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ANALYZING REFLECTIVE FUNCTIONING AS A POTENTIAL
MEDIATOR IN THE RELATIONSHIP BETWEEN PARENT'S ATTACHMENT,
PAST TRAUMA, DEPRESSION, AND THEIR PARENTAL SENSITIVITY:
IMPLICATIONS FOR TREATMENT OF HIGH RISK DYADS

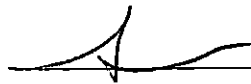
A Thesis
Presented to
the Faculty of the College of Science and Technology
Morehead State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Kayla M. Sizemore


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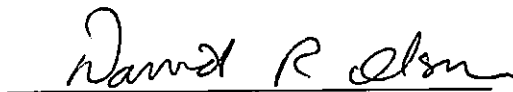
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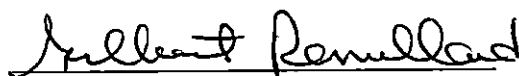


Director of Thesis

Master's Committee:



Chair



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Date


This research is dedicated to the parents and children who have participated in this study over the past eight years. The data used for this project was part of a larger study, the MSU Family Development Study, which is directed by the committee chair. This project would not have been possible without the constant support, guidance and encouragement that have been consistently provided to me over the past two years by my committee chair and research mentor Dr. Shari Kidwell. I would like to thank her for the long hours she has put into training me in clinical skills, research methods and professional writing. I would also like to thank Dr. Gilbert Remillard for his continued support, as well as his assistance with the statistical analyses utilized on various projects from this study. In addition, Dr. David Olson, as my clinical supervisor has been a constant source of encouragement and I would like to thank him for his continued support and interest in the aim of this study. Additionally, this research would not have been possible without the extensive efforts of several undergraduate and graduate research assistants who helped complete data collection, transcripts and coding over the past two years. I am particularly grateful for the efforts of Katelyn Fugate, Medina Jackson, Ashley Morriss, Leah Katz, Alice Nauman, and Tenecia Wellington.

In short, I would like to thank all of those mentioned above for their help and support with this project. I especially would like to thank my committee members for mentoring me and supporting my passion for this research. Their dedication to teaching and research has been an invaluable source of inspiration for this project and future work.

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Kayla M. Sizemore, M.S.

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This study sought to replicate and extend findings on the effect of attachment risk, trauma history and depression on sensitive care giving. The current study also investigated the mediational role of reflective functioning in these relationships. The current sample was part of a larger longitudinal study, and included data from three different time points for 21 families. Results of this investigation revealed that reflective functioning did not mediate the aforementioned relationships. Findings, however, did confirm that reflective functioning may play an important role in parent's ability to provide sensitive care giving. This finding is consistent with the current literature (Slade, 2005). Additionally, findings of this study support and validate the Dynamic Maturational Model of attachment and adaptation (Crittenden & Landini, 2011). Parent's attachment, examined for low vs. high risk attachment, was associated with depression scores averaged across the time period, as well as

childhood trauma ratings and scores for sensitivity measured via observations at Time 2. These findings have important implications for intervening with high risk families; however they also support the need for further research in delineating the relationship between reflective functioning and associated variables.

Accepted by:

 _____, Chair

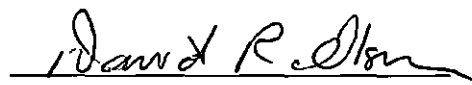




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Chapter 1

Introduction

In recent decades, advancement in the field of infant mental health has been remarkable. Early detection, prevention and the treatment of psychological disorders in early childhood has progressively become an area of concentration for both child clinical and developmental psychology. The importance of attachment security, parenting skills, parent's mental health, and the early environment are consistently found to be central influences on children's psychological development and resilience to disorder (Bowlby, 1973; Cicchetti & Toth, 1995). Clinicians have incorporated these important research findings into an assortment of interventions with parents and children at risk for psychopathology.

Intervening with traumatized or at risk children, however, becomes increasingly challenging when the primary caregiver has a mental disorder or is also a victim of trauma or child maltreatment. Parents suffering from psychological distress often misinterpret their children's behavior and motives, responding with either anger or rejection (Lieberman, 2007). A popular therapy metaphor known as "ghosts in the nursery" gives sound illustration to how painful events from the parent's past are reenacted in the relationship with their own children (Fraiberg, Adelson, & Shapiro, 1975). Explicitly, the metaphor pertains to how negative experiences from the caregiver's childhood are carried into the present. This becomes increasingly problematic when treating young children's mental health, as intervention also

requires adequate support, security and stability within the parent-child relationship.

Many interventions aiming to hold the child's mental health as the principal concern of treatment in these disrupted dyads often do so by targeting parenting skills (i.e. parental sensitivity), either via psychoeducation or directed play sessions. For example, a behavioral intervention that utilizes these strategies is Parent Child Interaction Therapy (PCIT; Eyeberg, Boggs & Algina, 1995). PCIT, is one of the most commonly used interventions for emotional and behavioral disorders in young children. As it was developed based on both attachment and social learning theory, the treatment emphasizes the importance of sensitive and responsive parenting, as well as contingent reinforcement. Though targeting sensitivity, PCIT is primarily a behavioral based intervention and is not the best representation of an attachment 'theory driven' treatment. Such treatments (e.g. Child Parent Psychotherapy) target internal constructs, such as mentalization and reflective functioning, rather than just overt parenting behavior.

With increased interest in applying attachment research to clinical practice, parental sensitivity has become a popular target in attachment based interventions, especially with high risk families. Sensitivity's known association with various important facets of the parent-child relationship, have made the two constructs inseparable. However, there is still an ongoing debate within the field about how much intervention is needed to enhance sensitivity, and at what intensity (i.e. short-term behavioral/psychoeducation vs. long-term attachment/ insight driven therapies).

Crittenden (2008) has suggested that selecting treatment plans for individual families may depend on a parent's ability to reflectively integrate her own varied mental states, as well as to balance these with those of her child. In her theory (which will be discussed later) she hypothesizes that some parents will benefit from short-term psychoeducational interventions, while others will not. One example of a parent who may benefit from this style of intervention is the parent who already has the capacity to hold their child's mental state in mind (reflective function), but has a limited range of responses. However, if the parent misperceives the child's behavior, more intensive treatment may be required to make significant progress. The current study examines reflective functioning, as a potential mediator in the relationships between the following variables among parents: attachment, trauma and depression, and parental sensitivity. (see hypothesized model in appendix A.)

Chapter 2

Literature Review

I. Sensitivity and significant associations

Parental sensitivity was first defined by Ainsworth, Blehar, Water & Walls (1978) as the degree to which the parent responds appropriately to the child's emotional needs. Furthermore, in attempting to understand this construct, they developed the original scale for sensitivity, intending to measure parent's accuracy of reading their infant's signals (Ainsworth et al., 1978). These ratings were made via behavioral observations of the dyad, in which raters coded patterns in parent's interactions with their child. They looked for demonstrations of sensitive responsiveness to such signals (i.e. accurate, attuned, prompt and consistent responding).

II. Attachment

A large body of research in this area reports parental sensitivity as one of the most robust influences on children's attachment to their parents (De Wolff & van Ijzendoorn, 1997). Attachment is the emotional bond between child and parent. It is thought to serve as a function of both adaptation and resiliency. If children's needs for safety and security are met, they can confidently investigate and learn from their environment (Bowlby, 1973). In the earliest empirical study of attachment research, Ainsworth and colleagues (1978) assessed sensitivity based on home observations of a relatively small sample of predominantly middle class parents and their infants. They subsequently identified three types of organized attachment patterns in infants

(avoidant -A, secure -B and resistant –C) based on what is now considered the “gold standard” measure of attachment for infants and young children, the Strange Situation. This procedure consists of a series of 3 minute separations and reunions thought to activate the child’s attachment system.

Subsequently, students of Ainsworth began to study attachment patterns in higher risk populations, including those referred by child protective services due to maltreatment (Crittenden, 1983). Such studies have found that the standard A,B,C model of classification did not fit high risk samples. It is notable that in addition to an inability to classify such samples, highly trained coders in the traditional model mistakenly classified maltreated and high risk children as secure-B (Main & Solomon, 1986, Shah, Fonagy, & Strathearn, 2010) Main and Solomon (1990) later identified a fourth category, known as disorganized-D attachment, classifying children who showed no organizational strategy or observable goal in the Strange Situation. Later, this classification was conceptualized as a “collapse of strategy; understood as the inability of the child to maintain an organized strategy for seeking proximity to the caregiver in stressful situations, owing to overwhelming fear” (Hesse & Main, 2000; Moss, et. al., 2011, pp.55).

A six year follow up study of the participants from the Ainsworth and colleagues original 1978 study of infant attachment was conducted in 1985 to assess the attachment of parents whose children were classified 6 years prior (Hesse, 2008). Parental attachment was assessed via the Adult Attachment Interview (AAI), which

was developed by Carol George. The AAI is a 1- 1 ½ hour semi structured interview that asks the individual to recollect early childhood memories and reflect on how these early experience have influenced their adult personality and life. The measure is viewed as extremely sensitive in eliciting an individual's underlying mental states about attachment. Additionally, the predictive validity of the Adult Attachment Interview has been established, and it is consistently deemed as the best (i.e., 'gold standard') assessment of adult attachment by parenting researchers (Fox, 1995).

Building on Ainsworth's original ABC model of attachment in infancy, Main and colleagues (1985) developed a coding system by which AAI data could be classified into three groups. Secure-autonomous, associated with infant Strange Situation security-type B, represented a group that was characterized by an adult that values attachments and draws on close relationships as key sources of support. Insecure-dismissing in adulthood, associated with attachment avoidance-type A in the Strange Situation, involves dismissing or devaluing of others and is often characterized by emotional detachment. Insecure-preoccupied in adulthood, associated with attachment resistance/ambivalence in the Strange Situation, can be described as having excessive concern with the unavailability or unpredictability of close relationships.

More recently a fourth type of adult attachment has emerged known as insecure/unresolved in adulthood, associated with disorganized attachment in the Strange Situation, and characterizing higher risk populations (Solomon and George, 2011.) This classification is often used when the individual is coded as unresolved in

regard to past trauma or loss and does not fit into any of the three aforementioned categories. Taken together, this traditional theory of attachment will be referred to as the ABC-D model. However, given the quantity and magnitude of risk associated with a lower income rural population, it was surmised that the traditional system of assessing attachment was not suitable to best differentiate the parents in the current sample. Thus, this study conceptualizes this construct using the Dynamic Maturational Model (DMM) of attachment and adaptation (Crittenden & Landini, 2011)

III. Dynamic Maturational Model of Attachment

The Dynamic Maturational Model looks at attachment behavior in a different context than the original model. For Main (1990) if child behavior is not proximity seeking, is frightened, or reflects a mixture of attachment strategies, it is disorganized. However, the DMM is formulated under the assumption that, in higher risk environments characterized by abuse, neglect, or marginal maltreatment (i.e. considerable parental insensitivity), attachment behavior may be organized around what will minimize physical and or psychological harm for the individual. In short, the two theories mean different things in regard to organization. In the DMM, attachment is all about adaptation and attachment behaviors are normally strategic. For Crittenden, organization is found wherever there is a concerted strategy of patterned behavior that is self protective for the individual.

