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Attachment Representations and Reflective Function in Women with Borderline Personality Disorder and their Adolescent Offspring

Katie Lauren Fitzpatrick
University of Tennessee - Knoxville

To the Graduate Council:

I am submitting herewith a dissertation written by Katie Lauren Fitzpatrick entitled "Attachment Representations and Reflective Function in Women with Borderline Personality Disorder and their Adolescent Offspring." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Jenny Macfie, Major Professor

We have read this dissertation and recommend its acceptance:

Paula Fite, Heather Hirschfeld, Michael Nash

Accepted for the Council:

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Vice Provost and Dean of the Graduate School

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Attachment Representations and Reflective Function in Women with Borderline Personality Disorder and their Adolescent Offspring

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Katie Lauren Fitzpatrick
December 2010

Abstract

Borderline personality disorder (BPD) is characterized by significant disruptions in development, including but not limited to the development of attachment representations and a capacity to reflect on mental states of self and other. For the individual with BPD, these disruptions may greatly impact the development of her offspring, including an increased risk of the child developing borderline psychopathology. Examining the attachment representations and the reflective capacity of the offspring of women with BPD can add to the understanding of developmental pathways to pathology and resilience. In particular, assessing for BPD-related patterns in attachment representations, narrative coherence, and reflective functioning in adolescent offspring may be especially illuminating as it is in adolescence that BPD can first be diagnosed. It is also in adolescence when attachment representations can begin to be measured most directly given the cognitive capacities gained by this developmental period.

The body of parent-offspring attachment research that exists to date has focused primarily upon infant-parent relationships. Minimal research has explored adolescent-parent relationships. The current study examines a low socioeconomic status sample of 20 adolescents and their mothers where the mothers are diagnosed with BPD and a sample of 19 matched comparison adolescents and their mothers on: adult/adolescent attachment representations, the capacity for reflective functioning, and coherence in discourse regarding early attachment-related experiences. Measures utilized include: the Adult Attachment Interview (AAI), which measures attachment representations of adults

and adolescents, and the Reflective Functioning (RF) coding system, which measures the capacity to understand self and others in terms of mental states.

Results demonstrated no significant relationships between BPD and comparison groups on two-way or four-way attachment classification for mothers or their adolescent offspring. A marginally significant difference was found between groups of mothers on the capacity for RF. No such difference was detected between groups for adolescents. Narrative coherence as measured by the AAI was not found to be correlated between mothers and adolescents. Finally, affect instability, a main feature of BPD, was not found to be correlated with RF capacity. The implications of these findings, the methods used, and suggested future directions for research are discussed.

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CHAPTER 1

Introduction and Literature Review

Developmental Psychopathology and Attachment

A main tenet of the developmental psychopathology perspective is that "psychopathology needs to be understood in its developmental context" (Bradley & Westen, 2005). Through the study of young people at high risk of developing pathology, the pathways toward pathological and typical developmental outcomes can be illuminated (Macfie & Swan, 2009). In particular, first degree relatives of individuals with borderline personality disorder (BPD) are considered to be at high risk for developing borderline pathology themselves (American Psychiatric Association, 2000) and so examining developmental pathways of the offspring of these individuals could shed light on a trajectory of pathology as well as on protective factors that might contribute to resiliency.

While the etiology and development of BPD is yet to be fully understood, research points toward an interaction between an individual's genetic predisposition and environmental risk factors (Trull, 2001). The genetic or biological factors that contribute to the etiology of BPD are often discussed in terms of emotional vulnerability (Torgersen et al., 2000), while environmental risk factors of developing BPD typically refer to disruptions in early attachment relationships due to a kind of emotional deprivation resulting from separation, loss, or abuse (Heard & Linehan, 1993; Zanarini, 2000). To be clear, this research cannot distinguish between the effects of genetics in the development of BPD and the effects of environmental or caregiving factors.

Borderline Personality Disorder

Borderline personality disorder has been described both as a disorder of attachment and of the capacity to reflect accurately on the mental states of self and other, also called reflective functioning (Fonagy, Target, & Gergely, 2000). The Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition Text Revision (American Psychiatric Association, 2000) describes the essential features of borderline personality disorder (BPD) as being "a pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity that begins by early adulthood and is present in a variety of contexts." This pervasive pattern is generally characterized by efforts to avoid abandonment, a history of tumultuous interpersonal relationships with a propensity to "split" or alternate between extremes of idealization and devaluation of the relationship partner, an unstable sense of self, impulsivity, recurrent suicidal and/or self-injurious behavior, and affect dysregulation.

BPD is thought to affect 5.9% of the people in the general population and is equally prevalent in both men and women (Grant et al., 2008). However, BPD in women is associated with a higher severity of physical and mental disability than in men (Grant et al., 2008). Repeated suicidal behaviors occur in greater than 70% of individuals with BPD and approximately 10% commit suicide (Macfie, 2009), which is said to be 400 times greater than the rate of suicide in the general population (Levy, 2005). Individuals with a first-degree biological relative with BPD are approximately five times more likely to be diagnosed with the disorder themselves when compared with the general population (American Psychiatric Association, 2000).

Empirical Findings on Offspring of Mothers with BPD

A handful of studies on the offspring of women with BPD have been published. Some examined children in specific developmental stages such as infancy (Crandell, Patrick, & Hobson, 2003), while others assessed wider ranges of childhood and adolescence (Feldman et al., 1995; Weiss et al., 1996; Barnow, Spitzer, Grabe, Kessler, & Freyberger, 2006). Findings of these studies suggest that for offspring of women with BPD, family stability and the family environment are disrupted. For instance, these children between the ages 4-18 are more prone than the children of mothers with other personality disorders to experience inconsistent household composition, frequent moves leading to change of schools, out of home placement away from the mother, and exposure to substance abuse and suicide attempts on the part of both mothers and fathers (Feldman et al., 1995). In addition, these children are more often diagnosed with disorders of attention and disruptive behavior than the offspring of women with other personality disorders (Weiss et al., 1996).

Children of women with BPD at the older end of this age range, ages 11-18, present with a greater frequency of internalizing and externalizing problems and report having very low self-esteem compared with children of women with depressive disorders, other personality disorders, and no psychiatric conditions (Barnow et al., 2006). Lastly, children aged 4-7 who have mothers with BPD tell stories that contain more role reversal with parents, more fear of abandonment, and more negative expectations of relationships with parents in contrast to children in comparison groups (Macfie & Swan, 2009). In addition, these children demonstrated representations of the self that were less congruent

and more shameful as well as poorer emotion regulation as evidenced by stories with less narrative coherence and more boundary diffusion.

BPD and Adolescence

A diagnosis of BPD assumes that the pervasive pattern of diagnostic criteria began in early adulthood and so is most often assigned to adults (American Psychiatric Association, 2000), but BPD can also be diagnosed in adolescence (Ludolph et al., 1990; Westen, Shedler, Durrett, Glass, & Martens, 2003). Adolescents higher in BPD symptoms have been shown to be related to low functioning with respect to work and interpersonal relationships, as well as low life satisfaction from adolescence through middle adulthood (Winograd, Cohen, & Chen, 2008). In addition, BPD symptoms in adolescence predict lower academic and occupational achievement, lower levels of commitment in romantic relationships, and less achievement of developmental tasks in adulthood (Winograd et al., 2008).

The American Psychiatric Association (2000) warns that some characteristics associated with BPD seen in adolescents such as "identity problems" and substance use may lead the clinician to misdiagnose BPD on the basis of transitory symptoms. While it is true that characteristics typically associated with adolescence have some similarities to BPD characteristics (e.g., labile mood; incongruous, intense anger; unstable self-identity), why do these symptoms develop into a pervasive pattern in some adolescents and not in others? This study aims to assess the following constructs thought to be related to the development of BPD: attachment representations (George, Kaplan, & Main, 1984),

coherence of attachment narrative (van IJzendoorn & Bakermans-Kranenburg, 2008), and the capacity for reflective functioning (Fonagy et al., 1996).

