

# **Attachment and Caregiving**

**Volume I: Literature Review, empirical paper and public domain paper**

By

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A thesis submitted to  
The University of Birmingham  
For the degree of  
Doctor of Clinical Psychology

School of Psychology  
University of Birmingham  
January 2013

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## **Overview**

This thesis is submitted to fulfil the academic requirements for the degree of Doctor of Clinical Psychology (Clin.Psy.D), School of Psychology, University of Birmingham. This thesis is comprised of two volumes, which reflect the research component (Volume I) and clinical work (Volume II) required by the course.

### **Volume I: Research**

This volume contains three papers which explore the broad theme of attachment and caregiving. The first paper, the literature review, examines the role of the caregiver in helping the infant to establish a secure attachment relationship. Specifically, it explores whether the caregiver's ability to understand the world from the infant's perspective is conducive to the development of attachment security. This paper was prepared for submission to *Attachment and Human Development*. The second paper in this volume, reports an empirical study which again considers the role of the caregiver, this time in relation to spouse partnerships where one person has dementia. The research explores caregivers' perceptions of change within the relationship. It was hypothesised that attachment theory may potentially help to explain why some individuals experience continuity and others discontinuity. This paper was prepared for submission to *Dementia*. The final paper is a public domain briefing paper which comprises a summary of the literature review and empirical paper.

## **Volume II: Clinical Practice Reports**

This volume contains five clinical practice reports (CPR) which were submitted during the doctorate course and describe the clinical work carried out during placements across different specialities. The first report contains both systemic and cognitive-behavioural formulations for a 16 year old girl with depression. The second report describes an audit of the service provision for depression within a child and adolescent mental health service. The third report considers a single-case experimental study of an older adult with depression and agoraphobia. The fourth report, a case study, examines a cognitive-behavioural intervention with an adult who was experiencing panic disorder and agoraphobia. Finally, the fifth report outlines the abstract of an oral presentation which described an intervention with an individual who had an acquired brain injury.

All names and identifying features have been changed to ensure confidentiality.

To Nanny and Grandad

You filled my head with so many stories and memories, they won't be forgotten...

"I watch the sunlight shine through the clouds,

Warming the earth below.

And at the mid-day, life seems to say:

I feel your brightness near me".

"I watch the sunrise"  
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## **Acknowledgements**

I would like to thank my research supervisors Dr Jan Oyebode and Dr Gerry Riley for their continued support and advice throughout the research process. My thanks also go to Kristien Haepers for her enthusiastic help with recruitment and to all those who encouraged people to be involved. Thank you to everyone who gave up their time to take part in the research, it was a pleasure to meet with you. Alongside my research, I would like to thank my placement supervisors, who have supported me on the journey through training, provided me with many opportunities and contributed in countless ways to my ongoing learning.

To my parents, who have always allowed me to choose my own path and supported me along the way.

To Rachel, your texts of support through some of the hardest times really kept me going.

Thank you to my daughter whose arrival in the middle of training added a whole new perspective to my life and who, at times, has tested my ability to be mind-minded/reflective and insightful to the limit! (I wouldn't have it any other way). I hope baby brother/sister gives me an easier ride.

To the "mums" for reminding me of the important things in life (namely coffee and cake!) and that there is a world outside of clinical training.

Lastly, the biggest thank you to my husband. It is no exaggeration to say that none of this would have been possible without you. Thank you for your unwavering support, patience, laughter and love. It's been one hell of a journey but we made it!

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Literature review paper prepared for submission to Attachment and Human Development

**How Does the Caregiver's Ability to  
Understand Their Infant's Mind Lead to the  
Development of Attachment Security?**

## Abstract

The development of a secure attachment in infancy has been considered as paramount to healthy emotional development. How infants establish a sense of security is still unclear. This review considers the concept of mentalizing which broadly relates to the caregiver's ability to understand the world from the perspective of the infant. The importance of mentalizing has been considered in regard to three approaches: mind-mindedness; reflective functioning; and maternal empathetic understanding, also defined as insightfulness. A total of 11 papers were included in the review. An outline and subsequent analysis of each approach is provided, followed by a general consideration of methodological issues.

Overall, the studies reviewed appear to support the notion that the caregiver's capacity to mentalize is important for the development of a secure attachment relationship with their infant. Implications for clinical practice are discussed and it is suggested that the research findings may support the utility of interventions based upon the principles of mentalizing. Finally a brief consideration of the possibilities for future research, suggests the importance of understanding more about the role of mentalization in caregiver-infant relationships where language may not be the primary mode of communication.

**Keywords:** parent; infant; child; attachment; mentalizing; mind-mindedness; reflective functioning; insightfulness; maternal empathetic understanding.

## **Introduction**

One of the most influential findings within the field of attachment research over the last 20 years has been the establishment of a link between caregiver and infant attachment status (van IJzendoorn, 1995). On the basis of a major meta-analytic review, van IJzendoorn (1995) concluded that infant attachment security could be reliably predicted by the adult caregiver's attachment status. It was previously thought that this association was dependent upon the caregiver's sensitive response. Van IJzendoorn (1995) cast doubt on this notion, raising the possibility that there may be other mechanisms by which attachment is transmitted from generation to generation. One response to this has been to re-examine and redefine the notion of sensitivity, focusing on the premise that a crucial element of a sensitive response is the caregiver's willingness to engage in understanding the world from the child's perspective (Ainsworth, Blehar, Waters, & Wall, 1978). This has been explored under the broad heading of *mentalizing* (Fonagy, Gergely, Jurist, & Target, 2002). The following review examines the association between a caregiver's capacity to mentalize and the development of a secure infant attachment relationship.

## **Attachment Theory**

Attachment theory focuses on the unique connection between infant and primary caregiver in the first few years of life. Initially developed by John Bowlby in the 1950s, he hypothesised that strong early attachment relationships were critical for the healthy development of the self. He described the mechanism by which an individual's personality comes to be organised as an *internal working model* (Bowlby, 1973, 1982), broadly

comprising a model of the world, a model of the self and, critically, a model of the self related to others (Pietromonaco & Barrett, 2000). It is suggested that these early patterns of relating set the foundation for later interactions throughout the lifespan (Crowell et al., 2002; Holmes, 1993). Thus the role of the caregiver is critical in fostering an environment in which healthy emotional development can take place.

The way in which this happens was further explored by Bowlby's colleague, Mary Ainsworth. She suggested that the caregiver functions as a *secure base* for the infant, providing them with a safe environment from which to explore the world (Ainsworth et al., 1978). Where a healthy early relationship exists, the notion of a secure base becomes internalised, therefore rather than needing the actual physical presence of the caregiver, the child begins to draw upon their internal representation of the relationship in order to feel safe and secure (Sroufe & Waters, 1977). Further, the empirical studies by Ainsworth et al. (1978) highlight the importance of *maternal sensitivity* (Bowlby, 1982) as critical to the emotional development of the infant. A sensitive caregiver is able to receive the infant's cues, interpret them and respond appropriately, mindful of their own behaviour and the impact this may have on the infant.

Ainsworth and colleagues also established the Strange Situation procedure (SSN) as a method of assessing infant attachment (Ainsworth & Bell, 1970; Ainsworth et al., 1978; Main & Solomon, 1990). This involved a brief period of separation between infant and caregiver, where particular attention was paid to the response of the infant upon reunion. Analysis of the subsequent interactions led to the definitions of attachment styles as secure or insecure and

the finding that mothers who responded sensitively to their infants were more likely to have children who were classified as securely attached.

The Adult Attachment Interview (AAI; Main, Kaplan, & Cassidy, 1985) was developed in order to determine the attachment experiences of those parents whose children had undergone the SSN procedure. The AAI is concerned with the adult's state of mind with regard to their own attachment experience. It represents a shift toward a more representational level, as it is concerned with the individual's perception of their own early attachment experiences. The resulting narrative is considered in terms of "coherence", evidenced by "consistency; (and) connectedness of thought" (Hesse, 1999 p.404). A greater level of coherence is thought to indicate a more autonomous (secure) attachment style (Main, 1991).

### **The Transmission Gap (van IJzendoorn, 1995)**

The development of these measurement techniques enabled researchers to examine the relationship between infant and adult attachment. As outlined previously, an extensive review, drawing together this evidence was conducted by van IJzendoorn (1995) and a strong association between caregiver and infant attachment was found. It was suggested that the way in which the adult comes to understand their own early experiences (i.e. as assessed on the AAI), influences the way in which they interpret and respond to their infant's needs (De Wolff & Van IJzendoorn, 1997), referred to as the concept of maternal sensitivity. Van IJzendoorn found that sensitivity accounted for a much smaller proportion of the association

between infant and adult attachment than previously thought, thus creating a “transmission gap” (van IJzendoorn, 1995, p.400).

Over the last decade a growing body of research has begun to try to bridge this gap, from areas such as neuroscience (see Botbol, 2010) and genetics (see Bokhorst et al., 2003). Others have suggested that methodological issues, surrounding the precise definition and measurement of maternal sensitivity within the existing research literature are responsible for the gap (Atkinson et al., 2005; Bouchard et al., 2008; Grienenberger, Kelly, & Slade, 2005; Meins, Fernyhough, Fradley, & Tuckey, 2001; Shin, Park, Ryu, & Seomun, 2008; Slade, Grienenberger, Bernbach, Levy, & Locker, 2005). Thus it is possible that if these issues were addressed then the measurable contribution made by maternal sensitivity may increase.

## **Mentalizing**

In recent years, a number of authors have sought to revisit the role of sensitivity through the concept of mentalizing (Fonagy et al., 2002). Ha, Sharp, and Goodyer (2011) define the role of mentalizing in the infant-caregiver relationship as follows:

Early interactions provide the attachment environment in which the child may develop his/her capacity to reflect on the mental states of self and others. The extent to which the parent treats the child as a psychological agent, reflecting their child’s experience and attributing intentionality to the child provides the foundation for secure attachment which in turn, provides the opportunity for the child’s own development of mentalizing ability. In other words, children are more likely to develop secure

attachment in an environment where caregivers have well-developed mentalizing capacities.

Several independent groups have explored the validity of this concept under the headings of *mind-mindedness* (Meins et al., 2001), *reflective functioning* (Fonagy, Steele, Steele, Moran, & Higgitt, 1991) and *maternal empathetic understanding* (Oppenheim, Koren-Karie, & Sagi, 2001) also defined as *insightfulness* (Koren-Karie, Oppenheim, Dolev, Sher, & Etzion-Carasso, 2002). These constructs and their definitions have some overlap and this will be addressed to some degree later in the review.

### **Mind-Mindedness**

Mind-mindedness is grounded within a Vygotskian framework (see Vygotsky & Rieber, 1997, for an overview) which emphasises the importance of social interaction in relation to early cognitive development. The willingness of the caregiver to consider the infant's mental state is the hallmark of mind-mindedness and is defined as the, "proclivity to treat (the) infant as an individual with a mind, rather than merely as a creature with needs that must be satisfied" (Meins et al., 2001, p.638). A mind-minded caregiver is able to recognise that the infant has a dynamic internal world, distinct from their own, which encompasses a rudimentary capacity to think about and feel the world around them. The ability to bring into mind the infant's mental life and respond accordingly, using appropriate mental state terms is central to the notion of mind-mindedness. For further information on the assessment of mind-mindedness, see Table 1.

## **Reflective Functioning**

As with mind-mindedness, reflective functioning is concerned with the caregiver's ability to see their infant as an individual with their own mind, with particular regard to their mental and emotional life (Benbassat & Priel, 2012). Based within the psychoanalytic tradition, it draws upon principles such as *mirroring* (Winnicott, 1971) and *containment* (Bion, 1962), which emphasise the role of the caregiver in helping the infant to organise and integrate their experience in the context of early relationships. Benbassat and Priel (2012, p.1) describe reflective functioning as:

The metacognitive ability to think about one's own thoughts and feelings and those of others, as one attempts to understand and predict behavior. It involves attributing mental states (e.g., beliefs, emotions, desires, and needs) to one's self and others ...reflective functioning encompasses an intrapersonal dimension, (i.e., the capacity for self awareness and understanding), as well as an interpersonal dimension (i.e., the ability to see others as psychological entities, with thoughts, emotions and needs).

The ability to respond in such a way requires the caregiver to have the freedom to think flexibly about their infant's internal state, unconstrained by their own experiences (Slade et al., 2005; Slade, 2005). When this space exists in the caregiver's mind, a sensitive and appropriate response is more likely to be observed (Ainsworth, Bell, & Stayton, 1974). This is most likely to occur when a caregiver is secure in their own attachment experience (Fonagy & Target, 2005; Slade, 2005). For further information on the assessment of reflective functioning, see Table 1.

## **Maternal Empathic Understanding/Insightfulness**

As with reflective functioning and mind-mindedness, the concepts of maternal empathic understanding and insightfulness focus firmly on the caregiver's willingness to engage in thinking about the world from the child's perspective. In their first paper (Oppenheim et al., 2001), the term maternal empathic understanding is used but in the second paper (Koren-Karie et al., 2002) and also in subsequent papers in the field (for example, Oppenheim & Koren-Karie, 2002), the term insightfulness is used. In defining their concept, Oppenheim et al. (2001) and Koren-Karie et al. (2002) draw upon Ainsworth et al.'s (1978) description of maternal sensitivity as being the ability to see things from the child's point of view and to respond in a prompt and appropriate manner. This involves an ability to comprehend that the infant has an internal world which includes thoughts, emotions and intentions which are separate to the caregiver's own.

A capacity for insightfulness is believed to comprise the following characteristics: An understanding of the reasons behind the child's behaviour; an emotionally complex view of the child; and an openness to modifying beliefs in light of new information. In contrast, difficulties or "barriers" to insightfulness arise where the caregiver has feelings of anger and/or worry about the child, and shows a lack of acceptance toward the child and their behaviour, thus making it much harder for the caregiver to understand the world through their child's eyes. For further information on the assessment of insightfulness, see Table 1.

Table 1

*Method of Assessing Caregiver Mentalizing Capacity*

Approach	Procedure	Evaluation/Scoring
Mind-Mindedness (M-M) (Meins & Fernyhough, 2010).	<p>For infants up to 12 months of age.</p> <p>Caregiver and infant are observed during a 20 minute videotaped play session.</p> <p>The caregiver is given the instruction, “please play with your baby as you would do if you had some free time together at home”.</p> <p>The assessment usually takes place within a laboratory based environment set up as a playroom.</p>	<p>All information is transcribed verbatim. Caregivers are evaluated on their willingness to comment in relation to their infants mental state.</p> <p>All mind related comments are identified and coded according to whether they are appropriate or non-attuned.</p> <p>Mind-related comments are classified as either:            (1) Desires and preferences e.g. Like, dislike, want, prefer, hate.            (2) Cognitions e.g. Know, recognise, remember.            (3) Emotions e.g. Fed up, shy, happy, sad.            (4) Epistemic States e.g. Teasing, playing games. joking.            (5) Talking on the infant’s behalf.</p>
Mind-Mindedness (M-M) (Meins & Fernyhough, 2010).	<p>For children of pre-school age.</p> <p>M-M is assessed by asking the caregiver, “Can you describe your child for me?”</p> <p>The caregiver is instructed there is no correct answer and that they should talk about whatever comes to mind.</p>	<p>Responses are transcribed verbatim and coded according to references to mental attributes:            (1) Comments such as the child is wilful, bright, dedicated.            (2) Comments about the child’s desires and wishes e.g. “She wants to be a teacher”.            (3) Comments about likes or dislikes e.g. “He likes animals”.            (4) Comments about the child’s emotions e.g. Happy, loving.</p>

Approach	Procedure	Evaluation/Scoring
<p>Reflective Functioning/Adult Attachment Interview (RF/AAI)</p> <p>( Fonagy, Steele, Steele, Moran &amp; Higgitt, 1991; Fonagy Target, Steele &amp; Steele, 1998)</p>	<p>Transcripts from the Adult Attachment Interview (AAI) are coded for RF.</p> <p>Sample questions:  “Why do think your parents behaved the way they did?” and “what kind of effect did your childhood experiences have upon your development and personality?”</p>	<p>RF is rated according to an adult’s:</p> <ol style="list-style-type: none"> <li>(1) awareness of the nature of mental states,</li> <li>(2) explicit effort to tease out mental states underlying behaviour,</li> <li>(3) recognition of the developmental aspects of mental states,</li> <li>(4) recognition of mental states in relation to the interviewer (Slade 2005).</li> </ol> <p>RF is scored on an 11 point scale low RF (-1) to high RF (+9).</p> <p>RF can be considered as:</p> <p>Low - limited or little evidence of understanding of self or others actions or behaviour.</p> <p>Moderate - very generalised or superficial understanding of self and other.</p> <p>High - ability to understand psychological states, including conscious and unconscious motivations in relation to their own and others (Fonagy et al 1991).</p>

Approach	Procedure	Evaluation/Scoring
<p>Reflective Functioning/Parent Development Interview (RF/PDI)</p> <p>(Slade, Aber, Berger, Bresgi, &amp; Kaplan, 1985; 2003)</p>	<p>The Parent Development Interview (PDI) provides information about three areas: parent's representations of their children; themselves; and finally their relationship with their child.</p> <p>It is a 45 item semi-structured clinical interview. Caregivers are asked to ground their replies in real life examples e.g. "Describe a time last week when you and your child really clicked" and "a time when you and your child didn't really click".</p>	<p>Caregivers are scored in accordance with three factors:</p> <p>(1) Joy-Pleasure/Coherence,  (2) Anger,  (3) Guilt- Separation Distress.</p> <p>RF can be:</p> <p>Low - appears to display little understanding of child's internal experience.  Moderate - recognition that the child has an internal world.  High - understanding of the interplay between mental states and behaviour and between caregiver and infant.  (Slade 2005).</p>
<p>Insightfulness Assessment (IA) / Maternal Empathic Understanding Procedure (MEUP)</p> <p>(Oppenheim, Koren-Karie &amp; Sagi, 2001)</p>	<p>Two stage assessment:</p> <p>Stage 1 - caregivers and infants are video-recorded during a series of interactions, dependent on the age of the child. Younger children may take part in free play and older children a more structured task, such as building a tower of blocks.</p> <p>Stage 2 – The caregiver is asked to view the video recording and is then interviewed about what they have seen e.g. "What do you think went through your child's head, what were they thinking and feeling?"</p>	<p>The interviews are transcribed and rated on a scale of 1-7 according to 10 categories:</p> <p>Insight into child's motives; Openness; Complexity in description of child; Maintenance of focus on the child; Richness of description of child; Coherence of thought; Acceptance; Anger; Worry; Separateness from the child.</p> <p>Caregivers are then categorised as follows: Positively Insightful; One-Sided; Disengaged; or Mixed.</p>

## **Rationale For The Review**

As described, the findings of van IJzendoorn (1995) challenged the notion that caregiver sensitivity is a critical determinant of infant attachment security. In order to redress this, several groups of researchers have sought to outline the specific characteristics that define a sensitive caregiver. In doing so, they consider how the caregiver's ability to adopt the perspective of the child in their interactions, might lead to the development of a secure attachment relationship.