In the DMM, attachment strategies are reorganized as the individual acquires new experiences or adapts to novel environments in the relational context. Additionally, the range of potential strategies increases with maturity, peaking in

adulthood. This model asserts that individuals with traumatic pasts often have extremely complex attachment strategies organized around danger and keeping the individual safe, consistent with theories in evolutionary psychology (Belsky, 2012). Additionally, where the original model would likely collectively categorize most of these individuals as disorganized, the DMM posits that the most endangered individuals may employ a combination of attachment behaviors (Purnell, 2010). This pattern of attachment will be further explored as the DMM is given more explanation.

Building upon Ainsworth's original three categories of attachment (ABC), the DMM states that these patterns become more complex with increased exposure to risk and danger. Crittenden (2011) conceptualizes each category as differing in styles of information processing, or how individuals derive self-relevant meanings. These are called dispositional representations in DMM theory, and at the most basic level, they represent the transformation of affective and cognitive information. (This concept is roughly equivalent to the non-DMM concept of internal working model.) Affective information pertains to where, in relation to one's self, risk or opportunity may be present. Cognitive information pertains to when, in the sequence of one's behavior, there might be danger (i.e. temporal ordering).

Generally, type A individuals rely on the predictive availability of cognitive information, while often ignoring or minimizing the importance or influence of affective information. Increasing experiences of risk and danger result in increasing distortions of cognition and affect, where the individual rejects affect more and more as this strategy becomes more complex. Two processes associated with the type A

strategy are: 1) the splitting of positive and negative features of self and others; and 2) the dismissing of one's own negative affect, while attending vigilantly to the attachment figure's negative affect. In the context of the individual's early environment, this was strategic in dealing with a consistently rejecting, withdrawn, or abusive parent. Crittenden (1988) described that maltreated children develop this pattern as a self-protective strategy, noting that as children age, rates of child abuse significantly decrease. (i.e. Type A children may learn to inhibit negative affect and rely on temporal contingencies so that they may successfully avoid danger.) Because danger or rejection was relatively predictable, the individual is able to organize a self-protective strategy using cognitive information to prevent further danger.

Unfortunately, since these individuals rely on the temporal ordering of events to predict danger, they often internally attribute what has happened to them, exonerating the parent from any responsibility or blame.

Conversely, type C individuals rely primarily on affective information (feelings), while dismissing cognitive information. Type C individuals often grow up in environments that are characterized by perceived or experienced threats to the individual in which the contingencies are inconsistent, unpredictable or unclear. Because the early environment of these individuals involved inconsistent availability of care and over- and/or under-protection from attachment figures, the individual cannot distinguish what caused certain events or what their own contributions were. Furthermore, these individuals learn that greater parental response is given to affective signals, propelling them to exaggerate and emphasize their own negative affect and

internal state, at the cost of dismissing the concerns of others. That is, for type C individuals, feelings have been more predictive of future danger and safety in the past than have temporal contingencies.

Type B individuals, are distinguished from the other two types by their ability to integrate both sources of predictive information (cognition and affect), ranging from a fully balanced strategy, to mild biases toward cognitive or affective tendencies in information processing. Type A and type C individuals generally *do not integrate* information from different memory systems. For example, in the case of type A individuals, this functions to prevent conscious acknowledgment of personal vulnerability or the caregiver's failure to protect or comfort the individual. The ability to integrate both sources of information yields access to more accurately predictive information. Fully integrated individuals are aware of their own and others' mental states. Furthermore, they are cognizant of their own use of attachment strategies, possessing a wide range of self protective behaviors (from Type A to Type C). This is thought to enhance their well-being, as they can apply strategies that would be most appropriate and successful in each situation. When the strategy has not been effective, they learn from this and make adjustments to future behavior. Overall, Type B's are generally able to understand themselves in a balanced, psychologically sound manner, including: when they engaged in a certain behavior, why they behaved as they did, and whether this may be in conflict with what others expected of them or with what they expected of themselves. These qualities that typify Type B's appear closely related to a concept that will be described subsequently, namely reflective functioning.

On the other hand, both Type A and C individuals are thought to have less flexibility in their repertoire because they generally *do not integrate* sources of cognitive and affective information. When type A individuals exclude information about their own feelings of fear or rejection, focusing instead on information about environmental conditions and contingencies, they only partly understand their past and how to keep themselves safe in the future. The self-protective function of this exclusion, however, is to prevent conscious acknowledgment of not only these self-relevant emotions, but also the caregiver's failure to provide protection or comfort. Type C individuals, in contrast, fail to learn about contingencies that can keep themselves safe and comforted, particularly omitting how their own interpersonal behavior contributed to such conditions in the past. What they understand is that they are unhappy or angry about the past and quite possibly the present, and that it must be someone else's fault. This certainly has self-protective value, but inability to understand logical, if-then thinking regarding their own and other's behavior will likely hamper Type C individual's ability to solve future problems and maintain mutually satisfying relationships. Crittenden describes Type A and C as psychological opposites, both with respect to self-protective strategy and integration difficulties (Crittenden, 2008).

Additionally, in the DMM individuals can combine strategies from any of the sub patterns. This is referred to as A/C, which often consists of the more distorted, least flexible patterns, i.e., A3-4 or higher and C3-4 or higher. Individuals using this

combination of patterns often display very sudden shifts in behavior. These individuals are considered especially high risk, and often have the most experience with danger in childhood. A/C is distinguished from type B individuals by their lack of integration of each type of information to come to conclusions of greater predictability and the appropriate assignment of responsibility to self or other. (See appendix B for DMM figure.1 and descriptions of DMM classifications).

The DMM makes its distinction from traditional attachment theory in its conceptualization of insecurity and security. Only the higher-numbered patterns (3 thru 8) and A/C are considered at increased risk. For Crittenden (2011) an individual may be type A 1/2, but come from a safe environment where cognitive processing is prioritized and emotions (affect) are placed aside. By traditional terms, this is an insecure strategy, but DMM theory suggests that this is a low risk, adaptable strategy. Only as one moves further down the 'wheel,' to increasing levels of cognitive and affective distortion, does insecurity become high risk and potentially dysfunctional. That is, as the numbering within each pattern becomes higher, the individual's thinking and affect become more distorted and they lose the ability to use information in a balanced and flexible way. While these attachment strategies were strategic in the context of their early environment, or that in which they were originally learned, they create rigidity and impede the individual from adapting to new situations.

IV. Transmission of Attachment

In working with parents and children, an area of primary concern is how attachment is "handed down" from parent to child. Van Ijzendoorn (1995, pp. 411) in

reviewing the literature states “sensitive responsiveness is definitely an important causal factor in attachment development.” While effect sizes are moderately strong for parental sensitivity predicting children’s attachment, the findings are not as supportive for the intergenerational transmission of attachment. A meta-analysis examining this transmission, among research using the non-DMM, ABC-D model, found that sensitivity predicted a small amount of the variance between parent and child attachment (van IJzendoorn, 1995). These findings would suggest that sensitive responsiveness is not sufficient to fully explain the consistency of attachment patterns from parent to child (i.e., the transmission gap). It may be that a more complex process underlies the “transmission” of attachment from parent to child. Clinically-informed research has focused particularly on cognitive, reflective processes in trying to address this “gap.”

Several other correlates, in addition to parental attachment, have been associated with this the ability to interact sensitively with one’s child. Predictors of relevance to this study are past trauma and parental depression, as well as reflective functioning (alluded to above). Outlined below are the most significant associations discussed in the current literature.

V. Parental Trauma History

“Trauma can be defined as the impact of acute physical or psychological stressors that overwhelm an individuals’ ability to cope, such experiences include (but are not limited to) the threat of physical injury, psychological integrity or death of

another person” (Lieberman, 2007, pp. 25). On a general level, parents who report a history of trauma (i.e., neglect, physical or sexual abuse) from childhood often report significant impairments in emotional, behavioral and social skills. Additionally, the experience of chronic trauma in childhood is known to have lasting effects on the integration of memories, as well as emotional and physical experiences (Herman, 1992). These integrative, reflective abilities are thought to be highly important to a parent’s ability to provide sensitive caregiving (Koren-Karie et. al., 2004). Thus, a deficit in the parent’s integrative ability is likely to result in significant problems in the role of caregiver and within the parent child relationship.

The clinical implications of acknowledging and resolving past trauma are also significant in this line of work. Lack of mothers’ resolution of past trauma and loss, seen in the AAI, has been shown to be strongly related to their infant attachment disorganization, (i.e. the highest risk attachment pattern in the traditional, non-DMM) model (Bush & Lieberman, 2011). Considering the strength of this association, resolution of trauma has become a greater focus in some attachment-based interventions parenting interventions, such as Child Parent Psychotherapy (CPP: Lieberman, 2004). Supporting research looking at the co-construction of ‘autobiographical emotional events’ has demonstrated that mothers who were more resolved regarding their childhood trauma were not only more sensitive in guiding emotional dialogue with their children, but their children were also more cooperative and constructed more coherent narratives (Koren-Karie et. al., 2008). Not only do these findings exemplify the importance of resolution of trauma for parental

sensitivity, but also its implications for child outcomes.

Research on mothers who have failed to resolve their past trauma indicate patterns of frightened and frightening interactions with their children (Schuengel, et.al., 1999). Lyons-Ruth and colleagues conceptualize such parenting as ‘hostile and helpless’ (Lyons-Ruth, Bronfman & Atwood, 1999). Such parents have considerable difficulties in responding to their children’s needs for comfort and protection, as acknowledging such needs evokes painful memories related to past trauma (i.e. ghosts in the nursery). For this reason, past childhood trauma and lack of resolution creates a significant risk for the intergenerational continuity of child maltreatment and insecure attachment.

VI. Parental Depression

The adverse effects of maternal depression on child outcomes are well documented in the developmental literature. Not only are children of depressed mothers at a much higher risk for developing insecure attachment (Coyl, et al., 2002), they are also at a greater risk for developing internalizing and externalizing problems (Silk et al., 2006). Gravener and colleagues (2012) found that high rates of parent’s criticism, seen in the five minute speech sample (FMSS; Magana et al., 1986) mediated the relationship between maternal depression and child socio-emotional functioning and attachment. These findings provide further validation for the importance of sensitive responding, in that it is unlikely that critical parents would provide sensitive caregiving.

Depression has consistently been found to be negatively correlated with parental sensitivity (Lyons-Ruth, Lubchik, Wolfe, & Bronfman, 2002; see Martins & Gaffan, 2000, for a meta-analysis). In a longitudinal study of 1,215 mothers and their infants, women with chronic depression were significantly less sensitive in interactive play sessions with their child; moreover differences in parental sensitivity moderated the effect of maternal depression on child outcomes (NIHD Early Child Care research Network, 1999). There is, however, little research on how maternal depression influences the thought processes that may underlie the relationship between depression and maternal sensitivity. Past research (Cicchetti, Toth & Rogosh, 1999) has suggested that maternal depression has a negative impact on attachment-related internal working models, which may in turn impact sensitivity.