Attachment Theory

Attachment theory is one lens through which to examine the development of psychopathology and to contrast it to normative or resilient development. John Bowlby (1977, 1988) believed that by attending to individuals' early experiences of caregiving, attachment theory contributes to the explanation of pathways of development to positive mental health or conversely psychopathology. John Bowlby took from evolutionary, cognitive control and object relations theories to introduce attachment theory as a universal and species-specific inherent motivation to form affectional bonds between parent and child (Bowlby, 1969, 1973, 1980). Interestingly, Bowlby observed that even children of abusive mothers became attached to them. At a time when delinquents were thought to be born "morally deviant", through systematic observation of maladjusted adolescents (Bowlby, 1944), he came to believe that the child psychopathology he observed was a consequence of actual experiences in the family, including loss of or separation from a parent, neglect and abuse, which he deemed to be "potentially pathogenic to the developing personality" (Bowlby, 1969). Indeed, individuals who experienced abuse and/or neglect in childhood are at risk for the development of borderline pathology (Rogosch & Cicchetti, 2005).

From his study of psychopathology in the development of attachment relationships, Bowlby (1969) arrived at a comprehensive theory of attachment: the child-caregiver bond originates in the infant's need for protection from harm and a feeling of

security (rather than the need for food) in order to survive. According to this theory, the attachment system of the infant-caregiver relationship provides a safe haven from which the growing child can move to explore the world and to which he/she can return in times of danger. Under threat, the attachment system is activated and subsequent attachment behaviors serve to sustain a desired proximity to the caregiver. These behaviors are unique to each child and include those that are most useful to them in a specific moment and context.

It is the caregiver's sensitive and appropriate responsiveness to the child's needs that leads to a sense of security and a trajectory toward healthy development. This infers that inappropriate responsiveness by the caregiver (e.g., a lack of response, inconsistent responsiveness, misreading the child's needs, abusive responses) could result in a sense of insecurity in the child thus making the development of psychopathology more likely. Such inappropriate responsiveness and its effects on development have been shown in mothers with BPD. Namely, mothers with BPD have been found to be more insensitive and intrusive with their infants (Crandell et al., 2003; Hobson et al., 2005) and more overprotective with their offspring ages 11-18. Moreover, these young people have more internalizing and externalizing problems than both normative and clinical comparison groups do (Barnow, et al., 2006).

Internal Working Models

Repeated and prolonged experiences with the attachment figure are thought to lead to the development of a set of beliefs about the future behaviors of the caregiver, accompanied by corresponding beliefs about the self (Bowlby, 1969). Bowlby termed

these beliefs about the self and other "internal working models" (Bowlby, 1969). Internal working models thus enable the child to "regulate, interpret, and predict both the attachment figure's and the self's attachment-related behavior, thoughts, and feelings" (Bretherton & Munholland, 1999). As a means of obtaining more in-depth characteristics of various types of attachment relationships, Bowlby went on to examine how different specific and actual events such as separation, loss, deprivation, and abuse could lead to different internal working models (Main, Kaplan, & Cassidy, 1985).

The working models of self and attachment figure are complementary in that the working model of the self is developed in the context of how adequate or inadequate a person is from the point of view of his attachment figures (Bowlby, 1973). Insensitive care or actual separation from the attachment figure may lead the infant to internalize a model of the attachment figure as "inaccessible and/or unresponsive to him when he desires her" (Bowlby, 1973), resulting in an anxious (insecure) attachment, and a corresponding model of himself as unworthy (Bretherton & Munholland, 1999). When asked to describe memories with caregivers in early childhood, adults with BPD tend to see others as more deliberately harmful and less helpful than are those of clinical and normative comparison groups (Nigg, Lohr, Westen, Gold, & Silk, 1992). Bowlby's (1969) use of the term "working" in the phrase internal working model implies the continuous updating and revising that is thought to be necessary if such a model is going to be useful, as is thought to happen in the psychologically healthy person. It is when internal working models are not updated and thus no longer appropriate, that the potential for the development of pathology arises. Ideally, working models of both the child and parent(s) are gradually modified in synchrony with the child's developmental process as

he or she matures physically, cognitively, and socially (Bowlby, 1969). When this does not occur, internal working models of self and other that were adaptive in childhood may not be revised concurrent with new and different experiences with others. The failure to update working models can lead to problems in relationships in adulthood and/or the development of psychopathology.

Based on his view on the influential role of internal working models on psychological functioning, Bowlby stressed the impact of the "family microculture" on the development of mental wellness and mental illness over the role of genetics (Bowlby, 1973). According to attachment theory, it is the internal working model that is thought to be the essential mechanism in the link between the infant experience and the developmental trajectory to adulthood. More specifically, Bowlby saw verbal and nonverbal communication as the source of the creation of internal working models of attachment relations as well as the vessel for the transmission of these internal representations from one generation to the next (Bretherton & Munholland, 1999). It is particularly salient to examine the possible transmission of maladaptive representations in the offspring of women with BPD given the high risk of these offspring developing BPD themselves (Macfie, 2009). Is there a relationship between attachment representations of women with BPD and the attachment representations of their adolescent offspring?

Measurement of internal working models in adults and adolescents

In 1985 Mary Main, along with her colleagues, wrote the seminal paper "Security in infancy, childhood, and adulthood: A move to the level of representation," in which the authors suggested that mental representations of attachment of preschool-aged children could be assessed using projective measures, and mental representations of

adolescents and adults could be captured in their patterns of speech that become apparent in relating their childhood experiences (Main, Hesse, & Goldwyn, 2008). Prior to this, the field of attachment research had been limited to observational studies of non-verbal behavior of infants in the Strange Situation. It was from this paper that the construct of adult attachment was born. Main et al. (1985) theorized that an adult's capacity to organize information with respect to their own attachment-related experiences was associated with an individual's current security and the future security of their child. Out of this work a valid instrument to assess adolescent or adult representations of attachment was developed, the Adult Attachment Interview (AAI: George, Kaplan, & Main, 1985).

The AAI was designed to measure an individual's current state of mind with respect to his/her childhood attachment experiences. The measure is an hour-long semi-structured clinical interview in which the speaker is asked to describe his/her early relationships and particular attachment-related events and to reflect on the effects that these relationships and events have had on his/her adult personality (Main, et al., 1985). A coding system (Main & Goldwyn, 1984) utilizes verbatim transcriptions of the entire interview to assess the security of the individual's internal working model of the self with respect to attachment. In addition to the speaker's explicit presentation of his/her experience, contradictions and other forms of incoherence of which the speaker may be unaware are considered important. It is important to note that it is not just the *content* of the reporting of childhood experiences, but *how* they are told, e.g., level of coherence, which determines their classification. Five classifications are noted in the coding system.

Secure/autonomous individuals' interviews are characterized by an objective, open, and fresh approach to the interview, a valuing of attachment relationships, and an

awareness of the influence that attachment experiences have on the self. Many individuals classified as secure with respect to their childhood attachment recall positive experiences in their early attachment relationships. However, some report adverse attachment-related childhood experiences such as abuse, loss or rejection. If the adult is able to recount a difficult childhood coherently, with a balanced sense of understanding of caregivers' actions and the effects they had on the self, the adult is deemed to have earned secure attachment status.

Individuals characterized as dismissive convey attachment relationships as being undeserving of concern, value, or contemplation. These interviews are typically brief and may include considerable idealization of one or both caregivers. Individuals classified as preoccupied are characterized by an inability to move out of discussion of untoward attachment experiences, sometimes with feelings of anger or in a more passive style. They may also seem to have an ongoing dependency on their parents, possibly still actively attempting to please them.

Secure/autonomous, dismissing, and preoccupied classifications are all considered to be organized states of mind with respect to attachment as they each categorize a predominant way of representing attachment-related experiences. Disorganized states of mind with respect to attachment include the unresolved and cannot classify categories. Individuals in the unresolved group have experienced abuse or the loss of an attachment figure and have not yet fully worked through these events. This is evidenced by accounts of incoherence around the discussion of the loss or abuse such as disorganization in discourse, disorientation with respect to time or place, or unsuccessful denial of the event. The disorganization in the discourse of an individual classified as unresolved is isolated

and temporary. On the contrary, the interviews of individuals in the cannot classify category are characterized by "a global breakdown in the organization and maintenance of a singular strategy for adhering to the discourse tasks of the AAI" (Hesse, 1996). Thus, these interviews do not fit into any one organized AAI category, which is rare in low-risk samples (Main, Goldwyn, & Hesse, 2002).

