THE RELATIONSHIP SPECIFICITY OF THE REFLECTIVE FUNCTION: AN EMPIRICAL INVESTIGATION

by

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Abstract

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The present study examines the stability of the Reflective Function (RF) across relationship contexts by testing the correlation between mothers' RF in discussing their children/parenthood and their RF in discussing their parents/childhood. It was hypothesized that RF would be stable across these contexts as evidenced by a positive, significant correlation between RF scores on separate interviews that focus on parenthood and childhood in detail.

Subjects were 40 first-time mothers between the ages of 25 and 40, all of whom were middle-class and in stable, cohabiting relationships at the time of the study. They were interviewed using the Adult Attachment Interview (George, Kaplan, & Main, 1996) while in the third trimester of pregnancy, and with the Parent Development Interview (Slade, Aber, Bresgi, Berger & Kaplan, 2003) when their children were 10 months old. The Reflective Function Manual for Application to Adult Attachment Interviews (Fonagy, Steele, Steele, & Target, 1998) was used to determine the level of RF regarding childhood, and the Addendum to the Reflective Function Manual for use with the Parent Development Interview (Slade, Bernbach, Grienenberger, Levy, & Locker, 1999) was used to determine the level of RF regarding parenthood.

Results supported the study's hypothesis: There was a highly significant, positive correlation between RF scores across the two interviews. These results are discussed in terms of their implications for attachment theory, the theory of mentalization and affect regulation, psychoanalysis, and clinical treatment. In order to form hypotheses about the potential sources of unstable RF, qualitative analyses are performed on two subjects with significantly discrepant scores across interviews.

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Chapter 1
Introduction

It is widely assumed that basic aspects of psychological functioning tend to be stable over time and across contexts. Sigmund Freud addressed basic facts of psychological continuity in his writings on the repetition compulsion and transference, both of which remain central to psychoanalytic theory (Freud, 1912, 1914). Since Freud, other psychological approaches have formulated accounts of stability such as accommodation and assimilation of schemata (Piaget, 1926; Beck, 1976; Cantor & Mischel, 1979), and behavior outcome expectancies (Bandura, 1977, 1982). John Bowlby's (1969) concept of the internal working model of attachment added a powerful account of both stability and change regarding relationship expectations between childhood and adulthood. Researchers working from Bowlby's model have developed empirical procedures to test both the influence of childhood experience on adult functioning and the consistency of functioning across contexts.

This project investigates the stability of a particular area of psychological functioning, mentalization, across two specific realms of internal representation – childhood and parenthood. First-time mothers are asked to depict their lives as children, discuss early emotional experiences, and speculate about their parents' motivations, in the Adult Attachment Interview

(AAI) (George, Kaplan, & Main, 1996). They are then asked to depict their lives as new parents, reflecting on their infant's experiences and their own, in the Parent Development Interview (PDI-R) (Slade, Aber, Bresgi, Berger, & Kaplan, 2003). In each interview, a subject's ability to mentalize, i.e., to consider relationships in terms of beliefs, desires, and intentions with appreciation for the nature of mental states, is assessed using the Reflective Function (RF) Scale to measure mentalization on a continuous, 11-point scale (Fonagy, Target, Steele, & Steele, 1998).

In its investigation of RF across these contexts, the current study explores the nature of the caregiving system and its relationship to a mother's past experiences with care. According to Bowlby, the mother's caregiving system is "reciprocal" to the child's attachment system, as it governs a parent's behaviors regarding care with the same evolutionary goal as the attachment system - to protect the vulnerable child from danger (Bowlby, 1982). When Bowlby and others refer to the caregiving system as reciprocal to the attachment system, they are referring to the attachment system of the child and the caregiving system of the mother. In a different but related vein, the current study examines the relationship between the attachment and caregiving systems within an individual.

An innovation made possible by Fonagy's detailed definition of mentalization has been the development of a method for measuring it via narrative analysis. By carefully defining the

types of utterances that qualify as mentalization, and further delineating characteristics of those utterances that reflect their degree of sophistication, the Reflective Function Scale allows for a reliable, reasonably objective assessment, via narrative, of a subject's mentalization when discussing relationships.

This review examines literature that relates to the stability of RF capacity across relationship types. The first section situates the question of stability broadly within psychoanalysis, particularly in the work of Freud, Fraiberg, and Benedek. The second section describes Bowlby's attachment theory and his concept of the internal working model, citing evidence from attachment research regarding the question of attachment stability. The third section presents Fonagy and colleagues' theory of mentalization and affect regulation as factors underlying attachment security and goes on to examine evidence that bears on the stability of mentalization over time and across relationships. The last section considers the implications of comparing RF about one's own childhood with one's current life as a new parent and details methodological issues involved in comparing RF on the AAI and PDI.

Chapter 2

Literature Review

As beings defined by our ability to remember, humans are living records of our own histories. While new events in life - accomplishments, relationships, parenthood – always have the potential to change us, our core selves reflect our childhood conflicts and their resolutions, major life events and their sequelae, and everyday patterns of relating and warding off anxiety that are ingrained over the early years of life.

No one appreciated this aspect of the psyche more than Sigmund Freud, who based his understanding of development in the notion that the tenor of childhood resonates in the mind of the adult, in conscious and unconscious ways. "The character of the ego," he wrote, "… contains a record of past object choices" (Freud, 1917). When aspects of past relationships are repressed, Freud reasoned, they are no less present in the psyche:

> …the patient *remembers* nothing of what is forgotten and repressed, but he expresses it in *action*. He reproduces it not in his memory but in his behaviour; he *repeats* it, without of course knowing that he is repeating it (Freud, 1914).

The idea that humans unconsciously repeat past experience, elaborated most fully in the psychoanalytic study of transference phenomena, has remained a cornerstone of psychoanalysis and developmental theory. Subsequent theorists have explored the mechanisms underlying our tendency to repeat the past, both as an effort to understand the persistence of character and as an attempt to identify avenues for therapeutic change.

A time of life of particular interest regarding this phenomenon is parenthood. The intense and sudden changes involved in having a first child, the memories evoked, the navigation of a budding relationship, the responsibility, the preoccupation with the child's well-being, combine into a swirl of emotions and experiences that propel a parent into a new phase of adulthood. Therese Benedek has argued that a parent, far from being a closed book developmentally, enters an era of working through her own early conflicts with *her* mother which are aroused by the intensely emotional experience of parenting. Ideally, for Benedek, "the healthy, normal process of mothering allows for resolution of those conflicts, i.e., for intrapsychic 'reconciliation' with the mother" (Benedek, 1959). When the mothering process is unhealthy or abnormal, it would follow, those conflicts are not resolved but rather lead to misattunement and pathology. Whether motherhood begins in ideal circumstances or is conditioned by pathology, the mother and child nevertheless develop in concert, so that the development of one is inseparable from that of the other. There are "reciprocal ego developments" between parent and child while both experience the world anew, which play out in a "spiral of transactions" (Benedek, 1959).

This notion of the dyad has been thoroughly articulated by other theorists of early development, particularly D.W. Winnicott, who saw mother and child as a single unit that cannot even be discussed as individual entities (Winnicott, 1960). Selma Fraiberg, too, took note of the ways that a mother's traumas find their ways into the dyadic relationship, focusing on the

intrusive identifications with the aggressor that can color this relationship from the very beginning (Fraiberg, 1980). From this point of view, transgenerational psychic inheritance is a fact of life: If a mother is working through her own early conflicts while caring for a new child, the child necessarily experiences, in some way, refracted elements of her mother's own childhood.

While these ways of thinking have been useful to clinicians over the years, systematically measuring these developmental phenomena has been difficult, and discussions have largely been limited to theory and case descriptions. Bowlby's attachment theory, though originally considered a significant departure from psychoanalytic theory, has much in common with psychoanalysis in its idea about the origins of psychic reality, and it has evolved into an area of research that makes early relationships accessible to empirical investigation (Fonagy, 2001). These points of convergence include emphases on early life generally, on the internal representation of relationships, and on the importance of maternal sensitivity.

Any theory of the mother-child relationship faces the question, "If there is indeed a connection between a mother's relationship with her parents and her relationship with her child, can we identify the mechanisms underlying this connection?" The importance of the question is clear. First, to identify and measure certain dynamics in a mother's representations of her childhood and of motherhood would lend great support to the theories derived from

psychoanalytic observation of parents and children in the clinic. And second, to identify mechanisms underlying this connection can open avenues for specific therapeutic interventions.

Peter Fonagy and his colleagues have identified mentalization as one such mechanism. An outgrowth of both attachment theory and cognitive research on theory-of-mind, mentalization is Fonagy's name for the ability to think accurately about relationships and behavior in terms of mental states - thoughts, emotions, and beliefs. Drawing on a tradition of psychoanalytic object relations theory, attachment research, and neurocognitive literature, Fonagy posits that the ability of a mother to mentalize about her child, to consider and maintain perspective on her child's mental experience, and her ability to reflect empathically the child's emotions, helps the child understand his feelings and, eventually, to regulate them effectively. Ultimately, mentalization is a procedural perspective-taking ability that determines the quality of the relationship between mother and child.

If mentalization is a mechanism underlying infant-mother attachment and the infant's ability to regulate affect, then it likely plays a role in what Freud and later psychoanalytic observers saw when they noted a mother's own childhood being revisited as she learns to be a mother. Does a mother's ability to mentalize about her parents predict her ability to mentalize about her own child? This is the subject of the current study.

Section II: Attachment theory

With a series of papers published between 1958 and 1960, John Bowlby challenged the world of psychoanalysis by reaching beyond the traditional bounds of psychoanalytic developmental theory in order to explain what he had seen working as a child psychiatrist – powerful mourning reactions in children when separated from their caregivers. Informed by ethology generally and inspired by Lorenz's study of imprinting (1952), Spitz's study of hospitalism (1945), and Harlow's cloth mother experiments (1958), Bowlby began a revolutionary integration of research into a new kind of instinct theory, the theory of attachment, which asserts that humans are innately driven to keep their caregivers close by automatic behavioral systems akin to those identified in other mammals and birds. He identified various universal mechanisms for maintaining this proximity, such as crying, smiling, and clinging, and argued that these mechanisms were selected evolutionarily as a survival tactic. By the time he published the attachment trilogy, he had laid out a thoroughgoing revision of the dominant psychoanalytic understanding of child development (Bowlby, 1969, 1973, 1980).

How often rebellions are shaped by what they rebel against. Bowlby, a disaffected Kleinian analyst, was critical of Klein for anthropomorphizing her "fictional and metaphorical infants," since she made inferences about infants based on work with older children and adults; still, there is a noticeable overlap between attachment categories and Klein's developmental

positions (Fonagy, 2001). Though considered heretical at that time, Bowlby's theory has become a major contributor to the growing body of research supporting psychoanalytic understanding of transference (Westen, 1988), lifespan development (Erikson, 1950, 1959), and the impact of the mother-child bond on personality formation (Fonagy, Target, Gergeley, & Jurist, 2002). Bowlby theorized unconscious motivation and defensive processes within an information-processing model; he saw the ego as a hierarchical executive structure; and he conceptualized dissociation and defensive exclusion with Tulving's model of autobiographical memory (Bretherton, 1995). Just as psychoanalysis is built upon the notion that early experience remains present in the psyche of an adult, so, too, was it Bowlby's firm belief that the quality of an infant's attachment to its mother would have lifelong consequences for psychological development.

The internal working model

The internal working model is Bowlby's theoretical explanation for attachment phenomena as they relate to an inner world. Expanding on work by the early cognitive scientist Kenneth Craik, Bowlby reasoned that the internal working model is a representation of interactions with caregivers which guides future expectations, a representation cast by repeated patterns over time (Bowlby, 1973, 1980; Craik, 1943). Bowlby writes,

> Every situation we meet with in life is construed in terms of the representational models we have of the world about us and of ourselves. Information reaching us through our sense organs is selected and interpreted in terms of those models, its significance for us and those we care for is evaluated in terms of them, and plans of action executed with

> those models in mind. On how we interpret and evaluate each situation, moreover, turns also how we feel (Bowlby, 1980).

These patterns are governed largely by the attachment system in emotionally-charged negotiations of the child's sense of security, but they are also determined by the parent's caregiving system, another evolutionary control system, which drives the mother to be engaged with the infant and to respond to the child's attachment behaviors (Bowlby, 1969; George & Solomon, 1996b). Thus, the internal working model consists of models of self built in relief over representations of caregivers, so that self-other representations are mutually determined. In cognitive terms, the internal working model can be understood as "a set of rules for the organization of information relevant to attachment and for obtaining or limiting access to that information" (Main, Kaplan, & Cassidy, 1985).

The specificity of these working models to individual relationships, and their malleability over time, have been major questions in attachment research since its inception. Ideas of both stability and change are built into the term "working model," which implies that mental structures, or models, exist but are subject to "working" revision based on interaction with the environment. Early in development, internal working models are more fluid and as the child gains some ability to comprehend a caregiver's motivations and to predict reactions (Bowlby, 1969). But as development proceeds, these representations become more and more resistant to change. In *Loss*, Bowlby explains why he believes that internal working models display

increasing stability over time, using information processing theory to name two causes for stability (Bowlby, 1980). First, as a child matures, many of the proximity-seeking behaviors and self-other representations take on an automatic, procedural quality and operate unconsciously. Also, he argues, the dual nature of the bond makes it more resistant to change as mother and child patterns reinforce each other. With these observations and speculations about attachment representations, Bowlby set out questions about specificity and stability of attachment representation that would later be taken up in empirical research.

It is a sign of Bowlby's respect for the idea of an inner life that he theorized the existence of internal working models before attachment research had developed methods to access and measure them (Bretherton, 2005). To assess and quantify attachment patterns was the next logical step; only then would researchers become able to categorize types of infant-mother attachment well enough to make testable hypotheses about their specificity, stability, and effect on general psychological functioning.

Mary Ainsworth and the Strange Situation

Mary Ainsworth had been working with Bowlby for years before he began publishing on attachment theory, and she contributed greatly to its verification and nuance by conducting naturalistic observation of mother-infant dyads in both Uganda and the United States. Through this extensive field experience, Ainsworth began to categorize mother-child attachment behaviors in various ways. She began by conducting extensive home-based observation of maternal sensitivity and child interaction, and she achieved her greatest success when she developed the Strange Situation laboratory procedure, a structured interaction among a mother, child, and stranger, during which the child is briefly separated and then reunited with mother while in the presence of a stranger (Ainsworth & Wittig, 1969). Other interactions are also observed, including a period in which the baby plays alone. Though she had originally focused most intently on the child's reaction to separation, Ainsworth discovered serendipitously that, while separation provoked a variety of reactions in children, it was the reunion with the mother that gave the most information about a child's attachment and resonated with Bowlby's ideas on separation.

Ainsworth's empirical exploration of a child's relationship to his caregiver as a "secure base" has become a classic in the field of attachment (Ainsworth, Blehar, & Waters, 1978.) In her Baltimore Project, Ainsworth observed that infant-mother reunions broke down into three

basic patterns. The first and most common pattern, labeled "secure," was one in which the child was upset on being left in the presence of a stranger, but then went to mother on her return and was easily soothed and returned to exploration of the playroom. The next pattern identified by Ainsworth and colleagues was "anxious-avoidant." Infants in this classification appeared not to be upset by mother's departure and displayed little need for her when she returned. The third pattern, "anxious-resistant," showed a great degree of distress on separation, could not be soothed easily if at all by mother on her return, and in their anxious preoccupation with separation, showed the fewest exploratory behaviors during the protocol. These basic categories have become a central paradigm for attachment research, and the Strange Situation has been used in countless studies and linked to a multitude of outcomes in later development. Further replication of the procedure eventually led to the identification of a fourth pattern, "disorganized," which is characterized by freezing, startle responses, and contradictory behavior (Main & Solomon, 1986; Main & Hesse, 1990). Inquiry into this previously unclassifiable group found their parental interactions to be characterized by unpredictable, frightening behavior on the part of the caregiver, who often had a history of unresolved trauma or loss.

These data were validated in comparison with Ainsworth's 72-hour home observations of these dyads (Ainsworth, Bell, & Stayton, 1974). They showed correlations among mother's interactive style with the child and the child's attachment behaviors: mothers of avoidant infants

tended to be cold and rejecting of the child's gestures of affection; mothers of resistant infants tended to be clumsy and inconsistent; while mothers of secure children displayed behaviors deemed indicative of sensitive attunement.

Stability of Strange Situation classifications

Ainsworth's research gave attachment theory a grounded vocabulary for discussing attachment patterns and an invaluable tool in exploring the vagaries of infant attachment across relationships and over time. How generalized can we consider a baby's internal working models to be? Bowlby saw early attachment patterns as a profound influence on a child's confidence in exploring the world and relating to new people, and it follows that an expectation of dependability or unreliability based on parental interaction would color subsequent relationships. This assertion is complicated, however, by the fact that infants often have relationships with more than one person, and the finding that comparisons of infant attachment patterns across mother and father relationships have produced modest correlations (Fonagy, Steele, & Steele, 1991; Fox, Kimmerly & Schafer, 1991; Steele, Steele & Fonagy, 1996; Goossens & van IJzendoorn, 1990). A meta-analysis of such data has shown a weak effect (.17) between mother and father attachments (de Wolff & van IJzendoorn, 1997).

If attachment quality across maternal and paternal relationships is not strongly stable, on what grounds could we assert that internal working models tend to generalize? van IJzendoorn

suggests that this weak correlation could be an artifact of the Strange Situation because it was first developed to assess infant-mother samples and does not assess infant-father relationships appropriately (van IJzendoorn, 1995.) He also notes that, by and large, fathers in Western countries spend less time with their children than mothers. Because mother-infant attachment has been shown to predict later outcome more reliably than father-infant attachment, it makes sense to suggest that the mother is usually the primary attachment figure and has the greatest influence on development (Bretherton, 2005).