A comprehensive review of both mind-mindedness and reflective functioning was conducted by Sharp and Fonagy (2008), who examined the two approaches both from a theoretical standpoint and in light of the available evidence from existing studies. This paper aims to incorporate the concept of insightfulness (often associated with mind-mindedness and reflective functioning in the literature) and to update the evidence base, considering more recent empirical findings. This will include a focus on issues of methodological adequacy within the literature. Finally, the review will attempt to compare the three approaches in order to draw some tentative conclusions on the overlap and possible integration of the thinking in these areas. Given this, the review is structured as follows: an overview of the main findings and discussion of these in relation to the areas of mind-mindedness, reflective functioning, insightfulness and maternal sensitivity; methodological considerations; a comparison of the approaches; and finally consideration of any clinical implications and suggestions for future research.

## Method

A keyword search of the relevant databases (PsycINFO 1987 to 2011 and Medline 1996 to 2011) was carried out (see Table 2). The aim of the initial search was to identify all papers relating to the development of infant attachment security which included the concepts of either mind-mindedness, reflective functioning or maternal empathic understanding/insightfulness. A total of 78 papers were found. The abstracts were examined in light of the inclusion and exclusion criteria documented below. A further manual search of each of the reference lists did not identify any additional papers, nor did a search under the names of the key authors.

Table 2

*Literature Search Strategy*

Database	Search Terms Used	Number of Papers Found
PsycINFO1987 to October Week 2 2011	(parent* OR (infant* or toddler or child or baby)) AND attachment AND (mind mind* OR reflect* function* OR insightfulness OR exp "Theory of Mind") (peer reviewed journal and English language)	78
Ovid MEDLINE(R) 1948 to October Week 2 2011	(parent* OR (infant* or toddler or child or baby)) AND attachment AND (mind mind* OR reflect* function* OR insightfulness OR exp "Theory of Mind") (peer reviewed journal and English language)	29

## **Inclusion Criteria**

Papers were included if they contained a specific focus on the infant-caregiver relationship using the framework of attachment theory. All papers included a measure of infant attachment in relation to either mind-mindedness, reflective functioning or maternal empathic understanding/insightfulness.

## **Exclusion Criteria**

Papers were excluded if they were not published in a peer-reviewed journal in English language format. The term *infant* was defined as aged five and under, therefore papers were excluded if they included children above this age or if they did not focus on this age group. This left a total of 13 papers. Two papers were excluded from this group because their focus was considered to be too diverse: A paper by Meins et al. (2002), considered both mind-mindedness and attachment security, however the overarching aim of the paper was to examine both concepts in relation to Theory of Mind development. Further, a paper by Grienenberger et al. (2005) was excluded because it did not specifically examine the link between reflective functioning and infant attachment security. The remaining 11 papers were thus retained and are displayed in Table 3.

## **Critical Appraisal**

A critical appraisal of each of the studies was undertaken in order to ascertain the quality of the research evidence presented. A framework devised by Tolley (2012) which

draws on the work of Caldwell, Henshaw, & Taylor (2005) was used. Table A1 (in Appendix 1) provides a description of the criteria adopted. Each quality indicator was rated either -1, 0 or 1 (see Table A2, Appendix 1) according to how well they met the desired criteria. Table A3 (Appendix 1) provides a breakdown of the scores given to the studies according to each quality standard. These were combined to give an overall rating for every paper. Studies that scored between 0-5 were given a rating of *Poor*, those scoring between 6-10 were given a rating of *Adequate* and those scoring between 11-15 were given a rating of *Good* (see Table 3). In this review all the studies scored within the adequate or good categories. To check the reliability of the ratings, a quality check on a small number of studies was carried out by the research supervisor.

Table 3

*Summary of Studies Included for Review*

Author (Year)	Study Aim	Sample	Measure(s)	Statistical Analysis	Findings	Quality Rating
Fonagy, Steele, Steele, Moran & Higgitt (1991)	To examine mothers and fathers RF (as assessed from AAI administered prenatally) and consider the association between RF and infant and adult AS.	100 mothers & fathers. Infants < 18 months.	RF/AAI SSN	Correlation analysis.	A strong correlation was found between RF and infant AS.	Adequate
Meins, Fernyhough, Fradley, & Tuckey (2001)	Exploration of the role of M-M in relation to infant AS and MS.	71 mother-infant dyads. Infants < 13 months.	M-M BSID-MS SSN MS – Ainsworth's 9 pt scale	Regression analysis.	Of the five categories examined in relation to M-M, only appropriate mind-related comments were found to predict infant AS. Further, MS & M-M were found to be distinct but related concepts. M-M was a stronger predictor of infant attachment security above MS.	Adequate

Author (Year)	Study Aim	Sample	Measure(s)	Statistical Analysis	Findings	Quality Rating
Oppenheim, Koren- Karie & Sagi (2001)	To explore the role of MEU in relation to infant AS.	118 mother- infant dyads. Infants < 4.5 years.	MEUP SSN BSI – adapted version. PSI – adapted version.	ANOVA, ANCOVA.	A significant association was found between MEU and infant AS. Additionally more secure mothers were less likely to make misperceptions about their child's behaviour.	Adequate
Koren- Karie, Oppenheim, Dolev, Sher & Etzion- Carasso, (2002)	To examine how maternal insightfulness relates to infant AS and to MS.	129 infant- mother dyads. Infants < 13 months.	IA MS Scale SSN	ANOVA, regression analysis.	Mothers who were more insightful were also more likely to be sensitive and have children who were more securely attached.	Good
Bernier & Dozier (2003)	To investigate the role of M-M in relation to adult and infant AS.	64 foster mother- foster infant dyads. Infants < 30 months.	AAI SSN TIMB	Correlation analysis, mediation analysis.	Greater M-M correlated negatively with both infant and adults AS.	Adequate

Author (Year)	Study Aim	Sample	Measure(s)	Statistical Analysis	Findings	Quality Rating
Lundy (2003)	(1) To examine the relationship between appropriate mind-related comments and mind-mindedness. (2) To consider the role of synchrony in this relationship.	24 mother-father-infant triads. Infants < 8 months.	M-M AQS IS	MANOVA, correlation analysis, mediation analysis.	(1) Appropriate comments relating to general thought processes were positively correlated with infant attachment scores for both mothers and fathers. More mind-related comments were correlated with more synchrony. (2) Synchrony was found to be a potential mediator between M-M and AS.	Adequate
Slade, Grienberger, Bernbach, Levy, & Locker (2005)	To examine the relationship between maternal RF and adult and infant AS.	40 mother-infant dyads. Infants < 15 months.	BSI WAIS AAI RF/PDI SSN	ANOVA, mediation analysis.	Higher RF was associated with a more autonomous (secure) attachment in mothers. RF was predictive of infant AS with higher maternal RF associated with a more secure infant attachment. RF mediated the relationship between adult attachment and infant attachment.	Adequate

Author (Year)	Study Aim	Sample	Measure(s)	Statistical Analysis	Findings	Quality Rating
Arnott & Meins (2007)	(1) To examine the association between outcomes on the AAI and M-M. (2) To consider the relationship between M-M and RF. (3) To investigate the association between M-M and infant AS.	25 mother-father-infant triads & 3 mother-infant dyads. Infants < 16 months.	RF/AAI M-M SSN	Correlation analysis.	Mothers who demonstrated higher RF were less likely to comment inappropriately on their infants internal states. Fathers who showed higher RF were more likely to comment appropriately on their infants mental states. Parents who had greater RF were more likely to be classified as autonomous (secure) than non-autonomous (insecure). Parents who were more mind-minded had a tendency to comment appropriately on their infants internal states.	Adequate
Laranjo, Bernier & Meins (2008)	To investigate the relationship between M-M, MS and infant AS.	50 mother-infant dyads. Infants < 15 months.	M-M MBQS AQS	Correlation analysis, mediation analysis.	Results suggested that MS was a potential mediator between M-M and infant AS. This finding was in contrast to Meins et al. (2001). In addition, the results supported the notion that M-M is a pre-requisite for MS (Meins, 1997, 1999). Further clarification as to the impact of the particular MS assessment used is needed.	Good

Author (Year)	Study Aim	Sample	Measure(s)	Statistical Analysis	Findings	Quality Rating
Demers, Bernier, Tarabulsky & Provost (2010)	(1) To examine any potential differences in M-M between adults and adolescent mothers. (2) To broaden the assessment of M-M to include a measure of valence. (3) To consider the association between M-M, MS and infant AS.	29 adult mothers (21 years +). 69 adolescent mothers. Infants < 18 months.	M-M MBQS SSN	MANOVA, t-test, correlation analysis.	(1) Adult mothers used more mind-minded comments than adolescent mothers, were considered more sensitive and had children who were more likely to be classified as securely attached. (2) Assessment of valence appeared to be a useful addition measure. (3) More sensitive adult mothers used more mind-related comments.	Good
Meins, Fernyhough, de Rosnay, Arnott, Leekam & Turner (2011)	To explore the impact of appropriate and non-attuned comments on infant AS and their relationship to MS.	206 mother-infant dyads. Infants < 15 months.	M-M MS – Ainsworth’s 9 pt scale SSN	Regression analysis.	Mothers of more securely attached infants used more appropriate M-M comments and less non-attuned comments than mothers of insecurely attached infants. Appropriate and non-attuned comments were independent predictors of infant AS over and above MS.	Good

*Note.* General abbreviations: AS = Attachment Security; MEU = Maternal Empathic Understanding; MS = Maternal Sensitivity; M-M = Mind-Mindedness; RF = Reflective Functioning. Abbreviations of measures: AAI = Adult Attachment Interview; AQS = Attachment Q-Sort; BSID-MS = Bayley Scales of Infant Development – Mental Scale; BSI = Brief Symptom Inventory; BSI – Israeli version = Brief Symptom Inventory; IA = Insightfulness Assessment; IS = Interactional Synchrony; MBQS = Maternal Behavior Q-Sort; MEUP = Maternal Empathic Understanding Procedure; M-M = Assessment of Mind-Mindedness; MS = Maternal Sensitivity Scale; MS Scale = Maternal Sensitivity Scale; PSI – Hebrew Translation = Parenting Stress Index; PDI = Parent Development Interview; RF/AAI = Adult Attachment Interview coded using the Reflective Functioning scale; RF/PDI = Reflective Functioning assessed using the Parent Development Interview; SSN = Strange Situation; TIMB = This Is My Baby Interview; WAIS = Wechsler Adult Intelligence Scale. Abbreviations of statistical tests: ANOVA = Analysis of Variance; ANCOVA = Analysis of Covariance; MANOVA = Multivariate Analysis of Variance.

## General Methodological Considerations

A number of studies within this review report contrasting results, therefore careful consideration of any potential methodological constraints is important when interpreting the results. The following section contains a review of some of the most prominent methodological issues arising.

**Representativeness of the samples.** Several issues emerge when considering the representativeness of the samples. Nearly all of the studies included relatively low risk, non-clinical, middle class populations, with whom measures of attachment and maternal sensitivity demonstrate greater validity (De Wolff & Van IJzendoorn, 1997). In studies outside this demographic (e.g. Bernier & Dozier, 2003; Demers et al., 2010; Lundy, 2003; Meins et al., 2011; Slade et al., 2005) greater variability of results was reported. For example, Demers et al. (2010) failed to replicate previous findings when examining mind-mindedness in adolescent mothers.

In relation to recruitment, most participants were included on the basis that they replied to an advertisement or flyer inviting them to take part in the research, which may have resulted in selection bias. A relatively high dropout rate of between 35-50% was reported in three of the studies (Arnott & Meins, 2007; Lundy, 2003; Slade et al., 2005) and not all of the papers indicated the reasons behind lack of completion.

**Sample size.** Across the studies, sample sizes varied widely. A number of studies report sample sizes greater than 100 (Fonagy et al., 1991; Koren-Karie et al., 2002; Meins et al., 2011; Oppenheim et al., 2001). In contrast, others included smaller sample sizes ( $N < 50$ ) which may have limited the power of the results (Arnott & Meins, 2007; Demers, Bernier, Tarabulsy, & Provost, 2010; Laranjo, Bernier, & Meins, 2008; Lundy, 2003; Slade, Grienenberger, Bernbach, Levy, & Locker, 2005).

**Classification of attachment.** A number of methods of classifying attachment exist, reflecting attempts within the wider literature to reconceptualise patterns of attachment. However, the use of different categories between studies makes comparison across the literature more problematic. In addition, a common difficulty occurs in recruiting an adequate number of participants to each attachment category to allow for sufficiently detailed statistical analysis. When this is not possible groups are often combined to allow for greater comparison, most commonly into secure versus insecure. This kind of analysis can make interpretation of the results more difficult, given the reported diversity between insecure attachment styles. Oppenheim et al. (2001) attempted to overcome this issue, by recruiting from a much larger sample of families who were already participating in an ongoing study. This allowed for some control over the difference in the size between groups. However, unusually the authors did not include a category of avoidant attachment, because of the rarity of this attachment style in the country where the study was conducted.

**Methods of assessment.** A number of assessments were employed within each of the studies. A detailed consideration of all of these is beyond the scope of this review. However,

several of the measures were integral to the research designs and will be briefly discussed below.

The SSN is considered to be the “gold standard” method of assessing infant attachment security. However, some issues have been raised and are relevant to its use within this research context. The SSN involves a highly scripted and structured interaction between infant and caregiver, which primarily focuses on the observation of secure base behaviours (Pederson & Moran, 1996). In light of this, researchers have recommended that assessment of the relationship dyad within a naturalistic setting (i.e. the home environment) is more appropriate (Bailey, Moran, Pederson, & Bento, 2007; De Wolff & van IJzendoorn, 1997; Lindhiem, Bernard, & Dozier, 2011; Slade, Belsky, Aber, & Phelps, 1999). Measures such as the Attachment Q-Set (AQS; Waters & Deane, 1985) have sought to readdress this, although the self-report version, as used in Lundy (2003) has questionable reliability (van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004).

At present no gold standard measure of maternal sensitivity exists (Lindhiem et al., 2011), thus it is perhaps not surprising that a range of assessments were used to try to capture maternal sensitivity. The lack of standardisation across the literature makes comparisons between studies difficult. Further, Laranjo et al. (2008) suggest that previous discrepancies between findings may be a result of the measure of maternal sensitivity used. For example, when a more comprehensive measure was employed (e.g., The Maternal Behaviour Q-Sort; MBQS; Pederson et al., 1990), more of the variance was accounted for, leaving little room for the contribution of other factors such as mind-mindedness. In contrast, when the Sensitivity Scale devised by Ainsworth, Bell and Stayton (1971) was used, mind-mindedness was found

to make a stronger contribution, suggesting that mind-mindedness might be encompassed by more comprehensive measures of maternal sensitivity.

**Reliability and validity of the assessment procedures.** Across all three areas, there appears to be limited published data which refer to the assessment of reliability and validity. However, a number of studies outside this review report adequate reliability and validity for the assessment of mind-mindedness (Walker, Wheatcroft, & Camic, 2011), reflective functioning (Bouchard et al., 2008) and insightfulness (Oppenheim & Koren-Karie, 2002). All of the studies included a measure of inter-rater reliability, generally reporting a Kappa statistic above 0.70.