On two occasions, normative data on the AAI classifications has been examined using a meta-analytic approach (van IJzendoorn & Bakermans-Kranenburg, 1996; 2008). Distributions of nonclinical father, mother, and adolescent samples, samples from different countries, and clinical samples were revealed. In the initial analysis, the four-way distribution of nonclinical mothers was comprised of 55% secure/autonomous, 16% dismissing, and 9% preoccupied, with 19% of nonclinical mothers being unresolved with respect to loss or trauma. The three-way distribution was comprised of 58% secure/autonomous, 24% dismissing, and 18% preoccupied. This distribution did not significantly differ in samples of fathers, adolescents, and participants from different countries. A significant difference was detected in the comparison of individuals with very low SES backgrounds and nonclinical mother samples. Namely, there was an overrepresentation of individuals classified as dismissing as well as unresolved with respect to attachment and an underrepresentation of secure classifications. The results of the most recent analysis (van IJzendoorn & Bakermans-Kranenburg, 2008) did not differ significantly from the findings published more than 10 years ago.

Links between the development of psychopathology and states of mind with respect to attachment have been demonstrated. In a study of mother-child interaction, mothers' psychopathology (Axis I) was significantly associated with their mental

representations of attachment as measured by the AAI (Ward et al., 2006). Women classified as insecure with respect to attachment were more likely to have an Axis I diagnosis than women classified as secure. Specifically, 32% of secure mothers had an Axis I diagnosis, 63% of dismissive mothers, 100% of preoccupied mothers, and 65% of unresolved mothers had an Axis I diagnosis. Of the women with unresolved mental representations of loss or abuse, the risk of psychopathology was low for those with underlying secure attachment states of mind compared to women with underlying insecure states of mind. Fonagy et al (1996) studied the relation of attachment patterns and psychiatric diagnoses using a sample of nonpsychotic inpatients and a comparison group. All participants completed the SCID-I and II as well as the AAI. The inpatient participants with both Axis I and Axis II disorders were more likely to be classified as preoccupied and unresolved with respect to loss or trauma. Those who met the diagnostic criteria for BPD were likely to have experienced severe trauma and were classified as unresolved with respect to the traumatic event.

BPD: A Disorder of Attachment

Affective instability, difficulty regulating affect, fear of abandonment, and self-harming behaviors are the hallmark of borderline personality and they are typically manifested in the context of interpersonal relationships (Levy et al., 2006). In attachment theory, these symptoms correspond with the characteristics of an individual with anxious or insecure attachment and an internal working model of the self and others as unpredictable and/or inadequate (Bowlby, 1973). Risk factors for the development of BPD include trauma, loss, and/or abnormal parenting during childhood (Paris, 1994).

Trauma, early separation or loss, and abnormal parenting are more common in individuals with BPD than in individuals with other personality disorders. In particular, childhood sexual abuse is highly frequent (approximately 70%) in BPD samples (Paris, 1994). Abnormal parenting includes pathology in the parent(s) and/or poor quality of the parent-child relationship.

Compared with the distribution of AAI classifications in the nonclinical population, the BPD population has an overrepresentation of preoccupied and unresolved classifications. Barone (2003) assessed protective and risk factors in developing borderline pathology using the AAI. AAI classifications of 40 participants (both men and women) who met diagnostic criteria for BPD were compared with those of 40 "nonclinical" participants. No effect for gender was found in the group comparison. Results showed a distribution of attachment patterns specific to the BPD sample; 7% of participants were classified as secure with respect to attachment, 20% as dismissive, 23% as preoccupied, and 50% as unresolved with respect to loss or trauma. The proportion of participants classified as dismissive was similar across groups (21% in nonclinical group). Of the participants classified as unresolved, the most common alternate classification was preoccupied. These distributions are consistent with the results of a meta-analysis that included BPD samples (van IJzendoorn & Bakermans-Kranenburg, 1996).

Additionally, participants with BPD have been found to have dramatically lower coherence and to be more unresolved with respect to trauma than nonclinical participants (Barone, 2003). For participants with BPD who were classified as insecure, results of the study point to the parental relationships as a potential risk factor. Particularly detrimental

is having an actively rejecting father and a mother who is neglecting and lacking in love as reported in the individual's discourse on the AAI regarding the childhood attachment relationships. This combination of factors is thought to impair the security of individuals with BPD and to be associated with a failure in resolving traumatic experiences concerning abuse. Due to the high concordance rate of BPD and the experience of severe trauma it is not surprising that, compared to the normal distribution of attachment classifications, there is an overrepresentation of individuals classified as unresolved with respect to trauma (Fonagy et al., 1996).

Attachment in Adolescence

In addition to being the time when BPD can be first diagnosed, adolescence is a particularly salient developmental period in which to study attachment. Namely, it is the time when the attachment system "can be assessed in terms of a single overarching attachment organization that has developed, displays stability, and predicts future behavior and functioning" both within the family and in other relationship contexts (Allen, 2008 referencing Hesse, 1999). During adolescence, individuals move toward increasing autonomy and developing attachment relationships with others. Cognitive and emotional advances are made in this stage of development, enabling an adolescent to begin the process of integrating and implementing a more comprehensive perspective of attachment experiences (Allen, 2008).

The family experience of those who develop into relatively stable and independent adults is characterized by parental support and "by the frank communication by parents of working models—of themselves, of child and of others—that are not only

tolerably valid but are open to be questioned and revised" (Bowlby, 1973). For example, adolescents classified as secure with respect to attachment using the AAI demonstrate effective coping skills (Seiffge-Krenke & Beyers, 2005), healthy adjustment to major age-related transitions such as beginning college (Larose & Bernier, 2001) and mandatory military service (Scharf et al., 2004), and the capacity for mature intimacy with romantic partners as well as with friends (Scharf et al., 2004).

Conversely, dismissive adolescents have been shown to demonstrate affect dysregulation, namely in the form of "emotionally explosive parent-child exchanges (Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993). In turn, Kobak and colleagues (1993) found that preoccupied mothers demonstrated affect dysregulation during conversations with their adolescents. The family experience of those who have developed into adults with significant anxiety and fear is characterized by the inability to rely on parental support and by "covert yet strongly distorting parental pressures" (e.g., role reversal). This may result in the child's having to "adopt, and thereby to confirm, a parent's false models—of self, of child, and of their relationship" (Bowlby, 1973).

Transmission of Internal Working Models from Parent to Offspring

It is the focus of this study to examine the potential effects of maternal borderline pathology on the development of psychopathology in adolescent offspring via attachment representations. The concept of the internal working model as measured by the AAI has been used to explain pathways of abnormal development, both in terms of how an individual's environment impacts his or her working model and the role the working model has in the development of self (Fonagy & Target, 2000). The findings of Main et

al.'s (1985) longitudinal study revealed a correlation between the overall organization of the parents' narratives about their own early attachment experiences assessed before the child is born and their attachment relationship when the infant is 12 months old. A parent's coherent AAI, regardless of whether the recalled attachment relationships with their parents would be considered secure or insecure, predicted their infant's secure classification in the Strange Situation. In other words, the *organization* of the parents' internal working models of attachment, *not the content* of their experiences, predicted their infants' attachment relationship with them (Bretherton & Munholland, 1999). This led to a deeper understanding of the intergenerational transmission of internal working models as it demonstrated that parents do not necessarily repeat the parenting behavior of their parents with the next generation. Instead, the parents' organization of their own attachment experiences with their parents, or their internal working models, are what predict the attachment relationship with their own children.

As suggested by Main, Kaplan, & Cassidy (1985), the mental representations of parents as demonstrated in language with respect to their own childhood attachment experiences have considerable bearing on the quality of their child's attachment to them (van IJzendoorn, 1995). The AAI was developed to assess adult attachment under the hypothesis that a parent's mental representations of their own early attachment experiences assessed before the child was born, would predict the quality of the infant-parent attachment relationship when the infant was 12 months old, as measured by the Strange Situation (Main, Kaplan, & Cassidy, 1985). Ten years later, a meta-analysis was performed to test the predictive validity of the AAI (van IJzendoorn, 1995) and the findings were impressive, making the AAI the most well-validated and widely used

instrument in developmental research for the study of attachment representations in adults (Roisman, Fraley, & Belsky, 2007).