Attachment has also been shown to be somewhat subject to change during infancy. Sroufe and his colleagues reported that 38% of their longitudinal sample changed between secure and insecure classifications between 12 and 18 months (Sroufe, Egeland, Carlson, & Collins, 2005). Changes from secure to insecure were found not to be impacted by caregiving skills but rather by low maternal pleasure and joy in feeding; this finding suggests that a mother's affective presentation could be an issue in cases of downward slide. Changes in a positive direction, Sroufe notes, correlate with reduced environmental stress (Vaughn, Waters, Egeland, & Sroufe, 1979).

These studies using the Strange Situation suggest that internal working models, as indicated by attachment patterns, can be fluid early in life. It makes sense that these models are more changeable early in development and are associated with the mother's emotional world and

stress level. The question remained, though, whether attachment patterns persist into adulthood. The Strange Situation gave attachment research access to the internal working models of children, but it stopped there. Not until the creation of the Adult Attachment Interview (AAI) (George, Kaplan & Main, 1996) were researchers able to assess the stability of attachment from infancy to adulthood.

Mary Main and the Adult Attachment Interview

An understanding of individual differences in patterns of infant attachment and caregiver behavior led researchers to wonder whether and how these patterns persist into adulthood, and whether such patterns could be discerned in adults. The Adult Attachment Interview was developed to elicit verbal responses from adults about their childhood experiences in a semi-structured interview format.

Main and her colleagues developed a way to score this interview based not on the explicit content of answers, which could always be affected by conscious, intellectual processes in adult subjects, but rather by the coherence of narratives (Main, 1991). Because coherence is a factor that operates primarily outside of awareness, Main thought it to be potentially more indicative of a person's mental processes when attachment relationships are evoked on a representational level. Main identified four adult attachment patterns based on an analysis of the AAI using Grice's Maxims of quality, quantity, relation, and manner, which define coherent discourse as

truthful, not excessive, of appropriate interest to the listener, and syntactically clear (Main, 1991). Based on this approach to narrative analysis, she found that AAIs fell into four basic categories—autonomous, dismissing, preoccupied, and unresolved.

Autonomous adults remain coherent in the face of the stressful task of giving specific examples to support generalizations and speculating about the feelings underlying their parents' behaviors when they were children. They integrate both positive and negative memories in their representations of attachment figures and display a textured appreciation of the impact of early experience on their personality development. The AAIs of dismissing adults are often content-poor in that these individuals have limited access to early memories and give global explanations for parental behavior, either in an idealized or a devaluing fashion. In addition, they sidestep strong emotion by minimizing the importance of early experience in their formation. The AAIs of preoccupied adults, on the other hand, tend to display ready access to memories of early experience, but they lose coherence and give contradictory representations as if overwhelmed by the feelings accompanying those memories. Unresolved AAIs are characterized by the intrusion of traumatic memories that are not successfully integrated into an overall personal narrative. While they can have qualities of the other categories as well, these interviews reflect the split-off, dissociated recollections typical of people who have suffered early trauma.

Main's premise – that coherence in delivering autobiographical narrative is indicative of an adult's current state of mind with respect to attachment – rests on the idea that adult attachment is generalized across relationships. Without this foundation, it would not make sense to give a single attachment rating based on narrative about both parents in the same interview. Therefore, underlying any study using the AAI is the tacit assumption that there exists a tendency toward cross-contextual stability of parental attachment representations by adulthood.

Stability of adult attachment

The stability of AAI classifications over time has lent it great credibility as a measure. It has shown solid reliability and validity on test-retest studies over a two-month period, a three-month period, and a 1.5 year period (Bakermans-Kranenburg & van IJzendoorn, 1993; Sagi, van IJzendoorn, Scharf, Koren-Karie, Joels, & Mayseless, 1994; Benoit & Parker, 1994; van IJzendoorn, 1995). Crowell and colleagues (2002) found that 78% of a sample of 157 adults given the AAI at an interval of 21 months, before and after marriage, received the same primary classification, strongly supporting the idea that attachment is stable over time.

The AAI has also allowed attachment stability to be studied longitudinally between childhood and adulthood. Such studies have produced some evidence to suggest, as attachment theory has always held, that prototypes established in childhood continue to affect adult attachment behavior in subsequent relationships. A longitudinal study found that 72% of 50

subjects were concordant between the Strange Situation at 12 months of age and the AAI at 20 years of age (Waters, Merrick, Treboux, Crowell, and Albersheim et. al., 2000). Sroufe and colleagues' Minnesota study found that 18-month Strange Situation classifications modestly predicted secure/insecure status in adulthood, though it did not predict the particular varieties of insecurity (Sroufe, Egeland, Carlson, & Collins, 2005).

Stability of attachment across relationships in adulthood is also of key importance because there is evidence that the primary attachment figure in a person's life tends to change. Studies of attachment with romantic partners have shown that the vast majority (80%) of subjects with partners of more than two years show that person to be their primary attachment figure (Kobak & Hazan, 1991). Research on romantic love as an attachment phenomenon was pursued by Hazan and Shaver (1987), who reported compelling findings in support of the idea that a person's attachment to their parents is a major influence on their attachment to a lover. Using a self-report measure, they classified subjects as anxious/avoidant, anxious/ambivalent, and secure, designations similar to infant attachment categories. They found that their population fell into these categories with frequency very similar to Ainsworth's infant categories. Further, they found that secure subjects tended to have significantly longer relationships, and that they tended to describe parental relationships as warmer both with the child and between the mother and father. Subsequent studies on romantic attachment have found similarities between

representations of parents and quality of current love relationships (Collins & Read, 1994; Collins, 1996). A study comparing the AAI with the Current Relationship Interview (CRI) found that adults who were secure on the AAI were significantly more likely than insecure adults to be coherent in discussing attachment-related elements of their current relationships, and that they reported more closeness, fewer arguments, and tended not to threaten abandonment (Crowell, Treboux, & Waters, 2002).

Change of attachment representation

While it is generally held that working models from early life determine the quality of later attachment relationships, there is also evidence that change can occur. Bowlby did not think attachment was impervious to change. He theorized that major life events could alter attachment patterns, but that in the absence of factors such as abuse, loss, and grave illness, that stability should be the rule (Bowlby, 1973). Crowell's study of attachment and marriage did find that the majority of its subjects remained consistent before and after marriage, but a certain percentage (22%) did change. That a majority of that group changed from insecure to secure suggests that positive life events can also alter attachment patterns in some cases (Crowell, et al., 2002).

Because working models are theorized to be more fluid in early childhood, attachment theory would predict that a later assessment of attachment during childhood would be more likely to correlate with adult attachment than an earlier assessment. Sroufe and his colleagues

note that they did not find evidence for stability between 12-month Strange Situations and 19-year-old AAIs, but the 18-month Strange Situations did a better job of predicting adult state of mind (Sroufe, Egeland, Carlson & Collins, 2005). As noted above, another longitudinal study found a high degree of correlation even at 12 months; Sroufe and colleagues speculate that the difference between their finding and Waters's finding could lie in the sample – Waters's sample was a low-risk group, while the Minnesota study followed a high-risk population, more susceptible to the kind of life events that Bowlby thought could create changes in attachment style.

Intergenerational transmission

One of the most important findings in attachment research is the correlation between a mother's classification on the AAI and her child's attachment classification (Main, Kaplan, and Cassidy, 1985; Grossman, Fremmer-Bombik, Rudolph, & Grossman, 1988; Ward and Carlson, 1994; Steele, Steele, & Fonagy, 1996). Main and colleagues' original study (1985) showed that maternal attachment narrative predicts her infant's attachment quality 68% of the time, suggesting that autonomous mothers tend to have secure babies, dismissing mothers tend to have avoidant babies, and preoccupied mothers tend to have resistant babies. In both Main's study and subsequent replications, predicting the basic secure/insecure distinctions is easier than predicting subtypes of insecure attachment; Main predicted this more basic distinction 75% of

the time. Further studies revealed that a history of unresolved trauma can cause the frightened/frightening behaviors that lead, in some cases, to a disorganized Strange Situation (Main & Hesse, 1990). Since Main developed and validated her scoring procedure for the AAI, the correlation between a mother's narrative coherence on this interview and her child's classification on the Strange Situation has been replicated many times over in studies which assess adult attachment and strange situation concurrently as well as studies which assess the mother's attachment prenatally (Fonagy, Steele & Steele, 1991; Benoit & Parker, 1994; Ward & Carlson, 1995). Van IJzendoorn's meta-analysis (1995) found a robust correlation of 75% between parent and infant attachment classifications when comparing the basic categories of secure vs. insecure. Correlations among subcategories of insecure were found to be less robust but nevertheless considerable for such different types of measures; he found combined *r*s of dismissing, preoccupied, and unresolved AAIs as predictors of child's Strange Situation to be .45, .42, and .31, respectively.

These correlations suggest that internal working models are consistent not only across one individual's life span, but also across generations, and they have led attachment theory into a new realm as researchers attempt to understand what mechanisms underlie the correlation between a mother's attachment style and her child's. The next section will present a compelling

new branch of attachment theory that helps to explain the intergenerational transmission of attachment, Peter Fonagy's theory of mentalization and affect regulation.

Section III. Mentalization

The qualities of the dyad that promote attachment security have been of interest since the field began. Since Ainsworth's early naturalistic observation linking a mother's sensitivity to infant security, many attempts have been made to better understand the processes that underlie attachment security (Ainsworth, Bell & Stayton, 1974). Investigation of the components of maternal sensitivity has mirrored other developments in the attachment field, in that it has moved generally from a consideration of observable behaviors to incorporate data measuring mental representations as well.

The dominant figures in attachment theory have suggested at various points that a person's ability to think about the mind – the mind of a caregiver, and one's own mind – likely plays a significant role in the creation and maintenance of internal working models of attachment. Bowlby noted the importance of the child gaining theory-of-mind in his delineation of the "goal-corrected partnership," which occurs between the ages of 3 and 4 (Bowlby, 1969). In this stage, the quality of the relationship changes as the child becomes better able to understand the motivations of his caregivers (Bowlby, 1969). Main (1991) argues that the inability to employ a "self-regulation of knowledge," or regulating understanding based on a distinction between appearance and reality, makes younger children particularly vulnerable to insecure attachment as they are unable to make sense of discordant behavior from caregivers. To

know that people can deliberately lie, or that they might feel something other than what they show, can help an older child create an integrated representation that a younger child could only process as separate models, rather than an integrated single model.

Metacognitive monitoring

Main's discussion of "metacognitive monitoring," elaborated in the same seminal article (1991), set the stage for much of the attachment theory that has been written since. She drew a contrast between representation, the content of autobiographical thoughts and associated feelings that make up internal working models, and metarepresentation, the ability to reflect on those thoughts. She spelled out this distinction clearly:

> For young, children, [attachment-related] experiences are expected not only to influence the development of certain first-order representations (in philosophical terms, propositional attitudes such as 'I believe that I am an unworthy person'), but may also influence the child's ability to create and manipulate second-order representations (metarepresentations) such as 'I find myself believing that I am unworthy person – why?' (Main, 1991).

Thus, Main nuanced Bowlby's concept of the internal working model so that it would include not only behavioral systems but also the ability to act on and revise one's memories. In formulating the AAI, Main connected metarepresentation, or "thinking about thought," with narrative coherence, and this connection serves as the basis for her adult attachment classifications. Linking metacognitive monitoring to several mental faculties, she writes,

> … since defensive and/or self-deceiving processes are compartmentalizing processes which act to separate feeling, attention, perception, and memory, they will inherently place limits on metacognitive monitoring (Main, 1991).

On the AAI, coherence is maintained when a person has flexible access to metacognitive capacities. When a person can hear how he sounds to another and can communicate clearly, metacognition is operating in the context of evoked attachment representations, and the narrative is likely to be coherent. This person's attachment style is likely to be autonomous. Dismissing and preoccupied attachment are evidenced by a tendency to lose coherence in particular ways, such as idealizing a parent and then being unable to support the idealization (dismissing), or losing the thread of an answer out of a worried rumination on the topic, and giving self-contradictory responses (preoccupied) (Main, Kaplan, & Cassidy, 1985). The quality of these latter two kinds of narratives are not true to their content; they give evidence of thought processes that are disrupted by dysregulated affect, i.e., of a failure of metacognitive monitoring.

As an explicit elaboration of Main's "metacognitive monitoring," Peter Fonagy and his colleagues formulated the related concept of "reflective self-function," and began to explore the usefulness of their concept in terms of attachment narratives (Fonagy, Steele, et al., 1991). Coherence is one indicator of an understanding of mind, but Fonagy's group found that many other indicators of this ability also exist. Their concept came to develop a wider focus than metacognitive monitoring—while it includes coherence as a sign of reflectiveness, it also includes any evidence of an appreciation for, and use of, mental states in discussing attachment relationships. This expanded understanding of metarepresentational mental capacity has since

grown into the broad-based theory of mentalization, rooted in an integrated understanding of theory-of-mind and affect regulation that partakes of research from fields as diverse as philosophy of mind, psychoanalysis, and cognitive neuroscience (Flavell, 1979; Dennett, 1987; Bion, 1962; Schore, 1994; Hofer, 1995; Sroufe, 1996).

The concept of mentalization is rooted in cognitive research on theory-of-mind. Alan Leslie proposed that the capacity to use theory-of-mind, to see others as beings with intentions, is so essential to human survival that it must have its own mental module like other crucial abilities such as vision or hearing (Leslie, 1994). Building on classic research by Piaget on the origins of causal beliefs, and further by studies of the false belief paradigm begun by Premack and Woodruff, Leslie designated a mental mechanism the ToMM – the Theory of Mind Module – which he proposed to explain the development of the most rudimentary form of the ability to understand pretense (Leslie, 1994; Piaget, 1926; Premack and Woodruff, 1978). Fonagy's contribution has been to follow these researchers in moving theory-of-mind to the center of research on attachment, social functioning, and affect regulation over the course of development. Recently, Fonagy defined mentalization this way:

> … a form of mostly preconscious imaginative mental activity, namely, perceiving and interpreting human behaviour in terms of intentional mental states (e.g., needs, desires, feelings, beliefs, goals, purposes, and reasons (Fonagy, 2006).

This deceptively simple definition of the term expands the concept of metarepresentation beyond the theory-of-mind literature from which it first evolved. Basing his argument in Dennett's concept of the "intentional stance," Fonagy defines "mentalization" as a broad kind of automatic self-perception that includes three primary criteria – "mentalism," a basic understanding that intentional mental states underlie behavior; a representation of the minds of others; and an ability to predict future action of self and other based on those representations (Dennett, 1987; Fonagy, 2006.) Fonagy argues that, over the course of normal development and secure attachment to a caregiver, these capacities achieve increasing levels of sophistication throughout childhood and form the basis of an integrated self. Disrupted attachment patterns, however, can interfere with the development of mentalization because "the development of the self is tantamount to the aggregation of experiences of self in relationships" (Fonagy, et. al., 2002).

Affect regulation

Fonagy and his colleagues formulated this idea, in part, with the intention of understanding the "transmission gap," van IJzendoorn's name for the unaccounted-for variance in the findings about intergenerational transmission of attachment patterns. Fonagy holds that, in development, a crucial mechanism underlying intergenerational transmission is the adult's capacity to understand her child's emotions and help the child learn to regulate them. This understanding is based in an understanding of secure attachment as involving the regulation of strong, attachment-

related emotions (Carlson and Sroufe, 1995; Cassidy, 1994). Allan Schore (2003) argues that "attachment theory is fundamentally a regulatory theory" that describes a dyad's ability to synchronize and connect emotionally.

Parental sensitivity, by Fonagy's account, involves an ability to tolerate, contain, and re-present or "mark" a child's emotion in such a way that the child experiences feeling, positive or negative, as tolerable and comprehensible (Gergely & Watson, 1996). Over time, repetition of this mentalizing activity allows a child to understand not only his own mind but also the properties of mental states generally, distinctions between appearance and reality, and the behavior of others. While such an activity takes a variety of forms depending on many factors in both caregiver and child, the essential, representational moment in a securely attached dyad involves a meeting of minds in which a parent automatically teaches a child this most human of activities. Without such regulating interactions, the child is liable to become overwhelmed by unintelligible states of arousal and to develop maladaptive strategies for handling strong emotion. The idea of affect regulation is crucial to understanding the link between early experiences with attachment figures in emotionally charged situations and expectations in social situations later in life (Sroufe, 1996; Hofer, 2004). Fonagy does not see this ability as something which is innate, but rather as a developmental achievement based fundamentally in interactions with caregivers (Fonagy, 2006).

Fonagy's conceptual contribution has been to elaborate this connection between metacognition and attachment as an integrated developmental theory with a focus on affect regulation. Mentalization and affect regulation are as inseparable in child development as mother and child. Through facilitating interactions with mother, a child learns to handle and eventually to make meaning of strong feelings based on a working knowledge of mind. This ability keeps those feelings from becoming overwhelming. Mentalization and affect regulation develop in concert so that the quality of emotional understanding affects further development, which in turn sets the stage for the development of more sophisticated emotional understanding, in an iterative fashion (Fonagy et. al., 2002). Fonagy has likened this mental holding of the child to Bion's idea of a mother's "containment" of her child's affect (Bion, 1962), and it coincides with the ideas of some major figures in object relations theory (Fairbairn, 1954; Winnicott, 1965) in its emphasis on a child coming to understand his own mind through his mother's mind.

If this theory is correct, then adult attachment security and a child's theory-of-mind capacity should be linked. Studies have been conducted to test the relationship between adult attachment classification and the age of acquisition of theory-of-mind in the child. This type of cognitive research is predicated on the notion that parental use of theory-of-mind with the child could lead to an earlier development of the child's ability to pass the false belief task. Consistent with this prediction, Fonagy and colleagues found that, of the 92 children classified as secure at

12 months, 82% passed the belief-desire reasoning task, and that 42% of those classified as insecure failed (Fonagy, Redfern & Charman, 1997). Meins and her colleagues showed that 83% of the children classified as secure in her sample passed the false belief task at age 4, compared with 42% of those classified as insecure (Meins, Fernyhough, & Russell, 1998). The evidence is compelling that secure attachment promotes a developmentally earlier acquisition of the ability to reason about the beliefs of others (see also Moss, Parent, & Gosselin, 1995).