As described above, although sensitivity is undoubtedly a central aspect of the “handing down” of attachment from parent to child, less than 20 percent of the variability between parent and child attachment is accounted for by sensitivity (van Ijzendoorn, 1995). This inability of attachment research and theory to fully explain the intergenerational transmission of attachment became thereafter known as the “transmission gap.” More recently attachment researchers with a psychoanalytic background have tried to bridge this gap, explaining a somewhat larger amount of the variability in the ‘passing down of attachment’ via the parent’s capacity for reflective function (Slade, et. al., 2005).

VII. Reflective Functioning

Fonagy (1998) defines this concept in his Reflective Functioning Manual as,

“the mental function which organizes the experience of one’s own and others’ behavior in terms of mental state constructs. RF concerns knowledge of the nature of experiences which give rise to certain beliefs and emotions, of emotions and beliefs consequent upon particular experiences, of likely behaviors given knowledge of beliefs and desires, of the expectable transactional relationships between beliefs and emotions, and of feelings and beliefs characteristic of particular developmental phases or relationships (pp. 5).”

In short, RF refers to a parent’s capacity to reflect upon his/her own mental state, as well as that of their child, and to understand behavior in light of these underlying states and intentions (Slade, 2005). Everyone is born with the ability to develop the capacity for reflective function. However, it is early relationships that create the opportunity for children to learn about mental states and to determine how the social environment can be processed (Fonagy et al., 2002). A parent’s ability to keep in mind a representation of his/her child as having unique feelings and desires allows that child to discover their own internal experience via their parent’s representation of it. Slade (2005) suggests that it is the parent’s observations of continual changes in the child’s mental state, and their representation of these, that is “the heart of sensitive caregiving” (pp. 3).

The developmental trajectory of reflective functioning is a process that is still not fully understood. Fonagy and his colleagues (2002) have hypothesized a model for the provisional roots of reflective functioning, stating that it first begins with the

security of the attachment figure. He states that this will result in increased synchrony between the infant and caregiver, because the secure parent will give more contingent, sensitive responses. Fonagy (2002) hypothesizes, that under such conditions an infant is able to generate a second order representation of the self, coming to understand their own feelings and thoughts as they are reflected from the caregiver. Again the parent's ability to reflect the child's underlying mental states in the context of their behavior is essential for their own development of reflective functioning.

In contrast, deficits in parent's reflective functioning abilities are likely to be associated with maladaptive communication patterns that are characteristic of insecure dyads. Specifically, parents with low reflective capacities often misinterpret their children's signals, responding with hostility, rejection, overprotection or withdrawal. For the child, being misunderstood is aversive as these frightening parenting behaviors evoke powerful emotions in the child as well that are incomprehensible to both members of the dyad [See Appendix F for a Fonagy's (1998) model for the 'vicious cycle of parent-child interactions' that take place in the context of poor reflective functioning.] This cycle received some support by research described above, on the co-construction of children's autobiographical emotional memories in the context of unresolved parental trauma (Koren-Korie, et al., 2008).

However, decreased reflective capacities have been suggested to serve a range of self-protective functions for the individual who has experienced trauma (Fonagy, Gergely, Jurist, & Target, 2002). Fonagy and colleagues have demonstrated an

inverse relationship between interpersonal trauma and reflective functioning (1991a). It is thought that in the context of maltreatment, lower levels of reflective functioning may be adaptive; that is they protect the individual from emotional pain by not contemplating the abuser's motives or re-experiencing the event (Fonagy & Target, 1997). Additionally, since mentalization arises via the child having their mental state reflected accurately by their parent, individuals with trauma histories have been found to be impaired in their reflective capacities (Fonagy & Target, 1997). This is problematic, as it has also been demonstrated that reflective functioning generally remains stable over time (Steele & Steele, 2008).

Reflective functioning can be coded from the AAI in accordance to the rating guidelines outlined by Fonagy (1998). (See Appendix E for this rating procedure.) This is currently one of the most validated measure of RF in the field. [Slade's and colleagues (2002) procedure to code Aber's Parent Development Interview (1985) is also representational, with higher scores suggestive of greater reflective integration. There is much less focus on the parent's history; rather the emphasis is on the individual as a parent.] Reflective functioning coded from AAI's with Fonagy's method has been associated with both parent and child's attachment (Arnott & Meins, 2007; Fonagy et al., 1991b; Toth et al., 2008).

A particularly relevant set of findings for the current study indicate that in the context of a difficult childhood, parent's reflective functioning is quite important. Such findings indicate : 1) Higher RF is predictive of children's development of

secure attachments with mothers, specifically in cases where the mothers independently reported significant deprivation in childhood (Fonagy et al., 1994); and 2) In comparing mothers with significant deprivation vs. those without, 79% of the non-deprived mothers with high RF (> 5) had secure infants, relative to 42% for those who had low RF (< 5). In the deprived group, 100% of those with high RF had secure infants, compared to only 6% of those who had low RF. These results show that RF is particularly important in the transmission of attachment security between parent and child, especially where the mother has suffered significant deprivation in childhood (Fonagy, Steele & Steele, 1991a).

Reflective functioning abilities have also been hypothesized by Toth and colleagues (2008) to be impaired in the context of maternal depression. In such studies, however, RF has been a target of CPP attachment-based interventions for parenting in high risk dyads. Toth and colleagues (2008) failed to find a relationship between reflective functioning and depression with this population, when comparing a group of depressed mothers with normal controls and non-depressed mothers receiving the same CPP treatment. However they do find that the depressed group shows the most significant change, or improvements, in reflective functioning in response to treatment. Though theoretically it is still presumed that depression should hamper reflective capacities, it is also notable that other studies have failed to find a relationship between reflective functioning and depression as well. This has occurred in both in samples of depressed mothers receiving CPP (Vrieze, 2006) and in a

longitudinal study of mothers with a history of childhood trauma who had recently had a baby (Wong, 2012).

Additionally, given that Slade's (2005) assertion that reflective functioning is a core aspect of sensitivity, it is surprising how few empirical studies seem to have examined their connection. Grienenberger, Kelly & Slade (2005) found RF to be associated with parent-child affective communication in the Strange Situation procedure and Wong (2012) found RF to be related to sensitivity in free play interactions. Both utilized Slade's measure of Parent Development Interview procedure (2005) to assess RF. Arnott and Meins (2007) examined reflective functioning using the AAI and Fonagy's method (1998), finding RF positively associated to parental comments made during play interactions that demonstrated accurate understanding of their children's mental states. Thus, there is presently only limited empirical support for the RF-sensitivity association.

VIII. Gaps in the Current Literature

In addition to the limitations described above in the reflective functioning literature, thus far support for RF as an additional mechanism explaining the "transmission" of attachment from parent to child is modest. Slade and colleagues (2005) found their version of RF was associated with children's attachment, and that this relationship was mediated by sensitivity in affective communication. Fonagy (1991b) found that parental RF coded from the AAI was associated with both parent and child attachment, additionally finding that the AAI coherence scale no longer

predicted children's attachment when parent's RF scores were entered into the regression analysis. When researchers have tried to replicate and extend these results, they have been hampered by small sample sizes and sometimes by modest relationships between parent and child attachment (Arnott & Meins, 2007). In clinical intervention studies, changes in parental RF have also failed to mediate changes in child attachment from pre- to post (Toth et al, 2008; Vrieze, 2006). Intervention studies have also had similar problems with lack of statistical power. Therefore, researchers commonly describe their results in alternative, supplemental ways, which generally do sound promising. However, interventions such as CPP target RF because of its theoretical importance and the direct relation it has been shown to have with parent and child attachment. Thus, further investigation into the potential mechanisms through which RF may have its influence is warranted.

None of the above studies utilized the DMM method for classifying either parent or child attachment; yet several studies have shown the DMM has greater ability to differentiate risk status than the ABC-D traditional model. Particularly relevant for the current study, a handful of studies have used the DMM model to test the intergenerational transmission of attachment. Shah, Fonagy, & Strathearn (2010), in a comparison of the two models, suggest that it may be time to abandon the idea of continuity of attachment among higher risk populations, and reframe the idea of intergenerational transmission to fit the DMM's premise of adaptation. In other words, another limitation of aforementioned ABC-D studies may be the strong emphasis on

continuity, rather than the search for predictable deviations from just that. These ideas are supported by a trend of discontinuity or ‘inversion’ seen among insecure attachment patterns (Shah et al, 2010; Hautamki et al, 2010), suggesting a more complex process for insecure dyads. For example, Crittenden (2011) would predict in many cases that an insecure, high risk mother with a Type A attachment pattern may raise a child that ends up developing a Type C pattern of attachment pattern. The current study utilizes the DMM coding system to test part of this model (see appendix A for hypothesized model), and further validate existing research findings in DMM literature.

Two additional recent findings validate the DMM in the context of risks for parenting difficulties. In the sample described above by Shah and colleagues, parents’ indicators of resolution of trauma within the AAI (i.e., enhanced RF, high levels of coherence, balanced perspective) were associated with their children’s attachment strategy. Very few parents receiving an unresolved trauma modifier had B children. However, examination of the AAI’s of the subsample of parents with B children revealed that all were reorganizing their self-protective strategy towards earned B (Iyengar, Martinez, Kim, Fonagy, & Strathearn, 2012). A longitudinal study of females with substantiated childhood sexual abuse demonstrated that, when they became parents, their children were highly unlikely to develop secure attachments. Rather their attachments were almost entirely high risk (A3/4 and above, C3/4 and above, or A/C) (Kwako, Noll, Putnam, & Trickett, 2010). Unfortunately this

sample did not include AAI's on these mothers, so psychological resolution of trauma could not be determined. Individuals with earned B status and resolution of trauma are thought to have particularly high levels of reflective integration, as they have "worked through" the trauma. Increasing RF for parents with difficult histories is an explicit goal of Child Parent Psychotherapy. This is thought to be essential to have a balanced understanding of the self and one's children, as well as to engage in sensitive behavior.

It is noteworthy that the current study utilizes the DMM version of the AAI (DMM-AAI: Crittenden & Landini, 2011) as a key measure, which may have greater ability to assess trauma and its psychological resolution. This extended version of the AAI includes more questions about trauma, and assesses a broader array of potential adverse events and their lasting effects on the individual. This makes the current study unique relative to others in the field. Classifications in the traditional version of the AAI were expanded subsequently to include trauma; however, these have not been fully validated or tested (Hesse, 2008). In contrast, the DMM version of the AAI was developed in concert with clinicians experienced in trauma's effects and was informed by both developmental and information processing theories. It greatly expands inquiry about traumatic experience within the interview itself, as well as in coding options for types of responses to trauma. This suggests the DMM-AAI may have greater clinical validity and utility. Indeed, this interview has been shown to have high sensitivity to differences between clinical and non-clinical populations (Crittenden & Landini, 2011.)

Furthermore, Crittenden's model is seen as an effective aide to intervene with the highest risk families. It is useful in selecting treatments that are the best fit for each individual family's needs. Crittenden (2008) outlines how individuals and families using A vs. C attachment strategies may benefit from tailoring treatment goals and methods. Hautamaki and colleagues (2010) describe the importance of preventing the "inversion" of A parents having C children and vice versa. It is suggested that such insecure parents do not yet have true reflective integration, yet highly desire a different relationship with their own children. Without higher levels of RF they cannot likely engage in attuned, sensitive behaviors with their children. Crittenden (2008) describes this type of pattern as "pendulum parenting," wherein the parent behaves the opposite of their parents in some fashion but has failed to find the "happy medium." However, to date there is no published intervention study using CPP within a DMM framework. Thus, the current study may be informative for future intervention work.