A four-way cross correlation was found for parental attachment classifications and infant attachment classifications with large effect sizes. Specifically, secure/autonomous adult attachment category predicted the secure infant category, the dismissive adult category predicted the avoidant infant category, the preoccupied adult category predicted the ambivalent infant category, and the unresolved adult category predicted the disorganized/disoriented infant category. Moreover, 80% of infants of mothers with borderline personality disorder are disorganized (Hobson, Patrick, Crandell, Garcia-Perez, & Lee, 2005). Further, disorganized attachment in infancy has been found to predict dissociation and conduct disorder in adolescence (Sroufe, 2005). Thus, mothers' pathology may impede the way they are able to relate to and care for their children, contributing to a disruption in the development of secure attachment in these children with lasting effects into adolescence.

These findings provide resounding support for the presence of the intergenerational transmission of internal working models of attachment from parent to child. However, the bulk of studies on the transmission of attachment focus on dyads of parents and young children. Very few studies have examined the internal working models of adolescents as they relate to the internal working models of their caregivers and findings have been mixed. Allen and colleagues (2004) found that the current attachment representations of mothers were only weakly related to the attachment representations of adolescent offspring. Less recent studies have found a modest overall concordance between adolescent and maternal attachment classifications (Zimmermann,

Fremmer-Bombik, Spangler, & Grossman, 1995), with concordance being higher for adolescents living in a household with both biological parents compared with adolescents living in other household structures (Allen, Land, Liebman, Bell, & Jodl, 1997). Further understanding of *how* attachment representations might be transmitted from parent to offspring is an important focus of emerging theories and research. The relationship found between attachment representations of mothers and adolescent offspring was mediated by the quality of interactions between mothers and adolescents at the time attachment representations were assessed (Allen, McElhaney, Kuperminc, & Jodl, 2004).

Reflective Functioning

One theory on how attachment representations are transmitted from parent to offspring suggests that a parent's ability to make meaning of behavior in oneself and others in mental state terms such as thoughts, feelings, and beliefs is a significant factor. This process, termed reflective functioning, RF (Fonagy, Steele, Moran, Steele, & Higgitt, 1993) is considered a developmental achievement and enables people to make meaning of and predict others' behaviors. Of note, reflective function is also synonymous with the term mentalization. According to Fonagy and colleagues, children develop this capacity through the attachment relationship with caregivers who reflect on their children's mental states without being impinging (Fonagy & Target, 1996). Based on this theory, Fonagy and colleagues developed a reflective functioning coding system (Fonagy, Target, Steele, & Steele, 1998) to be used with the AAI. Certain interview questions, such as, "How do you feel your childhood experiences with your parents have affected your adult personality?", and, "Why do you believe your parents behaved as they

did when you were a child?", seemed to demand reflection on the motivations of self and other, and responses to these questions are used to assess reflective functioning.

The RF scale examines, through the individual's language, the ability to think about one's own and others' beliefs and desires in the present, in the past, and in the imagined future (Fonagy et al., 1993). Speakers in the low end of RF capacity do not demonstrate enough evidence to show that they consider the motives that may have shaped their parents' behavior toward them or about their own motives and behaviors. Mean RF ratings for psychiatric groups, including those with personality disorders, have been shown to fall within this range (Fonagy et al., 1996). Speakers in the moderate range of RF have a general understanding of human motives and behavior, but the application of this understanding to personal experiences is lacking or incomplete. Speakers in the high end of the RF scale demonstrate an organized and consistent understanding of both conscious and unconscious motivations with respect to one's own behavior and those of the parents (past and present) and how those processes are related. In general, speakers with moderate to high RF demonstrate an awareness of the nature of mental states, an effort to think about mental states that underlie specific behaviors, recognition of developmental aspects of mental states, and/or recognition of mental states in relation to the interviewer. Ratings on RF have been shown to have the greatest influence on the judges' appraisal of secure attachment and explain over half of the variance in the distinction between secure and insecure transcripts (Fonagy et al., 1998).

Mother's RF has been found to predict her child's performance on a cognitive emotion task that assesses the child's ability to accurately read emotional states (Fonagy et al., 1998).The relationship between a parent's secure AAI classification and her

infant's secure strange situation classification has been found to be mediated by the parent's capacity for reflective functioning (Fonagy et al., 1995). In a study of parent-infant attachment security, women who reported significant deprivation by caregivers in childhood were more likely to have securely attached infants if they demonstrated high reflective functioning capacity compared to women in this group with low RF (Fonagy et al., 1995).

When a parent is highly self-reflective, he/she is able to be more sensitive to her infant's inner states and so is able to respond to the child's attachment signals in an empathic and accurate way that meets the child's needs, regardless of her own early attachment experiences. Consistent with attachment theory, the infant is thought to develop internal working models of the parent as responsive to his/her needs and of the self as worthy of response and affection. Thus, it can be said that the caregiver's capacity for reflective function may be a protective mechanism within the attachment relationship that buffers the transmission of insecure attachment representations from one generation to the next (Gabbard, 2004). The caregiver's RF capacity has also been shown to directly influence her child's ability to mentalize, another term for RF. Utilizing a cognitive emotion task with children 5.5 years old, the child's ability to accurately read emotional states on a puppet was predicted by mother's RF capacity (Fonagy et al., 1998).

To date only one study is known to have assessed the role of RF in the attachment relationship between mothers and their adolescent or adult children. This study tested a transgenerational perspective of attachment in women ages 15-46 hospitalized for anorexia nervosa and their mothers (Ward et al., 2001). While no association of attachment classification was found between the anorexic women and their mothers, both

mothers and their daughters had low RF scores and the majority of the mothers were classified as unresolved with respect to loss using the AAI. Of note, limitations of this study included the absence of a comparison group and a small sample size. Attachment security in the sample was compared to population norms and not all of the mothers of the anorexic patients participated. Literature could not be found on the validity of the measure when used with adolescents. However, Howard and Miriam Steele, two of the developers of the RF scale, have stated that a range of RF scores have been demonstrated by samples of adolescents (in Busch, 2008).

BPD and reflective functioning

In addition to being characterized by disrupted attachment relationships and representations, BPD is also characterized by a disrupted capacity for reflective functioning. The absence of reflective functioning is seen as a link to disruption in the attachment system as well as to the development of various types of pathology. In this respect, insecure or disorganized attachment is the result of the failure to develop the ability to reflect on the internal states of the self and of others without relying on primitive defense mechanisms (Slade, 2005). Given that secure attachment is associated with emotional regulation and high reflective functioning, capacities that are lacking in the person with BPD , examining the symptoms of BPD helps to illuminate the link between the attachment system, reflective function, and pathology (Fonagy et al., 2000).

The individual with BPD may have a preoccupied attachment style as a result of a non-reflective parent leading to a failure of the individual to develop an internal working model of others as reliable and caring and of the self as intentional and deserving of care. Being unaware of one's own internal states and lacking a representation of the self as

intentional and unique can result not only in a preoccupied attachment style and an unstable sense of self, but also difficulties in emotion regulation, a common symptom of BPD. More specifically, a diagnostic criterion of BPD is "affective instability due to a marked reactivity of mood" (American Psychiatric Association, 2000). This instability could be explained by the individual's inability to anticipate his/her own and others' behaviors given their internal representation of relationships as being unpredictable and of attachment figures being inconsistently responsive.

Another symptom of BPD is "a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation" (American Psychiatric Association, 2000). In individuals with BPD, the inability to use reflective functioning creates an isolated internal working model that dominates the person in intimate relationships in that their representations of all relationships and their dynamics are a consequence of their primary attachment relationships (Fonagy et al., 2000). As with the symptom of affect instability, non-reflective internal working models may inhibit the individual with BPD from understanding themselves and, particularly in addressing the symptom of unstable interpersonal relationships, understanding the intentions of those people they are in relationships with. Difficulties with integrating intentions of others can lead to splitting, a primitive defense mechanism commonly found in individuals with BPD. Splitting the relationship partner (romantic or otherwise) into someone all good or all bad may be a compensatory method for creating internal representations for others at the cost of inaccuracy and ultimately tumultuous relationships.