**Appropriateness of the assessment measures.** In two of the studies, an assessment measure was used that was inappropriate to the age of the child. Both Bernier and Dozier (2003) and Lundy (2003) used a measure of mind-mindedness considered more appropriate with older children. Potentially therefore, a lack of response in some areas may not have indicated a less mind-minded caregiver, but actually signalled the reverse, a caregiver who was attuned to the age and stage of development of their infant. In the study by Arnott and Meins (2007), reflective functioning was measured according to responses given on the AAI and not using the PDI, as recommended by Slade et al. (2005). Finally, several researchers reported adapting the measures used in order to encompass multiple assessments. For example, Lundy altered the mind-mindedness assessment, shortening the interaction between caregiver and infant in order to code for both interactional synchrony and mind-mindedness. Further, a split screen technique was used for analysis and coding. This is cautioned against in the coding manual provided by Meins and Fernyhough (2010). The reason for this being,

that it may be difficult at the analysis stage to determine who comments are addressed toward and what they are in response to, particularly if caregiver and infant are separated by a split screen.

**Experimental Design.** The studies reviewed here employed non-experimental, cross-sectional designs, making it harder to draw firm conclusions regarding the causality of the effects reported. It is possible that a range of other factors may influence the security of attachment between caregiver and infant. While a comprehensive assessment of all these possibilities is beyond the scope of this review, alternative methodology (such as the use of longitudinal data) might allow for some of these other factors to be discounted, or at least provide some alternative explanation for the associations found (e.g. that parents show more mind-mindedness because of the attachment behaviour of the baby, rather than vice-versa).

Overall, the majority of the studies reviewed have attempted to address methodological issues, although all had some limitations which need to be considered when interpreting the results. The study by Meins et al. (2011) appears to have a relatively strong methodology, in that the researchers included a larger sample with greater diversity and more powerful statistical analyses (i.e. regression). On the other hand, the studies by Bernier and Dozier (2003) and Lundy (2003) were limited by sample size and difficulties regarding the suitability of the measures used, making them comparatively weaker.

## Findings

### Reflective Functioning

The first approach considered in relation to the development of attachment security is that of reflective functioning. While there are a number of conceptual papers which outline this approach, empirical data is more limited, thus only two papers were included in this review. The first of these by Fonagy et al. (1991) explored the relationship between infant attachment security and reflective functioning as assessed from parental responses on the AAI. In a relatively large sample ( $N=200$ ), Fonagy et al. found strong correlations between reflective functioning, adult security (determined from level of coherence on the AAI) and infant attachment security. Thus, parents who showed greater reflective functioning and were classified as more secure in regard to their own attachment histories, were more likely to have children who themselves were securely attached. In relation to the previously held finding that AAI classification correlated strongly with parent-infant attachment (Main et al., 1985; van IJzendoorn, 1995), Fonagy et al. found that when reflective function was controlled for, the association between adult and infant attachment classification was no longer significant. This could suggest that capacity for reflection may be a more crucial determinant of infant attachment security than parental attachment style. However, as reflective functioning and adult attachment are likely to be highly correlated, it would be difficult to conclude the independent contribution made by each, toward infant attachment.

In a further attempt to clarify the contribution of reflective functioning, particularly with regard to the transmission gap, Slade et al. (2005) examined the notion using an

alternative measure, the Parent Development Interview (PDI). The PDI/RF measure is considered to be a useful assessment tool because it focuses on the specific caregiver-infant relationship under review. The results indicated a strong relationship between reflective functioning and attachment security, with higher reflective functioning being related to greater security in both infant and caregiver. Further analysis suggested that reflective functioning accounted for most of the variance between mothers' and infants' attachment security and therefore was considered a potential mediator between parent and infant attachment. In fact, when compared to the mediation analysis in the original paper by van IJzendoorn (1995), reflective functioning demonstrated a stronger mediation effect than maternal sensitivity. However, no measure of maternal sensitivity was included by Slade et al., thereby preventing further exploration of its association with reflective functioning.

The findings reported here by both Fonagy et al. (1991) and Slade et al. (2005) offer the potential for further understanding of the contribution of reflective functioning to the caregiver-infant relationship. Within the wider literature, where a much more comprehensive theoretical account has been provided (see Fonagy & Target, 1997, 2005 for a review), reflective functioning is suggested to be a “key mediator” in the transmission of attachment (Fonagy & Target, 2002, p.322). However, the corresponding empirical evidence as presented here, while promising, is much more limited, constrained by differing methods of assessment (PDI/RF versus AAI/RF) and lack of powerful data analysis.

## **Mind-Mindedness**

Mind-mindedness has generated by far the most empirical data, reflected by the number of papers included in this review, seven in total. In the first of these studies, Meins et al. (2001) examined the validity of five categories of mind-mindedness in relation to infant attachment security: Maternal responsiveness to change in infant's direction of gaze; maternal responsiveness to infant's object-directed action; imitation; encouragement of autonomy; and appropriate mind-related comments. Only the last category, which refers to the caregiver's ability to accurately represent the infant's internal state, was found to reliably predict infant attachment status. In light of these findings, the authors considered the use of appropriate mind-related comments to be a hallmark of mind-mindedness and thus this measure has become the focus of much of the subsequent work exploring the role of mind-mindedness.

In spite of this, Bernier and Dozier (2003) employed a more global measure of mind-related comments in a study investigating the potential of mind-mindedness to bridge the transmission gap. This measure, used with foster carers and their infants, included any reference (either appropriate or inappropriate) to the infant's *mental life*, i.e. thoughts, knowledge and desires. A significant negative relationship was found between mind-mindedness in relation to both AAI results and infant attachment security, such that as mind-mindedness increased, a decrease was observed in terms of adult autonomy (security) on the AAI and infant attachment security. In a further mediation analysis, the results suggested that the predictive power of the AAI, in relation to infant attachment security, was accounted for entirely by mind-mindedness, albeit in a negative direction. This highlighted the possibility

that mind-mindedness may help toward explaining the transmission of attachment between generations. In light of previous findings (e.g. Meins et al., 2001), the inclusion of a measure of the appropriateness of comments may have offered some potential to further explain these results.

Lundy (2003) returned to a more detailed analysis of the role of appropriate mind-related comments in one of the few studies to investigate mind-mindedness in both mothers and fathers. Appropriate mind-related comments were classified into five subcategories. Only those comments relating to thoughts, knowledge and desires (labelled “general thought processes”) were found to significantly predict higher infant attachment scores for both mothers and fathers, a result replicated by Laranjo, Bernier and Meins (2008) in a study of 50 mother-infant dyads. Lundy also examined the role of maternal depression and found that mothers who exhibited greater symptoms of depression used fewer mind-related comments. Further, they used more comments which considered the infants in terms of their “attempts to manipulate others’ thoughts”. Potentially, this may indicate a tendency for more depressed mothers to misinterpret their infant’s intentions, which Lundy suggests is consistent with the wider literature regarding maternal depression (see Estroff et al., 1984; Fergusson, Horwood, Gretton, & Shannon, 1985; Field, 1992).

In an attempt to provide a more comprehensive account of the relationship between mind-mindedness and infant attachment security, Arnott and Meins (2007) extended their focus toward the role of inappropriate mind-related comments. Similar to Lundy (2003), both mothers and fathers were included within the sample. Fathers who were classified as more secure on the AAI made more appropriate comments and were more likely to have children

who were securely attached. No differences were found between groups of fathers regarding the use of inappropriate comments. The results for mothers were less clear. There was no difference between groups (secure versus insecure) in relation to the use of appropriate and inappropriate mind-related comments. However, a trend (although not significant) was reported for mothers whose infants displayed greater attachment security, to make more appropriate and fewer inappropriate comments.

Few studies have attempted to examine the interrelation between any of the three constructs at the heart of this review. However, one of the aims of the paper by Arnott and Meins (2007) was to explore the potential relationship between mind-mindedness, reflective functioning and infant attachment security. The findings suggested that parents who displayed greater autonomy (security) on the AAI, scored higher in terms of their capacity for reflective functioning, replicating the findings of Fonagy et al. (1991). Further, a relationship was reported between reflective functioning and the number of appropriate mind-related comments made by fathers, however this result was not found for mothers. A negative correlation was reported for mothers, between the number of inappropriate comments made and reflective functioning, indicating the greater the capacity for reflective functioning, the less the tendency to comment inappropriately, whereas fathers who made more appropriate comments also made more inappropriate comments. To extend the scope of the literature and provide greater clarity, it would have been interesting to include an additional analysis of reflective functioning in relation to infant attachment security.

Demers, Bernier, Tarabulsky and Provost (2010) attempted to broaden assessment of mind-mindedness by including a measure of *valence* (positive, negative or neutral) in relation

to appropriate and inappropriate responses. In one of only a few of studies, mothers deemed as high risk (i.e. adolescent mothers) were included alongside a sample of low risk adult mothers. Demers et al. found that for adult mothers, infant attachment security was more closely related to the use of appropriate mind-related comments of neutral valence. Negative valence comments (although proportionally lower within this group) had a significant negative effect on infant attachment security. When compared with adolescent mothers, adult mothers were found to make more overall mind-related comments, the majority of which were classed as positive and appropriate, and were more likely to have children classified as securely attached. No significant relationship was found between infant security of attachment and mind-mindedness in adolescent mothers. Demers et al. comment that the number of confounding variables, in relation to demographic and psychological factors, made it difficult to explore the reasons behind this finding. They suggested the utility of future research in exploring these variables further, perhaps with a focus on the notion of attachment disorganisation.

Returning to examine the notion of a transmission gap, Meins, Fernyhough, Arnott, Turner and Leekam (2011) attempted to widen the scope of mind-mindedness by looking in more detail at the contribution of non-attuned (inappropriate) comments. Specifically, they focused on trying to ascertain whether non-attuned comments could explain any additional variance in the caregiver-infant attachment relationship, over and above the use of appropriate mind-related comments. Meins et al. reported that mothers of more securely attached infants were found to have a tendency toward using more appropriate comments than those with infants in the insecure category, with the exception of mothers of infants classified as resistant. Further, mothers of secure group infants were much less likely to make non-attuned

comments in comparison with mothers whose infants were classified as insecurely attached. Meins et al. concluded that both appropriate and non-attuned comments were independent predictors of attachment security and together they accounted for more of the variance. As such Meins et al. argued that mind-mindedness should be considered as a “multidimensional” construct.

In summary, mind-mindedness has comparatively the largest evidence base. However, this is accompanied by a greater diversity in findings; thus the suggestion that mind-mindedness is the mechanism via which attachment is transmitted across generations still remains under review. A clear progression of findings is evident, concluding with attempts to expand the notion of mind-mindedness to include a broader focus on the ways in which caregivers may promote or inhibit more secure attachment styles.

### **Insightfulness**

The concept of maternal empathic understanding in relation to attachment security was first explored by Oppenheim et al. (2001). Oppenheim et al. found a significant association between the categories of maternal empathic understanding and infant attachment as follows: More *balanced* mothers had children who were more likely to be classified as *secure*; *one-sided* mothers had children who were more likely to be classified as *ambivalent*; and *mixed* mothers had children who were more likely to be classified as *disorganised*. No association was found for the category of *disengaged*. Balanced mothers scored higher in terms of *positive insightfulness* than mothers of infants who were not classified as secure. Thus, mothers of secure children provided a more coherent and flexible narrative of their

interactions and demonstrated a greater propensity to make accurate interpretations about their child's behaviour (see Table 1 for further information regarding scoring criteria).

In a similar study by Koren-Karie et al. (2002), maternal empathic understanding was further defined as insightfulness. The category of mothers described as balanced was reclassified as being positively insightful. Koren-Karie et al. replicated the findings of Oppenheim et al. (2001) with regard to the association between mothers' scores on the Insightfulness Assessment (IA) and child outcomes on the SSN as follows: Positively insightful/secure; one-sided/ambivalent; and mixed/disorganised. Again, no relationship was found for either disengaged mothers or the additional category of avoidant attachment (as assessed from the SSN). Without further empirical data, it is not possible to conclude that insightfulness is a useful predictor of infant attachment, but these results reinforce the importance of the caregiver being able to hold an integrated perspective of the infant and suggest that a greater willingness consider the child's perspective is likely to result in a more secure outcome in terms of infant attachment.

### **Maternal Sensitivity**

Clarifying the role of maternal sensitivity has remained a priority when considering the impact of early relationships with regard to attachment security. A salient theme in recent years has been to focus upon Ainsworth's original proposition that a critical role of sensitive caregiving is the ability to understand the perspective of the infant.

The first area to be considered in relation to maternal sensitivity is that of mind-mindedness. In the study by Meins et al. (2001), a significant positive correlation was found between the two variables, such that greater mind-mindedness was associated with more sensitive caregiving behaviour. Further analysis, revealed that the two concepts captured distinct but related aspects of caregiving behaviour, therefore contributing independently to infant attachment security. Based upon their findings, Meins et al. (2001) concluded that mind-mindedness demonstrated the strongest predictive relationship with attachment security, over and above maternal sensitivity.

In two subsequent studies (Laranjo et al., 2008; Lundy, 2003) a contrasting result was found. Lundy (2003) explored maternal sensitivity using a measure of *interactional synchrony* (Lundy, 2002), which refers to how well a caregiver is able to “recognise and accurately interpret (their) infants’ perceptions and... to engage in well co-ordinated interactions” (Lundy, 2003, p.201). When comparing mind-mindedness and interactional synchrony, Lundy (2003) reported it was the latter that predicted infant attachment security alone. Further, synchrony was found to mediate the relationship between mind-mindedness and infant attachment security for both mothers and fathers. In a similar finding, Laranjo et al. (2008) concluded that maternal sensitivity mediated the relationship between mind-mindedness and infant attachment. Based upon their comprehensive analysis, Laranjo et al. suggest that this finding supports the assertion that mind-mindedness is a “prerequisite” for maternal sensitivity (Meins, 1997, 1999) in that the caregiver must understand and interpret the infant’s behaviour and then respond accordingly.

The contrasting findings of both Lundy (2003) and Laranjo et al. (2008) with Meins et al. (2001), indicates that the nature of the relationship between mind-mindedness and maternal sensitivity remains unclear. In an attempt to understand this association further, Laranjo et al. suggest a focus on the role of non-attuned (inappropriate) mind-related comments. This idea was addressed in further work by Meins et al. (2011) who found that both appropriate and non-attuned comments were independent predictors of infant attachment security, over and above any contribution made by maternal sensitivity.

In the final study examining mind-mindedness and maternal sensitivity, Demers et al. (2010) report an interesting finding that adult mothers' overall mind-related comments (as opposed to just appropriate mind-related comments) were more closely associated with maternal sensitivity. However, it was only appropriate mind-related comments that were associated with infant attachment security. Demers et al. speculate that all attempts to understand the infant's point of view may be deemed sensitive, but that only appropriate comments may lead to the development of greater attachment security. Further exploration, of these findings might perhaps help to clarify the relationship between maternal sensitivity, mind-mindedness and attachment security, which still remains uncertain.

Finally Koren-Karie et al. (2002) explored the role of insightfulness in relation to maternal sensitivity and attachment security. The results suggested that mothers classified as more positively insightful were more sensitive and were more likely to have children who displayed greater attachment security. Further analysis, indicated that insightfulness independently contributed to infant attachment security over and above maternal sensitivity. However, a potential limitation of this study was that all mothers scored within sensitive

range regardless of infant attachment classification. A more robust relationship between insightfulness and sensitivity would need to consider caregivers presenting as insensitive.

None of the studies of reflective functioning included a measure of maternal sensitivity, therefore it is harder to determine any association between the two concepts. It would appear from the theoretical literature that sensitivity is determined by the caregiver's ability to observe and respond to changes in the child's internal state in a prompt, accurate and appropriate manner (Fonagy & Target, 1997; Sharp & Fonagy, 2008). Thus, higher reflective functioning should be associated with greater sensitivity and a more secure infant attachment relationship. Further research would be needed to clarify any potential association.

### **Summary**

The results of the studies present some interesting findings, helping to expand current understanding of the role of the caregiver in the development of a secure infant attachment. Overall, the findings appear to reinforce the importance of the caregiver being able to consider the world from their infant's perspective. However, it is difficult to state this with any certainty due to the number of extraneous variables. For example, wider family factors, levels of social support and overall psychological and physical wellbeing may all impact upon the relationship between the caregiver and their infant.

One of the aims of this review was to consider a comparison of the three approaches. This becomes more challenging due to the limited empirical data in the areas of reflective

functioning and insightfulness. In addition, while the research into mind-mindedness was relatively more expansive, the disparity in research findings makes it more difficult to elicit firm conclusions. Future research should attempt to clarify the potential overlap between the approaches. A brief summary of both conceptual and methodological issues follows.

## **Conceptual Overview**

Conceptually, although the three approaches are allied together under the broad heading of mentalizing, there has been limited discussion within the literature with regard to the potential similarities and differences between them. Generally, comparisons have tended to focus on the areas of mind-mindedness and reflective functioning. Slade (2005) draws a clear distinction between the concepts, defining reflective functioning in terms of low, medium and high and suggesting that mind-mindedness is akin to medium reflective functioning. Slade (2005, p. 279) illustrates high reflective functioning with the following extract from a mother, “I was just so sad and frightened (mental state) by the fight I had with my husband. I wasn’t myself at all (behavior) and this was so disorienting to my baby (implies effect upon baby’s mental state)”. The incorporation of self reflection seems to be the distinctive element, such that where a mind-minded caregiver would be able to comment on their infant’s mental state and be guided by their behaviour, a highly reflective caregiver would also consider this information in relation to their own mental state (Dykas, Ehrlich, & Cassidy, 2011). This has led some researchers to define mind-mindedness as “reflective functioning in action” (Rosenblum, McDonough, Sameroff, & Muzik, 2008, p.364).