Measuring mentalization in adults: The Reflective Function

Under the rubric of the more general "interpersonal interpretive function" (IIF), mentalization is understood as a procedural, automatic ability to understand mental states as underlying behavior (Fonagy, et al., 2002; Fonagy, 2006). In the context of affectively charged relationships, it also involves an ability to regulate emotions and interactions based on that understanding. This definition is wide in its scope, and the IIF is often seen as including two components, the affective (IIF-a) and the cognitive (IIF-c).

Fonagy and colleagues created the construct of Reflective Functioning (RF) as a way to operationalize mentalization in a scoring system for the AAI, and RF has come to mean, specifically, mentalization in the context of an attachment relationship (Fonagy, Target, Steele, & Steele, 1998; Fonagy, 2006). Mentalization in an attachment relationship necessarily implicates the IIF-a, as attachment involves the regulation of strong emotions. The

mentalization-based theory of development is more precisely about RF, then, since development always plays out in the context of highly emotional relationships with primary caregivers. This distinction is important, as mentalization can occur in any interpersonal context, but the component of affect regulation is more relevant in the context of powerfully emotional attachment relationships.

Created to apply to the AAI, the Reflective Function Scale is an important construct in mentalization research. The RF Scale takes account of both cognition and affect in measuring the presence of, and the sophistication of, mentalization as it appears in narrative. It rates an interview on an 11-point continuous scale from -1 (bizarre) to 9 (high) based on the presence of four indices of mentalization: An awareness of the nature of mental states, the explicit effort to tease out mental states underlying behavior, recognizing developmental aspects of mental states, and mental states in relation to the interviewer (Fonagy, et. al., 1998). Less sophisticated instances of RF might include mere perspective-taking, such as noticing that another person wants something, while more sophisticated RF would take several such thoughts and use them in the service of understanding difficult emotions. Subjects are given higher scores for mentalizing in the face of terribly difficult circumstances that would clearly elicit strong emotion, such as the death of a loved one.

Using this scale, Fonagy and colleagues demonstrated that an adult's ability to mentalize about her parents on the AAI predicts her child's attachment security at one year of age (Fonagy, Steele & Steele, 1991). This study supports the theory that a parent's mentalizing ability is involved in attachment security on the Strange Situation (Fonagy, Steele, Moran, Steele & Higgitt, 1991). These adults were also more likely to have an "autonomous" classification on the AAI.

Parental representation of child

Mentalization has also been studied in the context of parental representations of children. From the beginning, Bowlby discussed a system parallel to the child's attachment system – the parent's caregiving system, which motivates parents to safeguard the child (Bowlby, 1982). Until recent years, this side of the equation was relatively neglected as a topic of study, but Solomon and George (1996) have drawn attention to the caregiving system, which they consider to be separate from the child's attachment system but, like attachment, "organized at the level of representation" (Solomon and George, 1996). Taking note of the evidence that adult attachment classification is so often concordant with infant attachment, they nevertheless challenge the idea that a mother's relationship to her baby is simply determined by her past experiences. Instead, they argue that while the caregiving system is affected by the mother's own attachment history, it also takes on a life of its own as the real-life interactions between mother and child unfold. For

this reason, they see the caregiving system as a "mature transformation of the attachment system" that involves a reorganization of self-representations toward the new goal of protecting a child (Solomon and George, 1996).

Researchers interested in parental representation have used semi-structured interviews to obtain narrative data from mothers about children, and they have used various methods for assessing its quality. The question in most studies has been the relationship between parental representation and adult attachment representation and/or infant security. Solomon and George (1996) found very significant relationships between their measure of caregiving representation on the "Experiences of caregiving interview" and adult attachment representations, as well as child attachment classifications, in a sample of 32 mothers. In their analysis of maternal data on the Working Model of the Child Interview (WMCI), Zeanah and Benoit (1995) found similarly strong correlations between maternal representation, gauged in categories similar to the AAI categories, and Strange Situation classifications. Theran and her colleagues also used the WMCI found 71% of a sample of 180 mothers to have representation that is stable over time, pre- and post-natally. They also found that, of the 29% who did change, most began as insecure, and environmental risk factors were greater (Theran, Levendosky, Bogat & Huth-Bocks, 2005). These results suggest that the influence of early experience on a mother's caregiving is less subject to change if the mother's early attachment is already secure.

Mentalization and parental representation

Research on mentalization in parental representation has centered on the Parent Development Interview (PDI) (Slade et al., 2003). The PDI is a 45-question, semi-structured interview that asks a mother to describe her child and to elaborate in detail a variety emotional experiences with the child, such as moments of anger, joy, and separations. The PDI was originally designed to be scored with a group of scales that assess 16 variables, including emotional experience (anger, neediness, separation distress, guilt, joy, sense of competence), understanding of child's emotional experience (acknowledgement of anger, neediness, separation distress, child's dependence or independence), and state of mind (coherence, and richness of perception) (Slade, et al., 1993). Studies using these scales found evidence for stability in parental representations of Joy and Separation Distress during toddlerhood, though anger was found to increase when the child was two years old (Aber, Belsky, Slade & Crnic, 1999).

Later, Slade and her colleagues adapted the RF Scale, originally written for scoring the AAI, for use with the PDI (Slade, et. al., 2003). Fonagy's study had connected a mother's RF on her AAI with attachment classifications, but the study had only indirectly indicated that a mother's RF about her child would be of a similar quality to her RF about her parents (Fonagy, et al., 1993). In the interest of studying the intergenerational transmission of attachment more directly, Slade and colleagues hypothesized that a mother's attachment classification on the AAI

would correlate with maternal RF as measured by the PDI, and that infant attachment as measured by the Strange Situation procedure would also be predicted by a mother's RF on the PDI (Slade, Grienenberger, Bernbach, Levy, & Locker, 2005). Both of these hypotheses were confirmed, though a post-hoc analysis showed that maternal RF of secure and avoidant infants was indistinguishable. This documentation of associations between adult attachment and RF on the PDI, and between infant attachment and RF on the PDI, implies that RF could is an important mediator in the intergenerational transmission of attachment (Fonagy & Target, 2005). While this study did not compare RF on the PDI with RF on the AAI, Slade raises the question of potential correlations between RF across these two contexts.

Another study from this group tested the relationship between parental RF and disrupted affective communication as measured by the Atypical Maternal Behavior Instrument for Assessment and Classification scale (AMBIANCE), which focuses on disruption and negativity, as opposed to synchrony and positivity. On five scales, it measures disrupted communication in parent-infant interaction which includes negative affect (Bronfman, Parsons and Lyons-Ruth, 1999). This study found that disrupted communication during displays of negative affect by the infant correlated negatively with maternal RF on the PDI. Presence of disruption also correlated negatively with the infant's attachment classification (Grienenberger, Kelly, & Slade, 2005).

These findings suggest that failures of mentalization could be involved in moments of severely disrupted mother-child communication.

Stability of RF

This stability of RF across relationships is the subject of the current study. If attachment theory asserts correctly that internal working models tend to be stable, and mentalization is the primary mental capacity underlying attachment security, then it follows that mentalization should be a stable psychological process. However, the literature is, to date, inconclusive about the cross-contextual and longitudinal stability of mentalization.

Informed by skills theory, Fonagy and colleagues speculate that mentalization is a domain-specific skill, meaning that, early in development, mentalization should not be automatically expected to generalize from one relationship to the next (Fonagy, et al., 2002). He theorizes, instead, that an unevenness in development, a *décalage* or fractionation, would likely be common in the development of RF. While a person could be expected to have a certain ceiling in terms of the sophistication and utility of her mentalization, this capacity could be expected to be reached, or not reached, depending on context.

Fonagy and colleagues cite Fischer and Pipp's 1984 paper "Development of the Structures of Unconscious Thought" in theorizing that RF is a domain-specific skill in childhood, learned in the context of particular relationships, that does not automatically generalize to other

situations and can remain fractionated during development. The comparison is quite reasonable, as Fischer and Pipp themselves expand the idea of skills and abilities to include making connections between thought and behavior (Fischer & Pipp, 1984). For them, fractionation refers to both "passive dissociation" of learned abilities, meaning abilities that remain compartmentalized because they have not yet been integrated, and "active dissociation," the realm of unconsciously motivated repression (Fischer & Pipp, 1984). They then argue that psychotherapy works by helping a person to make the unconscious conscious insofar as it aids in creating connections between either passively or actively fractionated abilities. In accordance with Fischer and Pipp, Fonagy and colleagues speculate that, regarding RF, "normal development proceeds from fractionation toward integration," but they allow that "unevenness across situations is likely to remain prevalent even in adults, especially when they are emotional" (Fonagy, et al., 2002).

Like Bowlby, Fischer and Pipp consider unconscious process and defense in terms of information processing and memory systems, and they emphasize the effect of emotionally charged material on encoding and retrieval (Fischer & Pipp, 1984). They describe the unconscious as a thought *process* rather than a store of drives, detectable only by implication, through the prism of the defenses. Unconscious thought, they argue, emerges whenever there is a gap between the task being performed and the subject's skill at performing that task. While

order and logic dominate secondary process thought, unconscious thought is influenced by primary process and the illogical qualities that Freud saw in dreams and the thought of children and psychotics. In contrast to Freud, however, they emphasize that primary process becomes an influence on the thinking of *any* normal adult whenever she attempts to use an overextended skill. They write:

> Thought is unconscious when the person cannot differentiate and integrate the potential components and relations in the task. That is, the person is unaware of the potential integrations of the components and relations at higher levels of thought, although a trained observer can detect them implicitly in the person's behavior and in the task (Fischer & Pipp, 1984).

Because emotion is "a potent organizer of skills," they suppose that the emotional valence of a particular topic can determine the skill with which a subject is able to think about it.

The RF scale is an instrument designed to measure the level of mentalizing thought in the face of difficult questions about family relationships. A scorer of RF is a "trained observer" of unconscious thought as it emerges in the attachment narrative, and many of the criteria for low RF, such as bizarre explanations and egocentrism, are precisely such irruptions of primary process thought into narrative. A subject who makes bizarre mental state attributions is not considered psychotic; rather, it is assumed that low RF is the result of the affect dysregulation that occurs for them as a result of the representations evoked in the interview. When the tasks

presented by these interviews, designed to stress the subject, surpass a given subject's skill in reflecting and regulating emotion, their narratives will reflect lower-level thought, i.e., low RF.

Several studies support the idea that the skill with which mentalization is used tends to be context-dependent early in life. Dunn suggests that mentalizing in children should be seen as context-dependent based on her finding that children use significantly more mentalization in conversations with peers and siblings than they do with their parents (Dunn, 1996). Fonagy supports his hypothesis of developmental unevenness with a finding that the ability to mentalize in a non-attachment context does not predict the ability to mentalize in the context of an attachment relationship (Fonagy & Target, 1997). It has also been suggested mother's orientation to mind in relation to a child increases over time as the child matures (Beeghly, Bretherton & Mervix, 1986; Dunn, Bretherton, & Munn, 1987). In a similar vein, outcome studies of treatments of Borderline Personality disorder show a significant increase over time in the RF of borderline patients undergoing Transference-Focused Psychotherapy (Levy, Meehan, & Weber, 2005). These findings, taken together, suggest that mentalization can vary by situation and over time.

To study the relationship specificity of mentalization, O'Connor and Hirsch employed a categorical measure of mentalization across relationships to test the hypothesis that RF would remain stable across relationships between children and their teachers (O'Connor & Hirsch,

1999). Controlling for relationship type, they interviewed children about a more-liked and a less-liked teacher, and found a moderate difference between mentalization in positive and negative relationships. They had a weak result that affect tone – gauged by the quality of the relationship toward the teacher – mediated the relationship between affect and mentalization.

Most recently, Steele and her colleagues conducted a study comparing RF on the AAI with various subscales of the PDI in a population of adoptive parents (Steele, Kaniuk, Hodges, Asquith, Hillman & Steele, 2008). They gave AAIs to these parents before the adoption of a child, and then gave them PDIs at three intervals following adoption. They found that RF on the AAI had a significant and positive correlation with warmth, coherence, ability to reflect on the new relationship with the adopted child, richness, and extent of child focus as scored on the PDI. They also found that RF on the AAI predicted a greater tendency to acknowledge need for support and ability to represent parenting difficulties. Although this study did not measure RF on the PDI but rather used the dimensional subscales, these findings strongly support the hypothesis that a general score of RF on the PDI would probably correlate positively with RF on the AAI. The authors write:

> Clearly, the overwhelming conclusion from the current report is that mentalizing in the present about the current parent-child relationship, even when it is as new and challenging as a late-adoptive placement, is foreshadowed in meaningful ways by a parent's mentalizing about their own early childhood relationships (Steele, et al., 2008).

They go on to call for further research to help understand the stability of mentalization across relationships. The current study is an attempt to further the efforts of Slade, Steele, and Fonagy, and others, in documenting this stability by using the same RF scale to measure mentalization across the AAI and the PDI.

Section IV

Purpose of study

This study addresses the stability of RF across different relationship types. There is strong evidence in the literature for the hypothesis that RF is stable across relationship types, and this study tests the hypothesis that RF on the AAI correlates positively with RF on the PDI. Second, subjects showing a clinically significant difference in RF across relationships will be examined in detail. While it is expected that stability is the norm, factors such as pathology, the mother's history, or the circumstances of the child's birth could come into play in creating significant intra-subject variation across interviews. The qualitative section will aim to generate hypotheses for further study about these and other factors that could account for both the stability and instability of RF.

Hypothesis

There will be a significant, positive correlation between RF scores on the AAI and the PDI.

Plan for Qualitative analysis

Qualitative analysis will be performed on selected subjects if any show clinically significant discrepancies between interviews. The purpose of this qualitative analysis will be to explore what factors may be involved in instances of unstable RF across parent and child relationships.

Chapter 3
Methods

Subjects

The present study involves the secondary analysis of data collected as part of The Pregnancy Project, a study of attachment designed by Arietta Slade at the City College of New York and funded by the National Institute of Child Health and Human Development (RO1-HD24676-05). Subjects were 40 first-time mothers and their infants studied from the third trimester of pregnancy through the infant's second year. Drawn from the New York City area, the sample was mostly Caucasian, (94%), three were African-American and one was of mixed background, and all were middle-class. They ranged from 25 to 40 years of age, with a mean of 31.4 years. All were in stable, cohabiting relationships at the time of the study, and all but three were married. The group were well-educated and consisted of 90% college graduates and 50% with some graduate education. When the mothers were contacted initially, 48% were employed professionally, 29% were in public service or business, 15% were artists, and 8% were students or unemployed. On average, the subjects were 31.8 weeks pregnant when they made initial contact with the project.

All of the babies were healthy at the time of postpartum interviews. The distribution was 51% girls and 49% boys. 91% of the mothers elected to breastfeed; of these, 75% reported breastfeeding without problems, and 25% reported mild difficulty with feeding. Some 23% of

the mothers suffered depressive symptoms at one month following birth, but none reached a significant level of postpartum depression.

Setting

The data were collected in a laboratory on the campus of the City College of New York. The lab included a large, outer room designed especially for interviewing, and another outer room that served as a waiting area with comfortable chairs and a play space for infants. There was one inner room separated by a one-way mirror, which included a video camera set up to record the Strange Situation procedure. The other side was a playroom with carpeting, wall decorations, and toys appropriate for young children.

Procedure

The subjects were recruited during pregnancy from a variety of locations including maternity stores, doctor's offices, and LaMaze classes, and newspaper advertisements. When mothers contacted The Pregnancy Project, they were given a detailed description of the research, and they were told that two two-hour meetings would be required for participation in the initial phase of the study. Between the 32nd and 36th weeks of pregnancy, subjects came for an initial appointment during which details of the study were discussed and consent was given. Ultimately, their participation consisted of three visits to the laboratory while pregnant and four to six follow-up visits with the baby, at four, ten, fourteen, and 28 months after birth. At one

month after birth, there was also a short telephone interview. Throughout the period of the study, a project coordinator was responsible for scheduling these interviews and was available to answer questions. The mothers received $20.00 for their participation after each visit. They all provided informed consent, and the study was given Institutional Review Board approval.

The current study uses data collected at various points during the study. The Adult Attachment Interview (George, Kaplan & Main, 1996) was administered during the second visit, while the mothers were still in their third trimester. The Parent Development Interview (Slade, et al., 2003) was administered when the child was ten months old, and the Strange Situation was conducted when the child was 14 months old. The measures and scoring procedures for all of these are described below.

Measures

The Adult Attachment Interview (AAI)

The Adult Attachment Interview (George, Kaplan & Main, 1996), developed by Mary Main and colleagues at the University of California at Berkeley, is a structured interview that asks 18 questions and takes 1-1.5 hours to administer. It asks subjects to describe their parents, about life stressors such as deaths of significant figures, setbacks in development, and themselves as children, and to speculate about why their parents behaved as they did in the past.

The primary use of the AAI in the current study was to score it for Reflective Functioning using the Reflective Functioning Scoring Manual (Fonagy, Steele, Steele, and Target, 1998). Inspired by Main's paper on metacognitive monitoring (1991), the RF scale operationalizes the idea of mentalization by having raters code utterances which reflect an awareness of the nature of mental states, an explicit effort to tease out mental states underlying behavior, an appreciation for the developmental aspects of mental states, and for mental states in relation to the interviewer. The RF measure was developed and validated as part of the London Parent-Child Project (1991).

Reflective Function is scored on a scale of -1 to 9, an 11 point scale that measures the presence of, and sophistication of, reflective thinking about a subject's representation of herself, her parents, and her early relationships with her parents. It rates certain questions that call for the use of RF about oneself, such as, "Which parent did you feel closest to, and why?" as well as RF about others, such as, "Why do you think your parents behaved the way they did during your childhood?" Scores are given to individual answers and then taken together to give an overall score. A very low (-1,0,1) overall rating involves an absence of mental state language or outright rejection of RF; a low rating (2,3) involves only simple references to mental states; an ordinary rating (4,5,6) is given to transcripts which show a basic awareness of mental states or make unsophisticated efforts to tease out mental states underlying behavior; a high rating (7,8,9) is

given to transcripts which use mental states amply and flexibly in the service of providing a sophisticated picture of emotional representations. Within each of these four general levels of RF, a higher or lower number reflects the degree of sophistication within that level (e.g., a 6 versus a 4).