The capacity for reflective functioning has been shown to be a protective factor, or a mechanism for resilience, for individuals considered to be at risk for developing psychopathology and particularly BPD. A study by Barone (2003) found that adults with BPD scored significantly lower on metacognition, the ability to monitor one's own mental processes that is thought to be a component of reflective functioning, and significantly lower on coherence of transcript and coherence of mind on the AAI (Barone, 2003). Based on these findings, Barone concluded that secure attachment and the ability to demonstrate metacognition must be a protective factor of BPD.

The capacity for RF has also been shown to be a protective factor for the development of borderline psychopathology in individuals who report having been abused (Fonagy et al., 1996). In a large sample of individuals in inpatient treatment and among those who reported abuse, patients with low RF scores were more likely to be diagnosed BPD compared with those patients who had high RF scores. Additionally, individuals diagnosed with BPD and receiving inpatient treatment of severe personality disorder have been found to exhibit the lowest level of RF compared to patients with nonborderline personality disorders as well as those with Axis I disorders (Fonagy et al., 1996).

In sum, individuals with BPD are likely to be insecurely attached, to have a history of childhood sexual abuse (Paris, 1994), and to have an impaired capacity for reflective functioning, which has been found to mediate a parent's attachment security and her infant's attachment security (Fonagy et al., 1995). What cannot be measured in infant-parent attachment research, however, is the mental representation of the *offspring* and their capacity for reflective functioning. Thus, examining the capacity for RF and the

quality of attachment in adolescents with their mothers who have BPD can shed light on the effects an attachment relationship with a mother with BPD has on the mental representations of her offspring.

Current Study

BPD may be characterized as a disorder of attachment and of reflective function. How may having a mothers with BPD affect an adolescent's attachment representations and capacity for reflective functioning? The current study examines adult/adolescent attachment and reflective functioning in a sample of mothers with BPD and their adolescent offspring.

In the current study, mothers with BPD and their adolescents were compared with normative comparisons on adult attachment and reflective functioning measures. BPD was assessed categorically and on a continuum, however BPD group placement was made solely using a categorical measure.

It is hypothesized that:

1. Compared with mothers in the comparison group, mothers in the borderline personality disorder group will have an over-representation of insecure attachment classifications in a two-way distribution.
2. Compared with mothers in the comparison group, mothers in the borderline personality disorder group will have an over-representation of unresolved and preoccupied classifications in a four-way distribution.

3. Compared with adolescents in the comparison group, adolescents in the group of adolescents with mothers with BPD will have an over-representation of insecure attachment classifications in a two-way distribution.

4. Mothers with BPD will have lower reflective functioning capacity than will comparison mothers.

5. Adolescent offspring of women with BPD will also have lower reflective functioning than will comparison adolescents.

6. Across groups, mothers' coherence on the AAI will be significantly correlated with adolescent coherence.

7. Across groups, affect instability will be significantly negatively correlated with reflective functioning for both mothers and adolescents.

CHAPTER 2

Method

Participants

The participants included 39 adolescents, 20 whose mothers meet the diagnostic criteria for BPD, and 19 whose mothers do not; 44% are girls and 8% are of ethnic minority background; their average age is 15 years 8 months, with an age range of 14 to 17 years. The participants also include 34 mothers, 18 who meet the diagnostic criteria for BPD, and 16 who do not. Three of the mothers had more than one adolescent participating in the study. Groups were matched on adolescent age, family income, adolescent gender, adolescent minority ethnic background, and the education level of the mother. See Table 1 (All tables are in the appendix), which includes overall and group means as well as tests of significant group differences.

Two sources were used in the recruitment of mothers with BPD. One source came from referrals from various mental health professionals from local hospitals, community mental health centers, professional organizations, homeless shelters, and private practitioners. Referral sources were informed of the study as part of presentations given by a doctoral level researcher/clinician on clinically relevant topics regarding BPD, as well as in continuing education seminars. Brochures about the study were provided to referral sources to be distributed to their clients inviting them to call. The second recruitment source utilized flyers posted throughout the community. The flyers listed questions about BPD symptoms and invited those with adolescents ages 14-17 to apply. Questions included: “Do you fear abandonment in relationships? Find it difficult to

control your anger? Are you very impulsive? Do your relationships have extreme ups and downs? Have you hurt yourself or threatened to do so?"

For the recruitment of comparison participants, two sources were also utilized. Research assistants handed out brochures to mothers at local high schools as they came to various school-related activities such as sporting events. In addition, participants were recruited from flyers posted throughout the community that asked mothers with adolescents ages 14-17 if they would like to participate in a study on parent-child interactions.

The recruitment area included a region of 5 counties in the southern United States including rural and urban areas. Mothers were compensated for their participation with $25 upon completion of the home visit portion of the study. Upon completing the lab visit, mothers in the comparison group and their adolescents were each compensated equally with $50. Mothers in the BPD group and their adolescents were each compensated equally with $75. Monetary compensation was given in the form of gift cards to a large discount department store chain.

Procedures and Measures

Overall

A brief phone screen with the mother was followed by a visit by two research assistants to the participant's home or other meeting place suggested by the participant. During this visit, research assistants explained the details of the study and obtained informed consent from the mother for her own participation as well as for her adolescent child. Informed assent was obtained from the adolescent. In addition, the mother

completed a self-report screening measure for symptoms of BPD and was interviewed about demographic information. The home visit was usually completed within 1 hour. If the participant met eligibility criteria, she and her adolescent child were invited to participate in the lab visit, which typically ran 3 hours. Transportation and babysitting for siblings were provided if needed. During the lab visit, mothers were assessed for BPD status using a structured clinical interview, mothers and adolescents completed questionnaires, and both mothers and adolescents were interviewed about their early attachment experiences. A total of eleven mothers and 13 adolescents completed home visits, but were ineligible or declined to participate in the remainder of the study.

Adult Attachment Interview

Each mother and adolescent was individually administered a semistructured, hour-long interview protocol designed to elicit current mental representations or internal working model with regard to early attachment experiences (George, Kaplan, & Main, 1985). The protocol is comprised of 20 questions which are asked in the same order each time. Many of these questions invite the interviewee to remember specific incidents in childhood when the interviewee was ill, physically hurt, or emotionally distressed and how a primary caregiver responded. Other questions ask about how the interviewee believes those experiences may have affected his or her adult personality, possible explanations for or understanding of why caregivers behaved as they did during the interviewer's childhood, and the quality of current relationships with caregivers. Experiences of loss as well as any experiences perceived as traumatic or abusive are also asked about. All interviews were audio taped and transcribed verbatim by research assistants trained in AAI transcription.

Adult Attachment Interview coding

The Adult Attachment Interview Coding Manual, version 7.1 (Main, Goldwyn, & Hesse, 2002) was used to code the transcribed interviews. Trained raters score transcripts on the basis of subscale ratings first, which are then used to arrive at a primary attachment classification of which there are five (secure/autonomous, dismissive, preoccupied, unresolved with respect to loss or trauma, and cannot classify). The unresolved classification can be primary or secondary to an additional organized style (secure/autonomous, dismissive, or preoccupied).

The AAI was scored by two raters who completed an intensive 2-week training institute conducted by June Sroufe and Sonia Gojman. Both raters achieved reliability with Mary Main and Eric Hesse, two of the developers of the coding manual. Once training was completed and reliability was achieved, the two raters established interrater reliability by coding approximately 25% of transcripts from the sample. An overall agreement rating of 87% was attained for both 3-way and 4-way classifications. Raters were ignorant to group status.

Reflective functioning

The AAI was also scored using the reflective functioning scale, RF (Fonagy, Steele, Steele, & Target, 1998). This is an 11-point scale that assesses the quality of and capacity to understand the behaviors of self and others in terms of mental states in the context of attachment-related experiences. The scale is continuous and categorical with possible scores ranging from -1 (negative RF, in which interviews are overtly hostile or actively evading the opportunity to respond with reflection or consist of bizarre explanations of behavior) to 9 (full or exceptional RF, in which the speaker demonstrates

unusual complexity and elaboration during the interview or when highly reflective responses are given in particularly emotionally charged instances). Ratings of 1 to 3 are considered to fall within the low end of RF capacity, a score of 4 or 5 is considered to be within the moderate range, and scores of 6-9 are considered to be within the high end of the RF scale. The rater (KLF) completed a 2-day training workshop conducted by Howard Steele, a developer of the scale and coding manual. Reliability was established between the rater and Howard Steele using practice transcripts, with an 82% agreement rating. The rater was ignorant to group status.