High reflective functioning is considered to be more conducive to the development of attachment security (Benbassat & Priel, 2012; Fonagy & Target, 2002; Slade, Grienenberger, Bernbach, Levy, & Locker, 2005). However, the findings of the studies in this review do not necessarily support this assertion. The constructs of mind-mindedness and insightfulness (which both emerged from a desire to reconceptualise maternal sensitivity) would appear to have much to offer the understanding of how a secure caregiver-infant relationship develops. Only one further study, aside from that of Arnott and Meins (2007) has explored the association between any of the concepts. Rosenblum et al. (2008) concluded that greater reflective functioning was associated with an increased tendency toward mind-mindedness. Further they found that mind-mindedness did not appear to have any additive effect over and above reflective functioning. Based on this, Rosenblum et al. conclude that reflective functioning should be considered a more “global” parenting capacity which encompasses features such as mind-mindedness.

### **Methodological Distinctions**

As with the theoretical discussions, issues of methodology have generally focused upon the areas of reflective functioning and mind-mindedness. Arnott and Meins (2007) have drawn a clear distinction between the approaches, suggesting that the mind-mindedness assessment captures an “online”, live and observable interaction between infant and caregiver. As such the assessment is at the “interface of representation and behaviour” because it considers the parent’s ability to *both* represent the infant’s internal state mentally and respond to this behaviourally (Arnott & Meins, 2007, p.134). In contrast they report reflective functioning to be an “offline” measure which does not involve any observation of real time

caregiver-child interaction. As such, it takes place in a relatively “calm” environment which may not reveal the true nature of the relationship (Goodman, 2009). Alternatively, Fonagy and Target (2005) suggest that the assessments of mind-mindedness and insightfulness provide only a snapshot of an interaction at any given time. The assessment of reflective functioning is purported to be accessing a “prototype” in that it captures many series of interactions, thereby offering a more “stable, cross situational index” of the relationship (Fonagy & Target, 2005, p.335). The insightfulness assessment uses video and interview and as such would appear to offer the opportunity for both live interaction and reflection.

### **Clinical Implications**

A number of studies have begun to explore the utility of applying the concept of mentalizing with those groups deemed to be more high risk. The results of recent research (Pawlby et al., 2010; Quitmann, Kriston, Romer, & Ramsauer, 2011; Walker et al., 2011) suggest that within clinical populations (e.g. mothers diagnosed with either psychosis, severe depression or a mood disorder), caregivers were able to respond in ways which demonstrated mind-mindedness; although, there was a sub-group, who would appear to benefit from some support in order to help them maximise their ability to be mind-minded. In other research, mind-mindedness has been explored in relation to parenting stress and caregiver emotional availability. Findings suggest that greater mind-mindedness is associated with lower parenting stress, more emotional availability and less hostility in interactions between mother and child (Lok & McMahon, 2006; McMahon & Meins, 2012). Taken together, these findings seem to reinforce the utility of clinical approaches which aim to develop and

encourage the mentalizing capacity of caregivers (for a review see Barlow & Svanberg, 2009; Berlin, Ziv, Amaya-Jackson, & Greenberg, 2005)

Research by Oppenheim, Goldsmith and Koren-Karie (2004) suggests that a uniform approach to intervention may not always be appropriate. They report an intervention study aimed at increasing insightfulness in mothers whose children were experiencing behavioural difficulties. They found that mothers generally fell within one of two groups. In the first group an increase in insightfulness in mothers post-intervention was accompanied by a decrease in behavioural difficulties of the children. However, in the second group of mothers, who appeared to maintain a less insightful perspective, child behavioural problems increased. The authors speculate on the possible reasons for this difference and suggest the validity of future research in order to develop understanding of how to tailor interventions to best meet the needs of particular groups.

Finally, a number of researchers and clinicians have looked at the role of mentalizing in context of adult psychopathology. This has led to the development of an approach titled Mentalization Based Treatment (MBT; Bateman & Fonagy, 2004; for a review see Fonagy, Bateman, & Bateman, 2011). The main aim of this intervention is to help individuals to build upon their mentalizing capabilities in the context of the therapeutic relationship. It has been applied to areas such as the treatment of borderline personality disorder (Bateman & Fonagy, 2008) and eating disorders (Skårderud, 2007).

## **Future Research**

One possible explanation for the divergent findings relating to mind-mindedness may be that Meins et al. (2001) were premature in their conclusion that mental state comments were the most important factor in mind-minded behaviour. It is possible that a heavy reliance on linguistic components may be inappropriate. Research has suggested that interaction with very young infants is largely non-verbal and may be reflected in numerous other ways (Schore & McIntosh, 2011; Schore & Schore, 2007; Shai & Belsky, 2011). For example, Ereky-Stevens (2008) examined mind-mindedness and proposed that additional factors, such as matching emotional arousal may be pertinent to this critical relationship. Further investigation of this aspect of the caregiving relationship and its relationship to caregiver capacity for mentalizing may be useful. This could perhaps be further explored by understanding more about the role of mentalizing in dyads where language may not be the primary mode of communication, for example, deaf children or those with communication difficulties such as Autism Spectrum Disorder.

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Empirical paper prepared for submission to Dementia

**The Connection Between Dementia Carers'  
Attachment Security and Their Perceptions of  
the Caring Relationship**

## Abstract

**Background:** For couples, a diagnosis of dementia may bring with it a period of change as they adjust to living with a significant long-term illness. How couples come to understand their experiences in light of this has been explored through the construct of relationship continuity. This research examines the notions of continuity and discontinuity through the concept of attachment, which considers an individual's earliest relationship experiences.

**Aims:** It was hypothesised that spouse carers who were more securely attached would be more likely to perceive greater relationship continuity, whereas those who indicated a more insecure attachment would be more likely to experience discontinuity.

**Method:** Thirty-one spouse carers, whose partners had a diagnosis of dementia, completed the Attachment Style Questionnaire (ASQ), the Birmingham Relationship Continuity Measure (BRCM) and a Background Questionnaire which examined demographic information, carer support and the care needs of the person with dementia.

**Results:** There were no overall significant relationships reported between attachment and continuity/discontinuity. A trend was noted between greater Preoccupation with Relationships (on the ASQ) and an increased perception of discontinuity. This became significant when time since diagnosis was accounted for, such that those reporting a longer time since diagnosis, showed a stronger relationship between Preoccupation and discontinuity.

**Conclusions:** The results suggest some validity in considering the role of attachment and continuity/discontinuity together. This seems particularly prominent where individuals may experience a more anxious attachment. Providing support for a period of time post-diagnosis to those who are more anxious, may help to increase perceptions of continuity within the relationship.

**Keywords:** attachment style; caregiving; dementia; relationship continuity; spousal relationships.

## **Introduction**

Understanding more about the complexities of how relationships change when one person has a diagnosis of dementia, may help to develop our knowledge about how best to support couples through this time. Furthermore, individuals respond very differently to caregiving, thus a focus on relational factors could provide a framework for interpreting these disparate findings.

It is estimated that there are around 820,000 individuals living with dementia in the UK and this figure is expected to rise significantly as life expectancy increases (Alzheimer's Society, 2010). Currently, the vast majority of care is provided by relatives, most often by the spouse or partner (Alzheimer's Society, 2010). Dementia is a progressive disease, with the needs of the person likely to increase over time. The illness can have a substantial impact on both caregiver and care-recipient in regard to social, emotional, physical, and financial outcomes (Daire, 2002; Ferri et al., 2005; Thompson et al., 2007). Indeed, there is a considerable amount of literature which suggests that for many individuals, caring for a relative with dementia is likely to have a significant detrimental effect on mental health and wellbeing, with carers reporting increased rates of anxiety, stress and depression (Cooper, Balamurali, Selwood, & Livingston, 2007; Cuijpers, 2005; Magai & Cohen, 1998; Pinqart & Sörensen, 2003; Sörensen, Duberstein, Gill, & Pinqart, 2006) and poorer physical health outcomes (Pinqart & Sörensen, 2011). Spouse carers in particular appear to be at an increased risk for worse outcomes (Pinqart & Sörensen, 2007, 2011). However, more recent research suggests that this experience is not uniform and that for some individuals, caring for

a partner with dementia can be a positive and potentially enriching experience, with few negative outcomes (Carbonneau, Caron, & Desrosiers, 2010; Farran, 1997; Hellström, Nolan, & Lundh, 2007).

One way of interpreting these contrasting findings may be through research which indicates that prior relationship quality is an important factor. Greater pre-morbid relationship satisfaction has been associated with less perceived caregiver burden (Steadman, Tremont, & Duncan Davis, 2007; Williamson & Schulz, 1990; Williamson & Shaffer, 2001). Further, Lewis (1998) suggests that individuals tend to make sense of new behaviour in the context of their pre-morbid relationship history. From the perspective of the person with dementia, research has indicated the importance of maintaining personal relationships (Livingston, Cooper, Woods, Milne, & Katona, 2008; Warner, Milne, & Peet, 2010) in regard to improving quality of life, helping to give meaning to experiences and in order to help individuals to hold onto a sense of self (Hellström, Nolan, & Lundh, 2005). These findings suggest that understanding more about relationship quality in regard to dementia could be a useful focus for further research.

### **Relationship Continuity**

One avenue of investigation has explored how couples make sense of their relationship after diagnosis, specifically looking at how much a feeling of partnership is maintained. Kaplan (2001) considered the extent to which spouse carers retained a sense of togetherness when their partner was diagnosed with dementia. Outlining a typology of couplehood, Kaplan classified spouses along a continuum of “We” through to “I”. A strong

experience of couplehood was embodied by the notion of “We”, which remained at the forefront of the partnership despite the challenges couples faced. In contrast those spouses who viewed themselves from a position of “I” considered themselves as no longer part of a couple. Kaplan suggested two crucial factors appeared to contribute toward the spouse’s position on the continuum; perception of change since the onset of dementia and previous relationship history.

Developing this theme, Hellström et al. (2007) explored the relationships of 20 couples who were described as having mainly positive relationships prior to diagnosis. They found the couples strived to maintain a sense of closeness and an active relationship in what was referred to as a “nurturative relational context”. This appeared to be more successful when caregivers were able to integrate past relationship history with new experiences in order to maintain a sense of “personhood” for the individual with dementia. Hellström et al. outlined three phases, “sustaining couplehood”, “maintaining involvement” and “moving on”, which included attempts by both parties to try to preserve the quality of the relationship for as long as possible. Within the concept of sustaining couplehood, the caregiver appeared to try to maintain a sense of continuity both with the person with dementia and in the context of their relationship.

Chelsa, Martinson and Muwaswes (1994) , specifically explored the idea of relationship continuity by examining the types of relationships that existed between family carers and the person with dementia. They suggested three styles of adaptation which ranged from “continuous”, “continuous but transformed” to “radically discontinuous”. In all categories carers were still motivated to provide care but the degree to which the person being

cared for was seen as still being part of a relationship varied. For example, where the relationship was perceived as more discontinuous, there was greater perception of change in the person with dementia. This was accompanied by “emotional distancing”, more withdrawal and a lack of a sense of reciprocity in the caregiving relationship.

Research by Walters, Oyebode and Riley (2010) explored the notion of relationship continuity further in a group of female carers, whose partners all had a diagnosis of dementia. They found that discontinuity was accompanied by increased feelings of guilt and being held “hostage” to the role of caregiver. In contrast, wives who reported greater feelings of continuity appeared to demonstrate a more positive adaptation to the role of being a caregiver alongside a tendency for more empathetic care. These findings replicate those of Murray and Livingston (1998) who examined caregiving when one partner had been diagnosed with a psychiatric illness. They found that those partners who could maintain a sense of continuity were better able to adapt to changes and were more likely to locate difficulties as being outside of the “ill” person; as a result this group appeared to maintain stronger relationships.

Finally O’Shaughnessy, Lee and Lintern (2010) reported that, for some carers, feelings of continuity and “connectedness” were associated with an additional awareness of a sense of “separateness” between themselves and the person with dementia. This was generally accompanied by a perception of increasing dependence by one partner due to the nature of the illness. In spite of these feelings, a powerful “emotional bond” and an experience of continuity remained, which the authors linked to a “re-organisation” of the attachment relationship. In this way, the spouse shifted toward the role of a caregiver who responded in an “empathic” and “protective” manner.

The concept of attachment in regard to caregiving in dementia may provide a worthwhile framework for understanding more about continuity, helping to explain why some couples experience discontinuity while for others a meaningful sense of connection prevails.

### **Attachment Theory and Caregiving**

Attachment theory focuses on the quality of the relationship between the infant and their main caregiver, which can be seen as a foundation for later development (Bowlby, 1982, 1988). The role of the caregiver is to function as a *secure base* for the infant and to respond sensitively to their needs (Ainsworth & Bell, 1970). Based upon this early interaction, it is suggested that the infant develops an *internal working model* (Bowlby, 1973, 1982) which is believed to persist throughout the life cycle (Crowell et al., 2002; Holmes, 1993). This model provides a framework for predicting and interpreting the world based upon beliefs and expectations of self and others, with more positive models associated with greater attachment security (Collins, 1996). A wealth of research has examined particular patterns of attachment based upon these internal representations (for reviews, see Bennett & Nelson, 2010; Crowell & Treboux, 1995; Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010) and a number of methods of classification exist. In regard to infant attachment, Ainsworth (1985), reported the categories of secure, anxious/avoidant and anxious/ambivalent. A further category of disorganised attachment was added later (Main & Solomon, 1990).

Focusing on these styles, Ainsworth (1985), suggested that securely attached infants have a working model of others as “responsive” and “accessible”. Infants in the avoidant category have an experience of the caregiver as rejecting and unresponsive and those

classified as ambivalent are likely to have developed a model of a caregiver as responsive but inconsistent (Holmes, 1993). Finally, in the disorganised category, the caregiver “becomes both the source of the infant's fear and the haven of safety” (Henninghausen & Lyons-Ruth, 2010, p.2) potentially creating a confusing and unpredictable environment. Subsequent work by Main, Kaplan, & Cassidy (1985) suggested the corresponding adult categories of autonomous, dismissing, preoccupied and unresolved/disorganised attachment. These categories have been reviewed in regard to adult romantic relationships, with Hazan & Shaver (1987), suggesting the categories of secure, anxious and avoidant and Bartholomew (1990), outlining secure, dismissing, fearful and preoccupied classifications. Each pattern of attachment refers to a different way of relating to others, therefore, attachment theory has the potential to provide a useful framework for conceptualising adult caregiving relationships.

Bowlby (1973), suggested that at times of stress, attachment needs, especially the desire for a secure base, are heightened. Thus, an illness such as dementia may pose a “threat” to the attachment relationship (Perren, Schmid, Herrmann, & Wettstein, 2007) and is likely to activate attachment-related behaviour. Given the nature of the illness, it is anticipated that one partner will find themselves in the role of caregiver and the other as recipient of this care. Caregiving and attachment systems are thought to be encompassed within the same underlying working models. How these roles are perceived and carried out, are likely to be affected by each individual’s own experience of being cared for, therefore bringing into play their attachment pattern (Kunze & Shaver, 1994).

Bowlby (1982) considered that a more secure pattern of relating to others would be associated with more responsive caregiving. Indeed, in relation to adult caregiving, differences have been observed on the basis of adult attachment styles, with a more secure

attachment associated with more sensitive caregiving. This has been found in more general adult romantic partnerships (i.e. secure attachment being associated with greater sensitivity to the partner) (Collins & Feeney, 2000; Feeney & Collins, 2001; Feeney & Hohaus, 2001) and has also been reported in relationships where one partner is facing significant illness, such as undergoing treatment for cancer (Braun et al., 2011; Kim & Carver, 2007; Monin, Schulz, Feeney, & Cook, 2010). In relation to dementia caregiving, a more secure attachment style has been found to protect against the stress associated with caregiving (Crispi, Schiaffino, & Berman, 1997; Daire, 2002; Markiewicz, Reis, & Gold, 1997). Individuals report feeling better able to cope with the demands of caring (Ingebretsen & Solem, 1998) and are likely to feel more satisfied with support from outside agencies (Markiewicz et al., 1997).

Focusing on insecure attachment patterns, evidence suggests that individuals with avoidant styles display greater anxiety and more “dysfunctional” coping strategies (Cooper, Owens, Katona, & Livingston, 2008). Perren et al. (2007) found that a more avoidant style was associated with lower levels of wellbeing. Further, an increase in the level of challenging behaviour in the care recipient was observed. This may in part explain the finding that avoidant caregivers were more likely to place the person with dementia in institutional care (Markiewicz et al., 1997). Anxious carers also describe more difficulties with caregiving, having smaller support networks in place and expressing less satisfaction with the support received (Markiewicz et al., 1997). In addition, Markiewicz et al. (1997) found that anxiously attached caregivers demonstrated more negative emotional responses such as anger and disappointment toward the other person. Finally, Braun et al. (2011) and Millings and Walsh (2009) suggested that individuals with insecure styles were more likely to engage in caregiving that was “controlling” and “compulsive”.