IX. Translating Theory to Practice

As discussed earlier, many dysregulated dyads can improve in their relationship with the aid of psychoeducational styles of intervention, but this is not always the case. Sometimes, a parent's reflective capacities are too limited to engage in such collaboration. It is in these cases that a more intensive form of intervention should be proposed. Child Parent Psychotherapy (CPP) is a relationship-based approach for enhancing early attachments in infants and young children, by targeting

reflective functioning skills in parents. While many interventions aim to improve early parent child relationships, it is suggested that high risk populations (i.e. families effected by trauma, loss, etc.) need special and specific interventions such as CPP. This approach was primarily developed for high-risk and traumatized dyads, and was first created for use in homes dealing with domestic violence (Lieberman, 2004). Improvements in attachment, mental health, cognitive functioning and behavioral problems have been consistently found to be a product of CPP. A growing body of outcome studies has documented the efficacy of this approach.

In a randomized preventative trial examining attachment security as an outcome of CPP in toddlers of depressed mothers, researchers found significant improvements in attachment security post-intervention 36 months later, while control groups remained stable in their attachment insecurity (Toth, Rogosch, Manly, & Cicchetti, 2006). Similar findings have been found for anxiously attached Latino toddlers (Lieberman, Weston, & Pawl, 1991), and preschoolers living in the context of domestic violence (Lieberman, GhoshIppen, & Van Horn, 2006). Child Parent Psychotherapy has also been found to be effective in improving symptoms of PTSD, depression and anxiety in both mothers and children who have experienced domestic violence (Lieberman, GhoshIppen, & Van Horn, 2006)

Compared to other intervention programs CPP has been found to be significantly more effective than standard psychoeducation home visitation programs in altering the representational models of maltreated preschoolers (Toth, et. al., 2002). Additionally, when compared to the community standard of treatment, CPP was found

to have a significantly greater effect on fostering secure attachment in maltreating families during infancy (Cicchetti, Rogosch, & Toth, 2006).

A more recent intervention study with CPP examines child and adult attachment with the level of the parent's reflective functioning in a sample of depressed mothers (Toth, Rogosch & Cicchetti, 2008). Toth and colleagues (2008) infer that the weak link between parent attachment, sensitivity, and child attachment may be suggestive of another possible mechanism- RF- accounting for the intergenerational transmission of attachment. In this study RF was measured, along with adult attachment, via the AAI. Child attachment was measured via the Strange Situation. Each were assessed prior to and after completion of treatment. Findings of this study evidenced the hypothesis that maternal reflective functioning served as a mediator of attachment outcomes.

X. The Current Study

In aiming to provide further validation for intensive attachment based interventions, such as CPP, the current study examines whether parents' reflective capacities mediate the relationship between various known predictors of parental sensitivity. CPP targets reflective functioning as a primary factor to be changed in treatment, thus empirical support for its meditational effects in the relationship between risk variables and sensitivity are needed. In light of the aforementioned treatment outcomes and literature discussed throughout this chapter, the following hypotheses are expected to be supported. Specifically; the current study seeks to:

1) Validate the DMM model of attachment by replicating findings from studies that use the traditional ABC-D model of attachment, including demonstrating associations between parental attachment and the variables of trauma, depression, sensitivity and reflective functioning. Based on previous research, it is predicted that:

- a. High risk parental attachment will be associated with increased trauma history.
- b. High risk parental attachment will be associated with increased depression scores.
- c. High risk parental attachment will be associated with decreased parental sensitivity.
- d. High risk parental attachment will be associated with decreased reflective functioning.

2) Replicate findings from other studies with regard to the relationship between sensitivity and the variables of trauma and depression. Based on previous research, it is predicted that:

- a. Lower levels of sensitivity among parents will be associated with increased trauma history.
- b. Lower levels of sensitivity among parents will be associated with increased levels of depression.

3) Understand the relationship between reflective functioning, depression, sensitivity and trauma history. Based on previous research, it is predicted that:

- a. Higher levels of reflective functioning among parents will be associated with increased parental sensitivity.
 - b. Higher levels of reflective functioning among parents will be associated with decreased trauma history.
 - c. Little research in the field has examined the relationship between depression and reflective functioning. The few findings that have been reported in recent literature have been inconsistent. Here it is predicted that higher levels of reflective functioning among parents will be associated with decreased depression scores.
- 4) Determine if reflective functioning mediates the relationship between sensitivity and the variables of parent's trauma, depression and attachment. Previous literature and theory has drawn links between sensitivity and all other variables in the current study. Research regarding the relationship between reflective functioning, trauma, and depression however is lacking. Based on theoretical assumptions and the current literature, it is predicted that:
- a. Parent's reflective functioning will mediate the relationship between trauma and parental sensitivity.
 - b. Parent's reflective functioning will mediate the relationship between depression and sensitivity.
 - c. Parent's reflective functioning will mediate the relationship between their attachment and sensitivity.

Chapter 3

Method

I. Study Design:

This was a longitudinal design with three visits over approximately 8 years.

This data was collected as part of a larger study.

Time One:

Upon arrival, participants were asked to complete an informed consent form. Parents and children were escorted into separate, private rooms where parents were then given a brief questionnaire consisting of questions regarding demographic information, along with the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). Participants completed a variety of assessments that were not utilized in this particular study, lasting approximately 2 hours. Parents were given \$50 for their participation.

Time two:

Participants completed an informed consent form. Parents were given instructions for the Reminiscing Task and were escorted into the room where their child was playing with the child interviewer. Subsequently, parents were escorted into a private room where they were then given a demographic questionnaire and the

Center for Epidemiologic Studies Depression Scale, among other measures. Upon overall completion, participants were awarded \$50 for their participation.

Time three:

Upon arrival, participants were asked to complete an informed consent form and a brief questionnaire consisting of questions regarding demographic information. Parents were then escorted to a private room where a trained Masters level graduate student researcher performed the DMM-Adult Attachment Interview. Parents were subsequently given the Center for Epidemiologic Studies Depression Scale, among other measures not included in this study. Interviews were audio recorded and verbatim responses were later transcribed for coding. Upon overall completion, participants were given a monetary reward of \$75 for their participation in the 2.5-3 hour visit.

II. Study Setting and Participants:

Families were originally recruited through community announcements and local preschools. Participants were given monetary compensation for their participation after all visits. All parents participating in the study were primary caregivers and the vast majority were mothers. Families were of primarily low to moderate income, and 42% had some college-level education. Children averaged 4 years at time one, 6 years at time two and 12 years of age during the third phase of data collection. Approximately fifty percent of the children were female. The families who have participated in this study lived in rural Kentucky and were mostly

Caucasian. All phases of this project were approved by the Institutional Review Board.

Twenty one families had complete data for all variables measured at time three. Thirty families had complete data for variables measured at time two. Analyses looking at parental sensitivity (time two) with time three data utilized 16 subjects.

III. Assessments:

Demographic Information.

A questionnaire created for use in the present study was administered. This assessed the participant's gender, age, race/ethnicity, gender, marital status, educational level, family constellation, income, etc.

Center for Epidemiologic Studies Depression Scale (CES-D).

Parental depressive symptoms were measured with the Center for Epidemiologic Studies Depression Scale (Radloff, 1977.) over three time points. The CES-D is a 20-item self-report scale used to assess the presence of depressive symptoms within the past week. e.g., *Please tell me how often you felt this way in the past week:* I had crying spells; I felt hopeless about the future. For each item, respondents endorse one of four possible selections ranging from 1-*Rarely or none of the time* to 4- *Pretty much all of the time* regarding the occurrence of a depressive symptom. Each item is scored 1, 2, 3 or 4 with reverse scoring performed on some

items. Overall scores on the scale range from 0 to 60, with a higher score indicating the occurrence of more depressive symptomology. A clinical cutoff of above 16 was developed by Radloff (1977). Reviews of this widely-used measure (e.g., Block, & Gjerde, 1990) suggest that this cut-off has good sensitivity and specificity. Roughly 85 percent of respondents scoring above 16 would likely meet criteria for Major Depressive Disorder. Under-reporting may be a bigger issue than over-reporting. Internal consistency reliability is typically quite good, as it was for our sample (average alpha T1 thru T3=.93). Data collected from each time point was summed and averaged to create a total score of depression over the 8 year span, to create a general sense of risk for depression over time. CES-D data from all time points was found to be highly correlated, bivariate statistics for this data can be found in Table 1. Test-retest reliability, validity, and internal consistency of the CES-D have been found to be acceptable (Radloff, 1977). See Appendix C for full version of the CES-D.

Reminiscing Task.

Parental sensitivity was coded from behavioral observations of the Reminiscing Task, which was similar to that of Laible & Thompson (2000). During this task parents were given instructions to think about two instances in the past week regarding their child's behavior: one instance in which their child misbehaved and one instance in which their child behaved well. Participants were then instructed to talk about each event with their child for 5 minutes. After 5 minutes had passed, the

researcher signaled the parent to move on to the opposite behavior (i.e. 'good' or 'bad') with a light knock on the door. Parents were not given any specific instruction as to which behavior to discuss first, but were simply encouraged to have their child remember each event as naturally as possible. Parent-child discussions were filmed via a two way mirror.

Emotional Availability Scale. Parent behavior from the Reminiscing Task was coded using the Parental Sensitivity rating scales from the Emotional Availability Scales, 3rd edition (Biringen, Robinson, & Emde, 2000). The Emotional Availability Scale is a widely used and validated scale, expanded from Ainsworth et. al (1978) original assessment of maternal sensitivity/insensitivity. Sensitivity was measured on a 9pt scale. Parents who received a 9 (Highly Sensitive) talked with their child about emotions, and displayed genuine and consistent interest in their interactions. Parents who received a 5 (Inconsistently Sensitive) showed significant inconsistency in their affect and behavior during interactions with their children. Parents who received a 1 (Highly Insensitive) made no attempt to understand their child from emotional standpoint. Coding was completed by the author and another trained research assistant. Inter-rater reliability for exact numerical agreement was above 85 %.

Adult Attachment Interview.

Parent's attachment, reflective functioning and trauma were coded from the modified AAI (DMM-AAI, Crittenden & Landini, 2011). The AAI is a one hour, semi structured interview in which parents were asked to discuss early childhood

experiences and how those experiences have influenced their adult personality. Individuals are asked to think of five adjectives to describe their relationship with each parent/caregiver. Additionally they are asked to recall specific memories that illustrate their choice of adjective. Furthermore, questions throughout the interview probe the memory systems described in Crittenden's theory (i.e., procedural, semantic, episodic, and imaged). Questions explore participant's memories of separation, loss, and trauma. Questions are also included in the interview to assess the participant's level of reflective integration, (reflective functioning). Interviews were recorded and transcribed verbatim for coding purposes.

DMM Attachment Coding.

Attachment was classified from the AAI using the manual for Dynamic Maturational Model coding (Crittenden & Landini, 2011). Transcripts were rated by the author and a graduate student, both trained by the committee chair who has received extensive training in AAI coding by Crittenden. All ratings of attachment for this study were completed blindly. Five of the study's 21 AAI's were coded independently by the two raters, who achieved 100% agreement for classification of A, B, or C and of high vs. low-risk within A and C.