Demographics

Demographic information was obtained using a maternal interview (MHFC, 1995). Adolescent participants ranged in age from 14 to 17 years old (M = 15.69, SD = 1.32). Forty-four percent of adolescents were female and 8% of adolescents were of ethnic minority background including Hispanic and African American. No significant differences were found between groups on demographic variables (See Table 1 for details).

Psychiatric diagnosis

BPD was measured categorically and continuously. Initially on the home visit, BPD was measured categorically using a preliminary self report screen. This was followed by the Structured Clinical Interview for DSM-IV Axis II Disorders, SCID-II (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) during the lab visit. The SCID-II was administered to all mothers across groups by a doctoral level clinician/researcher. A diagnosis of BPD was determined by the results of the SCID-II.

Additionally, features of BPD for mothers and adolescents were assessed on a continuum using the Personality Assessment Inventory, PAI (Morey, 1991), a self-report measure. BPD features subscales include: affective instability, negative relationships, impulsivity and self harm. A *t* score cutoff of ≥70 (raw score ≥38) indicates the presence of significant BPD features, but not necessarily a BPD diagnosis (Trull, 1995; Morey, 1991). Morey (1996) presents a number of studies which have established good validity and reliability for the PAI. Furthermore, PAI borderline features scores have shown high convergent validity with a structured interview-style measure of BPD (Kurtz & Morey, 2001). In the current study, BPD diagnosis (yes/no) was significantly correlated with affect instability $r = .54$, $p < .01$, with identity problems $r = .69$, $p < .01$, with negative relationships $r = .41$, $p < .05$, and with self-harm, $r = .65$, $p < .01$.

Inclusion and exclusion criteria for group assignment

Participants referred to the study from clinical settings were included in the BPD group only upon meeting diagnostic criteria derived from scores on the SCID-II. If referred participants did not meet criteria, they were dropped from the study. None of the participants recruited for the comparison group through school functions were placed in the BPD group. Participants who responded to recruitment flyers (BPD or normative) were assigned to groups based on SCID-II scores and initial BPD screening measure as it could not be determined which flier callers were responding to.

CHAPTER 3

Results

Preliminary analyses

Prior to testing the hypotheses, frequencies were obtained on the demographics of this sample. No significant group differences were found with respect to adolescent age or demographic variables. See Table 1 for means, standard deviations, and tests of significance.

Population distributions

Mothers

The sample of mothers included 18 women who met the diagnostic criteria for BPD using the SCID-II and 16 women who did not. In a two-way distribution of AAI classifications, the majority of mothers across groups were insecure with respect to attachment, with 56% of mothers in the comparison group and 83% of mothers in the BPD group classified as insecure. In a four-way distribution, the majority of mothers across groups were unresolved with respect to attachment, with 61% of mothers in the BPD group and 37% of comparison mothers classified as unresolved. For both groups this shows an overrepresentation of unresolved attachment compared with previous studies on normative and BPD populations (van IJzendoorn & Bakermans-Kranenburg, 1996; 2008). Of note, since both the Unresolved and Cannot Classify categories are considered disorganized states of mind with respect to attachment, these two groups were combined in analyses to create four attachment classifications. Seventeen percent of mothers

with BPD and 25% of comparison mothers were classified as dismissive. None of the comparison mothers and 11% of mothers with BPD were classified as preoccupied. In previous research, 23% of individuals with BPD were preoccupied (Barone, 2003). Across groups, mothers demonstrated low RF capacity (M = 2.53, SD = 1.46). See Table 2 for frequencies and tests of independence.

Adolescents

The sample of adolescents with mothers in the BPD group included 7 girls and 13 boys. The sample of adolescents in the comparison group included 10 girls and 9 boys. Across groups in a two-way distribution the majority of adolescents were insecure with respect to attachment, with 68% of comparison adolescents and 79% of adolescents of mothers with BPD classified as insecure. Specifically, most adolescents were classified as dismissive including 70% of the adolescents with mothers with BPD and 63% of adolescents in the comparison group. Similar to mothers in the comparison group, there were no adolescents in the comparison group classified as preoccupied whereas 15% of adolescents in the BPD group were preoccupied. Unresolved attachment classifications were assigned to 10% of the adolescents in the BPD group and 5% in the comparison group. Like mothers, adolescents demonstrated low RF capacity across groups (M = 1.59, SD = 1.12). See Table 3 for frequencies and tests of independence.

Hypothesis testing

Hypothesis 1

Eighty-three percent of mothers in the BPD group and 56% of mothers in the comparison group were classified as insecure. To examine whether mothers in the borderline personality disorders group had an over-representation of insecure attachment

classifications in a two-way distribution when compared with mothers in the comparison group, a two-group chi-square analysis was conducted. While more women in the BPD group were insecure compared with comparison women, the percentage of mothers' insecure classifications did not differ by BPD status, $\chi^2(1, N = 34) = 2.993$, $p = .13$. Of note, women in both groups had an overrepresentation of insecure classifications compared with the normal distribution—comprised of 42% insecure (van IJzendoorn & Bakermans-Kranenburg, 1996; 2008).

Hypothesis 2

Of the mothers in the BPD group, 11% were classified as preoccupied and 61% as unresolved/cannot classify. Of the mothers in the comparison group, no one was classified as preoccupied and 37.5% as unresolved/cannot classify. To examine whether mothers in the borderline personality disorders group had an over-representation of unresolved and preoccupied classifications in a four-way distribution compared with mothers in the comparison group, a four-group chi-square analysis was conducted. While only women with BPD were preoccupied and more women with BPD were unresolved than comparison women, the percentage of unresolved and preoccupied classifications did not significantly differ by BPD status, $\chi^2(3, N = 34) = 5.52$, $p = .13$.

Hypothesis 3

Of the adolescents with mothers in the BPD group, 90% were insecure and 68% of the adolescents in the comparison group were insecure. To examine whether adolescents in the group with mothers with BPD had an over-representation of insecure attachment classifications in a two-way distribution compared with adolescents in the comparison group, a two-group chi-square analysis was conducted. The percentage of

adolescents' insecure classifications did not differ by mothers' BPD status, χ^2 (1, N = 39) = 2.78, p = .13.

Hypothesis 4

To examine whether mothers with BPD had lower reflective functioning capacity than the comparison mothers, an independent t-test was conducted with BPD diagnosis as the independent variable and RF as the dependent variable. As predicted, mothers with BPD had lower RF scores of marginal significance (M = 2.06, SD = 0.94) than mothers in the comparison group (M = 3.06, SD = 1.77), t(22.21) = 2.04, p = .054.

Hypothesis 5

To examine whether adolescent offspring of women with BPD also had lower reflective functioning than comparison adolescents, an independent t-test was conducted with mother's BPD diagnosis as the independent variable and adolescent's RF score as the dependent variable. Unexpectedly, all adolescents had low RF. Adolescents of mothers with BPD did not have lower RF scores (M = 1.55, SD = 0.94) than adolescents of mothers in the comparison group (M = 1.63, SD = 1.30), t(37) = 0.23, p = .82.

Hypothesis 6

To examine whether across groups, mothers' coherence on the AAI was significantly correlated with adolescent coherence, bivariate correlations were conducted. Although the relationship was in the predicted direction, mothers' coherence and the coherence of their adolescent offspring were not significantly correlated, r(37) = .19, p = .27.

Hypothesis 7

To examine whether across groups, affective instability on the PAI was significantly negatively correlated with reflective functioning for both mothers and adolescents, bivariate correlations were conducted. Although the relationship was in the predicted direction, affective instability and low reflective functioning were not significantly correlated for mothers, $r(32) = .16$, $p = .09$, or for adolescents, $r(37) = .30$, $p = .34$.