Ingebretsen and Solem (1998) carried out a qualitative study looking at insecure attachment styles in relationships where a spouse had dementia. They used the categories “anxious attachment”, “self-sufficiency” and “compulsive care-giving” (Bowlby, 1980) to represent the classifications of ambivalent, avoidant and disorganised/controlling attachment. In the anxiously attached group, spouses were looking to the person with dementia for a sense of security and if this was not available, for some individuals, this resulted in feelings of both panic and anger toward the person with dementia. In this group it was suggested that the spouses were less likely to respond empathetically, presumably because they were consumed by their own feelings of anxiety. Those individuals who were described as self-sufficient fought hard to maintain a sense of distance and when this was compromised they withdrew. Finally, those in the compulsive care-giving group were, as the name suggests, most likely to push themselves to meet all the care recipient’s needs. In this group the biggest threat was the destruction of the bond between the partners. Maintaining the partnership, or sense of “we-ness”, at all costs was critical. It was suggested that any threat toward this would trigger painful feelings of rejection and change for the caregiver.

### **Aims and Hypotheses**

The notion of “we-ness” i.e. maintaining a sense of couplehood is suggested to be an important factor in the way couples experience living with an illness such as dementia. The ability to maintain feelings of continuity and connectedness could influence the way in which care is provided. A focus on attachment style might thus provide a useful framework for understanding more about the factors that affect continuity. There appear to be possible

connections between the two areas of research, which while speculative at present, warrant further investigation. For example, Walters et al. (2010) suggest that more person-centred care is observed in caregivers who perceived their relationships as more continuous. Similarly, as described, those caregivers who have stronger, more secure attachment relationships are also reported to provide more empathic care focused on individual needs.

Further, Walters et al. (2010) identified that some wives were more likely to distance themselves, increasing the sense of “disconnection” they felt from their partners and the previous relationship they shared. Linking this with the literature on attachment, it might be that these wives could be thought of as having a more avoidant attachment style, their strategy of distancing being implemented in order to maintain a sufficient distance between themselves and their partner, so as to minimise the level of personal distress provoked by dependence. Another theme leading to greater sense of discontinuity was a perception of reduced reciprocity in the relationship. Again, from an attachment perspective it could be suggested that, for those wives with an anxious attachment style, they could no longer rely on their husbands to provide a secure base thus threatening the perceived security of their attachment. In these cases the authors observed that caregiving became less about caring for the person themselves and more about a “sense of duty” akin to the “compulsive caregiving” reported by Ingebretsen and Solem (1998).

The current evidence base examining attachment theory may provide some support for these tentative hypotheses. As discussed, it is through the relationship with the primary caregiver that the individual builds a working model of attachment (Bowlby, 1973).

Generally, adults who have been able to establish secure models are likely to be able to draw

upon these internal representations in times of threat, in order to restore a sense of security (Mikulincer & Shaver, 2007). However, those with insecure styles may find this problematic and use alternative strategies to regulate their emotional responses. Anxious individuals are thought to respond to threats to security by “hyperactivating” their attachment system, such that they escalate all efforts so as to achieve feelings of security (Mikulincer & Shaver, 2007). They are likely to appraise situations negatively (Mikulincer & Florian, 2001) and to feel dominated by worries about the other abandoning or rejecting them (Collins, 1996; Mikulincer, Gillath, & Shaver, 2002). Consequently, they become hypervigilant to signs of “responsiveness” and “availability” in others (Fraley, Niedenthal, Marks, Brumbaugh, & Vicary, 2006). Finally, anxious individuals are thought to experience more distress in relation to the perceived suffering of others (Monin et al., 2010).

In contrast, those with a more avoidant attachment style are considered to respond to perceived threats to security by “deactivating” their attachment system (Mikulincer et al., 2002; Monin et al., 2010) disregarding information which may threaten security (Fraley & Shaver, 2000; Mikulincer, Shaver, & Pereg, 2003). In relation to caregiving, this might occur in response to the fear of others becoming too dependent or needy, which could trigger the desire to withdraw in order to maintain a safe proximity (Collins, 1996; Fraley & Shaver, 1997). These findings would suggest that for both groups (anxious and avoidant) the role of being a carer may be experienced as challenging. For these individuals, looking after a partner with dementia may be incompatible with their own needs for security (which are likely to be heightened), potentially compromising their ability to provide effective, responsive care (Collins & Ford, 2010).

In regard to the connection between attachment and an individual's sense of continuity in their relationship, a number of tentative hypotheses emerge. Those with a more anxious attachment may interpret any change in the person with dementia as a sign of rejection, bringing to the fore feelings of abandonment. They may view their partner as having become fundamentally different and someone on whom they can no longer depend upon to provide a sense of security. This perceived lack of reciprocity, could lead to a greater sense of distance and discontinuity in the relationship. Conversely, those with a predominantly avoidant attachment style may find their spouses growing needs for dependency and support overwhelming. This may result in the need to withdraw and disengage from the relationship, particularly emotionally, perhaps leading to increased feelings of discontinuity. In contrast, those carers with more secure attachment style may find themselves more able to adapt to and tolerate changes in their spouse, attributing them (correctly) to dementia. This would then leave the securely attached carer free to empathise with their partner, seeing both their spouse and their relationship as essentially the same, despite the changes caused by dementia.

A review of the literature indicates that there have been no studies looking specifically at relationship continuity and attachment style. Having more understanding of the association between these areas may, amongst other things, help to identify and target those who would benefit from more support with caregiving.

The research hypotheses are:

(1). Spouse carers who score higher on the Anxiety subscales (Preoccupation with Relationships & Need for Approval) of an attachment measure are more likely to perceive greater relationship discontinuity.

(2). Spouse carers who score higher on the Avoidance subscales (Discomfort with Closeness & Relationships as Secondary) of an attachment measure are more likely to perceive greater relationship discontinuity.

## **Method**

### **Design**

The present study used a cross-sectional questionnaire design. Participants were asked to complete three questionnaires in order to explore the association between attachment and caregivers' perceptions of their relationship at the present time.

A power analysis was performed using G\*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009). In order to obtain statistical power at the recommended 0.80 level (Cohen, 1988), a sample of approximately 26 was required to detect a large effect size, 0.50 (Cohen, 1977). To detect a medium effect size, 0.30, a sample of 82 was needed to obtain statistical power at the recommended 0.80 level. Therefore, the target sample for this study was

between 26-82 participants. For both power calculations, significance at the 5% level (two-tailed) was assumed.

## **Participants**

Participants were recruited from two sources, firstly from the local health Trust (which serves a population of over 1 million, and encompasses a mix of both urban and rural areas) and secondly from voluntary organisations across the region. Participants were included in the study if (1) they had a spouse or partner who had a diagnosis of dementia, (2) they had been in the relationship for at least 10 years and (3) they were aged 50 or over. In order to try to minimise the impact of any potential confounding variables, participants were not included if they had a diagnosis of a severe mental illness, learning disability or severe cognitive impairment. Further as there is limited knowledge regarding the reliability and validity of the three measures when translated into other languages, individuals who were not familiar with written English were excluded.

## **Measures**

**Attachment Style Questionnaire (ASQ)** (Feeney, Noller, & Hanrahan, 1994; see Appendix 4). The Attachment Style Questionnaire (ASQ) is a 40-item questionnaire designed to measure adult attachment. The questionnaire is a dimensional measure and does not assess attachment style per se; instead it considers that individuals may fall within each area, rather than belonging to one category alone. In all cases a higher score on any of the factors indicate a stronger propensity toward that particular dimension.

Responses are given according to a six-point Likert scale (1= Totally Disagree; 6= Totally Agree). The ASQ can be used as either a three or five-factor measure of attachment (Feeney et al., 1994). The five-factor measure includes: Confidence (e.g. “Overall, I am a worthwhile person”) which relates to both self and others; Discomfort with Closeness (e.g. “I find it hard to trust other people”) and Relationships as Secondary (e.g. “To ask for help is to admit that you're a failure”) reflect a view of others; Need for Approval (e.g. “It's important to me to avoid doing things that others won't like”) and Preoccupation with Relationships (e.g. “I worry that others won't care about me as much as I care about them”) reflect a view of the self. A review of the literature suggests varied interpretation of how to define the three-factor model which comprises of the subscales Confidence, Anxiety and Avoidance. In this research, the three-factors were structured following the methodology outlined by Coble, Gantt, & Mallinckrodt (1996) and Leveridge, Stoltenberg, & Beesley (2005), so that Need for Approval and Preoccupation with Relationships form Anxiety and Discomfort with Closeness and Relationships as Secondary form Avoidance.

The questionnaire was selected because it was felt to be acceptable for use with an older adult population compared with other attachment measures. For example, the language and phrasing was considered to be more appropriate for couples in longer term partnerships. While developed with younger adults, it has been used with adults aged 18-82 (Meredith, Strong, & Feeney, 2006). The ASQ has been developed from a strong theoretical base (see Feeney et al., 1994; Fossati et al., 2003) and has demonstrated adequate reliability and validity. A Cronbach's alpha score of above 0.7 is generally considered to be an acceptable level of reliability (Goddard & Villanova, 2006). As can be seen in Table 1, some of the subscales of the ASQ in this study have fallen below this level. To place the scores in context

Table 1 shows a further comparison with two other studies reporting internal validity of the ASQ. The ASQ was originally designed and validated by Feeney et al. (1994) and further tests of reliability and validity were reported by Fossati et al. (2003). The latter provided a comprehensive analysis of the ASQ with large clinical and non-clinical samples.

Table 1

*Comparison of Cronbach's Alphas for the ASQ*

ASQ Subscales	Current Study	Feeney et al. (1994)	Fossati et al. (2003)
	$\alpha$	$\alpha$	$\alpha$
Confidence	0.76	0.80	0.69
Discomfort with Closeness	0.68	0.84	0.68
Relationships as Secondary	0.72	0.76	0.73
Need for Approval	0.74	0.79	0.69
Preoccupation with Relationships	0.61	0.76	0.64
Avoidance	0.75	0.83	
Anxiety	0.68	0.85	

**Birmingham Relationship Continuity Measure (BRCM;** Fisher, 2010; see Appendix 5). The Birmingham Relationship Continuity Measure (BRCM) is a 23-item questionnaire which examines feelings of continuity or discontinuity in couples according to five dimensions: Same/different relationship (e.g. “It doesn’t feel like a partnership anymore”); Same/different person (e.g. “Sometimes I feel it’s like living with a stranger”); Same/different feeling (e.g. “It’s like there’s a barrier between us now” ) ; (sense of) Loss (e.g. “I feel like I’ve lost the person I used to know”); Couplehood (e.g. “It doesn't feel like a

partnership anymore"). A higher score reflects greater perceptions of continuity. A preliminary study by Fisher (2010) demonstrated adequate reliability and validity. Cronbach's alpha for the BRCM total in this sample was found to be 0.96. Riley, Fisher, Oyeboode and Le Serve (manuscript in preparation) report Cronbach's alpha of 0.95 in a previous study.

**Background Questionnaire** (Fisher, 2010; see Appendix 6). This questionnaire was used to provide information such as the length of time caring, the care needs of the person with dementia and the support received by the caregiver in providing this care. Its primary purpose was to provide a fuller description of the caring role of the participants

## **Ethics**

Ethical approval was granted by the local NHS Research Ethics Committee (REC).

## **Procedure**

The researcher attended local carers' groups, both within the NHS and the voluntary sector to talk about the research. Individuals were informed of the aims of the project and the inclusion criteria, followed by a brief outline of what participation in the study would involve. Those who expressed an interest in taking part were provided with an information pack (see Appendices 2 & 3). This included a consent form, a summary of the study, the three questionnaires and a pre-paid, pre-addressed envelope for the return of the questionnaires. At this stage, participants were asked to provide their name and contact details.

After a time period of one week, the main researcher contacted the potential participants by phone to discuss whether they wished to take part in the research. If participants agreed to complete the questionnaires, any additional support needs were discussed. Participants were informed they could either complete the questionnaires independently and return them or that the researcher could meet with them to complete the questionnaires. Five participants chose for the researcher to meet with them in their home.

### **Statistical Analysis**

All statistical analyses were conducted using SPSS (2009). For the main analyses a Pearson's correlation was carried out to examine the association between relationship continuity and attachment style. Further non-parametric analyses were also conducted for some measures using a Spearman's Rho correlation. Following on from this, a regression analysis explored the impact of time since diagnosis on the relationship between continuity and attachment. For all analyses a significance level of  $p < .05$  was used.

## **Results**

### **Response Rates**

A total of 38 individuals were given questionnaire packs and 31 completed questionnaires were received. Seventeen were completed by individuals who had been recruited from the local healthcare trust. The remaining 14 were recruited from local voluntary organisations. Of the seven participants for whom questionnaires were not received, one questionnaire was completed but did not arrive. A further three questionnaires were not returned but no reason was given. Two individuals declined due to pressures on time and one person declined because they did not feel it was appropriate for them to take part.

### **Missing Data**

Only two participants did not return completed datasets for the ASQ, this resulted in three missing values (0.24% of the total dataset for the ASQ). In relation to the BRCM, three participants did not return completed datasets, leaving nine values missing (1% of the total BRCM data). Finally, five participants did not return completed datasets for the background questionnaire, giving a total of eight values missing (1% of the total data). In regard to this questionnaire, missing responses were most common for questions which required participants to state a time period, for example, those relating to length of time since diagnosis (two missing responses) and length of time caring (two missing responses).

The missing data were accounted for by pro-rating scores on scales. For the ASQ this was done according to the participant's score on each of the individual subscales: Confidence; Discomfort with Closeness; Relationships as Secondary; Need for Approval and Preoccupation with Relationships. Missing data on the BRCM were pro-rated on the basis of the participant's total score on the measure.

### Participant background information and demographic data

Table 2

*Demographic Details for Participants*

Variables	n	M (SD)	%
Age		73.3 (7.30)	
Gender			
Male	9		29.0
Female	22		71.0
Ethnicity			
White British	25		80.6
Asian	1		3.2
Black	3		9.7
Mixed – White/Asian	2		6.4
Religion			
Christian	26		83.9
Muslim	1		3.2
Other	2		6.5
None	1		3.2
Missing Value	1		
Type of Dementia			
Alzheimer's Disease	15		48.4
Vascular/Multi Infarct Dementia	11		35.5
Lewy Body	2		6.5
Other	2		6.5
Missing Value	1		
Length of Relationship (years)		45.9 (15.5)	
Length of Time Since Diagnosis (years)		3.3 (2.7)	
Length of Time Caring (years)		5.9 (6.8)	

Variables	n	M (SD)	%
<b>Caring Support</b>			
Support from family and friends			
<i>Yes</i>	22		71.0
<i>No</i>	9		29.0
Formal caring support			
<i>Yes</i>	8		25.8
<i>No</i>	23		74.2
Respite			
<i>Yes</i>	9		29.1
<i>No</i>	21		67.7
<i>Missing Value</i>	1		3.2
Day Care			
<i>Yes</i>	11		35.5
<i>No</i>	19		61.3
<i>Missing Value</i>	1		3.2
Seeing friends			
<i>Yes</i>	8		25.8
<i>No</i>	23		74.2
Taking a break			
<i>Yes</i>	23		74.2
<i>No</i>	8		25.8
Leaving partner alone			
<i>Yes</i>	24		77.4
<i>No</i>	7		22.6
<b>Challenging Behaviour</b>			
Disturbed sleep			
<i>Yes</i>	19		61.3
<i>No</i>	12		38.7
Partner agitation			
<i>Yes</i>	21		67.7
<i>No</i>	9		29.1
<i>Missing Value</i>	1		3.2
Repeated questioning			
<i>Yes</i>	24		77.4
<i>No</i>	7		22.6
Physical aggression			
<i>Yes</i>	6		19.4
<i>No</i>	25		80.6
Draws public attention			
<i>Yes</i>	12		38.7
<i>No</i>	19		61.3
Difficulty persuading partner to do things			
<i>Yes</i>	26		83.9
<i>No</i>	5		16.1

Variables	n	M (SD)	%
Assistance			
Assist partner to dress			
<i>Yes</i>	20		64.5
<i>No</i>	11		35.5
Assist partner to eat			
<i>Yes</i>	10		32.3
<i>No</i>	21		67.7
Assist partner to go to the toilet			
<i>Yes</i>	10		32.3
<i>No</i>	21		67.7

Previous data from a study by Fisher (2010) developing the BRCM measure was used in order to compare some of the background demographic data. The current sample appeared to include a slightly more diverse population in regard to ethnic and religious background. Participants in the current study felt they had a greater level of support, but had to provide their partner with more assistance with daily activities. There were no substantial differences in the level of challenging behaviour reported between participants in the two studies.

## Outliers

The data were examined for outliers. Univariate outliers were classified as those with a standard score of greater than 3.29 ( $p < .001$ ; Tabachnick & Fidell, 2001). No participants exceeded this level, and therefore no participants were excluded from the analysis. However it was noted that participant 20 came close to being an outlier on the ASQ three-factor subscale Avoidance (-3.09) and on the five-factor subscale in relation to Discomfort with Closeness (-3.23). Participant 20 was also observed to have lower scores on the ASQ three-factor subscale of Anxiety (-2.30), and the five-factor subscale of Preoccupation with Relationships (-2.11).