Two judges scored the AAI for RF. These include the principal investigator and a clinical psychologist with significant experience using the same scoring system for the same interview. Reliability between these two scorers was established first by through a series of six training AAIs that are not a part of this project. Inter-rater reliability was further established, and checked at intervals, on eight interviews from the data set being used by the current study. The overall interrater reliability was acceptable at .89. In cases of discordant scores, consensus scores were reached through comparison and discussion of scores on individual questions.

The Parent Development Interview (PDI)

The Parent Development Interview (Slade, et al., 2003) has been administered to over 700 parents in many research settings. The interview assesses parental representation of the relationship with one specific child in a 45-question semi-structured format that takes about 90 minutes to administer. Parents are first asked to describe the child generally and to provide examples to go with their descriptions. They are then asked to explain particular times when they "clicked" and did not click with the child, and they are asked to describe moments in which

they experience certain feelings as they relate to the child: anger, guilt, happiness, neediness, and joy. The interview asks specifically about both the mother's and the child's reactions to routine separations, and asks the mother to reflect on her own parents as they affected her own parenting experiences. Throughout the course of the PDI, there are a number of probes and queries for elaboration. For example the question, "Can you describe a time in the last week when the two of you were not clicking?" is followed by two questions: "How did you feel at the moment when that happened?" and "How do you think she felt when that happened?" PDI interviews were audio recorded and transcribed by the staff of the Pregnancy Project.

In the present study, the PDIs were scored for Reflective Function using an addendum to the Reflective Functioning Scoring Manual (Slade, Grienenberger, Bernbach, Levy, & Locker, 2005). The scoring system applied to the PDI is identical to that described in the original RF manual for the AAI, detailed above (Fonagy, Steele, Steele, and Target, 1998). Its goal is to help raters assess a parent's ability to think about his or her child reflectively, with an understanding of mental states that involves the same four general criteria listed for RF on the AAI: awareness of the nature of mental states, explicit effort to tease out mental states underlying behavior, appreciation for developmental aspects of mental states; and mental states in relation to the interviewer. On the PDI RF scoring, special attention is paid to the age-appropriateness of a

mother's mental state attributions, as development is particularly relevant in the context of an actively forming relationship with an infant.

Four judges scored the PDI for RF. They were advanced doctoral candidates in clinical psychology and were trained by Arietta Slade, Ph.D., director of the Pregnancy Project and first author on the Addendum to the Reflective Functioning Scoring Manual as adapted for use with the PDI. During the scoring of the PDIs, inter-rater reliability was kept at an acceptable rate averaging .88 for individual passage scores and .87 for overall RF scores. In cases of discordant scores, consensus scores were reached through discussion of individual questions.

Because previous the RF Scale assesses internal processes via narrative, vocabulary scores from the Wechsler Abbreviated Scale of Intelligence (WASI) were used to identify subjects whose verbal IQ might present a confound to the scoring system. However, all 40 mothers performed in the average to superior range on this test, and none was excluded on the basis of poor verbal ability.

Chapter Four

Results

Empirical Results

The 40 first-time mothers in this study were assessed for Reflective Functioning on two separate interviews, the Adult Attachment Interview (George, Kaplan, & Main, 1996), and the Parent Development Interview (Slade, Aber, Bresgi, Berger, & Kaplan, 2003). On each interview, subjects received scores on an 11-point scale that goes from -1 to 9. The lowest score given on both the AAI and the PDI was a 2, and the highest score was an 8. See Table 1 for the distribution of scores on the AAI, and Table 2 for the distribution of scores on the PDI.

Table 1

Frequency of RF scores on the Adult Attachment Interview

RF Score	Frequency	Percent of sample
2	2	5
3	5	12.5
4	6	15
5	14	35
6	4	10
7	6	15
8	3	7.5

Table 2

Frequency of RF scores on the Parent Development Interview

RF Score	Frequency	Percent of sample
2	1	2.5
3	6	15
4	6	15
5	10	25
6	6	15
7	10	25
8	1	2.5

Hypothesis

The hypothesis of this study predicted that the there would be a significant, positive within-subject correlation between RF scores on the AAI and PDI. A Pearson correlation was performed to assess the degree of consistency between the two sets of scores. As predicted, RF on the AAI was found to be positively correlated with RF on the PDI at a high level of significance ($r=.528$, $p<.001$). These results support the study's hypothesis, confirming that there is a moderately strong, positive correlation between the two sets of scores. The result is robust for a behavioral measure. See Table 3 for the results of the Pearson Correlation.

Table 3

Correlation of RF scores between the AAI and PDI

		AAI	PDI
AAI	Pearson Correlation	1	.528
	Sig. (2-tailed)	-	.001
	N	40	40
PDI	Pearson Correlation	.528	1
	Sig. (2-tailed)	.001	-
	N	40	40

Regarding intra-subject discrepancies between scores, 92.5% of the sample had scores that were 2 points apart or less; 62.5% had scores that were 1 point apart or less, and 22.5% had the same score on both interviews. 7.5% had scores that were 3 points apart. The scores of each subject are outlined in Table 4.

Table 4

RF Scores on AAI and PDI

Subject	AAI RF	PDI RF
1	6	5
2	5	3
3	5	6
4	4	6
5	8	7
6	5	3
7	4	7
8	4	4
9	6	5
10	5	5
11	6	4
12	3	5
13	4	3
14	2	3
15	5	6
16	3	3
17	8	6
18	7	7
19	8	7
20	7	8

RF Scores on AAI and PDI, cont.

Subject	AAI RF	PDI RF
21	7	5
22	7	7
23	5	2
24	3	4
25	4	6
26	7	7
27	2	5
28	3	5
29	5	5
30	4	5
31	5	3
32	5	5
33	5	4
34	5	6
35	3	4
36	7	7
37	6	7
38	5	7
39	5	4
40	5	7

The average discrepancy between scores within subjects was 1.225, and the standard deviation was .891. Z-scores were calculated in order to place these intrasubject differences on a normal distribution and determine whether the most discrepant scores, represented in 7.5% of the sample, are statistical outliers. The Z-score for a discrepancy of 3 was z=1.99, meaning that the few subjects with a discrepancy of 3 are statistically significant outliers. Z-scores for all four levels of difference are shown in Table 5.

Table 5
Within-subject discrepancies between RF scores on the AAI and PDI

Discrepancy	Frequency	Percent	Z-score
0	9	22.5	-1.37
1	16	40	-.25
2	12	30	0.87
3	3	7.5	1.99

The small portion of the sample with a discrepancy of 3 is notable and merits qualitative analysis. Clinically, a discrepancy of 3 is very large and indicates a stark difference in reflective functioning across the two interviews. Statistically, this clinically large divide turned out to lie outside the margin of error, indicating that such instability, in the current sample, is rare.

Qualitative Results

Empirical support for the hypothesis that the cross-contextual stability of RF is the norm allows us to assume that there must be a cause for a subject to have uneven RF. A small number of mothers demonstrated unevenness of RF; 7.5% of the sample showed clinically significant instability of RF across the two interviews. Because the examination of abnormal psychological phenomena can lead to greater understanding of both pathology and normality, qualitative examination of subjects with unstable RF is an excellent opportunity to explore what factors affect mentalization. One subject whose RF was significantly higher on the PDI, and one subject whose RF was significantly higher on the AAI, were chosen for qualitative analysis. These interviews are worth analyzing in detail, as they stand as telling exceptions to the current finding and offer ideas for further research about the mechanisms involved in both permanence and change in RF.

What factors are at work in adults whose RF proves to be uneven across situations? Fractionation in the current sample could be caused by any number of factors, such as the circumstances of the child's conception and birth, the effect of motherhood as a new life experience, the quality of the bond between mother and child, or pathology in the mother. Sara and Jane, two mothers in this small group who display significant instability of RF across the AAI and PDI, were chosen for analysis because they offer interesting illustrations of potential sources of unstable RF in adults. Sara's 5 on the AAI and 2 on the PDI is a good example of inconsistency in reflective functioning and the sequelae of trauma. Jane's 7 on the PDI after a 4 on the AAI represents an improvement in RF and sheds light on the notion of parenthood as a developmental phase. A third subject also showed divide of three points with a significantly higher PDI; because her

interviews were comparatively very brief and the probable reasons for her RF split resemble Jane's, Jane is presented herein as representative of dynamics involved in improved RF in motherhood.

Sara AAI 5B, PDI 2

Sara's AAI was scored a 5B, meaning "inconsistent RF." In the scoring system, a score in the 5 range is qualitatively described as "ordinary," but subjects given 5B are ordinary for a unique reason—they consist of scores in the 7, high range, and the 3, low range, with few actually in the 5, ordinary range. Subjects with 5B carry the same numerical score as other ordinary subjects, but the 5 is a result of a striking split between high and low. In their lack of integration, these inconsistent transcripts provide a unique window onto processes underlying fractionation in reflective functioning. Within a single interview, it is possible to locate questions and responses that evoke quite disparate displays of mentalizing.

Sara's AAI is an excellent example of an inconsistent level of understanding about mental states and relationships. She faced significant challenges in childhood and spent eight years in psychoanalysis. At some points, the fruits of this work show themselves in her AAI. At other times, however, her RF is quite low and portends the difficulties she will have in child-rearing that are so painfully evident in her PDI.

Early in her AAI, Sara makes a comment that encapsulates well the overarching dynamic of her AAI, a tension between the matter-of-fact certainty with which she makes bold, non-reflective assertions, and the tenuously held insight into her own mental processes. She says,

> I fought with my mother, and she basically said that I ruined her life. And then she died, so my memories of her are very connected to the hostility that I had with her as an adolescent.

In the first phrase, Sara is dramatic, and her words are full of aggression. The second half of the sentence is more reflective, connecting her former hostility to the act of recollection. After showing an extremely negative and poorly integrated representation of her mother, she is able to place her attitude toward her mother in a developmental phase of life. This reflective moment displays both a mental model of adolescent development and an understanding of the sources of her continued hostility toward her mother's memory.

Sara recounts tale after tale of abuse, physical, verbal, and emotional, remembering the angry tirades of a mother who punished her for being messy by dumping her shelves onto the floor and slamming a door so hard a mirror broke and shattered. Another example goes as follows:

> I have memories of her chasing me down the staircase, going to hit me and of my running, feeling like I was cornered and of her screaming at the top of her lungs, screaming how I had ruined her life.

When recounting these very painful events, Sara is repeatedly unable to reflect on her parents' motivations, and at times she simply refuses to do so. When asked to comment on her parents' motivations as parents, she offers the non-mentalizing answer that "they didn't know better." This type of statement is not uncommon and usually carries a score of 3, indicating low RF. Sara is, however, able to reflect actively on her own experience of her parents' cruelty, and her experience of thinking about it. She comments on her process as she relates the story:

> I mean, the experience I have, the memory I have of being scared and the pain is almost as overwhelming as the feeling I have as a grown-up thinking back on this and wondering, "Why would you do this? This is so screwed up."

Despite the emotional power of the memories, Sara proves herself able to tell the interviewer about her current affective experience as she tells her story. While she has better moments such as this one when reflecting about herself, her view of her parents' motivations is simplistic – she often says her parents "didn't get it," or were "on autopilot," or, at her most complex, she reasons that her mother didn't realize she was rejecting her with these behaviors:

> I don't think she realized it at all. I think that she was an unfulfilled person who had great, unfulfilled desires in her life and they go very early back.

This statement is a simplistic effort to speculate about her mother's motivations. Many times, Sara says that her parents "didn't know better" or "didn't realize at all" what they were doing. These are non-mentalizing statements because of both the wholesale certainty with which they are made as well as the implicit denial that her parents have mental processes. If Sara's interview consisted only of these types of statements, she would merit a score of 3 or below.

Nevertheless, Sara is able, at times, to reflect on herself better than she is able to reflect on her parents. In this divide between RF about her parents and RF about herself lies the inconsistent quality of her narrative. Of her own feelings about the past, she has a more nuanced understanding. When discussing her mother's death from cancer, she says,

> I have memories of her in a physically horrible state. I have very strong memories of feeling that she was dying and this was my opportunity to fix things. I mean, that's where the guilt that I have related to my mother and my lack of a good relationship with her probably came out at that point.

In the passage above, she is able to reflect on herself complexly in the face of a severely distressing event. Sara sees herself as someone who wanted to "fix things" before her mother died, and as having had a change of mental state to feeling guilty for being unable

to do so. She admits that she rebelled as a teenager and created turmoil with her mother, and sees her guilt as emanating from her mother's death.

Around this very painful topic of her mother's death and the aftermath, Sara also makes some thoughtful, if depressing, attributions of her father's and grandmother's mental states:

> My father and my grandmother had no problems with saying, "Well, you did make your mother's life miserable." I mean, I think they got rid of their own animosities that way.

Here, she is reflectively teasing out the motivations of her father and grandmother in a psychologically complex way, something that would merit a higher score, and yet the statement is also mildly self-serving. Here again, Sara's inconsistency is apparent even within a single thought.

Sara proves herself able to reflect on adult experiences better than childhood ones. Regarding the death of a professional mentor who died, she says,

> He accepted his death and his dying, and he dealt with it, and he cleaned up his house so to speak, and he really allowed me to work out a lot of the bad feelings I had about the way my mother died. I took his death very hard, but the difference was that it was healthy. I worked it out. I grieved.

When not discussing the negatively charged relationship with her mother, Sara is able to show just how reflective she can be, in discussing the death of another important figure. On the topic of her grandmother's death, Sara is able to reflect on her mental process around visiting her on her deathbed:

> I was very, very apprehensive about going down and seeing her one last time. I felt for sure I would walk away like I did with my mother of memories of seeing her in a way that I didn't want to remember her…

Sara is thinking about her feelings in the face of distress, drawing on past experience to inform her current state of mind, and addressing her fear of repeating the past and

mentalizing about future memories. Here again, Sara shows the capacity for high RF. Back on the topic of her father, however, her understanding is polarized and poorly reasoned. She actually rejects RF in thinking about her father and his ability to change:

> … he's almost 60 years old, he doesn't have any capability of change. He sees himself as the victim of his own life. He sees himself as manipulated by other people, first my mother and then his second wife. There's no function to try to discuss how he has affected his own life because he doesn't see it that way.

Sara is thinking about her father's state of mind in a stereotyped way that discounts the possibility of change and nuance in his thinking. As with her mother, she dismisses his mind wholesale, defensively closing off speculation about her father's mind. At the end, she basically refuses to speculate about his mental experience, an outright rejection of RF.

Sara's case resonates with the theory of Fonagy and colleagues that one potential source of this lack of integration lies in personality disorder. They write:

> In normal development, there would be some degree of integration and generalization of a mentalizing model of behavior. In severe personality disorder, however, development goes awry—the normal coordination of previously separate skills does not come about. … Unfortunately, non-reflective internal working models come to dominate the behavior of personality-disordered individuals in emotionally charged or intimate relationships, and any interpersonal situation that calls forth attachment relationships representations that derive from the primary attachment relationships (Fonagy et. al., 2002).

While we do not know whether Sara carries a diagnosis of personality disorder, her performance on these interviews is thoroughly consistent with qualities that have been linked to borderline phenomena and severe personality disorder. In Fonagy's terms, Sara is quite unable to call upon a reflective internal working model when faced with representation of her parents. Fonagy theorizes the developmental roots of this difficulty in a child's avoidance of thinking about an abusive parent's motivations, which can be adaptive for abused children. To protect their own egos, abused children assume that

something outside of the dyadic relationship is causing the abuse, or they decide that the parent doesn't know any better. In order to maintain proximity to the caregiver, they develop an "alien self" that attunes to the unreliable and abusive figure at the expense of ego integration and the development of affect regulation (Fonagy et al, 2002). Sara repeatedly gives evidence that she has a history of avoiding thought about her parents' motivations; later, more evidence of likely personality pathology appears in her PDI.

Low RF is not the whole story of Sara's AAI. She has moments of reflection on a solidly second-order level. Her high RF occurs when she is discussing herself as an adult, commenting on her process remembering her childhood, or describing other significant figures in her life who are not her parents. It would be reasonable to posit that the inconsistent quality of Sara's AAI is a result of her analysis. Psychoanalysis stimulates RF by exposing a patient to uncertainty in its confrontation of conflicts, defenses, and transferences, all in the context of a warm and validating relationship. These are precisely the conditions for its development in early childhood.

In Sara's case, the question is whether the reflective capacity she has developed in analysis can generalize to other relationships. Sara's RF remains quite fractionated, and the rote quality of some of her statements suggests that her analysis has given her some isolated insights but has not brought her out of the realm of borderline object relations. In the language of the RF manual, "insight" is carefully distinguished from RF—it is language that sounds reflective but is actually more of a rote or learned statement that is not fresh or exploratory in nature. In the final analysis, Sara gives the impression of having processed certain aspects of her childhood without generalizing what she has learned into a new working model.

Sara's PDI

It should come as no surprise that Sara's AAI is rated "unresolved," as it is characterized by the intrusion of traumatic memories and the fragmentation of personal narrative. It is also consistent with research on unresolved mothers that Sara's child is rated as "disorganized" on her Strange Situation (Main & Hesse, 1990). This category of insecure attachment accounts for the ways frightened or frightening behavior on the part of the mother can cause a feeling of helplessness and hostility in relation to the caregiver, who occupies the paradoxical position as both the source of fear and the figure sought out in times of stress.

On Sara's PDI, the reasons for her child's disorganization are glaring. The moments of high reflective functioning about herself as a daughter do not carry over into her RF about herself as a mother. Her PDI proves her unable, after 10 months of motherhood, to live out this prediction she made at the end of her AAI:

> I'm due next week, and I think about how could you not be connected to this baby. I didn't think I would. I was just one of those people who wanted to have the baby and was going to paint the walls in the house. It's just a matter-of-fact thing, and I'm totally attuned to this baby before it's out.