Supplemental Analyses

The above hypotheses were based on the assumption that the BPD and comparison groups were different in terms of borderline symptomology for the reason that only clinical participants who met the diagnostic criteria for BPD upon completion of the SCID-II interview were included in the BPD group. Moreover, the comparison group only included nonclinical participants who did not meet BPD diagnostic criteria. Based on the results of the initial hypothesis testing, it would appear that although in the expected direction, the clinical and nonclinical groups were not significantly different. As a means of further exploring possible between group differences, the original hypotheses were retested utilizing the Borderline Features scale of the PAI (PAI-BOR), a continuous measure of borderline pathology (Morey, 1991). While it is not intended to be used as a substitute to diagnose BPD, the scale assesses for features of severe character pathology in the specific realms associated with BPD including affect instability, self-harm, identity problems, and negative relationships, as well as an overall borderline features scale (Morey, 1991).

Borderline Features

To test for group differences with respect to borderline features in the sample of mothers, an independent t-test was conducted with mother's BPD diagnosis as the independent variable and mother's PAI-BOR total score as the dependent variable. Mothers assigned to the BPD group based on their SCID-II responses had significantly higher *t* scores on the PAI-BOR total scale ($M = 91.40$, $SD = 9.45$) than mothers assigned to the comparison group ($M = 76.53$, $SD = 5.97$), $t(29.75) = 4.99$, $p = .00$. Of note, both group means are above the clinical cutoff score (*t* score ≥ 70), indicating the presence of significant BPD features across groups.

PAI-BOR and Attachment Security

To examine whether borderline features in mothers were negatively correlated with attachment security, a correlational analysis was conducted. Mothers' secure classifications were not significantly correlated with PAI-BOR overall scores, $r(32) = .23$, $p = .19$ or with PAI-BOR subscales. See Table 4 for complete results of correlational analysis with mothers. The same analysis was conducted to examine whether borderline features in adolescents were negatively correlated with attachment security. Like mothers, adolescents' secure classifications were not significantly correlated with PAI-BOR overall scores, $r(37) = .08$, $p = .63$, or with PAI-BOR subscales. See Table 5 for complete results of correlational analysis with adolescents.

PAI-BOR and Coherence

To examine whether across groups borderline features were significantly negatively correlated with coherence on the AAI, a correlational analysis was conducted.

For mothers, no such correlation was found with PAI-BOR overall scores, $r(32) = .21$, $p = .24$, or with PAI-BOR subscales. For adolescents, a significant correlation was found between coherence and the Negative Relationships (BOR-N) subscale, but surprisingly the correlation was positive, $r(37) = .38$, $p = .02$, so that the more coherent adolescents were, the more they reported negative experiences in relationships.

PAI-BOR and Reflective Function

To examine whether borderline features were correlated with lower reflective functioning capacity across groups, a correlational analysis was conducted. The findings for adolescents revealed another unexpected positive correlation, this time between RF and negative relationships, $r(37) = .36$, $p = .02$. Significant correlations in the expected direction were found between mothers' RF scores and the majority of PAI-BOR scales. Specifically, mothers' RF was significantly negatively correlated with identity problems (BOR-I), $r(32) = .47$, $p = .01$, negative relationships (BOR-N), $r(32) = .40$, $p = .02$, self-harm (BOR-S), $r(32) = .42$, $p = .01$, and overall borderline features (BOR-T), $r(32) = .48$, $p = .00$.

PAI-BOR and Disorganized Attachment Representations

Given the prevalence of disorganized attachment representations (unresolved with respect to loss or trauma and cannot classify) in individuals with BPD, correlations between mothers' placement in the unresolved/cannot classify classification and borderline features were examined (Barone, 2003). Mothers with unresolved or cannot classify classifications were compared with mothers with organized attachment representations (secure, dismissive, or preoccupied) on borderline features. A

disorganized classification was significantly correlated with self-harm (BOR-S), $r(32) = .44$, $p = .01$, and overall borderline features (BOR-T), $r(32) = .39$, $p = .02$.

CHAPTER 4

Discussion

Overall Findings

The way in which maternal borderline personality disorder and related attachment representations may impact adolescent offspring attachment representations is yet to be fully understood. BPD has been called a disorder of attachment with respect to the individual's early attachment relationships with caregivers as well as the individual's attachment relationships with their own children. Disruptions in early attachment experiences of people with BPD are common and include instances of abuse, loss, and/or separation. From these disruptive experiences, attachment representations can become disrupted and the individual can maintain an insecure or disorganized state of mind with respect to attachment relationships into and throughout adulthood. Such disrupted attachment representations, in addition to the other symptoms related to BPD, can make good-enough parenting quite difficult for these individuals. In particular, their poor capacity for reflective functioning, or thinking about one's own and other's behavior in terms of mental states, inhibits the ability of people with BPD to regulate their own affect and to help regulate the affect of their children. As these children develop into adolescents, an important stage of identity formation and relationship building, their attachment representations and capacity for reflective functioning may be disrupted. In this study using the AAI, we assessed attachment representations and capacity for reflective functioning in mothers diagnosed with BPD and their adolescent offspring as well as in a comparison group of mothers and adolescents.

BPD and Attachment Representations

The attachment representations of individuals with BPD have been found to be characterized by disorganized thinking and speech surrounding topics of trauma and/or loss, and a tendency to become stuck in the discussion of troublesome attachment experiences, sometimes accompanied by intense anger or passivity (Bakermans-Kranenburg & van IJzendoorn, 2009; Barone, 2003; van IJzendoorn & Bakermans-Kranenburg, 1996).

In this study, the majority of mothers with BPD did have an overrepresentation of unresolved and disorganized attachment representations and all of the mothers classified as preoccupied were in the BPD group. However no significant differences were found between the distribution of attachment representations of mothers with BPD and comparison mothers in a 2-way or 4-way classification. The problem in attempting to illuminate differences in the BPD sample arises when the distribution of the comparison, non-clinical sample appears skewed in the direction of abnormality. Our comparison group had approximately the same number of mothers with unresolved representations as secure representations. This is in contrast to meta-analyses that have repeatedly shown a normal distribution of AAI classifications as being predominantly secure with less than a quarter of people being classified as unresolved (van IJzendoorn & Bakermans-Kranenburg, 1996; 2008).

One possible explanation for mothers' overrepresentation of unresolved and insecure attachment representations across both groups is the socioeconomic status of the sample as a whole. Our sample was matched on demographic variables such as annual family income and the average family income across groups was less than twenty-eight

thousand dollars. A meta-analysis of other studies utilizing the AAI have shown that the distribution of AAI classifications of individuals with very low SES backgrounds tends to have an overrepresentation of dismissive and unresolved classifications and an underrepresentation of attachment security compared to nonclinical samples (van IJzendoorn & Bakermans-Kranenburg, 1996; 2008). Therefore, it is possible that the low SES of the sample put non-clinical mothers at risk for developing insecure and unresolved attachment representations and so they do not appear significantly different from mothers with BPD in this regard.

Similar to the sample of mothers, no group differences were found between groups of adolescents with respect to secure vs. insecure AAI classifications. Given the basic assumption of this study that having a mother with BPD would impact the attachment representation of an adolescent, the fact that no group differences were found in adolescent attachment representations after group differences were not found in maternal attachment representations is logical. Studies that have assessed for possible concordance of attachment classifications in mother-adolescent dyads using the AAI have suggested that the attachment security being measured theoretically in relation to the attachment relationship of the dyad is not actually examining attachment in a dyadic context (Allen, Kuperminc, & Jodl., 2003; Allen et al., 2004). Instead, a "state of mind with respect to attachment" (Main et al., 1985) is being assessed in general when using the AAI. In studies of attachment concordance in infant-mother dyads, attachment is assessed explicitly in the context of the mother-child relationship (van IJzendoorn, 1995). Although this study did not examine concordance per se in the attachment representations of dyads, we did set out to better understand the potential impact that mothers with BPD

and their attachment representations have on their adolescents' attachment representations. It is possible that inquiring into adolescents' attachment experiences in general and in retrospect as the AAI demands makes it more difficult to examine possible influences of specific and present attachment representations.

Interestingly, across groups the adolescent sample was highly overrepresented in the dismissive AAI classification. Dismissive attachment representations are characterized by typically brief and experience distant narratives, the portrayal of attachment relationships as beneath concern, value, or consideration, and often idealization of one or more attachment figures. In their second meta-analysis of AAI studies, van IJzendoorn and Bakermans-Kranenburg (2008) hypothesized that the distribution of non-clinical adolescent attachment classifications would have an overrepresentation of insecure-dismissing attachments given the developmental struggles associated with this age. Their hypothesis was not supported. It may be that distributions of adolescent attachment status are not more dismissive unless the sample is at-risk (low SES). Referring once again to the findings of the meta-analyses, low SES samples do tend to show significantly more dismissive representations than normative groups such as non-clinical mothers (van IJzendoorn & Bakermans-Kranenburg, 1996; 2008). This, too, could be a possible explanation for why the groups of adolescents in this sample appeared more similar than different with respect to attachment security in general and to dismissive attachment representations in particular.