Variables pairs that were significantly correlated or had modest but non-significant correlations were also inspected for multivariate outliers. This was done through visual inspection of scatterplots and use of the Mahalanobis statistic ( $>10.83$ ,  $p<.001$ ; Tabachnick & Fidell, 2001). Again no values were found to meet the outlier criteria, however, participant 20 showed the highest Mahalanobis value for the correlation of Anxiety against BRCM total score (5.29) and for the correlation of Preoccupation with Relationships and the BRCM total score (4.43).

### **Tests of Normality**

In order to examine the distribution of scores for the ASQ subscales (3 & 5-factors) and the BRCM, histograms were plotted against normal distribution curves. Tests of skewness and kurtosis were performed to determine deviation from the normal distribution (Tabachnick & Fidell, 2001). None of the variables were found to be significantly skewed at the  $p<.001$  level using these methods (see Appendix 7) and therefore parametric statistics were used for the analyses.

### **Attachment (ASQ)**

A correlation between the five-factor subscales was carried out to further examine internal consistency. Only a weak correlation was found between Need for Approval and Preoccupation with Relationships ( $r(31)=.157$ ;  $p=.400$ ), and in addition between Discomfort with Closeness and Relationships as Secondary ( $r(31)=.290$ ;  $p=.114$ ), suggesting

that the underlying subscales of Anxiety and Avoidance are not necessarily measuring the same constructs.

Table 3

*Descriptive Statistics for the ASQ Subscales*

ASQ Subscales	M	SD	Minimum Score	Maximum Score	Possible Score Range
Confidence	35.87	5.39	26	47	8-48
Discomfort with Closeness	32.10	5.60	14	40	10-60
Relationships as Secondary	17.73	5.21	7	26	7-42
Need for Approval	19.68	5.54	11	29	7-42
Preoccupation with Relationships	24.84	5.62	13	34	8-48
Avoidant	49.82	8.68	23	61	
Anxious	44.52	8.49	25	58	

The descriptive statistics for the ASQ (using both 3 & 5-factor) subscales are reported in Table 3. These were compared with a previous large scale study (Fossati et al., 2003) which investigated the validity of the ASQ with both psychiatric ( $M = 31.23$  years,  $SD = 8.78$ ) and non-clinical samples ( $M = 31.62$  years,  $SD = 12.43$ ). This study was chosen because it reported a comprehensive dataset for the ASQ. Table 4 shows the comparison of the mean scores from the current study with those from Fossati et al. (2003).

Table 4

*Comparison of Scores with Fossati et al. (2003)*

ASQ Subscales	Current Study	Fossati et al. (2003) Non-clinical Sample	Fossati et al. (2003) Clinical Sample
	N = 31 M (SD)	N = 605 M (SD)	N = 487 M (SD)
Confidence	35.87 (5.39)	32.25 (5.74)*	27.43 (6.28)*
Discomfort with Closeness	32.10 (5.60)	37.95 (7.12)*	39.81 (7.95)*
Relationships as Secondary	17.73 (5.21)	16.71 (5.96)	17.02 (5.62)
Need for Approval	19.68 (5.24)	20.82 (5.99)	25.95 (7.16)*
Preoccupation with Relationships	24.84 (5.62)	28.81 (6.08)*	33.83 (6.63)*

Note. \*  $p < .05$

A one-sample t-test revealed that there were some significant differences between the mean scores in the current study when compared to the study by Fossati et al. (2003) (Table 4). Participants in the current study scored significantly higher on the Confidence subscale than both the clinical and non-clinical samples of Fossati et al. Further, the participants in this study scored significantly lower on the subscales of Discomfort with Closeness and Preoccupation with Relationships than both groups in the study by Fossati et al. Finally, the Need for Approval subscale differed between participants in this study and the clinical sample only reported by Fossati et al. It is likely that this is due to the different demographics between the groups. The participants in the current study were comparatively older than the samples in the paper by Fossati et al.

## **Relationship Continuity**

The mean score for relationship continuity (BRCM) was 59.39 ( $SD = 25.27$ ). The minimum score obtained by any of the participants was 27 and the maximum 110 (the total maximum score for the BRCM scale is 130, which indicates a high level of continuity). This is comparable to previous research evaluating the reliability and validity of the BRCM. In comparison, two studies reported by Riley et al. (manuscript in preparation) showed means of 64.27 ( $SD = 22.09$ ;  $t = -1.076$ ,  $p = .291$ ) and 63.74 ( $SD = 24.14$ ;  $t = -.959$ ,  $p = .345$ ) respectively.

## **Attachment and Relationship Continuity**

In order to explore the relationship between attachment and level of continuity or discontinuity, two sets of Pearson's correlations were conducted. The first correlation examined the relationship between the total score on the BRCM and the ASQ using the three-factor measures of Confidence, Anxiety and Avoidance (Table 5). No significant associations were found. A second set of correlations between the BRCM total score and the ASQ five-factor model was carried out. Again no significant correlations were found, however, the largest correlation was found between the ASQ subscale of Preoccupation with Relationships and the BRCM total score. This may indicate a tendency toward those individuals who show greater preoccupation with their relationship being more likely to perceive less continuity.

Table 5

*Pearson's Correlation for BRCM (Total) and ASQ (3 and 5-Factor)*

ASQ Subscales	BRCM Total	p-value
Confidence	-.081	.664
Discomfort with Closeness	-.055	.767
Relationships as Secondary	.032	.863
Need for Approval	-.027	.884
Preoccupation with Relationships	-.219	.236
Avoidance	-.016	.931
Anxiety	-.163	.381

### **Background Variables**

Analyses of the relationships between the background variables (time since diagnosis, length of time caring and length of relationship) were conducted in relation to the ASQ five-factor model and the BRCM total score. Of these three variables only time since diagnosis showed a significant correlation with the BRCM ( $r(29) = -.42, p = .024$ ). This suggested that the longer the time since diagnosis, the more a sense of discontinuity was experienced by the person caring.

Further, the background information was divided into three groups, Caring Support, Challenging Behaviour and Assistance (see Table 2). A higher score on each variable indicated a greater level of support in place, challenging behaviour reported or that more

assistance was needed, respectively. The total scores for each group were then correlated with the ASQ (3 & 5-factor) subscales and the BRCM. In relation to the ASQ, a negative correlation was found between Discomfort with Closeness and Caring Support ( $r(30) = -.42, p=.020$ ). This indicated that those with less support reported greater Discomfort with Closeness. A negative correlation was also found between Caring Support and Challenging Behaviour ( $r(29) = -.52, p=.004$ ), suggesting that individuals who report comparatively more support, identify less challenging behaviour. Finally, Confidence and Assistance were positively correlated ( $r(31) = .47, p = .008$ ).

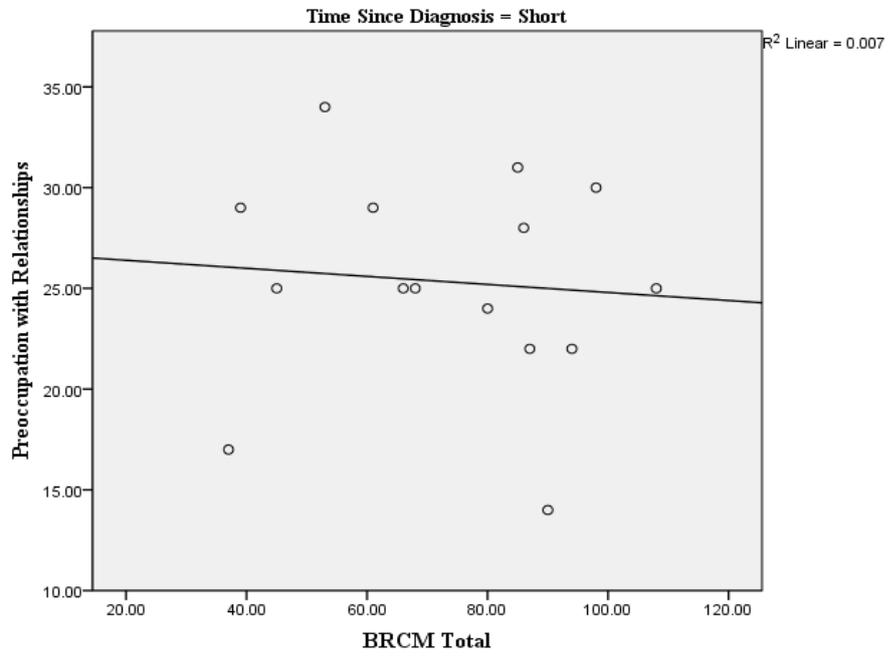
### **Effect of time since diagnosis on the relationship between BRCM and Preoccupation with Relationships**

Given the modest but not significant correlation between Preoccupation with Relationships and the BRCM and the significant correlation between time since diagnosis and the BRCM, further post-hoc analyses were conducted. In particular, this was to explore whether there was any effect of time on the relationship between the variables Preoccupation with Relationships and the BRCM. A linear multiple regression was carried out with BRCM as the dependent variable and time since diagnosis and Preoccupation with Relationships as independent variables. When time since diagnosis was accounted for, there was a stronger relationship (albeit not significant) between Preoccupation with Relationships and the BRCM total ( $B = -.35, p=.057$ ). A significant relationship was found between time since diagnosis and the BRCM when Preoccupation with Relationships was accounted for ( $B = -.52, p=.006$ ).

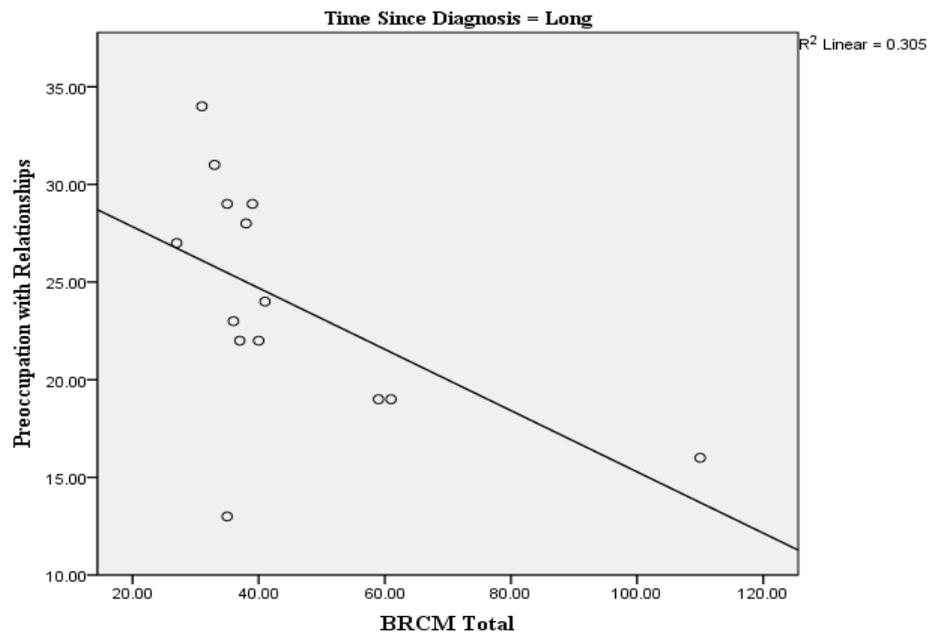
Given this finding, further analysis was conducted to explore the effect of time since diagnosis. The participants were divided into two equal groups, according to the median time since diagnosis. This enabled exploration of the data on the basis of those who had reported a shorter time since diagnosis ( $\leq 2.5$  years) or a longer time since diagnosis ( $> 2.5$  years). There was no significant relationship between the BRCM and Preoccupation with Relationships for those carers whose partner had a more recent diagnosis ( $r(15) = -.09, p = .763$ ). A significant relationship was found however between the BRCM and Preoccupation with Relationships in the group who had been living with a diagnosis of dementia for a longer period of time ( $r(14) = -.55, p = .040$ ). The difference between the two groups is illustrated in Figure 1. Note, in Figure 1b two points appear to tend toward being outliers (see Outliers section). To ensure the result was reliable, a further correlation using non-parametric statistics (Spearman's Rho) was carried out. A significant correlation remained between the BRCM and Preoccupation with Relationships ( $r_s(15) = -.586, p = .028$ ) in the longer time since diagnosis group.

The overarching subscale of Anxiety also correlated with the BRCM total for those in the longer time since diagnosis group ( $r(14) = -.55, p = .040$ ), whereas it did not correlate significantly for those in the shorter group ( $r(15) = .14, p = .608$ ). However, this significant correlation for the long group was not replicated when applying non-parametric statistics ( $r_s(14) = -.230, p = .429$ ). Neither Anxiety nor Preoccupation with Relationships were significantly correlated with the BRCM in the short time since diagnosis group when using non-parametric statistics ( $r_s(14) = .095, p = .737$ ;  $r_s(15) = -.148, p = .599$ , respectively).

a.



b.



*Figure 1.* Correlation of Preoccupation with Relationships and BRCM for (a) Short ( $\leq 2.5$  years) Time Since Diagnosis and (b) Long ( $> 2.5$  years) Time Since Diagnosis.

## **Discussion**

The aim of this study was to explore possible links between attachment and perceptions of relationship continuity, specifically focusing on these constructs from the perspective of the spouse caregiver. It was hypothesised that there would be a relationship between attachment and perceptions of continuity as measured by the BRCM. No significant correlations were found to support this notion. There may be a number of possible explanations for these results. It could be that there is no association between attachment and continuity of relationships in the context of caregiving in dementia. Alternatively, as the participants in this study had significantly lower Discomfort with Closeness scores and significantly higher Confidence scores than reported in other studies (see Table 4), it may be that there was not a sufficiently wide representation of these two attachment dimensions to permit a fair test of the hypotheses in respect of these two styles. Finally, the validity of the ASQ in this study was questionable.

Despite the lack of correlations on the three-factor ASQ with the BRCM, there was a trend (although not significant) toward greater Preoccupation with Relationships (a facet of the Anxiety subscale) being associated with increased feelings of discontinuity. Further analysis revealed that the length of time since diagnosis appeared to be an important factor in this relationship. When considering time since diagnosis, a significant association was found between the BRCM and Anxiety (when using the 3-factor model) and the BRCM and

Preoccupation with Relationships only (when using the 5-factor model). This indicated that the further away from the point of diagnosis, the stronger the relationship between degree of preoccupation and perceptions of discontinuity.

In outlining the underlying constructs of the ASQ, Feeney et al. (1994 p.134) define Preoccupation with Relationships as “an anxious reaching out to others in order to fulfil dependency needs” and an “ambivalence” about being close to others. According to Feeney et al. (1994) this is comparable to Bartholomew's (1990) category of *Preoccupied* attachment. Bartholomew outlined four categories of attachment relating to two underlying dimensions which refer to thoughts about the *self* and *other*. Feeney et al. suggest that a higher score on the preoccupation subscale would be indicative of a more positive view of the other, but a negative view of the self. Overall, this style reflects feelings of anxiety, particularly because a sense of security is determined by the responsiveness of the attachment figure (Bartholomew & Shaver, 1998). Collins and Feeney (2000) describe preoccupied individuals as having an “exaggerated” need for closeness which is accompanied by increasing fears of rejection.

In contrast, Need for Approval, the other subscale which makes up the Anxiety factor on the ASQ, is considered to relate to a negative view of self and other and reflects a need for “acceptance” and “confirmation” by others (Feeney et al., 1994, p.134). According to the model proposed by Bartholomew (1990) this would be suggestive of a *Fearful* attachment style, which is more closely associated with Avoidant attachment. This could indicate that the two subscales may actually be tapping into different underlying features of Anxiety, which may in part explain the reason for the lack of correlation between the Need for Approval subscale and the BRCM.

The idea that time since diagnosis is particularly relevant to the interplay between preoccupation and relationship discontinuity is perhaps not unexpected when considering the potential changes that could take place during this time. Whilst the progress of dementia is likely to be highly individual, it may be anticipated that there will be some cognitive decline. The period of time subsequent to a diagnosis has been described as a time of adaptation, both to loss and to change; for example, taking on the role of caregiver to a spouse may encompass both (Robinson, Clare, & Evans, 2005). It may be that in the earlier stages, those with a preoccupation with relationships try really hard to maintain continuity in the relationship, hence the lack of correlation between the two variables. However, as time moves on from the point of diagnosis, feelings of loss and change (e.g. absence of reciprocity) may accumulate, leading to a continued threat toward sense of security. For an individual, higher in preoccupation these could be felt very acutely. They may find it increasingly difficult to satisfy their own dependency needs through their relationship with the person with dementia, leading them to perceive their spouse as becoming less available as a source of support. If the significant person does not, or cannot, respond as required, the anxious/preoccupied individual may be propelled toward a state of hyperactivation (Mikulincer & Shaver, 2007). New information will be interpreted negatively, thus maintaining feelings of insecurity and distress (Collins, 1996) and anxieties about loss and abandonment will continue to grow. Spouse caregivers who experience this, could construe their partner as having fundamentally changed, leading to increased feelings of distance from their partner and a perception of discontinuity. This is reflected by the significant negative correlation between preoccupation and continuity from those reporting a longer time since diagnosis.