This coding system classifies individuals into A, B, and C. B represents security in the DMM model where, affect and cognition are fully integrated. A and C represent classifications of attachment insecurity; where the highest risk individuals rely on attachment strategies characterized by increasing levels of distortions in

cognition and affect. Individuals at the highest risk for psychopathology often employ a combination from type A and C strategies. In addition to the three main classifications, modifiers are sometimes given. Such modifiers include Utr (unresolved trauma) and Uls (unresolved loss).

Coding is accomplished using discourse analysis as specified by Crittenden and Landini (2011). Attachment is not classified based on reported childhood memories or life events, but rather by how the individual processes and evaluates these experiences and their effects. Furthermore, a DMM approach to coding involves assessing discourse markers rather than interpreting the history or content of the speaker's story. For example while a speaker's content may suggest that they are a type A (e.g., that they were a good child who had parents who were unavailable), discourse markers consistent with this strategy need to be present throughout the AAI to confirm this classification. (See Appendix B for descriptions of each classification).

For the purposes of this research, attachment classifications were dichotomized into high risk and low risk attachment classifications. High risk attachment status was comprised of participants who fell at or below an A3/4 or C3/4 classification in the Dynamic Maturational Model. Low risk attachment status was comprised of participants who were classified as B1-5, A1-2, and C1-2. This approach was taken to increase power given the small sample size.

Trauma Coding.

Trauma was coded using the Traumatic Antecedents Interview (TAI) Scale, to rate responses to the abuse, loss and neglect questions from the AAI. Here the TAI coding system (Herman, Perry, & Van der Kolk, 1989) will be utilized to measure gross trauma. Originally the TAI (Herman et al., 1989) was a semi-structured interview comprising 100 items, used to elicit recollections of childhood trauma. Fisher (2000) lays out a method for adapting this coding system for use in the AAI. In addition to directly inquiring about abuse and neglect, such questions involve the participant's experience with major illness, separations from caretakers, family discipline, and conflict resolution. (See Appendix D for questions coded from the AAI).

Undergraduate research assistants were trained in this coding system to assess 10 different areas, considered gross traumas. These include physical abuse, sexual abuse, physical neglect, witnessing violence, emotional neglect, losses, significant separations, verbal abuse, domestic chaos, and parental discord.

Physical and sexual abuse, witnessing violence, significant separations, losses, and verbal abuse are each given scores from 0 to n , with n being the number of perpetrators (or significant separations or losses) in each variable. Physical and emotional neglect, domestic chaos and parental discord are given scores of 0 (absence) or 1 (presence) for each variable. Specific predefined criteria are provided for the

variables in the instrument's rating manual (Perry & Herman, 1992). This manual also contains examples of scored vignettes to which the rater can refer when scoring.

Five AAI's were coded independently by the two raters, with 100% agreement on the trauma-specific scores given. Both coders were blind to other variables.

Reflective Functioning.

RF was coded using the *Reflective-Functioning Manual (Version 5) for Application to the Adult Attachment Interviews* (Fonagy et al., 1998). The RF scale assesses the clarity and complexity of the interviewee's representation of mental states in the self and others. Coders mark the presence or absence of a reflective stance in relation to the self or others, and then use the descriptions of differing types of reflective statements as outlined in Fonagy's manual (1998) to score the participant's response on a scale from -1 to 9. Each of ten questions that particularly press for reflective integration are rated. A judgment is then made as to which level of RF best describes the AAI in full, again based upon guidelines and models in the manual. (See examples from our study below and further information in Appendix E.)

Undergraduate research assistants were trained in this coding method and given verbatim AAI transcripts from which to code RF. Five AAI's were coded independently by the two raters, who achieved 100% agreement on the exact number on the 10-point scale that best characterized the level of RF evident in each AAI. Coders were blind to other information about the parent and child.

A rating of negative one is indicative of “negative RF,” either characterized by a rejection of RF or un-integrated, bizarre or inappropriate responses. Rejection of RF is a more typical response for someone receiving this score and can be given when a participant responds with hostile refusal to at least three reflective questions. For example:

Interviewer: Can you tell me about the first time you remember being separated from your parents? Participant: No. I don't want to talk about separation (-1).

A rating of three is indicative of “low RF”. This is often scored for responses that appear naïve, simplistic or over-analytical, but still un-integrated. For example:

Interviewer: Are there any aspects of your childhood that you think were a step back or a hindrance?

Participant: I actually think some of it might be a set back or hindrance in over the past couple of years of my life. I think I never was treated or dealt with a lot of the, clearly, (chuckles) none of the dramatic things was never dealt with in my life. Ever. I think that's kind of come back to haunt me a little bit in the past couple of years.

Interviewer: How so?

Participant: Just um, I don't know I just think about it more and things, just you know, something I never dealt with clearly needs to be dealt with. (3)

A rating of five is indicative of “ordinary RF,” often found in high functioning and ‘normal’ samples. This type of RF is characterized by responses that show some

understanding of other's mental states as well as their own. Such responses demonstrate a capacity to make sense of their experience while thinking about thoughts and feelings. For example:

Interviewer: Why do you think your parents acted as they did during your childhood?

Participant: My parents, being divorced, didn't know how to deal with it. My mom probably didn't know how to mother because she didn't... You know, her mom was sick. As long as she can remember she remembers her mom being really ill. You know, she had leukemia and I guess she was really sick and uh her father was in the military. I guess he was kind of strict and hard, you know so I mean I guess she is a product of her environment. My mom's not very mentally strong. Let's put it that way. She is very clear she is not very mentally strong at all so, you know, it really affected her. (5)

A rating of seven on the RF scale is considered to be "marked RF." These responses are characterized by what is defined as full RF, indicating an awareness of mental states and their influence on underlying behaviors. For example:

Interviewer: Do you think that you may have been abused sexually?

Participant: I was, not by him, but I was. Yes. I didn't tell anybody 'cause it's embarrassing. It was embarrassing, you know? And um . My sister . I remember 'cause I was trying to protect her. We were staying at my grandmother's when we first moved here and I was in one room here and my

sister was in a room, like over here and here's a room here. And to keep him from hurting her . I- when everybody was asleep, when I was seven years old, I'd walk in his room. . So I could protect her and uh . I guess, you know it didn't always happen that way and things happened ... she told before I did because where I was more introverted, it made me kind of go inside myself and it made her more extroverted. You know? Like anger and stuff. I just kind of wanted to disappear. (7)

A rating of nine is considered "exceptional RF." This is considered a rare score, requiring exceptional sophistication in the participant's response. Individuals with these scores are consistent throughout the interview in demonstrating an elaborate and complex reflective stance toward understanding behavior. This rating was not represented in the sample used for the current study.

IV. Statistical Analysis

Data was analyzed using SPSS 18. Hypothesis 1 was analyzed using a series of independent sample t-tests. Hypothesis 2 and 3 was analyzed using bivariate statistics; Pearson correlations. Hypothesis 4 was analyzed using multiple linear regression analysis, to test the mediation effects of reflective functioning.

Chapter 4

Results

I. Data Preparation

At time one 54 families participated in the study. At time two, 35 families participated; however only 30 had complete data for this study. At time three, 21 families participated in the study. Two families that had time three data could not be scheduled for time two. Additionally, for several families, time two sensitivity data could not be coded due to technical difficulties. Thus, analyses involving sensitivity and time three variables (parental attachment risk, reflective functioning and trauma) included 16 families. Analyses involving sensitivity and time one and two data (sensitivity and depression) included 30 families.. All other analyses included 21 families.

Although all other measures were collected at just one time point, parental depression was assessed at each visit. CES-D scores were found to be highly correlated with one another. Bivariate results for this data can be found in Table 1. This relative stability allowed a variable indicating cumulative risk to be calculated. For analyses involving Time 2 data, depression was averaged over time 1 and 2. For analyses using time three data, depression was averaged over all three time points. For the two participants that were not part of the study at time 2, CES-D data was averaged from time one and three.

II. Sample Demographics

Demographic information was collected at all time points. Demographic information from this study can be found in table 2. A cumulative demographic risk variable was calculated in order to facilitate understanding of the sample at each time point. Eight risks were examined and coded for presence or absence, including: the parent not being married, not graduating high school, being unemployed, perceiving frequent and/or intense financial stress; and the family having more than 3 children, receiving Aid to Families with Dependent Children and/or receiving this assistance four years or longer . The mean sum of these eight variables was 3.39 (SD = 1.73) at Time 1, 2.63 (SD=2.14) at Time 2, and 2.81 (SD=2.14) at Time 3.

III. Descriptive Statistics

Table 3 provides means and standard deviations for all study variables: DepressionT1 (time one CES-D data), Depression T2 (time two CES-D data), DepressionT3 (time three CES-D data), Average Depression (CES-D data averaged over all time points), and T3 (time 3) Reflective Functioning, Sensitivity, and Trauma History.

IV. Inferential Statistics

Hypothesis 1 examined the relationship between attachment risk and the following variables: reflective functioning, sensitivity, depression, and trauma history. An independent samples *t*-test was conducted to compare trauma history in participants with high risk and low risk attachment. There was a significant difference

in the trauma scores for high risk attachment ($M= 6.41$, $SD= 2.84$) and low risk attachment ($M= 1.56$, $SD= 2.29$); $t(19) = -4.19$, $p<.01$. Another independent samples t -test examined differences in averaged depression scores for participants with high risk and low risk attachment. There was a significant difference in averaged depression scores for high risk attachment ($M= 19.65$, $SD= 11.33$) and low risk attachment ($M= 7.91$, $SD= 4.74$); $t(19) = -2.91$, $p<.01$. An independent samples t -test was conducted to compare sensitivity scores in participants with high risk and low risk attachment as well. There was a significant difference in the sensitivity scores for high risk attachment ($M= 7.39$, $SD= 3.48$) and low risk attachment ($M= 13.21$, $SD= 1.91$); $t(14) = 4.26$, $p<.01$. An independent samples t -test was also conducted to compare reflective functioning in participants with high risk and low risk attachment. There was no significant difference in the reflective functioning scores for high risk attachment ($M=3.67$, $SD=2.10$) and low risk attachment ($M= 4.44$, $SD=1.74$); $t(19) = .90$, $p=.379$. Inferential statistics for hypothesis one can be found in Table 4.

Hypothesis two examined participant's sensitivity scores in relation to trauma history and levels of depression using bivariate statistics. Sensitivity was significantly related to depression, $r(28) = -.46$, $p<.01$. Sensitivity was not significantly related to trauma history in this sample.

Hypothesis three examined reflective functioning in relation to depression, sensitivity and trauma history using bivariate statistics. A significant relationship was found between reflective functioning and sensitivity scores, $r(14) = .63$, $p<.01$.

Reflective functioning was not found to be significantly related to depression or trauma in this sample. A complete bivariate matrix for all study variables can be found in Table 5.