This predicted attunement turns out to be as overstated and out-of-touch as her statements about her parents. Fonagy notes that this desire for merger with the child is characteristic of mothers of disorganized children (Fonagy et al., 2002).

Sara's early parenthood is an image of marital discord, financial strain, and a dysregulated family system. After some initial generalizations about her son being constantly in a good mood, she progressively reveals a mother/child bond disrupted from many directions. Because her husband's business has gone under, she has to work full-

time and spend ten hours per day away from her child. They scream and fight in character-assassinating, hurtful ways; their sex life is "in the toilet."

At first, Sara shows the capacity for thinking in terms of mental states. As on her AAI, she makes some ordinarily reflective comments about herself, such as this remark about the changes that her attitude toward parenting has undergone over the past ten months:

> I never thought in a million years that I would like it this much and I can't … I'm already up to thinking, "So when am I having the second one?" Yeah, it's a real turnaround.

She also shows an ordinary capacity for reflection about her child's experience. She appears to view her child as an easy baby and displays that she has the capacity to think about the impact of parents on their children:

> We're not looking at a baby that from day one I would have defined as a difficult baby. I have theories about this. I wonder whether parents make their children difficult.

However, it is important to note that Sara fails to support this assertion with an example or even an abstract explanation, and soon, her shaky ability to mentalize about her child, and herself as a parent, becomes readily apparent.

Under the weight of a long interview, the picture she gives at first, of a baby who is "constantly happy" gives way to a picture of profound misattunement that appears to descend into abuse. When discussing her child's difficult moods, she denies the possibility that she has an effect on the baby's behavior.

> I think that when he's uncomfortable and tired and kind of irritable from the cute stuff, that it really doesn't matter who's there or what's there or what you do. It's almost like he's trying to find a comfortable spot or position or something… you know, either's he's going to find it or he won't.

She knows that her overall state of mind is contributing to the problem with the infant:

> I mean, the fact that I'm as stressed out as I am probably is because I'm not handling it really well. I try not to think about it.

However, just being aware of one's own defenses – in this case, her avoidance and denial of the problem – is not enough. Rather than using this insight to regulate herself better as a mother, she goes on to deny that she is ever angry at the child and gives a chilling picture of disrupted mother-child dynamics:

> I … we say a lot of stuff but illiterally, I don't mean it. You know, like, shut up or we're going to beat the shit out of you.

In her next breath, Sara denies feeling angry when she says such things, but rather claims that they serve the function of keeping her from becoming angry enough to hit her baby. As the interview continues, her capacity for insight does not improve. She denies that her screaming at her son has any effect on her.

> I work really hard on not transmitting this kind of emotional stuff on him. I think it has very little impact. Not because it has a little impact but because I actively work on not taking my shit, my, ah, emotional ups, downs, swings, whatever and having any impact on him at all.

Of course, Sara does understand some aspects of her child's development. She speculates that he does not feel so much rejected when his parents leave him with the sitter as like "my parents are deserting me." She also understands that the 10-month old does not yet "understand the concept of disobey." As with other somewhat reflective comments, however, Sara displays, in dramatic fashion, an inability to put this understanding to use.

Even when she engages in mentalizing about her child's development, her emotions cloud the picture and prevent her from reacting appropriately to the more accurate attributions she makes about her son's development.

> I find it really amusing, I always think that it's incredibly funny that he has his own opinion. Out of nowhere, you had this little kid who was just blah, and then

> one morning he seemed to wake up with "I have an opinion and I'm not doing that."

Rather than finding joy in her child's developing a sense of self, however, she finds it amusing and explains this reaction by admitting that she doesn't like the child developing an opinion. She says,

> I mean, he is now developing his own opinions about things, and I don't necessarily like it, but I almost think it's amusing and this is clearly what threw my mother over the ledge …

Next, Sara makes another statement that could be seen as reflective in some circumstances; she makes an intergenerational link between her mother's parenting and her own.

> … it's just the battle of the wills in the household that I grew up in so now I'm seeing it. There's something almost… comforting that the circle goes, you know, around.

The recognition that parenting styles can be transmitted intergenerationally is evidence of an effort to think developmentally about mental states. However, Sara reacts to this insight inappropriately by claiming that she finds the repetition of the discord from her childhood home to be somehow comforting. Again, the insight is not put to use. Even after demonstrating several times that she has trouble handling the child, when asked whether there are times she feels she does not understand him, she replies simply, "No. Really, never."

Sara tells troubling stories about giving the baby alcohol. Once, with friends over, she tried "pouring scotch down his throat" in order to quiet him. And another time, she let the baby try her wine, knowing that it would upset him:

> … he took, not even a sip, it just, he made an incredible face and he went away, and was quiet. But that's what it took to make him quiet, I mean, this is something that you should keel over from.

Early in the interview, Sara says that she usually just hands the baby off when frustrated and that her husband does most of the screaming. In this passage, what she describes is inappropriate, even abusive:

> I have upon occasion, picked him up and yelled in his face, shook a finger in his face, or slapped his hands slightly, and he clearly gets mad and angry and fussy.

Sadly, Sara reveals that her own abusive childhood is rearing its head in her behavior as a mother, and she shows that her high hopes for perfect attunement with her child are not enough to make even ordinary attunement a reality. On the AAI, Sara shows a mixed ability to reflect about her childhood, but her PDI RF is very low, not just in the poor reflectiveness in her answers, but also in the misattunement with her baby that is so evident in examples she gives.

How can we account for the disparity between Sara's performance on the AAI and PDI? For one explanation, we turn to Sara herself. She mentions that her own childhood experiences might be weighing on her parenting. Talking about separation anxiety with her baby, she says,

> I think I suffer personally with my own trauma for a zillion reasons unique to me and my life from what I'll define as separation anxiety. When I leave and come and go places, I get very anxious.

She presents an awareness that she is excessively anxious and is even able to trace it to her own traumas. And further, she sees the need to provide a better environment for her own child:

> I don't want my son to grow up feeling like I felt growing up which is as if I was an annoyance to my mother.

If we connect this statement with her earlier comment that parents might make their children difficult, and the idea that something is being repeated from her own childhood,

this statement could be taken as evidence of a more sophisticated understanding of her motivations as a parent. But it is the reader who must make these connections – Sara does not do so herself, and high RF involves the ability to connect the dots.

Skills theory might offer a second hypothesis. It could also be that Sara has more potential for good RF than she is currently able to display. The pockets of high RF on her AAI show that she has the potential for it, but that her ability is outmatched by the demands of the PDI. Mentalization-based parent-infant therapy for Sara and her daughter would aim to foster the reflective elements of Sara's thinking as vehicles for helping her to understand the child's experience.

A third possibility is that Sara's defenses have actually broken down in the face of motherhood, and that her general functioning has decreased since she gave birth. Sara reports stressors in Freud's two classic areas of psychic functioning, love and work. She and her husband have terrible fights about his failing business. Sara says,

> It's symptomatic of us as a couple at this point in the game that I beat up on him and he cowtowers down; and then I resent that he did it. It's very sick.

Aside from problems with her husband, she also has had trouble with work as a result of giving birth. She got a bad evaluation from her boss, she thinks, because she took maternity leave. While it is also difficult to measure the amount of stress she is under, the circumstances of birth could also be playing a large role in her attitude toward the child and general anxiety level.

And yet, there are flashes of hope. In perhaps her strongest moment, Sara says,

> I see myself as my mother. It's as if I close my eyes, I flash, I see my mother and then I stop myself and re-change what I'm about to do.

The latter part of this statement is particularly encouraging. Sara is able to identify her destructiveness and even pinpoint its source in her early caregiving environment; her maternal RF is low, however, because she is unable to control this destructiveness. Here too, however, she hints that she can sometimes alter her behaviors based on reflective functioning. Therapy focused on Sara's ability to mentalize would reinforce moments such as this one, encouraging her to imagine her child's experience (Slade, 2005). Sara has a great deal of anxiety about caregiving, and her lack of confidence as a mother is poignant. An improved ability to mentalize would allow her to fantasize about positive interactions rather than spend her energy fighting off ghosts from her own upbringing. It would also allow her to understand the effects of her parenting style on her baby by helping her to take the child's perspective. Sara's interviews provide a window onto an object world that could produce a significantly higher score on the AAI than the PDI. The severe personality disorder that is likely major part of Sara's diagnostic picture is quite visible in her difficulty with mentalization.

Regarding the question of psychic inheritance, attachment theory finds itself constantly attempting to reconcile two sides of the same coin. On one side, there is a temptation to see in parent-child dyads a kind of determinism, to believe that parental influence is so profound and prolonged in early life that intergenerational transmission of relational patterns is inevitable. On the other side, the phenomenon of resilience, and the potentially life-changing effects of new relationships, serve as reminders that thinking deterministically is too simplistic at best, and at its worst, unnecessarily condemning.

By no means is this dilemma solely the domain of attachment theory. Writing from a psychoanalytic perspective, Selma Fraiberg wrote of a mother's early experiences

as "ghosts in the nursery" that profoundly impact parenthood if left unresolved. She did not see this phenomenon as inevitable, however, and posed the problem this way:

> History is not destiny, then, and whether parenthood becomes flooded with griefs and injuries or whether it becomes a time of renewal cannot be predicted from the narrative of the parental past. There must be other factors in the psychological experience of that past which determine repetition in the present (Fraiberg, 1959).

Attachment theory has devoted itself to identifying and understanding those factors that shape the influence of the past on the present, and the work on mentalization that Fonagy and colleagues have put forth has advanced the field in positing that those factors lie in the mother's mentalizing capacity. The story of Sara's relationship with her son is both a gripping depiction of the ghosts in the nursery and an illustration of the ways that later relationships, including a therapeutic one, can affect mentalization. Sara is quite unresolved about traumatic experiences with her own parents, and the fragile capacity for reflective functioning she has developed in certain contexts fails to serve as a protective factor as she becomes a new mother. Sara's low RF is largely evident in the negative impact of an invalidating early childhood, but some moments of higher RF on her AAI show the potential impact of subsequent relationships and therapy on mentalizing capacity.

Jane AAI 4, PDI 7

Unlike Sara, Jane and her daughter are rated as "secure" on the Strange Situation, and her adult attachment rating is "autonomous." Again, the concordance of these categories is in line with years of research showing that autonomous mothers tend to have secure children, while insecure and unresolved mothers often have insecure children. Jane's very disparate mentalizing performance across the two interviews is all the more notable in light of the health of her state of mind regarding attachment and the security of her relationship with

her child. Personality pathology, as in Sara's case, is only one possible cause of fractionation in reflective functioning. Jane's shift from a 4 on the AAI to a 7 on the PDI speaks to questions about the nature of mentalization and parenthood as a developmental phase.

Therese Benedek's 1959 article "Parenthood as a Developmental Phase – A contribution to the libido theory" focuses squarely on the developments in the mother's ego as she accomplishes tasks of motherhood. Benedek conceptualized the benefits that arise from normally healthy mother-child dynamics as the product of reciprocity and interaction in the dyad:

> The mother's confidence in her motherliness is not just a "reflection" of the child's gratification, a "mirror image" of the smile of her thriving child. The study of the psychodynamic processes of the female reproductive function reveals that the drive organization which motivates motherhood and the activities of mothering maintains dynamic communication between mother and child and leads to changes not only in the infant but in the mother as well (Benedek, 1959).

In Jane's case, these changes reveal themselves through a significantly increased RF score of 7 on her PDI. Close analysis of her transcripts shows that Jane presents an excellent example of parenthood as a developmental phase, as positive experiences of motherhood have encouraged her to think of herself in new ways and grow in terms of her reflective functioning. It also raises questions about factors involved in stability.

While, at first, Jane makes some very reflective comments on her AAI, her overall score is a 4, the score that occupies the middle ground between low RF and ordinary RF. The shape of her interview, generally, is a demonstration of ordinary to high RF at the beginning, followed by a steady deterioration of performance, where mentalization is avoided in favor of clichés and unsupported generalizations. She begins with some comments that qualify for high RF. Of her father, she says,

> He wasn't a real demonstrative kind of person. And, but it seemed that, as I got older, and was able to express my affection and emotion towards him, then that somehow released something in him that allowed him to reciprocate.

This is a strongly reflective passage that merits a 7 in the scoring because it addresses directly several criteria used to evaluate narrative for mentalization. Jane discusses her growing ability to demonstrate affection, she demonstrates an awareness that mental states can change over time, and perhaps most importantly, she understands the reciprocal nature of emotional expression in the interaction with her father.

She is just as mindful, at first, about her relationship with her mother, commenting on interactions in a way that includes both:

> I gave her the impression that I didn't need her help, you know. So she wanted to mother me, but I didn't accept it, or, at least I accepted it as little as possible. I think that frustrated her to a certain degree because she wanted to be the mother. And she wanted to take care of her baby and that kind of stuff.

Again, she demonstrates a sensitivity to the effect of her actions on her mother's state of mind, and she makes an effort to tease out the reasons that her tendency to reject help was frustrating to her mother. She also demonstrates reflectiveness about her own motivations as a child as in the following passage:

> I remember in high school years also my teenage years, also asking my mom, "Do you love me? Do you love me?" Cause, I guess I never felt that from her. I don't know whether it was all of our fighting, and arguing, or what. But I got married when I was 20, and our relationship completely changed, because I realized that when I went to her house that I didn't have to stay around and fight with her.

This passage includes efforts to tease out the mental states underlying her own behavior as a child, as well as an expression of the ability to perceive changes in their relationship.

As the weight of the interview begins to set in, however, Jane's more reflective comments give way to a rather transparent idealizing of her parents. She tells a story about joining a girls' group called "Job's Daughters" and spending a significant amount of

time working to become an "honored queen" in the organization over the course of several years. The point of the story is to express gratitude for her mother's support in the endeavor, but as she tells the story, it becomes clear that her mother did not, in fact, support her in it. Rather, she refused to attend meetings like the other mothers and came to her very last meeting after five years only as a matter of courtesy. The defensive denial is apparent in her language:

> And, so, they did this ritual at every meeting. They asked, "Are there any new members?" And my mother stood up. And it was like these people could not believe that this girl who had been in Job's Daughters for five or six years, her mother had never been to a meeting to see how her daughter performed… I remember just being really proud of her for finally coming to a meeting and just really loving her and adoring her for doing that for me.

Clearly, Jane is aware of neither her idealization of her mother's supposedly supportive gesture, nor of the way it might sound to an interviewer.

When Jane describes her father as "adoring," there is an obvious disconnect between the selected adjective and the detail offered as support. She says,

> The "adoring" part is that I can't believe that he would be so relatively uninvolved in my upbringing. As it was, he brought in the money and supported the household and all this kind of stuff, but he was really removed from the action unless I was really bad, and then I had the fear of God put in me…

Her description of her relationship with her father makes no logical connection between the adjective she chooses and the example she gives to support it. This is a violation of the maxim of quality used to score for attachment, but it also shows poor mentalization in that she fails to clarify the confusion for the interviewer. Jane also shows a tendency to idealize her father:

> I guess it was more like my father was up there on this pedestal, and he was this god that could do anything at any tine. And it seemed to know all and see all.

Other evidence of ineffective mentalization appears in Jane's tendency to make wholesale personality appraisals. Of fights with her mother, she says,

> I don't think she realized the extent to which I was hurt by it because I don't think that my mother is the kind of person who would deliberately want to see either of her children hurt. I think it was just her personality, and that's just the way it was, I think.

This sort of language, saying that "that's just the way it was," closes off exploration and constitutes a defensive avoidance of mentalization.

Still, the difficulty Jane displays as she continues to describe her early relationships is not completely pervasive. Regarding her mother's argumentative ways and her father's use of the paddle, she shows an appreciation for uncertainty about past motivations and draws lessons for herself as a mother. She says,

> I can't really remember what else was going on in the relationship where in her life or in my life that would make us explode in such a ridiculous way, you know. I don't know whether everything sort of impacted on the way we were relating to each other. I just don't remember that. I wasn't aware of that. And, so, I hope that I won't be as headstrong with my child.

In her next breath, however, she denies that her childhood experiences have had an effect on her as an adult and resorts to clichés as she tries to come to terms with her mother's frequent use of corporeal punishment:

> … my mother was big on spanking because I think it was the most forceful thing she could think of. But my brother and I were always hiding the leather paddle from her, so she could never find it. … So, she would, you know, just get us with her hand, which I'm sure hurt her a whole lot more.

She excuses her parents' behavior by adding that she was a difficult child after all, and she gives some indication of the attributions she has made to make sense of their frequent spankings. She says,

> Now, I realize that I was pretty much of a hellion, and probably a great frustration to my mother, especially because I was so headstrong, and because I was so independent and because I really rejected her kind offers of assistance.

Keeping in mind how her story sounds to the interviewer, she is able to monitor herself well enough to attempt to round out the picture of her parents, even if her effort still sounds a bit clichéd.

> … I mean, I make it sound like I got spanked every day, but we didn't. But that kind of discipline, you know, really made me aware later on, that they really loved me and they really cared about what happened to me, and they didn't want to put, jeopardize me or my life, or my experiences at all. They wanted, really the best for me.

It should come as no surprise, then, that Jane speaks in clichés while she is on the subject of her mother. Discussing a time she stole something from a store, she says,

> You know, in retrospect I felt so ashamed that I would have done such a thing … but you know, as my mother said, this too shall pass, I swear. I think that the hardest years of my growing up in my childhood were from about the time I turned 12 and 13 until I was about 18. I thought that my mother was going to kill me. I mean, she was just always saying, "This too shall pass," you know, and it finally did. But I think that over the long haul my mother had a tough time.

When she seems on the verge of adding some nuance to her depiction of her mother's experience of mothering, the interviewer asks, "Why do you think your parents behaved the way they did when you were a child?" Her answer is telling:

> I have no idea. Well, it's real funny because I really don't know why they behaved the way they did. I mean, I had no idea what was going on in their lives other than what involved me. Emotionally or anything else.

Then, Jane makes an attempt to explain their behavior by referencing their own childhoods, saying,

> Both my parents were only children, which I think to a certain extent is why they had two children. … I think that being an only child may have compelled them to behave the way they did in disciplining us and in raising us. I don't know.