Exploring this relational perspective through Interpretative Phenomenological Analysis (IPA), Walters et al. (2010) describe the experiences of two wives, both of whom were caring for husbands with dementia. Their relationships were defined by the notion of being “cared for” by their husbands. When this could no longer exist due to illness, the relationship became framed within a sense of discontinuity. It is possible that in this situation, the lack of reciprocity could be interpreted by an anxiously attached individual as rejection, thereby undermining any feelings of security. In a similar study, O’Shaughnessy et al. (2010) used IPA to examine the themes of “connectedness and separateness” within relationships where one person had a diagnosis of dementia. They reported the thoughts of one wife, who described herself as experiencing a loss of connection with her husband, due to the redefinition of roles in the context of the illness. She perceived her husband as no longer able to contribute to the relationship, which left her feeling “a bit at sea ...now I haven’t got the balance...I am left high and dry and insecure” (O’Shaughnessy et al., 2010, p. 242). This would seem to suggest that feelings of discontinuity arose as a result of having lost a sense of stability, previously provided by her husband’s role within the relationship.

The notions of continuity and attachment have also been explored together in relation to bereavement and loss. Stroebe, Schut and Boerner (2010) considered the role of attachment in regard to the concept of continuing bonds, which refer to the maintenance of an ongoing sense of connection with the person who has died. For some individuals, the notion of a continuing bond with the deceased seems to be a helpful and adaptive strategy for coping with the loss of a loved one, while for others it appears to make the process more difficult and distressing. Stroebe et al. (2010) suggest that a more preoccupied attachment style can be associated with attempts to rigidly maintain a bond with the deceased person. The experience

of loss for the preoccupied person leads toward a state of hyperactivation, whereby they feel dominated by thoughts of the deceased person, “clinging” on unrelentingly in order to maintain the attachment.

The results of the present study appear in contrast to the overview given by Stroebe et al. (2010), although it is difficult to draw direct comparison between the areas, given the differences in research samples. In the current research, it seems as though those individuals who scored higher on the Preoccupation with Relationships subscale perceived a greater sense of discontinuity in the relationship, which might indicate feelings of distance and withdrawal. This appears an opposite strategy to that proposed by Stroebe et al. who suggest that a more preoccupied style of attachment would be associated with a sense of anxious clinging onto the past relationship. It may be that this reflects something specific to caring for a person with dementia, whereby the changes that occur due to the illness become too much for the person with a preoccupied attachment to bear. In contrast, where a person is lost through bereavement, the sense of who they were may remain very much intact (lost only through death, not prior illness) and for this group the feeling of clinging on to an attachment may restore feelings of security.

Finally, brief analysis of the background variables indicated some differences between groups. An association was found between the variables Discomfort with Closeness and Caring Support, which would suggest that those who are more avoidant report having less support in place. Markiewicz et al. (1997) outlined this finding in relation to carers with a more anxious attachment style but not avoidance. Perhaps this finding reflects concerns about trusting others, or worries about dependency. It was further suggested that those who report more support, identify less challenging behaviour. It may be that those who feel well

supported view themselves as more able to manage difficult behaviours, possibly because they feel less stressed or have more patience. Thus, it could be that challenging behaviours arise less often for this group, or that their perception of what is challenging are different.

## **Limitations**

There are a number of limitations identified in regard to this research. It was difficult to gain access to large numbers of participants; hence, the sample size was small, although within the limits of the power calculation outlined earlier. Some of the organisations approached to take part in recruitment expressed concerns about overburdening an already stretched population. In total, of the 38 carers who were approached to take part, six declined to be involved.

Given the recruitment process, a further limitation relates to the representativeness of the sample. The majority of participants were approached to take part while attending a carers' group. The purpose of the group was to help individuals to understand more about dementia, including how best to support the person diagnosed. Attendance at the group suggests at the very least a degree of motivation and willingness to think about providing good care. Thus there may be some concern regarding the representativeness of a sample which is made up of carers who have chosen to stay in touch with services.

There are several issues regarding the reliability and validity of the ASQ in this study. The ASQ was developed with a student population. Although it has subsequently been used with a range of populations, including with older people (e.g. Meredith et al., 2006), there is limited data about its reliability and acceptability with this group. The internal consistency for

the ASQ in this study was between 0.76 and 0.61 (with similar findings reported in other studies, for example, Fossati et al., 2003). The subscales falling below 0.7 were Anxiety (using the three-factor model) and Discomfort with Closeness and Preoccupation with Relationships (using the five-factor model). Poor internal consistency was reflected by the low alpha score for the Anxiety factor and the weak correlation between the two underlying measures: Preoccupation with Relationship and Need for Approval. This may explain why Preoccupation was found to correlate with the BRCM but not Need for Approval. Similarly, the two components of Avoidance: Discomfort with Closeness and Relationships as Secondary did not show a significant correlation, again suggesting that these two factors are not measuring the same underlying construct. Future research may benefit from exploring attachment using an alternative questionnaire measure, preferably one that has been developed with, or used more extensively in an older adult population.

While the BRCM showed acceptable Cronbach's alpha, the questionnaire is a new measure. Emerging data suggests good reliability and validity (Riley et al., manuscript in preparation), however, further investigation to confirm this would be helpful.

Finally, the study design was based upon correlational analyses, therefore no conclusions about causality can be drawn. In addition, the study used a cross-sectional design. Considering that time since diagnosis appeared to be a particularly relevant variable, it may be that relationships between attachment and continuity were distorted by studying them in this way. Subsequent research may need to study the relationship between the two over time, with the inclusion of more longstanding carers in order to explore this more fully.

## **Clinical Applications**

The findings of this study appear to add weight to the notion that a focus on relationships should be central to the support offered. As identified earlier, research suggests that both attachment and perceptions of continuity/discontinuity have the potential to influence the way in which a person provides care (Kunce & Shaver, 1994; Walters et al., 2010). Having a greater understanding of the interplay between the two areas could help those involved in providing support in a number of ways, including thinking about the most appropriate time to offer support and how to tailor interventions to best meet the needs of those involved. As identified in this research, individuals who have a more preoccupied stance could benefit from support to help reflect on the changes that a diagnosis of dementia may bring. This may include thinking about the meanings attributed to certain behaviours or situations and interpreting these within the context of an illness, in order to reduce perceptions of threat to the relationship.

## **Future Research**

This research study focused on the role of the caregiver and whilst important, it would also be helpful to understand more about the perspective of the person with dementia, particularly regarding their sense of continuity and attachment within the relationship. Again greater understanding of these elements may help to provide more comprehensive support.

The results from this study appear to suggest there is some utility in exploring attachment and continuity together. An interesting concept which has emerged more recently out of the attachment-related literature is the notion of mentalization (Fonagy et al., 2002). Generally this refers to the ability to reflect on experiences of the self and the other (Ha et al., 2011), thus very much encompassing a relational perspective. Much of this research has focused upon early relationships i.e. between caregiver and infant, finding that more reflective caregiving is generally associated with more sensitive caregiving (Slade et al., 2005). It may be helpful to consider this concept in other caregiving relationships. One approach may be to explore the links between reflective functioning and perceptions of continuity, with a more reflective stance perhaps being associated with greater feelings of continuity.

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## **Public Domain Paper**

### **Attachment and Caregiving**

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#### **Literature Review: How does the caregivers' ability to understand their infants mind lead to the development of attachment security?**

Attachment theory is concerned with understanding the impact of early relationships on later developmental and psychological outcomes (Bowlby, 1982). These early patterns of relating are thought to influence the way in which individuals develop a sense of themselves which then encompasses how they begin to relate to others and to the world around them. Generally individuals are believed to develop either secure or insecure patterns of attachment. It has been suggested that sensitive and responsive caregiving is crucial to the formation of a secure attachment relationship (Ainsworth et al., 1978). However, more recently this notion has been challenged and as such research has begun to explore other pathways through which attachment security may be developed.

One strand of research has focused on the notion of mentalizing (Fonagy et al., 2002) which is closely related to Ainsworth's original concept of sensitivity. It highlights the importance of the caregiver being able to understand the world from the perspective of the infant. Three approaches, which are encompassed within this framework are the concepts of

mind-mindedness, reflective functioning and maternal empathetic understanding, also defined as insightfulness. Research has explored each approach in relation to infant attachment security.

The aim of the review was to draw together the findings of all three approaches and to consider their role in the development of infant attachment security. A total of 11 papers were included in the review. An outline and subsequent analysis of each approach was provided, followed by a general consideration of methodological issues, alongside implications for clinical practice and possibilities for future research.

Overall, the studies reviewed appear to support the notion that caregivers' capacity to mentalize is important for the development of a secure attachment relationship with their infant. Due to the differing research designs and limited evidence base for the areas of reflective functioning and mind-mindedness, it was difficult to draw comparisons across the research studies. A number of methodological limitations were highlighted including concerns about the representativeness of the samples, the methods of assessment and the appropriateness of the measures used. Clinically, an approach based upon increasing caregiver capacity to mentalize would seem worthwhile in order to help development of strong early foundations.

**Empirical Paper: Exploring the connection between dementia carers' attachment security and their perceptions of the caring relationship.**

**Background:** Caring for a partner with dementia can be both physically and emotionally challenging. After the initial diagnosis couples have to adjust to the changes an illness such as dementia may bring, both at an individual level but also to the relationship itself. Recent research has recognised that individuals respond to this experience in quite different ways. Thus exploring some of the potential possibilities behind these differences may be helpful in terms of identifying who may need support during this time and how and when this might be best provided.

One avenue of research examining how relationships change after a diagnosis of dementia has explored perceptions of continuity and discontinuity (Walters et al., 2010). Being able to hold onto a sense of both the spouse with dementia and the overall relationship as being broadly unchanged are associated with greater feelings of continuity. A shift in perspective toward discontinuity was found to be accompanied by feelings of radical change within both the spouse and the relationship itself. It has been suggested that maintaining a sense of continuity may be associated with more person centred care, because the caregiver retains a sense of their spouse as being fundamentally the same.

One way of understanding more about the differing perspectives of continuity/discontinuity may be through the concept of attachment. Attachment theory (Bowlby, 1982) focuses on the earliest relationship between infant and caregiver. This relationship is suggested to be critical in establishing the foundations for later patterns of

interaction. In essence this means that an individual's experience of being cared for will shape the way in which they provide care to others. A more secure style of attachment has been associated with more responsive caregiving. Greater attachment insecurity has been linked to worse outcomes for the caregiver, including feelings of increased stress and anxiety, which could potentially impact upon their experience of the caregiving role and how they provide care.

**Aims:** The research examined the relationship between attachment and perceptions of continuity. It was hypothesised that greater attachment security would be associated with feelings of greater continuity, whereas insecure attachments would be associated with an increased sense of discontinuity.

**Method:** Thirty-one spouse carers, whose partners had a diagnosis of dementia, completed the Attachment Style Questionnaire, the Birmingham Relationship Continuity Questionnaire and a Background Questionnaire, which looked at demographic information and aspects of caring support and challenging behaviour.

**Results:** No overall significant relationship was found between attachment security and perceptions of continuity or discontinuity. Similarly, there was no overall significant association between an avoidant (insecure) attachment and continuity/discontinuity. A trend was observed toward a more anxious (insecure) attachment being associated with a greater experience of discontinuity. This relationship became significant when the length of time since diagnosis was taken into account. This demonstrated that those reporting a longer time

since diagnosis (in this case over 2.5 years) showed a greater association between Preoccupation with Relationships (a facet of Anxious attachment) and discontinuity.

**Conclusions:** The results suggest that there is some utility in exploring the concepts of attachment and continuity/discontinuity together. In particular the findings suggest that couples may benefit from some support post-diagnosis in helping them to think about their relationships. Potentially, this support may be best targeted at those individuals who present as being more anxious and may take the form of helping them to understand some of the changes that may be taking place. Methodological limitations included a small sample size and a lower internal consistency score for some of the subscales of the attachment questionnaire.

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## Appendix 1: Literature Review - Critical Appraisal Method

Table A1

*Quality criteria framework*

Quality criteria	Specific questions to consider when rating
1. Rationale clearly described and research aims stated?	Is the current evidence base described? Have gaps in the evidence base been identified? Is there a justification given as to why the research is needed? Is there a clear statement of intention of the research aims?
2. Ethical issues addressed?	Does the research contain a statement indicating that ethical approval was sought? Is there due consideration of any potential ethical issues within the research study? (e.g. informed consent, confidentiality, responding to upset or distress, withdrawal etc).
3. Methodology appropriate to the research question?	Is the use of quantitative methodology appropriate to the research aims? (e.g. to determine relationships between a number of variables).
4. Study design identified and the rationale for choice evident?	Is the design of the study clearly stated? Is the research design justified? (e.g. longitudinal, cross sectional etc).
5. Experimental hypotheses stated?	Is there a clear statement of the expected findings?
6. Key variables identified?	Are the main variables being investigated clearly stated?
7. Sample description	Is the sample adequately described (e.g. gender, age, relationship to care receiver etc.) so that the reader can determine transferability of the findings? Is the context of where samples were recruited from adequately described? Is the method of recruitment used described in sufficient detail? (e.g. the sampling method, recruitment procedure etc). Are the inclusion criteria clearly stated?
8. Sample size	Is the sample size adequate?
9. Sample representation	Does the sample reflect the general population under study?

10. Method of data collection reliable and valid?	<p>Does the research contain a justification that the measures used are appropriate for the population under study?</p> <p>Do the measures used adequately assess the desired constructs?</p> <p>Do the measures used have good psychometric properties? (e.g. test-retest reliability, inter-rater reliability, internal reliability and internal consistency).</p> <p>Do the measures used have demonstrated validity?</p>
11. Method of data analysis reliable and valid?	<p>Is there a clear statement indicating which statistical tests were used?</p> <p>Are the statistical tests used appropriate for the nature of the data collected? (e.g. does the data meet the assumptions of the test).</p> <p>Are the statistical tests used appropriate to the research question?</p> <p>Is there consideration of the impact of extraneous variables and are there controls for these within the analysis?</p> <p>Is evidence provided of statistical findings? (e.g. data within the text, tables etc).</p> <p>Are levels of significance stated?</p>
12. Findings clearly stated?	<p>Are the finding(s) explicitly stated?</p> <p>Is statistical data clearly presented?</p> <p>Are significant and non-significant findings clearly differentiated?</p>
13. Comprehensive discussion?	<p>Are the main findings summarised?</p> <p>Are the findings linked back to the research aims?</p> <p>Are the findings linked to the current literature and/or psychological theory?</p> <p>Is the clinical usefulness of the findings considered?</p>
14. Strengths and limitations identified?	<p>Are the limitations of the research identified? (e.g. sample size, recruitment strategies, method of data collection, analysis etc).</p> <p>Are the strengths of the research identified?</p>
15. Justifiable conclusions made?	<p>Are conclusions supported in the discussion of findings?</p>

Table A2

*Quality rating system*

Quality rating	Quality rating definition
1	All or most of the component contributors to the criterion have been fulfilled. Components that have not been fulfilled are thought <b>very unlikely</b> to impact on the quality or overall conclusions of the study.
0	Some of the component contributors to the criterion have been fulfilled. Components that have not been fulfilled are thought <b>unlikely</b> to impact on the quality or overall conclusions of the study.
-1	Few or none of the component contributors to the criterion have been fulfilled. The unfulfilled components are thought <b>likely</b> to impact on the quality or overall conclusions of the study.

Table A3

*Quality criteria framework applied to the review studies*

Quality criteria	Journal Article				
	Fonagy et al. (1991)	Meins et al. (2001)	Oppenheim et al. (2001)	Koren-Karie et al. (2002)	Bernier & Dozier (2003)
1. Rationale clearly described and research aims stated?	1	1	1	1	1
2. Ethical issues addressed?	0	0	0	0	0
3. Is the methodology appropriate to the research question?	1	1	1	1	1
4. Study design identified and the rationale for choice evident?	1	1	1	1	1
5. Hypotheses stated?	1	1	1	1	1
6. Key study variables identified?	1	1	1	1	1
7. Sample description	0	0	1	1	1
8. Sample size	1	-1	1	1	0
9. Sample representation	-1	0	-1	0	-1
10. Method of data collection is reliable and valid?	0	0	0	0	-1
11. Method of data analysis is reliable and valid?	1	1	1	1	1
12. Findings clearly stated?	1	1	1	1	1
13. Comprehensive discussion?	1	1	1	1	1
14. Strengths and limitations identified?	0	0	0	1	1
15. Justifiable conclusions made?	1	1	1	1	1
	9	8	10	12	9

Quality criteria	Journal Article					
	Lundy (2003)	Slade et al. (2005)	Arnott & Meins (2007)	Laranjo et al. (2008)	Demers et al. (2010)	Meins et al. (2011)
1. Rationale clearly described and research aims stated?	1	1	1	1	1	1
2. Ethical issues addressed?	0	0	0	0	0	1
3. Is the methodology appropriate to the research question?	1	1	1	1	1	1
4. Study design identified and the rationale for choice evident?	1	1	1	1	1	1
5. Hypotheses stated?	1	1	1	1	1	1
6. Key study variables identified?	1	1	1	1	1	1
7. Sample description	1	1	1	1	1	1
8. Sample size	-1	-1	-1	0	-1	1
9. Sample representation	0	0	0	0	1	0
10. Method of data collection is reliable and valid?	-1	0	-1	0	0	0
11. Method of data analysis is reliable and valid?	1	1	1	1	1	1
12. Findings clearly stated?	1	1	1	1	1	1
13. Comprehensive discussion?	1	1	1	1	1	1
14. Strengths and limitations identified?	0	1	1	1	1	1
15. Justifiable conclusions made?	1	1	1	1	1	1
	8	10	9	11	11	13

## **Appendix 2: Participant Information Sheet**

### **Caregiving In Dementia**

The following information describes a research study being carried out by the University of Birmingham. It contains everything you need to know in order to understand why the research is being carried out and what it will involve if you decide you would like to take part.