Hypothesis four examined reflective functioning as a mediator in the relationship between sensitivity and the variables of trauma, attachment and depression. As outlined by Baron and Kenny (1986), a variable is considered to function as a mediator if: (1) the independent variable(s) (in this case: depression, attachment and trauma) is significantly related to the outcome variable (sensitivity); (2) the independent variable(s) is significantly related to the proposed mediator (reflective functioning); (3) the proposed mediator is significantly related to the outcome variable while controlling for the independent variable; and (4) the indirect effect of the independent variable on the dependent variable is reduced in the presence of the mediator (i.e., the indirect effect is significantly different from zero). For the fourth hypothesis, the first criterion had only been fulfilled for the relationships between sensitivity and the variables: attachment risk and depression. Attachment risk and depression, however, were not significantly related to the proposed mediator. Thus, the additional amount of variance explained by adding reflective functioning to the regressions of attachment risk and depression on sensitivity were insignificant, implying no significant mediational effects.

Chapter 5

Discussion

The current study attempted to validate the DMM model of attachment by replicating studies that utilize the traditional, ABC-D model of attachment, particularly focusing on the relationships between parental attachment, trauma, depression, sensitivity, and reflective functioning. These variables are commonly investigated in the Child Parent Psychotherapy outcome literature. The current study provided evidence that parent's DMM attachment classifications had strong relationships with all variables, except reflective functioning. These included: depression, trauma, and also behaviorally observed sensitivity. Although reflective functioning was not associated with parent's attachment, it was significantly associated with sensitivity. Thus, the current study was able to provide solid support for the DMM model of attachment, but was not able to show the expected main or mediation effects proposed by scholars of CPP and other mentalization based treatments.

The hypothesized relationships between attachment and depression, trauma, and sensitivity were all found in the expected direction. Relative to those with low-risk strategies, parents utilizing high-risk attachment strategies (i.e. the farthest away from B in the DMM, see Appendix B) were more likely to have higher depression scores averaged over three data points across an eight year span. Indeed, the average depression score of the high-risk attachment group at each time point was above the

cut-off score suggestive of mild Major Depressive Disorder. Parents using higher risk attachment strategies, compared to those using lower risk strategies, also reported a greater amount of adverse events in childhood within their AAI. Parents with higher risk attachment strategies were found to be significantly less sensitive when discussions with their children approximately five years earlier. In duplicating findings from studies that have used the traditional model of attachment, support has been provided for the validity of Crittenden's (2008) Dynamic Maturational Model of attachment and adaptation. This approach was taken because of the level of risk seen among our participating families. These findings will certainly need to be replicated in future studies, as this is likely the only study at present that examines the associations among attachment, sensitivity, depression and trauma using DMM coding.

The findings for parental attachment and sensitivity are particularly notable and merit further discussion. Compared to van IJzendoorn's (1995) meta-analysis which found parental attachment to account for 12% of the variation in parental sensitivity, the current study finds it to account for 53% of this variance. These strong effects are supportive of Crittenden's (2008) conceptualization of a dimension of risk across attachment categories. It also may be that our manner of assessing sensitivity increased our likelihood of this finding. We utilized a task developed by Thompson and Labile (2000) that requested parents discuss with their child a time he or she was recently "good" and "bad," which was then coded using the Emotional Availability Scales (Biringen, Robinson, & Emde, 2000). The EAS is an expanded version of

Ainsworth's original scales (1978), which were found to be so powerfully related to her classifications of child attachment in the Strange Situation procedure. We chose the reminiscing task because we hoped it would allow us an opportunity to observe somewhat naturalistic parenting behavior. And the discussions themselves seem likely to have induced mild stress among our parents, thereby potentially activating attachment-related anxiety. The ratings for parents with high-risk attachment strategies are suggestive of considerable difficulties responding in an attuned way to their children's emotional displays during these discussions. These findings indicate that enhancing sensitivity via mentalization-based treatments such as CPP might be an effective way to intervene with such families in order to break the cycle of intergenerational transmission of attachment insecurity.

Additionally, the current study replicated findings for depression and sensitivity. The inverse relationship between these two variables has been well-established in the literature. Additional analyses of this current data to investigate reflective functioning as a moderator for this relationship could provide support to current research in the field (Wong, 2012). That is, possibly high RF could serve a protective role in the context of parental depression. Conversely, trauma history was not related to sensitivity in this sample. Again it may be that participants did not give an accurate report of their history, due to the method of assessment. (See below.) However, it may also be that this particular hypothesis was tested on a sample of only 16 participants. Perhaps with a greater sample size to test this relationship, the expected association of trauma and sensitivity may have been significant.

Another central finding of this study was the association between reflective functioning and sensitivity. In this sample, parents who had high levels of reflective functioning typically demonstrated high levels of sensitivity when interacting with their children as they discussed positive and negative child behavior. To our knowledge this is the first study to demonstrate a sensitivity-reflective functioning connection using Fonagy's (1998) RF manual for the AAI. These findings are consistent with previous research on sensitivity and reflective functioning assessed by the Parent Development Interview (Aber et al., 1985) (e.g., Wong, 2012; Slade, 2006). (See limitations below for a discussion of the differences in the two methods.)

Surprisingly, however, attachment risk was not associated with reflective functioning in this sample. This finding was especially unexpected, given that the two variables were coded from the same measure and reflective integration is central aspect of attachment security. At least two previous published studies have obtained an attachment-RF association when both were coded from the AAI (Arnott & Meins, 2007; Fonagy, et al., 1991). It is not clear whether RF was coded blindly by separate raters in these studies. In fact, Arnott and Meins state that it is impossible to maintain blindness to attachment status when rating RF. We agree and, therefore, tried to minimize this confound by having ratings completed totally independently by separate raters. While this would appear to be a methodological strength of the current study, it may be that further training in AAI attachment classification methods is a desirable quality of raters using Fonagy and colleagues (1998) RF manual. In order to increase coding accuracy, this manual contains extensive background on the concept and

scored examples. These were followed in a painstaking fashion by our two coders. However, considerable AAI training and/or clinical experience may be necessary to detect the non-reflective integration patterns of higher-risk individuals in the DMM system. That is to say, high-risk type A's may appear reflective when they are being overly analytical and intellectualized, whereas type C's may appear reflective when they are actually subtly projecting blame elsewhere. These strategies are self-protective in these individuals who often have had difficult backgrounds, but they are not likely to result in true integrated self-understanding or sensitivity with their children (Crittenden & Landini, 2011).

Additionally, it could be the fact that other studies examining reflective functioning and attachment have utilized the traditional ABC-D model of attachment. It has been shown that those using some of the higher risk insecure attachment patterns in the DMM are classified as secure in the traditional model. (See Crittenden & Landini, 2011 and the 2010 *Clinical Psychology and Psychiatry* special issue on the DMM for reviews.) Also, another, non-DMM study examining trauma history, attachment, and reflective functioning failed to find a linear relationship between the latter two constructs (Angelo, 2006). However, in our sample it is possible that a relationship was not found due to the small sample size, the fact that Fonagy's manual for coding reflective functioning was written for the original AAI, or variation in interviewer's asking follow-up questions. (See limitations section below.)

Reflective functioning was also not associated with parental depression or trauma history, as hypothesized in this study. Understanding the complex relationship

between these variables is an area of research that is still currently being pursued by many clinical and developmental researchers in the field. We agreed with Toth and colleagues (2008) that depression should be inversely related to RF. However, this group of researchers did not find an association, nor did two other recent researchers (Wong, 2012; Vrize, 2011). It may be that higher levels of reflective functioning do not buffer one's susceptibility to depression, or vice versa. Based on theoretical and empirical research on the relationship between trauma history and reflective functioning, the current study proposed an inverse relationship between the two variables. Analyses however did not reveal a significant relationship. It may be that parents in this sample did not give an accurate report of their trauma histories, as is described further below.

Furthermore, reflective functioning did not serve to mediate the hypothesized relationships for the current study. Although several distinguished research groups (e.g., Meins, Toth, and Slade and their colleagues) have investigated RF as a mediator between aspects of parenting or between parent and child outcomes, it has proved to be illusive to demonstrate. Like our study, the lack of power in small sample sizes has been an issue, as has been the lack of expected associations between some aspects of the theorized model. It may also be that reflective functioning serves as a moderator in these relationships as opposed to a mediator. One study to date has examined reflective functioning as a moderator in the relationship between depression and sensitivity (Wong, 2012), finding evidence that at high levels of depression and high levels of reflective functioning, parents appear to be buffered from the negative effects

of depression on sensitive parenting. Another study examined reflective functioning as a moderator in the relationship between trauma history and adult psychopathology, also finding a significant interaction (Angelo, 2006).

Limitations

The current study looked at attachment risk, sensitivity, depression, trauma history and reflective functioning in a small sample of parents from a rural area of eastern Kentucky over the course of eight years. The data used in this study was part of a larger, ongoing study, the MSU Family Development Study, which has collected data at three different time points. There has been an increasing emphasis on understanding mechanisms through which risks found to be prevalent among the parents may have affected their children. Because of this, some constructs of interest here are not available from earlier time points.

Thus, a notable limitation of the study is that parental sensitivity was measured at time two, five years prior to time three data collection where the AAI was administered. Although overt parenting behavior must change to meet children's developmental needs, sensitive caregivers would likely be able to make such adjustments more readily. Generally, the literature supports relative stability in assessed sensitivity (Bigelow et al., 2010); however, studies with time spans of this length and children of this age are limited. Stability is expected to decrease with trajectories of increasing stressors (Pianta, Sroufe, & Egeland, 1989) and parental depression (Campbell, Susan B.; Matestic, Patricia; von Stauffenberg, Camilla;

Mohan, Roli; Kirchner, 2007). Therefore, we plan to code sensitivity from parent-child interactions once time 3 data collection is completed.

Reflective functioning was also measured at time three but hypothesized to relate to sensitivity at time two. This is a potential limitation of the current study, however, it is hypothesized that reflective function is likely a “state trait,” believed to remain relatively stable over time, at least without fairly intensive intervention (Steele and Steele, 2008). Still, more research on the stability of reflective functioning is needed to support this claim.

It was unexpected, though, that reflective functioning did not relate to any of the other variables in this study. Here reflective functioning was measured from the DMM-AAI. An important limitation to consider is that Fonagy’s manual (1998) was not written to fit this extended interview, which has additional questions about adverse experiences and presses for reflective integration. Furthermore, much of the research on reflective functioning has utilized other methods to measure this construct. For example, Slade and colleagues (2004) have developed a method of rating RF from the Parent Development Interview (PDI: Aber et al., 1985). The PDI is an intensive one-hour interview designed to elicit thoughts about one’s child and oneself as a parent. This method of assessing RF seems to be growing in its influence, particularly among parenting researchers and Child Parent Psychotherapy clinicians. Toth and colleagues (2008) suggest the PDI be utilized in future research on the putative mechanisms of change in CPP, as they were unable to show changes in RF (measured with the AAI and Fonagy’s manual) were associated with changes in child attachment.

Perhaps Fonagy's AAI measure is most useful for those engaging in research and practice with adults. A future direction for this research will be to examine additional methods of measuring this construct.