Thinking in terms of development could be seen as evidence of RF, but Jane does not explain the reason that being only children would have caused them to discipline their children as they did.

While the bulk of her AAI is characterized by unsupported idealization and cliché, she again shows moments of higher RF toward the end of the interview, particularly when she is asked to comment on her thoughts about her unborn child:

> I haven't really thought about it because I haven't really gotten to know this child yet either. And I think that's one of the things that impacts on how I'm going to feel about this child leaving – whether it's moving out of the house, or going to kindergarten for the first time, or whatever it is—I, you know, I don't have a real strong—I don't think that I have as strong an emotional attachment to this child yet, this unborn child, as I will to a child who I've taken care of- even for any period of time.

On the topic of her child, Jane's thought process becomes fresh, tentative, uncertain, and shows an appreciation for the reasons she is having trouble answering the question. This shift foreshadows changes that become very apparent on Jane's PDI.

Jane's PDI

The contrast between Jane's and Sara's prenatal ideas about motherhood are quite instructive. Before giving birth, Sara talked about already being "completely attuned" to her son, while Jane commented that she didn't have a strong emotional attachment to hers because she hadn't yet met her daughter. While Jane's comment may sound, on the surface, to be less doting and emotional, it is Jane, not Sara, who emerges on the PDI having developed a strong, supportive bond with her baby.

A year later, ten months after the birth of Jane's first child, she was administered the PDI. Right away, Jane gives the impression that she has grown as a result of the

challenges of first-time motherhood. In contrast to the idealizing tone of her AAI, Jane is genuinely positive about this relationship, giving example after example of flexible attunement and mutual appreciation:

> We just understand each other. You know, I don't always have to tell her not to touch the plant. I can just look at her, and she knows exactly what I'm thinking, and I don't have to say a word, and she just pulls her little hand back, you know, and so in that way we have a real strong… I guess strong and close are sort of the same. But we just have our own strong relationship. We thoroughly enjoy each other's company, and when I do something that she doesn't like, she really lets me know. And when she does something that I don't like, I definitely let her know. So it's a strong relationship. It's the happy and the sad or the good and the bad. Share all that.

Where Jane had been thin in her support of positive generalizations about her parents, she reports authentic attunement in the "strong and close" relationship with her daughter. She feels intense happiness in motherhood, taking great pleasure in the child's development:

> I'm very happy with her. Is very the same as intensely? And because she's really experiencing a lot of new things, and she really enjoys it, and that's really a lot of fun.

Despite the number of positive emotions Jane associates with motherhood, she offers the caveat that her experience could have been different if her child had a different temperament. At the beginning of the interview, she notes, "She's a real easy baby, and that makes it that much easier for it to be a happy relationship." Toward the end of the interview, she says,

> I just thank my lucky stars that she wasn't that way [colicky] because I probably would have gone over the deep end …

Jane notices important aspects of her daughter's mental development in particular, and she is also able to comment on her response to his curiosity. She says of children,

> They zero in on the minutest detail of the fence, like you know, a piece of bird doo-doo on the fence. And they're like trying to eat it, and you're going, "Oh, I didn't even notice that there," you know.

An appreciation for child development is also evident in her comment that the child plays by herself and comes to her occasionally to "touch base." Furthermore, Jane is also attuned to her own maternal development. When asked about "not clicking," or difficult interactions with the child, she says,

> … she was really throwing a fit about being in the cart, and you know, I was trying to be as calm as possible, you know, and, ah, remembering all those times where I've seen mothers being nasty to their children in public. I didn't want to be that mother and it, it was hard, it was hard.

Pressed for her feelings about this public tantrum, she answers using mental state language:

> Well, I know you're supposed to understand that a baby this age does not understand that they can't just do everything that they want all the time, but I wanted her to understand it at that moment, right now. I didn't want to have to wait until she was grown up to understand that. So I was feeling annoyed, I guess, and impatient.

In this comment, Jane demonstrates reflectiveness by showing her mental state to be a developmentally informed interpretation of the child's mental state, and then processing her feelings about the interaction without hiding her negative feelings.

Jane is candid about her feelings and what more she needs from her husband. She says,

> Sometimes I feel like I need to be mothered. And that doesn't happen enough. And I don't think that my husband understands it because, you know, he gets mothered all the time. I'm the world's most mothering person, and so he's mothered all the time and so his daughter is mothered, and I guess he thinks that it just happens magically that I mother myself, and I don't. So that's hard. And I do feel needy.

Jane thinks developmentally about her child throughout the interview, often offering her take on her subjective experience while cautioning that she cannot really claim to

understand another person's experience. When asked if the child is aware of her needy feelings, she says,

> … well at this age, I'm not certain that she notices. At a later age, when she is more conscious of people helping people … she may pick up more on my negative vibes about, "Oh, God, I have to do this again,"… I think it could have some negative effect, but I think that's also part of life.

Jane again shows a good understanding of the child's subjective experience:

> … well, it's sort of obvious to most people, but three eye rubs and she's ready for bed, you know. Even though she is smiling and happy and running around, there is a certain level of activity where I know she's just being frantic and can't wait to be dropped in the crib, you know.

She also shows that her observations of her development are coalescing into a working understanding of child development. She speaks of seeing "phases" in her life and uses her understanding of her development to temper her angry feelings:

> … they are so impulsive, they can't control themselves, and so I'd have to understand that, and so what if she spills the water, you can wipe it up, and all that kind of stuff.

Here Jane uses somewhat more removed language as she describes her experience in the second person. Still, she manages to process her angry feelings in the context of understanding of the child's development. She is honest about sometimes yelling at the baby and thinks psychologically about her use of yelling as discipline. She says,

> When I yell at her, she cries and wants to be immediately picked up and reassured. And in the situation with the cat food, I had taken to, I used to just go ahead and pick her up right away and comfort her. And now with the cat food, since she knows she not supposed to do that, I let her cry, maybe, oh, ten seconds longer than I normally would, to try and reinforce that.

At first, she says that she suppressed her anger when the child was very young, but then names two strategies she developed for handling these difficult feelings, which include calling her husband to vent and fantasizing about working full time with a babysitter.

Jane is no less able to discuss her guilt. When asked to reflect on any guilty feelings she might have as a parent, she comes out with three solidly supported sources of guilt: not having enough quality time with the child, not being creative with her cooking, and not having a set dinner time with her husband. She describes how she handles these feelings:

> I try to justify my feelings by saying, "Well, it could be worse." I could be working full time, or I could hate my child, you know. So I get over it, you know, it's a part of life…

She also articulates sources of anxiety in the relationship, describing a mix of frustration and worry during an illness:

> I think the most frustrating time for me, she went through a period of time where she was having ear infections and she would wake up in the middle of the night screaming, and that was a lot of anxiety for me because I could not comfort her, and you know that if mommy can't comfort her, you've got a big problem. Something is wrong somewhere.

Jane sees herself and her child as similarly willful in temperament, and during the interview, she actively reflects on her inability to understand the baby's tantrums. She explains,

> We're both very alike in the willful department … So maybe it's that I'm not trying to fully understand why she's having those tantrums. Maybe that's it, you know. I don't know, maybe I'm not down on her level enough.

The PDI asks a mother to make explicit connections between her parenting style and the way she was parented. Jane names as a source of guilt the contrasts between her family climate and the traditional environment where she grew up:

> I find that my mother's parenting … has made me more guilt-ridden as a parent. … my mother was like the consummate housewife. She took care of the house, he brought home the bread, that was it. She took care of the children, he was the god that came in the door at the end of the day, you know. … I still have such deep roots and such strong memories of how my mother handled it that that's how I feel

> I should handle it, and if I don't, I'm falling down on the job. So I feel guilty about that.

It is important to notice that the language Jane uses here is very similar to the descriptions of her parents that emerged in her AAI. When discussing her father, she falls into an idealizing mode quite like her AAI, strikingly simplistic in comparison to her discussion of her daughter:

> My father is the nicest man in the world. And I'd like to be like him. He's just real warm and friendly. I don't know if that sounds very strange but he's like a very friendly guy and he really cares about the other person.

While it seems that parenting so far has not disabused Jane of these stereotyped images, there is evidence that parenthood is having an effect on her maturity, her self-concept, and in some respects, her view of her childhood. Jane expresses a keen awareness about ways she has grown in motherhood. She says,

> … having a child has taught me to really sit back and smell the roses, you know, and to enjoy it instead of being too anal about getting all these other inconsequential things, you know getting stuff done. So that's, that's good. Definitely has benefited all of us.

There is also some evidence that motherhood is helping her to understand more about her own childhood. On the AAI, she was unable to identify any influence that she had on her parents when she was young, but she is able to articulate this on her PDI. Speaking of demonstrations of affection, she says, "I almost think that my brother and I taught my parents how to be that way." Furthermore, now that she has a child, Jane also hears her mother's statement that "we never had fun with our children" in a new light and now takes it as a cautionary tale, directly comparing her parenting attitude to her mother's:

> My mother was always saying, "I lost my sense of humor when I had children." Thanks, mom. I can see how that can happen because you are so fixated on what needs to be done that you forget you can enjoy it, too.

Jane also notices changes in her personality since she became a mother:

> I had much more volatility in my personality, and I can sort of look back on it now and say, "Wow, she, I, was very unpredictable."

Nuanced and reflective to the end, Jane ends her interview discussing change:

> And then you have this baby and it changes your life, and you're going, "Oh my God, has this changed my life!" Nothing prepares you, you think about only the positive side, aspects when you think about having a baby or when you're pregnant, and then it hits you that it's not all a bed of roses. But the positives outweigh the negatives drastically. … You may not realize it at the time, but it's true.

Jane is aware that she has grown as a result of having her first child, and she demonstrates her growth repeatedly throughout her PDI.

Jane shows the capacity for high RF at the beginning of her AAI, but then deteriorates in her performance as the interview continues. It is not at all uncommon for the strain of the long interview to arouse a subject's defenses and lead her to avoid mentalization as the questions continue to pull for difficult emotions. Jane's low score does not mean that she operates at this level in her daily life; rather, she operates at this level on the AAI, when discussing her childhood in an interview situation. When the skill is not commensurate to the task at hand, the result is poor performance on the RF scale (Fischer & Pipp, 1984). Jane's PDI shows the higher mentalizing capacity that can emerge when the skill is unimpeded by the difficulty of the task.

Thinking of development as a lifespan phenomenon, Jane's case is not such an outlier. Studies have shown that mentalization can be uneven in child development. If we take Jane's lead in assuming that her new motherhood is helping her to grow in new ways, then it is possible to argue that these interviews give a snapshot of a woman at a time when her sense of confidence, satisfaction, and competence have increased. Crowell and

colleagues found that 22% of their sample changed in attachment classification as a result of a new romantic relationship, and most of those, for the better (Crowell, et al., 2002). Jane's case stands as evidence that a mother's new relationship to her child and her experience of herself as a competent caregiver also has the potential to affect her mentalization in a positive way.

Chapter Five
Discussion

This study was designed to test the stability of the Reflective Function across relationships. It was hypothesized that a first-time mother's RF on her pre-partum AAI would predict her RF on her post-partum PDI. To test the stability RF across these two relational contexts, the same RF scoring system was applied to both interviews. The RF scoring system was originally designed by Peter Fonagy and his colleagues (Fonagy, Target, Steele, & Steele, 1998) to be applied to the Adult Attachment Interview (George, Kaplan & Main, 1996), and later, Slade and colleagues applied the same system (Slade, Bernbach, Grienenberger, Levy, & Locker, 2005), to the Parent Development Interview (Slade, Aber, Bresgi, Berger & Kaplan, 2003). While the two interviews are quite different in the kind of relationship they target, they are similar in that they press subjects to speculate about the mental states underlying their behavior, and the behavior of others, in an emotionally charged context. Research has shown that people react to this demand for mentalization with varying degrees of sophistication and effectiveness. The current study tests the stability of mentalization across relationship domains.

The results of the study confirm its hypothesis. There is a highly significant correlation ($r=.528$, $p<.001$) between RF on the AAI and PDI in this sample of 40 first-time mothers. Indeed, mothers who displayed a flexible, working knowledge of the nature of mental states, accuracy in teasing out the mental states underlying behavior, and an appreciation for the developmental aspects of mental states, tended to show these qualities in discussing both their own childhoods and their experiences as a new parent. Likewise,

mothers who were evasive, resorted to clichés rather than thinking actively about the questions, and had difficulty considering relationships in terms of intentionality and development, tended to display these difficulties when discussing both their childhoods and their parenting experiences. In terms of Bowlby's behavioral systems, a mother's RF, when her attachment system is activated by the AAI in pregnancy, predicts her RF when her caregiving system is activated by the PDI ten months after birth. This result stands as evidence that RF tends to be stable across the two relationship contexts.

The result has implications in several areas of research. Directly, it adds to the mounting evidence that RF is a mental capacity that operates stably across contexts. Until now, correlations had been demonstrated among all of the major attachment and reflective functioning measures *except* AAI RF and PDI RF. As shown in Table 6, the current finding completes the matrix of correlations among AAI RF, PDI RF, Adult Attachment classification, and the Strange Situation classification of a child whose mother has been assessed for RF or adult attachment.

Table 6
Correlations, two-way (secure-insecure) matches, and ANOVA results among AAI RF, PDI RF, Adult Attachment Classification (AAC), and Infant Strange Situation Classification (SS)

	PDI RF	AAI RF	AAC	SS
PDI RF	–	**r =.528***	F = 13.164*	r = .41*
AAI RF	**r =.528***	–	r =.734	r = .508*
AAC	F =13.164*[a]	r =.734[b]	–	75%*
SS	r =.41*[c]	r =.508*[d]	75%*[e]	–

Note: Current finding reported in bold. Reported correlations are for mothers only, though some studies also reported correlations for fathers.
*p<.001
[a] "Results of two group ANOVA were also highly significant at the p<.001 level (F=13.164, df=1,38), and had a large effect size of 1.01. These results indicate that maternal reflective functioning, as measured using the PDI when the baby is 10 months old, is highly predicted by the mother's prebirth attachment status" (Slade, Grienenberger, Bernbach, Levy & Locker, 2005).
[b] Product-moment correlation between AAI scales and reflective-self function scores. The reported correlation is between RF and the coherence subscale of AAI scoring. Significance level not reported. (Fonagy, Steele, Moran, Steele & Higgitt, 1991).
[c] "The size of the influence of maternal RF on infant security was equivalent to a correlation of about .41. This is higher than the correlation of .32 between maternal sensitivity and infant security that was reported in van IJzendoorn's meta analysis (1995)" (Slade, et al., 2005).
[d] "Reflective-self function yielded a greater point-biserial correlation with infant security than coherence (the strongest predictor of attachment classification) or any other AAI scale (r=.51 and .36 for mothers and fathers, respectively)." p<.001. (Fonagy, et al., 1991).
[e] "The overall two-way (secure-insecure) match between mother' prenatal interviews and children's security of attachment was 75% (kappa = .48, p<.001, 52% expected by chance alone." (Fonagy, Steele & Steele, 1991).

Indirectly, the current study supports two broad and well-established themes in attachment theory: 1) that attachments tend to be stable over time, and 2) that early attachments often prefigure the shape and composition of later attachments. Further,

because RF has been shown to be strongly correlated with the quality of the attachment bond, the current finding not only supports the time-tested idea that early relationships have a powerful influence on later ones, but it also adds weight to the proposition that mentalization is the primary vehicle through which attachments are formed and maintained.

The finding also has important methodological implications. It augments the body of support for RF as a valid construct for measuring mentalizing capacity in an attachment context. While similar in the emotional evocativeness of their questions, the AAI and PDI are quite distinct in the types of representations they evoke. The current finding stands as a demonstration that the RF scale is effective in detecting and measuring mentalizing capacity in very distinct contexts, as it is shown to be both recognizable and consistent in the discussion of remote memories of childhood as well as freshly forming memories of a new relationship.

Finally, the knowledge that RF tends to operate similarly across contexts carries important clinical implications, as it leads to the hypothesis that *instability* of RF is abnormal and should have a discernible cause. Only 7.5% of the sample fell outside the predicted correlation, and qualitative data from these subjects reveals potential causes for cross-contextual instability of RF.

Implications for the theory of mentalization

In conceptualizing the reflective function, Peter Fonagy and his colleagues drew psychoanalytic theory together with research on cognition and attachment to propose that mentalization is crucial to the development of secure attachment (Fonagy, Steele, Steele, Leigh, Kennedy, Mattoon & Target, 1995). Following a long theoretical tradition linking

positive mother-child interaction to the development of symbolic thought, they proposed that the mother-child relationship facilitates the birth of a reflective self, a psychological mind that processes emotional, interpersonal situations in terms of beliefs, desires, and intentions (Fonagy, et al., 2002). Similar concepts have been theorized in various forms over the years, including Winnicott's idea of objective reality and Klein's depressive position, both of which attempt to account for that aspect of the psyche which becomes aware, over the course of development, of the separateness of minds and the mother as a person unto herself.

Among Fonagy and colleagues' primary contributions has been to specify some cognitive mechanisms involved in the development of this kind of self-awareness and to develop means for identifying and measuring them. The concept of reflective functioning began as an extension of Main's "metacognitive monitoring," what she termed the self-reflective capacity observable in narrative that serves as the basis for adult attachment classifications. However, Fonagy has since expanded the idea and linked it to cognitive science and emotion research in positing the existence of an interpersonal interpretative function (IIF), which includes both mentalization, or cognition about mental states (IIF-c), and affect regulation based on those cognitions (IIF-a) (Bateman & Fonagy, 2004). What distinguishes RF from adult attachment classification is that RF is a skill that can be observed in action, not as a representation of something outside itself but as an ability operating in the moment. Main assumes that narrative coherence in representations is indicative of attachment status (Main, 1991). Fonagy's RF scale, on the other hand, aims to assess the quality of an observable skill.