If there is anything you are unsure about, or if you feel you would like to ask more questions, please do not hesitate to contact a member of the research team. The details are provided on the accompanying covering letter.

#### **Why is this research being carried out?**

This research is about the experience of caring for a spouse or partner who has dementia. We are interested in gaining more understanding of this by looking at two specific areas and seeing if there are any links between them. The first area is how our early experiences of being cared for might affect the way we care for others later on in life. The second area is how you view your relationship since the diagnosis of dementia. We would like to understand if there are any links between the two areas.

The primary researcher for this project is Amy Elliott who is carrying out this research in part fulfilment of the Doctorate in Clinical Psychology (award) at Birmingham University.

#### **Why is this research important?**

We hope that the research will help us to understand more about being a carer and how this impacts on a couple's relationship. If we can understand whether these two areas influence each other, this might help to change the way support is offered in the future.

#### **What do I have to do?**

If you decide to take part in this research you will be asked to complete 3 questionnaires. This should take no longer than 30 minutes.

You may decide to fill in these questionnaires at a time when someone from the research team is nearby to answer any questions, or you may decide to take them away. It is entirely your decision. If you want to take them away, we will provide a pre paid self addressed envelope.

## **Do I have to take part?**

Taking part in this research project is voluntary. If you decide you would like to take part, you will be given a copy of this information sheet to keep and a consent form to sign. Once you have given your consent you are still free to withdraw this at any time up to 6 weeks afterwards and you do not need to give a reason. In this case your questionnaires would be removed from the study and destroyed. Any decision to withdraw will not affect your right to access services or the standard of care you receive. There is no direct benefit to be gained by taking part in this research.

## **Confidentiality**

All the information you provide will remain confidential. If you decide to take part in the study you will be given a participant number. This number will be written on the questionnaires and not your name, to make sure that you cannot be identified. The corresponding names and numbers will be held separately and securely away from any other research data. Only the research team will be able to access this information.

## **Further Support**

We understand that sometimes taking part in research might bring up difficult feelings. If after taking part you feel that you require further support, we would encourage you to contact your local branch of the Alzheimer's Society or PALS. The contact details are as follows:

Alzheimer's Society:

Tel:

Email:

PALS

Tel:

Email:

Alternatively you can contact your GP if you feel you require more immediate help.

## **Ethical Review**

This research has been approved by a National Health Service ethics committee.

**Contact Details:**

The main researcher for this project is Amy Elliott. The research is being supervised by Dr Jan Oyeboode and Dr Gerard Riley at the University of Birmingham.

For further information please contact Amy Elliott by email:

Or alternatively:      Amy Elliott c/o  
                                    Dr Jan Oyeboode  
                                    Address:  
                                    Tel:  
                                    Email:

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

## Appendix 3: Consent Form

### CONSENT FORM

**Title of the Research:** Caregiving in Dementia

**Name of Researcher:** Amy Elliott

Please initial the box

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information and ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my legal rights being affected.
3. I agree to take part in the above study.

Participants Name.....

Contact Address .....

.....

Telephone Number .....

Participants Signature.....

Date.....

If you would like to be sent an information sheet telling you about the findings of the research, please tick here.

## Appendix 5: Birmingham Relationship Continuity Measure (BRCM)

### Birmingham Relationship Continuity Measure – Questionnaire for Male Caregiver

#### Instructions

Please read the questions on the following pages carefully and then circle the response option on the right that best expresses your view (as shown below). If you change your mind about your answer, simply cross it out and circle the response that you feel best expresses your view. Please answer ALL questions as honestly as possible.

#### Examples

1	Caring for my partner can be difficult	Agree a lot	Agree a little	○ Neither	Disagree a little	Disagree a lot
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1	Caring for my partner can be difficult	Agree a lot	<del>Agree a little</del>	Neither	Disagree a little	○ Disagree a lot
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1	It's like there's a barrier between us now.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
2	We face our problems as a couple, working together.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
3	The dementia has brought us closer together emotionally.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
4	It makes me feel uncomfortable if she is affectionate towards me.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot

5	I care for her, but I don't love her the way I used to.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
6	We still do things together that we both enjoy.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
7	I feel like her carer now, not her husband (partner).	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
8	She's a shadow of her former self.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
9	I don't feel about her the way I used to.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
10	I only tell her what she needs to know.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
11	Despite all the changes, she's still her old self.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
12	The bond between us isn't what it used to be.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
13	I miss having someone to share my life with.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
14	Sometimes I feel it's like living with a stranger.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
15	I feel shut off from her.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
16	I feel I've been grieving for her.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
17	Despite all the changes, our relationship has remained much the same as it was.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot

18	Compared to how she used to be, she's a different person altogether now.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
19	I don't like it if she comes too close to me.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
20	I feel like I've lost the person I used to know.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
21	I don't feel I really know her anymore.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
22	The bond between us is as strong as ever.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
23	She still has many of the same qualities that first attracted me to her.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
24	She's in a world of her own most of the time.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
25	It doesn't feel like a partnership any more	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
26	Sometimes I feel she invades my personal space.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot

*Note.* Subsequent work on the BRCM measure has indicated that a 23-item questionnaire is preferable. Therefore all three questions (4, 19 & 26) relating to the category "Expression" were removed for the purposes of analysis.

## Birmingham Relationship Continuity Measure – Questionnaire for Female Caregiver

### Instructions

Please read the questions on the following pages carefully and then circle the response option on the right that best expresses your view (as shown below). If you change your mind about your answer, simply cross it out and circle the response that you feel best expresses your view. Please answer ALL questions as honestly as possible.

### Examples

1	Caring for my partner can be difficult	Agree a lot	Agree a little	<input checked="" type="radio"/> Neither	Disagree a little	Disagree a lot
---	--	-------------	----------------	--	-------------------	----------------

1	Caring for my partner can be difficult	Agree a lot	<del>Agree a little</del>	Neither	Disagree a little	<input checked="" type="radio"/> Disagree a lot
---	--	-------------	---------------------------	---------	-------------------	---

1	It's like there's a barrier between us now.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
2	We face our problems as a couple, working together.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
3	The dementia has brought us closer together emotionally.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
4	It makes me feel uncomfortable if he is affectionate towards me.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
5	I care for him, but I don't love him the way I used to.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
6	We still do things together that we both enjoy.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
7	I feel like his carer now, not his wife (partner).	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot

8	He's a shadow of his former self.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
9	I don't feel about him the way I used to.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
10	I only tell him what he needs to know.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
11	Despite all the changes, he's still his old self.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
12	The bond between us isn't what it used to be.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
13	I miss having someone to share my life with.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
14	Sometimes I feel it's like living with a stranger.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
15	I feel shut off from him.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
16	I feel I've been grieving for him.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
17	Despite all the changes, our relationship has remained much the same as it was.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
18	Compared to how he used to be, he's a different person altogether now.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
19	I don't like it if he comes too close to me.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
20	I feel like I've lost the person I used to know.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot

21	I don't feel I really know him anymore.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
22	The bond between us is as strong as ever.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
23	He still has many of the same qualities that first attracted me to him.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
24	He's in a world of his own most of the time.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
25	It doesn't feel like a partnership any more	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot
26	Sometimes I feel he invades my personal space.	Agree a lot	Agree a little	Neither	Disagree a little	Disagree a lot

*Note.* Subsequent work on the BRCM measure has indicated that a 23-item questionnaire is preferable. Therefore all three questions (4, 19 & 26) relating to the category “Expression” were removed for the purposes of analysis.

## Appendix 6: Background Information Questionnaire

Background Information Questionnaire
--------------------------------------

Please circle or write your response to these questions concerning background details:

The following questions are about you:			
1	What is your gender:	Male <input type="checkbox"/>	Female <input type="checkbox"/>
2	How old are you?	Years _____	
3	How long have you been together as a couple?	Years _____ Months _____	
4	How long has your partner had the diagnosis of dementia?	Years _____ Months _____	
5	If you know the type of dementia that was diagnosed, please tick the appropriate box	Alzheimer's disease <input type="checkbox"/> Vascular or multi-infarct dementia <input type="checkbox"/> Lewy Body <input type="checkbox"/> Fronto-temporal dementia <input type="checkbox"/> Other <input type="checkbox"/>	
6	Ethnicity: Please tick the appropriate box	White British <input type="checkbox"/> Asian <input type="checkbox"/> Black <input type="checkbox"/> Chinese <input type="checkbox"/> Mixed - White and Asian <input type="checkbox"/> Mixed - White and Black <input type="checkbox"/> Other mixed background <input type="checkbox"/> Any other ethnic background <input type="checkbox"/>	
7	Religion; Please tick the appropriate box	Christian <input type="checkbox"/> Jewish <input type="checkbox"/> Muslim <input type="checkbox"/> Buddhist <input type="checkbox"/> Sikh <input type="checkbox"/> Hindu <input type="checkbox"/> Other religion <input type="checkbox"/> No Religion <input type="checkbox"/>	
The following questions are about the support you may receive:			
8	Do you receive any support from family, friends or neighbours in looking after your partner?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
9	Do carers come in on a regular basis to help you in looking after your partner?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
10	Does your partner receive any respite care or a sitting service?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
11	Does your partner attend a day care service?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

The following questions are about your role as a carer:			
12	How long have you been caring for your spouse?	Years _____ Months _____	
13	Do you see your friends as often as you used to?	Yes	No
14	Are you able to take a break from caring for a few hours if you need to?	Yes	No
15	During the day, are you able to leave your partner unsupervised for half an hour or more while you get on with things in another part of the house?	Yes	No
16	Is your sleep often disturbed by your partner?	Yes	No
17	Does your partner sometimes become distressed and agitated?	Yes	No
18	Does your partner sometimes ask the same question over and over again?	Yes	No
19	Does your partner ever hit out at other people?	Yes	No
20	Does your partner ever do or say things in public that draw attention to himself/herself?	Yes	No
21	Is it sometimes difficult for you to persuade your partner to do things?	Yes	No
22	Do you have to assist your partner to get dressed?	Yes	No
23	Do you have to assist your partner to eat?	Yes	No
24	Do you have to assist your partner to use the toilet?	Yes	No

## Appendix 7: SPSS Output Tables

Descriptive statistics for the ASQ (3 & 5-factor) and BRCM including measure of skew and kurtosis.

Descriptives			Statistic	Std. Error
Relationships_as_Secundary	Mean		17.7258	.93551
	95% Confidence Interval for Mean	Lower Bound	15.8152	
		Upper Bound	19.6364	
	5% Trimmed Mean		17.8423	
	Median		18.0000	
	Variance		27.131	
	Std. Deviation		5.20871	
	Minimum		7.00	
	Maximum		26.00	
	Range		19.00	
	Interquartile Range		8.00	
	Skewness		-.420	.421
	Kurtosis		-.379	.821
	Need_for_Approval	Mean		19.6774
95% Confidence Interval for Mean		Lower Bound	17.6453	
		Upper Bound	21.7095	
5% Trimmed Mean			19.6219	
Median			19.0000	
Variance			30.692	
Std. Deviation			5.54008	
Minimum			11.00	
Maximum			29.00	
Range			18.00	
Interquartile Range			9.00	
Skewness			.141	.421
Kurtosis			-1.296	.821
Discomfort_with_Closeness		Mean		32.0968
	95% Confidence Interval for Mean	Lower Bound	30.0428	
		Upper Bound	34.1508	
	5% Trimmed Mean		32.4857	
	Median		34.0000	
	Variance		31.357	
	Std. Deviation		5.59973	
	Minimum		14.00	
	Maximum		40.00	
	Range		26.00	
	Interquartile Range		6.00	
	Skewness		-1.270	.421
	Kurtosis		2.356	.821
	Preoccupation_with_Relationships	Mean		24.8387
95% Confidence Interval for Mean		Lower Bound	22.7766	
		Upper Bound	26.9009	
5% Trimmed Mean			24.9677	
Median			25.0000	
Variance			31.606	
Std. Deviation			5.62196	
Minimum			13.00	
Maximum			34.00	
Range			21.00	
Interquartile Range			7.00	
Skewness			-.323	.421
Kurtosis			-.485	.821

Confidence	Mean		35.8710	.96803
	95% Confidence Interval for Mean	Lower Bound	33.8940	
		Upper Bound	37.8479	
	5% Trimmed Mean		35.7616	
	Median		35.0000	
	Variance		29.049	
	Std. Deviation		5.38976	
	Minimum		26.00	
	Maximum		47.00	
	Range		21.00	
	Interquartile Range		10.00	
	Skewness		.281	.421
	Kurtosis		-.747	.821
Avoidant	Mean		49.8226	1.55932
	95% Confidence Interval for Mean	Lower Bound	46.6380	
		Upper Bound	53.0071	
	5% Trimmed Mean		50.4749	
	Median		52.0000	
	Variance		75.376	
	Std. Deviation		8.68192	
	Minimum		23.00	
	Maximum		61.00	
	Range		38.00	
	Interquartile Range		12.00	
	Skewness		-1.264	.421
	Kurtosis		1.576	.821
Anxious	Mean		44.5161	1.52462
	95% Confidence Interval for Mean	Lower Bound	41.4024	
		Upper Bound	47.6298	
	5% Trimmed Mean		44.8118	
	Median		46.0000	
	Variance		72.058	
	Std. Deviation		8.48870	
	Minimum		25.00	
	Maximum		58.00	
	Range		33.00	
	Interquartile Range		12.00	
	Skewness		-.582	.421
	Kurtosis		-.187	.821
BRCMTotal	Mean		59.3871	4.53936
	95% Confidence Interval for Mean	Lower Bound	50.1165	
		Upper Bound	68.6577	
	5% Trimmed Mean		58.3351	
	Median		53.0000	
	Variance		638.778	
	Std. Deviation		25.27407	
	Minimum		27.00	
	Maximum		110.00	

Correlations between the ASQ (3 & 5-factor) and the BRCM total score.

		Correlations							
		Confidence	Relationships as Secondary	Discomfort with Closeness	Need_for Approval	Preoccupatio n_with Relationships	Avoidant	Anxious	BRCMTotal
Confidence	Pearson Correlation	1	-.155	-.377*	-.318	-.167	-.336	-.318	-.081
	Sig. (2-tailed)		.405	.036	.081	.370	.064	.081	.664
	N	31	31	31	31	31	31	31	31
Relationships_as_ Secondary	Pearson Correlation	-.155	1	.290	.254	.058	.787**	.204	.032
	Sig. (2-tailed)	.405		.114	.168	.756	.000	.270	.863
	N	31	31	31	31	31	31	31	31
Discomfort_with_ Closeness	Pearson Correlation	-.377*	.290	1	.261	.262	.819**	.344	-.055
	Sig. (2-tailed)	.036	.114		.156	.154	.000	.058	.767
	N	31	31	31	31	31	31	31	31
Need_for_Approval	Pearson Correlation	-.318	.254	.261	1	.157	.321	.756**	-.027
	Sig. (2-tailed)	.081	.168	.156		.400	.079	.000	.884
	N	31	31	31	31	31	31	31	31
Preoccupation_with_ Relationships	Pearson Correlation	-.167	.058	.262	.157	1	.204	.765**	-.219
	Sig. (2-tailed)	.370	.756	.154	.400		.271	.000	.236
	N	31	31	31	31	31	31	31	31
Avoidant	Pearson Correlation	-.336	.787**	.819**	.321	.204	1	.344	-.016
	Sig. (2-tailed)	.064	.000	.000	.079	.271		.058	.931
	N	31	31	31	31	31	31	31	31
Anxious	Pearson Correlation	-.318	.204	.344	.756**	.765**	.344	1	-.163
	Sig. (2-tailed)	.081	.270	.058	.000	.000	.058		.381
	N	31	31	31	31	31	31	31	31
BRCMTotal	Pearson Correlation	-.081	.032	-.055	-.027	-.219	-.016	-.163	1
	Sig. (2-tailed)	.664	.863	.767	.884	.236	.931	.381	
	N	31	31	31	31	31	31	31	31

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Regression of BRCM Total and Preoccupation with Relationships and Time Since Diagnosis

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.532 <sup>a</sup>	.284	.228	22.74003

a. Predictors: (Constant), Length\_of\_diagnosis\_yr, Preoccupation\_with\_Relationships

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	115.573	22.644		5.104	.000
	Preoccupation_with_Relationships	-1.615	.809	-.347	-1.996	.057
	Length_of_diagnosis_yr	-4.912	1.641	-.520	-2.992	.006

a. Dependent Variable: BRCMTotal