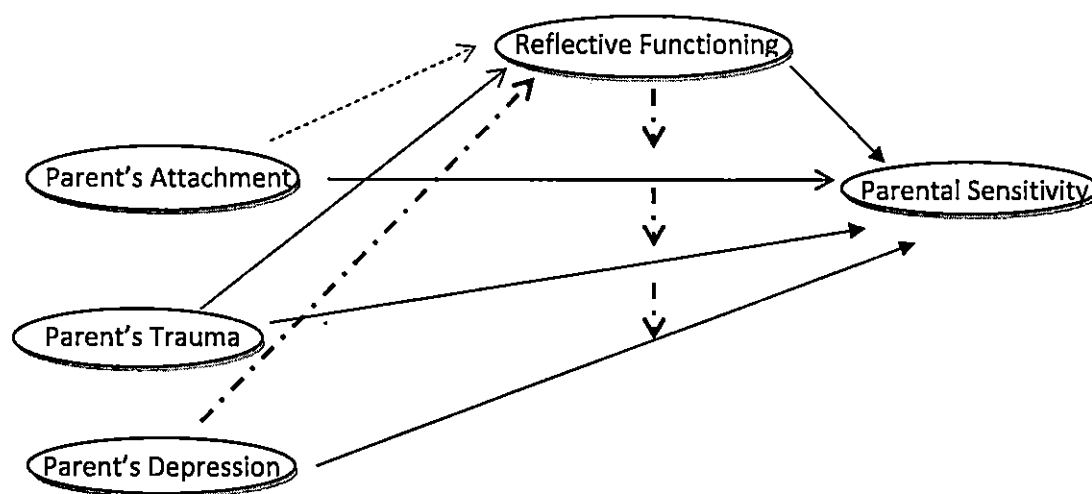
Another limitation, introduced above, was the fact that trauma was coded from the AAI. Interviewers were not provided with additional prompts for participants who were reluctant to disclose trauma experiences. Furthermore, the amount each interviewer probed the participant on trauma-related issues varied with their level of experience. Also, some participants may not have felt comfortable disclosing this information to a stranger or on an audio recorder, but interviewer ease and comfort with such questions certainly would make a difference. Thus, it is highly likely that a number of participant's reports of trauma history are inaccurate or insufficient. One solution may be to utilize an additional questionnaire to both standardize the questioning and potentially make it easier for parents to disclose this information.

In sum the current study investigated, among families at moderate risk for difficulties, parents' DMM-classified attachment in association with their trauma history, depression, reflective functioning, and sensitivity with their child. Reflective functioning was, additionally, proposed as a potential mediator among these parenting variables, with the aim of providing empirical support for intensive attachment-based interventions that target RF), such as CPP. Altogether findings supported Crittenden's (2008) Dynamic Maturational Model of attachment and adaptation but failed to find that reflective functioning was associated with variables other than sensitivity; thus, mediation effects were not found. Limitations of the study have been

discussed as possible explanations for this finding. Although the sample size used for this study was small, the findings for reflective functioning and sensitivity suggest that this mechanism does play an important role in parenting. Again, it may be that reflective functioning serves as a buffer to high risk parents, protecting them from engaging in insensitive parenting. Empirical evidence for reflective functioning as a moderator in these relationships is still premature. Continued research to delineate the relationship among the variables explored in this study is critical for developing meaningful and effective parenting interventions for families at risk.

Appendix A:

Hypothesized Model:



Bold dashed lines indicate unknown relationships.

- - ->

Dashed lines indicate mixed findings in the literature.

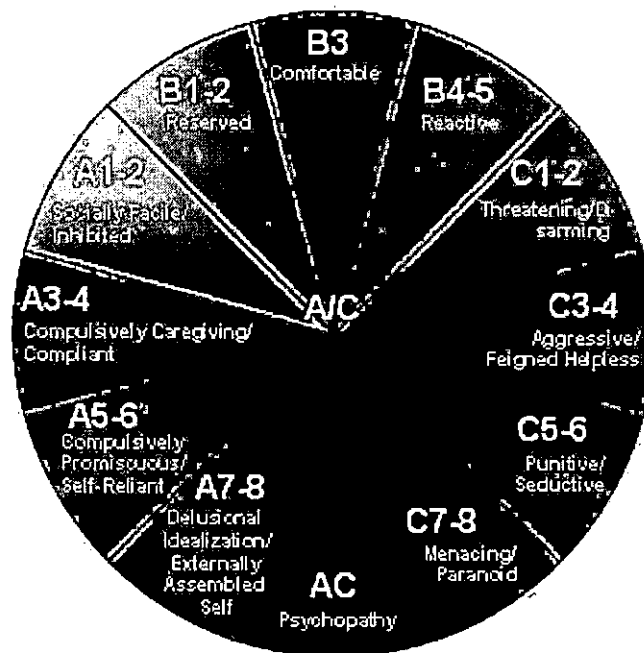
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Solid lines indicate known relationships in the literature.

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Appendix B:

DMM Model



Brief descriptions of each strategy (Crittenden & Landini, 2011)

Refer to http://www.patcrittenden.com/include/dmm_model.htm for further descriptions.

B3:“The Type B strategy involves a balanced integration of temporal prediction with affect. Type B individuals show all kinds of behavior, but are alike in being able to adapt to a wide variety of situations in ways that are self-protective, that protect their children, and that as often as possible cause others no harm. “

B1-2:“Individuals assigned to B1-2 are a bit more inhibited with regard to negative affect than B3s, but are inherently balanced.”

B4-5:” Individuals assigned to B4-5 exaggerate negative affect a bit, being sentimental (B4) or irritated (B5), but are inherently balanced.”

A1-2: “The A1-2 strategy uses cognitive prediction in the context of very little real threat. Attachment figures are idealized by over-looking their negative qualities (A1) or the self is put down a bit (A2). Most A1-2s are predictable, responsible people who are just cool and businesslike.”

A3:” Individuals using the A3 strategy (compulsive caregiving, cf., Bowlby, 1973) rely on predictable contingencies, inhibit negative affect and protect themselves by protecting their attachment figure. In childhood, they try to cheer up or care for sad, withdrawn, and vulnerable attachment figures. In adulthood, they often find employment where they rescue or care for others, especially those who appear weak and needy.”

A4: “Compulsively compliant individuals (Crittenden & DiLalla, 1988) try to prevent danger, inhibit negative affect and protect themselves by doing what attachment figures want them to do, especially angry and threatening figures. They tend to be excessively vigilant, quick to anticipate and meet others’ wishes, and generally agitated and anxious.”

A5: “A5 individuals use a compulsively promiscuous strategy (Crittenden, 1995) to avoid genuine intimacy while maintaining human contact and, in some cases, satisfying sexual desires. They show false positive affect, including sexual desire, to

little known people, and protect themselves from rejection by engaging with many people superficially and not getting deeply involved with anyone.”

A6: “Individuals using a compulsively self-reliant strategy (Bowlby, 1980) do not trust others to be predictable in their demands, find themselves inadequate in meeting the demands or both. They inhibit negative affect and protect themselves by relying on no one other than themselves.”

A7: “Delusionally idealizing individuals (Crittenden, 2000) have had repeated experience with severe danger that they cannot predict or control, display brittle false positive affect, and protect themselves by imagining that their powerless or hostile attachment figures will protect them.”

A8: “Individuals using an A8 strategy (externally assembled self, Crittenden, 2000) do as others require, have few genuine feelings of their own, and try to protect themselves by absolute reliance on others, usually professionals who replace their absent or endangering attachment figures.”

A/C: “A/C strategies combine any subpatterns. In practice, most A/C’s consist of the more distorted patterns, i.e., A3-4 or higher and C3-4 or higher.”

C1-2: “The C1-2 (threatening-disarming) strategy involves both relying on one’s own feelings to guide behavior and also using somewhat exaggerated and changing displayed negative affect to influence other people’s behavior. Specifically, the strategy consists of splitting, exaggerating, and alternating the display of mixed

negative feelings to attract attention and manipulate the feelings and responses of others.”

C3-4: “The C3-4 (aggressive-feigned helpless) strategy involves alternating aggression with apparent helplessness to cause others to comply out of fear of attack or assist out of fear that one cannot care for oneself. Individuals using a C3 (aggressive) strategy emphasize their anger in order to demand caregivers’ compliance. Those using the C4 (feigned helpless) give signals of incompetence and submission.”

C5-6: “The C5-6 strategy (punitively obsessed with revenge and/or seductively obsessed with rescue) is a more extreme form of C3-4 that involves active deception to carry out the revenge or elicit rescue. Individuals using this strategy distort information substantially, particularly in blaming others for their predicament and heightening their own negative affect; the outcome is a more enduring and less resolvable struggle.”

C7-8: “C7-8 (menacing-paranoid) is the most extreme of the Type C strategies and involves a willingness to attack anyone combined with fear of everyone. Type C strategies all involve distrust of consequences and an excessive reliance on one’s own feelings. At the extreme, this pattern becomes delusional with delusions of infinite revenge over ubiquitous enemies (a menacing strategy, C7) or the reverse, paranoia regarding the enemies (C8). These two strategies do not become organized before early adulthood.”

Appendix C:

Measures from each phase:

CES-D, administered in phases 1, 2 & 3

Directions: Below is a list of some ways you may have felt or behaved. Please indicate, to the best of your ability, how often you have felt this way during the past two weeks.

	2	3	4	
Rarely or None of the time	Some or A Little of the time	Occasionally or A Moderate Amount	Pretty Much All of the time	
1. I was bothered by things that usually don't bother me.	1	2	3	4
2. I did not feel like eating; my appetite was poor.	1	2	3	4
3. I felt that I could not shake off the blues even with help from my family.	1	2	3	4
4. I felt that I was just as good as other people.	1	2	3	4
5. I had trouble keeping my mind on what I was doing.	1	2	3	4
6. I felt depressed.	1	2	3	4
7. I felt that everything I did was an effort.	1	2	3	4
8. I felt hopeful about the future.	1	2	3	4
9. I thought my life had been a failure.	1	2	3	4
10. I felt fearful.	1	2	3	4
11. My sleep was restless.	1	2	3	4
12. I was happy.	1	2	3	4
13. I talked less than usual.	1	2	3	4
14. I felt lonely.	1	2	3	4
15. People were unfriendly.	1	2	3	4
16. I enjoyed life.	1	2	3	4

- | | | | | |
|-------------------------------------|---|---|---|---|
| 17. I had crying spells. | 1 | 2 | 3 | 4 |
| 18. I felt sad. | 1 | 2 | 3 | 4 |
| 19. I felt that people disliked me. | 1 | 2 | 3 | 4 |
| 20. I could not get "going." | 1 | 2 | 3 | 4 |

**Selected Questions from the DMM- Modified Adult Attachment Interview,
Administered in phase 3.**

Part I - Orientation to the speaker's childhood family

Before we begin, could you orient me to your childhood family? For example, where you were born, who was in your family, where you lived, what your parents did for a living, and whether you moved around much - things like that. I just want to know something about your family before we start.

1. Did you know your grandparents when you were a child?
2. What is the earliest memory that you have as a child? Tell me as much as you can remember about it.

Part II: The relationships with attachment figures

I'd like you to describe your relationship with your mother, as far back as you can remember.

1. Now, I'd like you to choose five words or phrases to describe your relationship with your mother when you were young. This may take a bit of time, so go ahead and think for a moment. I'll write them down as you're talking.
2. You said that relationship with your mother was _____. Can you tell me about a specific occasion when your relationship was _____? Try to think back as far as you can.
3. Could you now describe your relationship with your father, going as far back as you can remember.