The hypothesis of the current study, that RF is stable across relationships, is broadly based on findings that, throughout the history of attachment theory, have repeatedly demonstrated significant relationships among child attachment, adult attachment, and reflective functioning. Seminal studies by Mary Main and others have demonstrated moderate correlations between a mother's AAI classification and her child's Strange Situation classification (Main, Kaplan, and Cassidy, 1985; Ainsworth & Eichberg, 1987; Grossman, et al., 1987; Steele, Steele, & Fonagy, 1996; Ward & Carlson, 1995). This well-replicated finding raises questions about what mechanisms underlie the intergenerational transmission of attachment, especially since maternal sensitivity fails to account for the variance in these studies.

The question of the transmission gap has been at least partially resolved around the concept of mentalization. In fact, Fonagy has asserted that Slade and colleagues "closed the transmission gap" through their studies showing significant relationships between maternal RF and child attachment classifications (Fonagy & Target, 2005; Slade, et al., 2005).

If RF is the factor that accounts for the variance in studies of intergenerational transmission, then it is important to know whether RF tends to be a generalizable skill (Slade et al., 2005). If it tended to be relationship-specific, it would be more difficult to argue that the reflective capacity fostered in childhood had a lasting connection to later relationship outcomes. Many studies have proven Bowlby's initial observation that attachments tend to remain stable across the life span (Bakermans-Kranenburg & van IJzendoorn, 1993; Sagi et al., 1994; Benoit & Parker, 1994; van IJzendoorn, 1995; Waters, Merrick, Treboux, Crowell, and Albersheim et. al., 2000; Sroufe, Egeland, Carlson, &

Collins, 2005; Hazan & Shaver, 1987). Until Miriam Steele and colleagues' study published this year, however, it has only been assumed that RF tends to be stable cross-contextually (Steele, et al., 2008).

Steele and her collaborators took up Slade's call for research to assess the link between RF on the AAI and performance on the PDI in a sample of 41 adoptive mothers. Rather than scoring the PDI for RF, they used 27 subscales to measure parental qualities such as richness, warmth, and knowledge of attachment. Rather than comparing RF directly across interviews, Steele chose to compare AAI RF with qualitative subscales on the PDI. The most significant results included correlations between AAI RF and the ability to see the child as overfriendly (a common issue in adoptive families) ($r=.50$, $p<.001$), warmth ($r=.44$, $p<.001$), and richness ($r=.49$, $p<.001$), and they found positive, significant correlations on many others. The study provides excellent support for the assertion that high RF in the context of the AAI predicts positive parental attitudes, and it is strongly suggestive of cross-contextual RF stability. While their study was very revealing of parental qualities that tend to coexist with high RF on the AAI, Steele and colleagues did not take the step of measuring RF directly across the two interviews. The cost of this choice is the inability to compare scores that emerge from the same scoring system.

The current study was conceived to take this step and test the question of stability specifically. The finding of the current study, therefore, has implications for key questions in the theory of mentalization. It confirms the hypothesis that RF tends to be stable between the context of childhood memory and the context of a new relationship with a child. More broadly, by demonstrating the stability of RF across parent and child

representations, it provides empirical evidence to support the clinical wisdom that a mother's parenting is powerfully affected by her childhood experience with her own parents.

Implications for attachment theory

Despite the common misunderstanding that attachment theory sees early patterns as solid templates for later functioning, Bowlby actually theorized both sides of the cross-contextual stability question, as Bretherton points out (Bretherton, 2005). He reasoned that working models begin as representations of actual relationship patterns particular to child and parent, that they are, at first, relationship-specific. He understood that early patterns would influence the ways in which a person entered into later relationships, thus influencing later functioning, but he also accepted that major life experiences have the power to alter those patterns (Bowlby, 1989).

Research has supported both sides of this issue. A meta-analysis of research on attachment with both parents indicates that children often have distinct attachment classifications with each parent, but also that the stronger parent-child relationship is more predictive of later patterns of relating (van IJzendoorn & Bakermans-Kranenburg, 1996). Crowell's research on the stability of attachment in the transition to marriage shows that stability is the rule in these cases—78% of their sample kept the same classification before and after marriage, but they also showed that change is quite possible, as 22% of their sample did change classification.

Research on RF also speaks to both sides of the stability question. Early in development, children show instability of mind-reading when discussing friends and parents (Dunn, et al., 2000). Though the question of RF in childhood remains open,

Dunn's finding resonates with attachment research showing attachment patterns to be changeable as they are still forming.

The current finding that RF, a mental faculty that is distinct from yet closely tied to attachment, is stable across relationships, adds weight to the hypothesis that attachment-related expectations and behaviors also generalize by adulthood and is consistent with Crowell's finding that attachments resist change by adulthood (Crowell, et al., 2002).

Implications for the question of intergenerational transmission

Evidence of RF stability across behavioral systems also speaks to the question of the intergenerational transmission of attachment. While it is often noted that Freud overlooked the earliest interactions between mothers and infants, many subsequent clinical theorists noticed and attempted to account for the phenomenon of a mother's anxiety being transferred to her child. Harry Stack Sullivan put it this way:

> *The tension of anxiety, when present in the mothering one, induces anxiety in the infant.* The rationale of this induction – that is, *how* anxiety in the mother induces anxiety in the infant – is thoroughly obscure. This gap, this failure of our grasp on the reality, has given rise to some beautifully plausible and perhaps correct explanations of how the anxiety of the mother causes anxiety in the infant; I bridge the gap simply by referring to it as a manifestation of an indefinite—that is, not yet defined – interpersonal process to which I apply the term *empathy* (Sullivan, 1953).

Attachment research has attempted to break down this question and recognize the precise mechanisms at work in this induction of anxiety.

That attachment is transmitted intergenerationally is a central premise of attachment theory, but the precise mechanisms through which it is transmitted have remained largely obscure. Main's suggestion that a mother's own experience would be reflected in overt parental behaviors, such as a minimizing or overreacting to an infant's signals, has been supported by research using Ainsworth's sensitivity scale in various

populations, and by some studies that assess affect regulation (Main 1985; Main and Goldwyn, 1996; Cassidy, 1994; Kobak, 1987). Still, only 12% of the variance in parental responsiveness is explained by attachment security, according to the well-known meta-analysis of de Wolff & van IJzendoorn (1997), leading them to declare that "sensitivity has lost its privileged position as the most important causal factor" in attachment security.

It is very likely that a variety of factors contribute to the correlations described above, and there are several ways into the transmission gap (van IJzendoorn, 1995). These could include the child's temperament, (Vaughn, Lefever, Seifer & Barglow, 1989), ecological considerations, or limitations in the measurement of parent-child interaction (van IJzendoorn, 1995). A twin study discounted the hypothesis that genes play a role in attachment security, though it did find environment to play a large role (O'Connor and Croft, 2001). Since a subsequent meta-analysis suggested that sensitivity measures themselves are not the reason for the lack of predictability in maternal sensitivity, other approaches to the question have been theorized and tested (De Wolff and van IJzendoorn, 1997).

A decade of studies on attachment and reflective functioning has aimed squarely at exploring the transmission gap. Slade and colleagues showed that a mother's attachment classification on the AAI would correlate with maternal RF as measured by the PDI, and that infant attachment as measured by the Strange Situation procedure would also be predicted by a mother's RF on the PDI (Slade, et al., 2005; Grienenberger, et al., 2005). These findings of Slade and colleagues have led Bateman and Fonagy to declare that the reflective function is "the key mediator of the transmission of attachment and accounts for classical observations concerning the influence of caregiver sensitivity" (Bateman &

Fonagy, 2004). The current finding suggests that mentalization also mediates the effect of a mother's early relational life on her child-rearing, opening up the possibility that mentalization is involved in the multigenerational transmission of attachment.

Clinical Implications

The current finding documents a connection, via mentalization, between a mother's attachment and caregiving systems. This connection has implications for dyadic psychotherapy and for the question of generalizability of psychological change. Sara and Jane, examples of unstable RF rare in the current sample, are instructive about the factors that affect mentalization and on the phenomena of psychological regression and consolidation in parenthood.

Parent-infant psychotherapy

In documenting a connection between these two behavioral systems, the current finding points to the mother-infant relationship, and particularly, maternal RF, as a royal road to therapeutic intervention. To target the emotional world of a mother and her child, full of intense joy and strain, dyadic therapy interventions have been developed over the years, beginning with Fraiberg's Infant-Parent Psychotherapy in the 1970s (Fraiberg, 1980). Later, Lieberman & Zeanah's Infant-Parent Program and Heinecke's UCLA Family Development Project both grew out of her original principles involving insight-promoting interpretations and focus on the therapist-mother relationship as a way to understand the mother-child relationship (Fraiberg, 1980; Lieberman, Silverman, & Pawl, 1991; Lieberman & Zeanah, 2000; Heinicke, Goorsky, Moscov, Dudley, Gordon, Schneider, et al., 2000). More recently, Slade and colleagues' Minding the Baby Program has sought to

facilitate nurturing parent-infant relationships by focusing specifically on parental reflective functioning (Slade, Sadler, & Mayes, 2005).

Techniques for improving parental RF in Minding the Baby involve both modeling and relaying for the mother a mentalizing stance in relation to the child, herself, and the therapist. The therapists "work to keep mothers aware of their babies' physical and mental states, and continuously model a reflective stance in relation to everyday caregiving and nurturing" (Slade, et al., 2005). Modeling such a stance means putting words to the baby's mental states and intentions, "giving voice to the baby's states and intentions, thus concretely keeping the baby in mind for the mother." This type of technique is used not only for the baby, but also for the mother's thoughts, as the therapist often "speaks for the mother as well, giving voice to her intolerable feelings and making sense of her impulses" (Slade, et al., 2005). Helping to voice latent feelings in the mother, and modeling a curious and attuned stance toward the child, ideally combine to enhance the mother's RF in the emotionally charged context of childcare.

In showing that mentalization is a link between the attachment and caregiving systems, the current finding supports the use of dyadic interventions that focus on a mother's memories of care when she was a child. Like any unconscious assumptions, the ghosts in the nursery have more power when they remain unspoken. By watching for the emergence of unconsciously remembered early experience, and processing with the mother her assumptions about childcare based on her history, dyadic programs like Minding the Baby can enhance RF not only between mother and child but also in a mother's representation of her own childhood. Because RF is a link between these two systems, it is also possible that increased RF in one domain would positively affect RF in

another, in a mutually reinforcing way. By extension, the therapeutic possibilities that arise from this finding lead to the question of whether improvements in RF can extend beyond the parent-child relationship and into a patient's relational world at large. Could an improvement in RF regarding one's child lead to global changes in RF, improving relations with the rest of the family, and vice versa? This question requires consideration of a larger issue, whether cross-contextual stability is a general property of mentalization.

Generalizability of RF and structural change

In the broadest terms, the current finding suggests that cross-contextual stability might be a general property of mentalization, though such an assertion would require many more studies across varied populations to be proven. Still, the possibility that mentalization could be a stable trait raises questions about psychotherapy that aims at change in a patient's object relational world.

It is now widely accepted that factors common to various modalities of psychotherapy – a genuine, positive relationship, the verbalizing of feelings, the holding environment created by an alliance and regular contacts – account for much of the change that happens in any treatment (Frank & Frank, 1993). Many forms of talk therapy, particularly psychodynamic modalities, could be said to aim for augmenting RF by their very nature. There is mounting clinical evidence that therapies targeting mentalization explicitly, such as Bateman and Fonagy's Mentalization-Based Therapy and Slade's Minding the Baby program, lead to improvements in RF and, accordingly, to an alleviation of symptoms in patients (Bateman & Fonagy, 2004; Slade, 2002; Slade, 1999b; Slade, Sadler, & Mayes, 2005). It has also been demonstrated that other therapies such as Kernberg's Transference-Focused Psychotherapy and Linehan's Dialectical Behavior

Therapy, which are not written expressly to target mentalization, lead to significant improvements in RF nonetheless (Levy, Meehan, Kelly, Reynoso, Weber, Clarkin & Kernberg, 2005). The encouraging effectiveness of these treatments in altering RF supports a piece of clinical wisdom on which their practice obviously rests – that the increase in mentalizing capacity begins in therapy but does not end there. In a truly effective psychotherapy, improvement in psychological functioning must generalize beyond the bounds of the treatment and into the patient's relationships with family and friends.

Regarding the question of RF and psychotherapy, Sara's case is instructive, as she is entering motherhood after eight years of psychoanalysis. While we do not know the exact nature of her treatment, we can assume that it involved a long-term relationship with an analyst, an examination of family bonds, and most likely, a focus on gaining insight. Sara's uneven performance on the AAI, and her remarkably poor performance on the PDI, stand as evidence that while it may have indeed helped her in some ways, her psychoanalysis did not prepare her for motherhood.

Sara's AAI contains pockets of unintegrated reflective functioning. She can mentalize quite well about certain topics but remains very non-reflective, even rejecting of RF, in other instances. In a mentalizing mode, she makes the following comment about her mentor's death:

> He accepted his death and his dying, and he dealt with it, and he cleaned up his house so to speak, and he really allowed me to work out a lot of the bad feelings I had about the way my mother died. I took his death very hard, but the difference was that it was healthy. I worked it out. I grieved.

This statement is reflective in several respects—Sara empathizes with her mentor's experience, she reflects on her process around his death, and she observes growth in

herself over time. Compare the reflectiveness and resilience apparent in the above comment with this statement about her father:

> … he's almost 60 years old, he doesn't have any capability of change. He sees himself as the victim of his own life. He sees himself as manipulated by other people, first my mother and then his second wife. There's no function to try to discuss how he has affected his own life because he doesn't see it that way.

This remark amounts to an outright rejection of RF, in its dismissal of the possibility of change, as overly certain about the content of her father's thoughts. She also side-steps the question and then blames it on *his* inflexibility. This non-mentalizing statement is a remarkable contrast to Sara's discussion of her mentor's death. The lack of integration of such comments in Sara's AAI led to her "5B-inconsistent" rating; she could not sustain the reflective stance across relationship contexts, though she clearly has the capacity to reflect in some situations.

What can we learn about psychological integration from someone like Sara, whose reflective capacities are so splintered? In this cognitive literature, this splintering can be understood in terms of cognitive skills. Fischer and Pipp equate the cognitive notion of generalization of skills with the psychoanalytic idea of integration; to them, a cognitive skill becomes generalized when it has been successfully performed in various contexts and with greater and greater degrees of abstraction and difficulty (Fischer & Pipp, 1984). When RF has not been successfully integrated or generalized, a subject may find it possible to mentalize in one context but not another. When psychotherapy succeeds, on the other hand, moments of insight gradually fuse into a new vocabulary of personal experience, while experiences of self in relation to the therapist create a new emotional climate where this vocabulary can be internalized and made applicable to a variety of situations. It is no accident that the therapeutic situation – being held in mind by a caring

other and encouraged gradually to experience difficult feelings without losing a metacognitive perspective –resembles the environment theorized to foster the development of mentalization in childhood.

With respect to mentalization, then, structural change could be seen as the generalization of a new, higher level of reflective functioning to relationships that were previously too emotionally fraught for reflection to occur. From a skills theory perspective, the instability of Sara's RF could be the product of a therapy that made her mentalizing skill more somewhat more equal to the task that the AAI and PDI call for — but only regarding certain relationships and self-representations. The reflectiveness she can tap into when she speaks of her mentor or her father does not extend to her self-representation as a mother, or her ability to be a regulating presence for her child. These are evident in her very poor performance on the PDI. In this respect, Sara's case serves as a cautionary tale about the potential limitations of psychotherapy in creating structural change.

Regression in parenthood

A mother in the midst of forming a relationship with her child is confronting primitive anxieties that she may have successfully repressed for many years. Such anxiety is both potentially creative and potentially destructive, as the very different cases of Jane and Sara demonstrate. The majority of the time, this anxiety is survived and secure attachment prevails; in pathology, however, the destructive potential of primitive anxiety can become overwhelming, threatening the dyad with chronic misattunement and psychological disturbance. The interviews of Sara and Jane were chosen for qualitative analysis because of their unusual discrepancies in performance across the AAI and PDI, in hopes of

identifying factors that weigh on mentalization generally, in both abnormal and normal cases. In the acuteness of their shifts in RF, their transcripts shed light on factors that affect mentalization. In some respects, their stories stand as paradigmatic examples of regression and consolidation in motherhood.

The most prominent factor involved in Sara's regression as a mother is her trauma history. It has been well documented that trauma can leave a mother unresolved with respect to attachment, and that this lack of resolution can lead to the frightened / frightening behaviors common in the mothers of disorganized infants. Sara and her child are just such a dyad.

As evidenced by her stories of her mother's abuse and Sara's early psychic pain, she clearly had a traumatic experience of caregiving. This is the sort of experience that predisposes a person to maintain defenses such as splitting in order to maintain a connection with a malevolent caregiver. Sara's refusal to consider her father's mental state is an aspect of splitting, as she forecloses on the possibility of considering him as an intentional being. To do so would deprive her of the wholesale appraisal and dismissal that she invokes to hold him at a distance and prevent further insult. As brittle a defense as splitting is, it serves a function early in childhood and in abuse situations – whenever the basic dependability of the world is in doubt. It allows an infant to protect the good object from the bad object, to maintain some sense of security in relation to a good image of the parents, while dissociating memories of abuse from that image.

Evidence of splitting is evident in Sara's response to the interviews. She is able to mentalize about certain people, and she is able to mentalize about aspects of herself, but she simply refuses to mentalize about her parents. Fractionation of RF is related to

splitting in this case, to bring together terms from skills theory and psychoanalysis. The selective inattention she displays in refusing to mentalize is a clumsy defensive maneuver suggesting early pathology, i.e., misattunement with her parents from very early in life.

Sara's swing in RF, then, is accounted for by her defensive style and probable borderline personality pathology. Much of Fonagy's theory about RF was built around consideration of severe psychopathology, borderline personality disorder in particular, and Sara is a good example of patients whose early trauma resulted in problems with mentalization (Fonagy, et al., 2002; Bateman & Fonagy, 2004). Based on the idea that mentalization is particularly lacking in borderline patients, Bateman and Fonagy devised a treatment approach for borderlines targeted specifically at reflective functioning. Their Mentalization-Based Therapy (MBT) is not unlike Minding the Baby in its goal to improve functioning by creating an environment in which necessary, early developmental tasks can be achieved (Bateman & Fonagy, 2004). The first of these is to establish a sense of basic trust with another person to quell anxiety and tolerate exploration of inchoate and potentially threatening complex emotions. Winnicottian in spirit, Fonagy's treatment creates a facilitating environment in which mentalization can be engaged and improved.

