.

(NB: To accompany participant information sheets 1 and 2. To be read aloud if the person has any literacy difficulties that might impact upon their understanding).

Please read this sheet carefully and tick and initial each box

Participant Identification Number:

1. The researcher has been through the information sheet with me. I understood the information sheet dated…………..(version ………) . I have had time to think about the study and have had the time to ask the researcher any questions about the study.

2. I understand that my participation in the study is voluntary and that I am free to leave the study at any time, without giving any reason, and my medical care and legal rights will not be affected

3. I understand that information collected during the study may be looked at by staff that want to check the research and that people doing the research are doing their job correctly. For example staff at the University of Manchester, or NHS Trusts. I give permission for these staff to see this information.

4. I understand that the results of the study will form part of a report for the University of Manchester. The report will also be published. I agree that my answers from the assessments/ questionnaires can be in the report.

5. I agree to take part in the above study

Name of participant ____________________________ Signature ____________________________

Name of researcher ____________________________ Signature ____________________________

Date of signature ____________________________

When completed 1 copy for participant and 1 copy for researcher.

Version2; 22nd May 2010
### Table 11 SPSS output test of normality

**Tests of Normality**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZPQ_OB</td>
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<td>51</td>
<td>.000</td>
</tr>
<tr>
<td>EZPQ_NR</td>
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<td>51</td>
<td>.031</td>
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<tr>
<td>EZPQ_PR</td>
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<td>.013</td>
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<td>EZPQ_OD</td>
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<td>51</td>
<td>.001</td>
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<td>ERS1</td>
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<td>.000</td>
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<tr>
<td>ERS2</td>
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<tr>
<td>ERS3</td>
<td>.245</td>
<td>51</td>
<td>.000</td>
</tr>
<tr>
<td>MAST_total</td>
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<td>51</td>
<td>.200</td>
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<tr>
<td>LDCS_CB_total score</td>
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<td>51</td>
<td>.047</td>
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<tr>
<td>LDCS_ID_total</td>
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<td>51</td>
<td>.200</td>
</tr>
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</table>

*a. Lilliefors Significance Correction

* This is a lower bound of the true significance.

### Table 12 SPSS output test of normality

**Tests of Normality**

<table>
<thead>
<tr>
<th>Variable</th>
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<th>Sig.</th>
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<tbody>
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<td>MAST_reliability_total</td>
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</table>

*a. Lilliefors Significance Correction

* This is a lower bound of the true significance.
Table 13 SPSS output test of normality

Tests of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>SRAAS total frequency</td>
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<sup>a</sup> Lilliefors Significance Correction
Appendix 14: SPSS output - Cronbach’s α

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<tr>
<th>Item Deleted</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
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<tbody>
<tr>
<td>NewMAST_TP1 Q1</td>
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### Table 15 SPSS output

#### Paired Samples Correlation

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<th>Pair</th>
<th>Variable 1</th>
<th>Variable 2</th>
<th>N</th>
<th>Correlation</th>
<th>Sig.</th>
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</thead>
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<tr>
<td>Pair 1</td>
<td>NewMAST_TP1 Q1 &amp; NEW.RelMAST1</td>
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<td>Pair 4</td>
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<td>Pair 5</td>
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<td>.000</td>
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<td>Pair 11</td>
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<tr>
<td>Pair 14</td>
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<tr>
<td>Pair 15</td>
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</table>
### Table 16 SPSS output

**Paired Samples T-test**

<table>
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<th>Pair</th>
<th>Paired Differences</th>
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<th>df</th>
<th>Sig. (2-tailed)</th>
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<tbody>
<tr>
<td>Pair 1</td>
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<td>1.000</td>
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<td>.056</td>
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<tr>
<td>Pair 16</td>
<td>NewMAST_TP1 Q16_revscore - relMAST16_revscore</td>
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<td>29</td>
<td>.745</td>
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