4. To which parent did you feel closest as a child?
5. Why do you think you felt closer to _____? Why isn't there this feeling with _____ (the other parent)?

Part III: Direct probes of normative events in which children often feel unsafe

The next set of questions is about some common experiences that children have.

1. What happened when you went to *bed* as a child? Can you remember any specific time when you were in bed?
2. If you needed *comfort*, what would you do? Can you remember an instance?
3. When you were young, did you ever feel *rejected* by your parents - even though they might not have meant it or have been aware of it? Can you remember an instance?
4. Why do you think your parents did this (or these things)?
5. Do you think they realized that you felt rejected?

Part IV: Direct probes of potentially dangerous experiences

In the next set of questions, I'll ask about some very difficult experiences that you might have had as a child. First, I'll just ask about the list and you can answer yes or no. Then, if some of these happened, I'll ask you to tell me about them.

1. Did you ever feel very frightened or *not sure that you were safe*?
2. Do you think that you may have been *abused physically?*, *sexually?*, or *neglected?*
3. Tell me what happened.
4. Do you worry about this occurring again? Under what sort of conditions?

Part V: Loss

1. The next section is about people who might have died during your lifetime.

Can you tell me of anyone who died when you were a child?

2. Can you tell me the circumstances and how old you were?

Part VI: Integrative questions regarding childhood in general

1. Taken as a whole, how do you think your childhood experiences have affected your adult personality?

2. Are there any aspects of your childhood that you think were a setback or hindered your development?

3. Why do you think that your parents acted as they did, during your childhood?

4. How do you think your childhood experiences prepared you for romantic love relationships? For example, did they affect whether you chose to marry, how you chose your wife/husband/partner?

5. How do you feel when you separate from your children? Your partner?

Part VII: Closing integrative questions

Thinking over all that you have told me, what do you think you have learned from your experience as a child?

Sometimes, after this sort of interview, you might find that you continue to think about these issues after the interview. If you find yourself feeling uncomfortable or thinking about them too much, please don't hesitate to contact me. In any case, thank you very much.

Appendix D:

Sample Questions from the AAI coded for Trauma:

1. *When you were upset as a child, what would you do?*
2. *When you were upset emotionally when you were little, what would you do?*
(Wait for participant's reply). Can you think of a specific time that happened?
3. *Were you ever abused, either physically, sexually or emotionally.*
4. *Can you remember what would happen when you were hurt physically?*
(Wait for participant's reply). Again, do any specific incidents (or, do any other incidents) come to mind?
5. *What is the first time you remember being separated from your parents?*
6. *-How did you respond? Do you remember how your parents responded?*
7. *Did you ever feel rejected as a young child?*
8. *Were your parents ever threatening with you in any way - maybe for discipline, or even jokingly?*

Appendix E:

Reflective Functioning Rating Guidelines (Fonagy, 1998)

Rules for identifying passages: Demand vs. permit questions

Passages are to be identified according to the context in which they appear, specifically the question posed by the interviewer and the explanations and previous information the speaker has provided. Questions in the interview transcript may be divided into two types: (1) those that permit the speaker to demonstrate their reflective-self capacities (e.g. orient as to background; what did you do when you were upset as a child?); and (2) those that demand from speakers a demonstration of their capacity for reflective-self function.

Sample questions used from the AAI follows:

-why did your parents behave as they did during your childhood?

-do you think your childhood experiences have an influence on who you are today?

-any setbacks?

-in relation to losses, abuse or other trauma, how did you feel at the time and how have your feelings

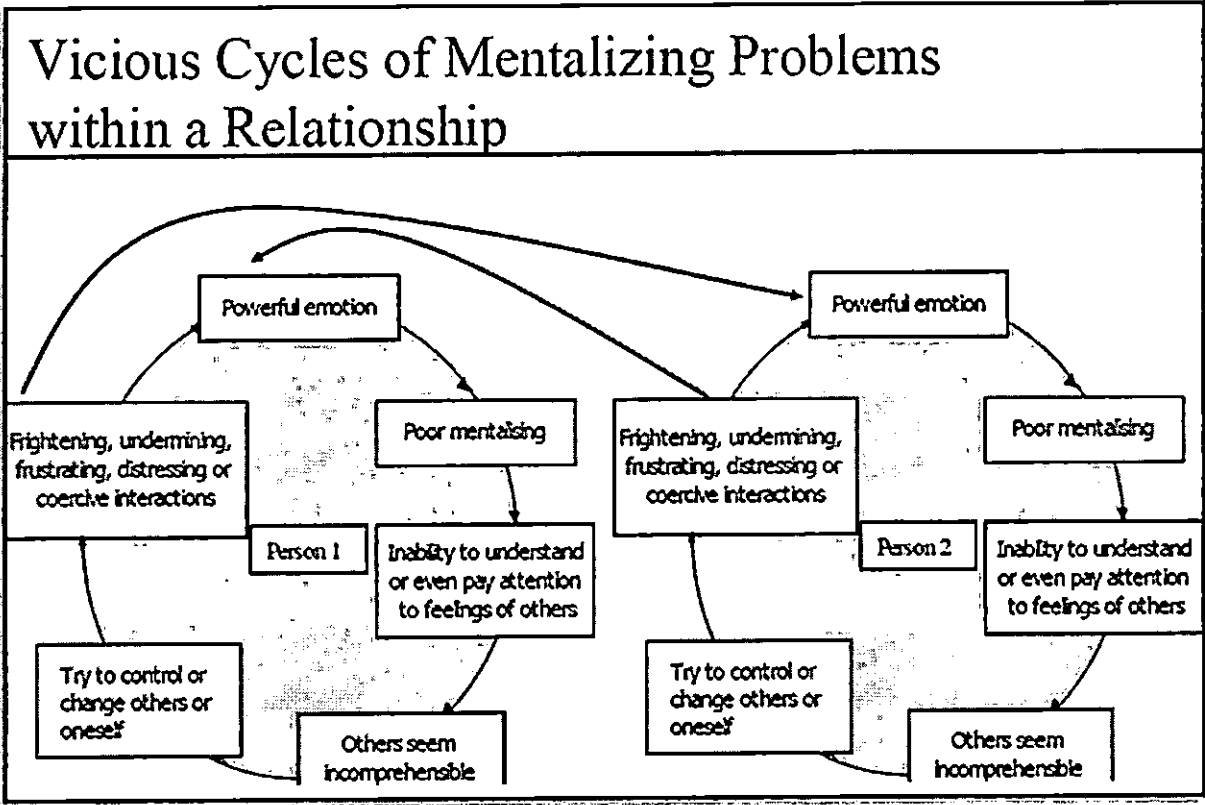
changed over time?

-have there been changes in your relationship with your parents since childhood?

When applying the principles in this manual to other research interviews, raters should identify a set of questions which are most likely to elicit explanations in terms of mental states. Passages in response to these demand questions must be rated, and should later be taken into account when arriving at a global rating of the interview. In some interviews, interviewers might use prompts which in effect are demand questions (e.g. 'And why do you think they did that?') and passages which follow such prompts should be treated in the same way as passages following the questions listed above. If the speaker has already addressed a demand question in their response to a previous question, no penalty is incurred. Non-reflective responses to permit questions, i.e. all other questions, should not carry as much weight as they would if provided in response to a demand question. When combining the scores, highly rated responses to these other questions should however contribute to the overall rating, and it should be noted when subjects are highly reflective in response to a non-demand question, which suggests a habit of spontaneously thinking in terms of psychological

explanations. An answer to each question will generally be rated as a single passage, unless it contains more than one 'answer' within it, e.g., "Why did your parents behave as they did?" might be answered with a clearly different way of thinking for mother and for father. The demand question about loss should always be rated separately for each loss.

Please see Fonagy's RF Manual (1998) for an extensive list of rules and guidelines for rating the passages listed above.



Appendix F:

Fonagy's (1998) 'Vicious cycle of parent-child interactions'

List of Tables

Table 1

Correlations for CES-D scores across Time 1, 2, and 3 data collections.

	<i>1</i>	<i>2</i>	<i>3</i>
1. DepressionT1	-	.723**	.870**
2. DepressionT2	-	-	.577*
3. DepressionT3	-	-	-

* $p \leq .05$

** $p \leq .01$

Table 2.

Demographics information

<i>Parent Demographics</i>	<i>Mean</i>	<i>Percentage</i>	<i>N</i>
Sample Size			
T1			54
T2			35
T3			21
Child Gender- Female			
T1		43%	
T2		49%	
T3		48%	
Parent Age			
T1	29.28		
T2	31.75		
T3	37.70		
Primary Caregiver Employed			
T1		51.7%	
T2		64.7%	
T3		38.1%	
Education- Some college			
T1		77.5%	
T2		52.9%	
T3		61.9%	
Marital Status- Married			
T1			
Married		58.6%	
T2			
Married		62.9%	
T3			
Married		52.4%	
Income- \$1201 or more per month			
T1		56.9%	
T2		61.8%	
T3		52.4%	

Table 3.

*Descriptive Statistics**Means, Standard Deviations and Correlations for Observed Variables*

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
1. DepressionT1	54	0	43	13.31	11.81
2. DepressionT2	34	1	44	14.62	11.33
3. DepressionT3	20	1	47	14.85	12.15
4. Average Depression	21	3.33	44.67	14.62	10.72
5. Reflective FunctioningT3	21	0	7	4	1.95
6. Trauma HistoryT3	21	0	11	4.33	3.44
7. SensitivityT2	30	3	18	10.85	4.1

Table 4.

t-tests and differences in Means and Standard Deviations for High Risk and Low Risk Attachment in relation to four variables.

	<i>t</i> -score	Mean	SD
Trauma History (n = 21)	-4.19**		
High Risk Attachment		6.41	2.84
Low Risk Attachment		1.56	2.29
Depression (n = 21)	-2.91**		
High Risk Attachment		19.65	11.33
Low Risk Attachment		7.91	4.74
Sensitivity (n = 16)	4.26**		
High Risk Attachment		7.39	3.48
Low Risk Attachment		13.21	1.91
Reflective Functioning (n = 20)	0.90 ns		
High Risk Attachment		3.67	2.10
Low Risk Attachment		4.44	1.74

* $p \leq .05$

** $p \leq .01$

Table 5.

Complete bivariate matrix for all study variables.

	AAIRiskT3	AvgCESD	TraumaT3	RFT3	SensitivityT2^e
AAIRiskT3^a	-----	.56**	.69**	-20	-.73**
AvgCESD^b	----	-----	.52*	-.26	.29
TraumaT3^c	----	-----	-----	.13	-.28.
RFT3^d	----	-----	----	----	.63**

^aAAIRisk Time is the dichotomized attachment classification with low-risk=0 and high-risk=1. This was measured at time 3

^bAvgCESD is depression scores averaged across the three time points.

^cTrauma T3 is the trauma scores developed from the AAI at time 3.

^dRFT3 is reflective functioning at time 3, as measured by ratings of the AAI.

^eSensitivityT2 is the sensitivity ratings from parent-child interactions during the Reminiscing Task, at Time 2.

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