Consolidation in parenthood

Jane also showed a swing in RF between her interviews, but for her, parenthood is proving to be an opportunity for remarkable improvement and consolidation of RF. The reasons for Jane's improvement are not as immediately clear as Sara's reasons for regressing. Jane's AAI is not disjointed like Sara's, but it does include a number of idealizing comments about her parents that crowd out opportunities for mentalization. Her PDI, on the other hand, is full of thoughtful, psychologically-minded statements.

As one might suppose based on her need to idealize, Jane's childhood was lacking in certain regards. Based on her report, she was closer to her mother than her father, but they fought frequently, and her mother was somewhat neglectful of her needs, as in the story of Job's Daughters (see p. 72). She characterizes her father as a distant breadwinner and also a harsh disciplinarian. What she describes is not abuse, however, and while she often speaks in idealizing terms, her attachment is rated autonomous.

Jane makes a simple but important point when she says, "She's a real easy baby, and that makes it that much easier for it to be a happy relationship." In good circumstances, having a child can be an organizing experience in which life priorities become clearer, and a great deal of gratification is obtained from the role of mother. The joy of connecting with a child, the sense of self as a competent caregiver, and the renegotiation of roles within the family can lead to improved self-esteem and a general sense of relief that deficits in one's own upbringing are not impeding the creation of a loving connection with the child. Jane also articulates an intuitive understanding of goodness-of-fit when she admits, "I just thank my lucky stars that she wasn't [colicky] because I probably would have gone over the deep end." There is an element of chance involved in temperament, and at such a delicate juncture in Jane's life, it may well be that she was "lucky" to have such a responsive and generally happy child.

Marriage can also play a role in consolidation or regression of RF. Without an interview focused on Jane's husband, we can only make a few inferences about this aspect of her life. She notes that her relationship with her mother improved when she married, and she talks about her husband very differently from her parents in that she does not idealize the relationship with her husband. It is not at all uncommon for a romantic

relationship to improve a person's attachment; 22% of Crowell's sample in her study of romantic attachment changed attachment classification when going from their parents to their new partner as attachment figures (Crowell, et al., 2002). The documented connections between RF and attachment would suggest that RF could be improved in a good marriage as well. Jay Belsky has studied the transition to parenthood and found that some marriages falter under the stress of new parenthood, while others actually improve (Belsky & Kelly, 1995). While Sara reports terrible fights with her husband about his failing business, Jane is able to give a candid picture of the ups and downs in her relationship. These differences signal that other key attachment relationships should not be left out of the equation.

The PDI asks subjects to reflect on ways their parenting has been affected by their experiences of being parented. Compared with Jane's pre-partum AAI, this moment in the interview gives a small window onto developments in her understanding of her upbringing in the ten months since she gave birth. In some respects, Jane remains about as idealizing and clichéd as she did on her AAI; she paints the same images of her parents as before: "She took care of the house, he brought home the bread, that was it." However, she also hints that her mother's attitude toward parenting, such as her mother's mantra that the family never had fun, now serves as a counterpoint to the attitude she wishes to take as a mother, which is to take care of things "and enjoy it, too." Accordingly, Jane's self-concept seems to have evolved, as she speaks of herself before motherhood as if she were a different person: "I had much more volatility in my personality, and I can sort of look back on it now and say, 'Wow, she, I, was very unpredictable.'" While it would not be expected that Jane's clichés about her parents would disappear over the course of one

year, it is notable that motherhood has given her perspective on aspects of herself, such as her unpredictability, and an active effort to distance herself from previous ways of being.

Jane's example suggests that motherhood is fertile ground for RF to be integrated and consolidated across contexts. Still, the repetition of clichés about her parents on the PDI serves as a reminder that this integration is bound to be gradual. Still, the fractionation within Jane's PDI – the stark difference between these clichés and her fresh, evolving view of her child – has a very different quality from the fractionation on Sara's interviews. Jane does not reject RF outright like Sara; rather, she falls into cliché—trite and canned explanations for the behavior of parents who "didn't know better." In Sara's case, fractionation could be understood as a suboptimal but nonetheless adaptive reaction to the abuse she faced in childhood, though the split-off flashes of mentalization have not protected her from poor outcome in the face of parental stress. In Jane's case of psychological growth and consolidation, contrasts in RF ability are probably less an artifact of pathological splitting than an aspect of healthy compartmentalization. Jane's scores, while as disparate as Sara's, span the low end of ordinary to very high; at baseline, she is operating at a higher level than Sara. This difference resonates with Fischer and Pipp's assertion that fractionation, in a higher overall range of functioning such as Jane's, has the quality of higher-order defenses.

Change of RF

The cases of Sara and Jane get at the heart of a question raised by the current finding, and which bears on any treatment that aims for change in RF as a path to psychological health. Would changes in RF regarding a parent, a child, or a therapist, lead to changes in other relationship domains? So far, we have discussed the current finding as evidence that it

would, insofar as parental RF can be predicted by adult attachment RF. These mothers illuminate some of the complexities of this question, however, that would require further research to address.

The problem of generalizabilty can be phrased as one of RF capacity vs. RF performance. If we view RF as a skill that is subject to variability depending on the emotion involved in the task, then we can say that Jane is better able to reflect on her child because the task is emotionally easier, and there is less defensive interference as a result. Following this line of thinking, a hypothesis regarding Jane's instability is that she had an underlying capacity for high RF all along that was underutilized on her AAI but became prominent on her PDI. Another possibility is that motherhood is actually helping her to grow, increasing her *capacity* for RF by stimulating her to think about herself and others in new ways. This growth hypothesis resonates the idea that motherhood is allowing Jane "psychic reconciliation" with her mother, as she renegotiates existing parental representations in light of new self-experiences (Benedek, 1959). While she may not have completely changed her descriptions of her parents, she appears to be in the process of revising her relationships to those representations, as evidenced in statements on her PDI such as,

> My mother was always saying, "I lost my sense of humor when I had children." Thanks, Mom. I can see how that can happen because you are so fixated on what needs to be done that you forget you can enjoy it, too.

The aggression in phrases such as "Thanks, Mom," suggests a working through of anger that is possible now that Jane is a parent and sees first-hand that it is indeed possible to enjoy her child.

The stark difference in Sara's and Jane's apparent functioning as parents suggests that fractionation should be considered a phenomenon with different subtypes that run along the lines of such constructs as defensive splitting, in Sara's case, and higher-level compartmentalization, in Jane's case. The most obvious difference between Sara and Jane lies in Sara's trauma history and probable personality pathology. The adaptations and characteristic defenses that occur in relational trauma, including dissociation and splitting, are largely understood to occur very early in development and therefore to affect a person's relational thinking on a fundamental level. Sara's psychoanalysis may have helped her to mentalize about certain relationships in her life, but fundamental anxieties elicited in parenthood were not affected, and she regressed when faced with the stress of raising a child. While Jane's mother may have been humorless and distant, she seems to have been good enough for Jane to emerge from childhood with the capacity for RF, a capacity that is not as apparent on her AAI but emerges in full bloom on her PDI. Jane's progress as a mother is an example of the ways in which parenthood can stimulate psychic growth; however, if parenthood as a developmental phase normally caused such a dramatic swing in RF, Jane would not be an outlier in this regard.

Further research would be required to explore the questions raised on these interviews. Particularly, tracing the development of RF over time as well as across relationships would provide better insight into mentalization as a mental function that can be considered in terms of both baseline capacity and context-dependent accessibility.

Methodological implications

Validity of the RF scale has been established by a number of studies, including those relating AAI RF to attachment rating subscales, child strange situation classification, child

performance on a theory of mind task, and maternal sensitivity **(**Fonagy, et al., 1993; Fonagy, Redfern & Charman, 1997; Levinson & Fonagy, 2004; Grienenberger, et al., 2005; Slade, Belsky, Aber & Phelps, 1999; Slade, Grienenberger, Bernbach, Levy & Locker, 2005**).** The current study adds to the series of validation studies by demonstrating that the scale measures mentalizing ability in two very different contexts in which very different representations are evoked.

It should not be taken for granted that the RF scale measures exactly the same capacity on two separate interviews. In creating the addendum to the RF Manual for use with the PDI, Slade and colleagues point out two key differences between the AAI and the PDI (Slade, et al., 2005). First, the AAI aims at eliciting memories of early childhood, "prior and relatively solidified representations," while the PDI "is presumed to tap into experiences that are live and immediate, and into representations that are still being constructed" (Slade et al., 2005). This difference could mean that affect regulation is more of an issue on the PDI, as the emotions evoked by recent or developing situations are often, by definition, raw and unprocessed. Also, the sheer intensity of emotion in a mother with her new child hardly needs mentioning; clearly the intensity and currency of the developing relationship distinguishes it from the relationships addressed on the AAI. Slade points out, also, that the PDI pulls for a greater degree of reflectiveness in the context of understanding child development, particularly in subjects who are discussing a preverbal infant, as in the current study.

It is important to take into account that, while identical RF scoring criteria are used on both interviews, some criteria can take on different meaning in the different contexts. As Meins has emphasized, making apparently empathic mental state attributions to young

children is not necessarily high RF if the mental state attributed to the child is too complex to be age-appropriate (Meins, Fernyhough, Wainwright, Gupta, Fradley & Tuckey, 2002). While complexity on the AAI merits higher RF scores, complexity can be somewhat deceiving in the context of child development if the mother attributes developmentally inappropriate mental states to the child.

Another major difference is that the PDI is not technically an attachment interview. An attachment figure is a caregiver, the person sought out in times of danger or stress; by definition, a child cannot be a mother's attachment figure. Strictly speaking, RF on the PDI is not RF in the context of an attachment representation in the same way that RF on the AAI is. It is, however, a very emotional relationship nonetheless, one that involves strong, family feelings and calls up images of one's own childhood. For this reason, it makes sense to call it properly a "caregiving interview," reciprocal to an attachment interview and comparable in the affectively charged task it presents the subject.

Furthermore, the PDI RF scoring tends to privilege the regulation of the child's affect. While on the AAI, a subject recalls her reaction to her parents' behavior, on the PDI a mother depicts situations in which she attunes to the child and attempts to regulate their interactions. Evidence of affective attunement to the child and appreciation for the child's developmental level merits the higher RF scores on the PDI. While it is certainly the case that episodes of attunement and affect regulation appear on AAIs, and that complexity appears on PDIs, the AAI tends to elicit more complex reflections because it involves the consideration of adult behavior, and the PDI tends to elicit more understanding of development because the child is more its focus. While the scoring

criteria are the same, the typical instance of parental RF can look quite different from the typical instance of RF about one's own upbringing.

Because of these differences, data that show RF to be consistent across the two interviews provides important information about the validity of the construct. A mother faces quite distinct tasks in discussing these two relationships, and different aspects of reflective functioning are elicited when different representations are evoked. A moderately strong and highly significant correlation of RF scores across the two interviews indicates that, despite the often stark difference in emphasis on the AAI and PDI, the underlying capacity to reflect is nevertheless registered by the scoring system. Therefore, the stability shown to exist across relationship contexts stands as evidence for the validity of the instrument used to detect and rate RF in its various forms.

Limitations of the study

The primary limitation of this study is its specificity to the representations evoked by the AAI and PDI, and the fact that it targets a specific population going through the particular life experience of new motherhood. The results suggest by implication that RF tends to be stable cross-contextually and generalizes in adulthood, but this argument is really a generalization from a specific result, and further study would be required to prove that it generalizes to relationships with spouses and other important figures as well. Investigation into these phenomena in other populations would also be important in understanding the impact of culture, gender, phase of life, and life experiences such as divorce, bereavement, or trauma on RF stability.

Second, RF scores are summary scores of a skill that often fluctuates throughout the course of an interview. Fonagy and Target call it a test of "offline mentalizing,"

meaning the general tendency across topics; when a patient has a "5" or ordinary RF, we are talking about tendencies rather than absolutes (Fonagy & Target, 2005). A future iteration of the measure might attempt to pinpoint whether intra-interview fluctuation runs along any dimensions, such as RF about self vs. parents; RF about self vs. child; RF about self as child vs. self as parent; or RF about one parent vs. another parent. Adding such a dimension might add nuance to the scale and allow it to detect patterns in the inconsistency and fractionation observed in subjects like Sara. Steele and colleagues' work on RF and the dimensions of the PDI is an important step in this direction (Steele, et al., 2008).

The current results represent one step toward proving that RF tends to generalize across contexts in the general population. Many more studies would be necessary to fully test this hypothesis in various contexts before such an assertion could be made. Its implications for therapeutic interventions with first-time mothers are rich, and research into other groups could eventually drive the creation of mentalizing-based interventions with the wider population.

The subjects displaying instability were few, and only qualitative analyses could be made of their particular cases, but by no means are trauma, psychotherapy, and development in parenthood the only ways in which a person could develop fractionated RF. Further study of inconsistent transcripts and intra-subject discrepancies could add significantly to the literature on the mechanisms underlying RF and its potential for change.

Conclusion

This study is an answer to a call in the literature on reflective functioning for research on the cross-contextual stability of RF. The positive, significant correlation found in its sample of 40 mothers is a preliminary step toward proving that RF stability is a general property of the mind. In its finding that AAI RF is predictive of PDI RF, the study indicates more directly that a mother's thinking about her childhood predicts her reflectiveness about her child, and therefore that mentalization is a key mechanism in the intergenerational transmission of attachment. This finding supports the clinical wisdom that a mother's history ought to be explored in depth and considered a possible source of her interactive style with her child. Unevenness of RF, while rare in the current sample, is important to investigate if we are to understand the mental operations underlying the reflective function. Our qualitative analysis shows that childhood trauma, psychotherapy, and maturation spurred by parenthood could all be involved in unevenness or change in RF capacity, but it is likely that other factors are also involved.

Stability and change are central themes in attachment literature as a whole, and Bowlby struggled with the question by addressing both sides. Attachment is malleable early on and tends to harden over time, though it can change as a result of life experiences including motherhood, marriage, and psychotherapy. In fact, psychotherapy aiming at augmenting mentalization was conceived in the hope that mentalization fostered in the context of a therapeutic relationship would contribute to character change by generalizing to other relationships in a patient's life. Stability and change of mentalization and attachment are elements continually in tension, critical to explore and understand not

because the tension will ever be resolved, but because of what they reveal about the mind, the nature of psychic inheritance, and the potential for change in psychotherapy.

APPENDIX

THE PARENT DEVELOPMENT INTERVIEW

Instructions: For the next hour or so I will be asking you a series of questions about your relationship with your child. If you have more than one child, try to answer the questions with the child in mind we are talking about today.

A. VIEW OF THE RELATIONSHIP

1. Could you describe your child to me?
2. Could you describe yourself as a parent?
3. How do you think your child is both like and unlike you?
4. I'd like you to choose 5 adjectives that you feel reflect the relationship between you and (your child). (pause while they list adjectives) Could you tell me why you chose those adjectives? (Take adjectives one by one and ask for an illustration)

B. AFFECTIVE EXPERIENCE OF PARENTING

1. What gives you the most joy in your relationship with (child)?
2. What do you like most about (child)?
3. When do you feel most "with" your child?
4. Do you ever feel intensely happy as a parent? What kinds of situations make you feel especially happy? What kind of effect does it have on (child) when you're feeling particularly happy?
5. Describe a time in the last week when you and (your child) really 'clicked'? (probe if necessary: Can you tell me more about the incident? How did you feel? How do you think he/she felt?)
6. Now, describe a time in the last week when you and (your child) really weren't 'clicking'? (probe if necessary: Can you tell me more about the incident? How did you feel? How do you think he/she felt?)
7. What gives you the most pain or difficulty in being a parent?
8. Do you ever feel really needy as a parent? What kind of situations make you feel this way?
9. How has having (your child) changed you?
10. Do you ever feel really angry as a parent? (Probe if necessary: What kinds of situations make you feel this way? How do you handle your angry feelings? How do you think these situations effect (your child)?

11. Do you ever feel really guilty as a parent? (What kinds of situations make you feel this way? How do you handle these guilty feelings? What kind of effect do these feelings have on (your child)?)
12. When (your child) is upset, what does he/she do? How does that make you feel? What do you do?
13. How do you figure out what your child wants or is feeling?
14. Does your child have moods or emotions that you sometimes have a hard time making sense of?
15. Are there times you feel you don't understand your child?
16. Are there times in your relationship with your child that you feel he or she has the upper hand? (Query: How does this make you feel? How do you handle it?)
17. Does your child ever seem to need to be by himself / herself?
18. Can you describe a situation when your child hurt or disobeyed you?
19. Do you think (your child) ever feels rejected? (Query: How do you handle that?)
20. Dow do you think your child's relationship with you is affecting the development of his/her personality?

C. PARENTAL REACTIONS TO TYPICAL INFANT/TODDLER SITUATIONS

1. How does your child feel when you're busy and can't pay attention to her?

2. How does your child feel when you are able to devote considerable time and attention to him/her?

3. How does your child do in exploring the world and solving problems on his/her own?

4. How does your child do when she can't explore or solve problems without your help and support?

5. Are there times when your child wants to do something and she can't quite figure it out and needs you to help her with it?

D. SEPARATION

Let's talk about times when you and (your child) are separated from one another.

1.Can you describe a typical routine separation?

2. How do you think your child feels about these separations?
3. How do you feel when you are separated from your child?
4. What kinds of reports do you get aboutu your child's response while you're away?
5. How does your child feel when you get home?

6. Can you describe the kinds of separations that your child might experience as somewhat more stressful than a routine one? (How do you think the child felt?)
7. What's the longest you've been separated from your child?
8. Has there ever been a time in the child's life when you felt as if you were losing her a little bit?

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