BPD and Reflective Functioning

For mothers, marginal group differences were found with respect to reflective functioning capacity and for adolescents no group differences were found. It is quite possible that with a larger sample size, the difference between mother groups would be significant. It is certain in this sample that for adolescents, having BPD or having a mother with BPD did not significantly influence one's capacity for RF. Given the underrepresentation of secure attachment representations across groups and the positive relationship known to exist between RF and security (Fonagy et al., 1995; Toth et al., 2008), this finding is not surprising. More specifically, in keeping with this expected relationship, the finding that across groups RF capacity was low is also not surprising. A study of RF in depressed mothers of toddlers demonstrated similarly low RF capacity prior to beginning an attachment-theory informed dyadic intervention (Toth et al., 2008). Of note, the mean RF scores for women with BPD and women in the comparison group were below mean scores found in previous research on psychiatric groups (Fonagy et al., 1996). Further, the mean RF score for women with BPD was even lower than what has been found in RF ratings of a prison group (Fonagy et al., 1998).

Utilizing a continuous measure of a feature of BPD, affect instability, in addition to using the categorical assignment of the BPD diagnosis, results consistently suggested no association with respect to RF capacity for mothers or adolescents. It was thought that because the capacity for RF has been linked to good affect regulation (Fonagy et al., 1995), the PAI Borderline Features subscale Affect Instability would be negatively

correlated with RF capacity. Results did not suggest this, possibly given the minimal range of RF scores between groups as most participants had low RF.

Coherence in Mothers and Adolescents

We tested for a correlation between mothers' and adolescents' coherence on the AAI. The theory behind this hypothesis was that if coherence is one of the most salient factors in determining a secure attachment representation (Main et al., 2008) and is related to healthy psychological development in childhood and adulthood (van IJzendoorn & Bakermans-Kranenburg, 2008) and secure caregivers are thought to promote offspring security (van IJzendoorn & Bakermans-Kranenburg, 1995), mothers' and adolescents' coherence should be related. Still, no meaningful relationship was found. To our knowledge, the transmission of coherence from parent to offspring has not yet been directly examined, making it difficult to suggest possible explanations for this finding. Further research is needed.

Supplemental Analyses

Borderline Features

While participants were screened for BPD pathology and placed into the BPD group only if diagnostic criteria were met as determined by the SCID-II, post hoc analysis revealed that for both the adolescent and mother comparison groups, self-reported borderline features were clinically elevated for all participants with the exception of one comparison mother. To be clear, the presence of borderline features as measured by the PAI does not assess BPD per se, even when in the clinical range.

Although borderline features were significantly higher in mothers in the BPD group compared with comparison mothers, the substantial presence of BPD features in the comparison group raises a number of questions. First, this finding suggests that the comparison group was not a true community comparison sample. In other words, the endorsement of significant borderline features was not limited to participants recruited for the BPD group. These findings could be explained, in part, by the low SES level of the participants across groups as it has been found that with poverty comes an increased risk for the development of borderline psychopathology (Cohen et al., 2008). Additionally, although not a focus of the current study, reports of childhood sexual and/or physical abuse during the administration of the AAI were somewhat prevalent in the comparison group of mothers and research suggests a strong association between a borderline pathology and a childhood history of abuse (Herman, Perry, & van der Kolk, 1989).

Second, the finding of generally elevated BPD features across groups raises the question of possible precautions when using multi-modal measures of similar constructs (interview vs. self report) with respect to BPD-related symptoms. Assessing borderline pathology on a continuum using the borderline features scale of the PAI has been shown to differentiate between patients diagnosed with BPD and patients without BPD or non-clinical controls with over 75% accuracy (Bell-Pringle, Pate, & Brown, 1997). However, this was in comparison to using another self-report continuous measure of pathology, the Minnesota Multiphasic Personality Inventory-2 (MMPI-2). Assessing for concurrent validity in the assessment of BPD, Jacobo and colleagues (2007) found a significant correlation between the total number of SCID-II criteria for BPD and the PAI-BOR scale

with patients who were diagnosed with BPD. In particular, the subscales of identity disturbance, self-harm, and negative relationships had strong correlations with BPD SCID-II criteria. So, why did all but one of the mothers in our sample score within the clinically elevated range of borderline features on the PAI but only half of them met SCID-II BPD criteria? This is possibly due to the fact that the comparison group was non-clinical in that comparison group participants were recruited from the community whereas BPD participants were recruited from clinical settings, but all participants were at-risk given the low SES overall.

Trull (1995) suggests that researchers conduct the PAI more than once when attempting to identify participants who more truly fit the symptomology criteria for character pathology. In his study of borderline pathology in non-clinical samples, a fairly large percentage of participants scored above the clinical cutoff initially and then below the cutoff upon retest. Third, with respect to the seeming absence of group differences in this study and the generally elevated borderline pathology across groups, one wonders if we were actually comparing (or contrasting) the two groups by relying on one method of BPD diagnosis.

PAI-BOR and Attachment Security

Utilizing the continuous measure of borderline pathology to test for a negative relationship between attachment security and BPD did not achieve different results than when using the categorical measure of BPD. Reporting fewer borderline features did not relate to mothers or adolescents having secure attachment representations. Again, a potential explanation for the lack of relationship between BPD and attachment classification in this sample is that given their generally low SES, both groups could be

considered at-risk for disruptions in attachment (van IJzendoorn & Bakermans-Kranenburg, 1996).

PAI-BOR and Coherence

Moderate to high narrative coherence is essential to being classified as secure with respect to attachment on the AAI (Main et al., 2008). Based on the knowledge that individuals with BPD are most often classified as insecure, it is thought that low coherence on the AAI for these individuals can be assumed. In an attempt to examine possible links between this particular characteristic of the AAI's of mothers with BPD and the AAI's of their adolescent offspring, we hypothesized that adolescent coherence on the AAI would be correlated with mother coherence. When the findings did not support this conjecture, we looked to see if borderline features were correlated with insecure attachment in general. For mothers, there was no such correlation. Thus, in this sample mothers' insecure attachment was not found to be related to BPD diagnosis or borderline features.

A significant positive correlation was found between the coherence of adolescents on the AAI and their reports of negative relationships (PAI-BOR-N). While good coherence is associated with secure attachment, this does not imply that the attachment experiences discussed in the AAI were positive. What can be implied is that the presence of negative relationships in adolescence is not a link to incoherence or vice versa. This goes along with the idea that it is not what kind of attachment relationships individuals describe in the AAI, but how they talk about those experiences. This idea is supported by the concept of "earned secure" attachment status. That is, when the person can discuss difficult early attachment experiences coherently, in a balanced way with an

understanding of the caregivers' actions and the effects they had on the self (Main et al., 2002).

PAI-BOR and Reflective Functioning

Based on the original hypothesis testing, RF was not found to be significantly negatively correlated with the borderline feature of affect instability as measured by the PAI-BOR. Being that the other three borderline features measured by the scale (identity disturbance, self-harm, and negative relationships) have been found to correlate strongly with the SCID-II criteria for BPD, we examined whether they also correlated negatively with the capacity for reflective function (Jacobo et al., 2007). Like with the findings of adolescent coherence as it relates to borderline features, the finding that RF correlated with negative relationships in the wrong direction was surprising. So, the more reflective an adolescent was, the more negative relationships he or she reported. It is possible that the capacity to reflect on the meaning of an other's and one's own behavior in terms of mental states makes individuals more aware of tension and volatility in their relationships. Moreover, it is possible that the capacity for RF is most clearly demonstrated in the context of a negative experience in relation to another person. Howard Steele has suggested that untoward attachment experiences such as loss or abuse demand reflective functioning in order to work through those experiences successfully (personal communication, November 8, 2007). It could be that the presence of negative relationships may foster a capacity for RF in some.

For mothers, significant correlations in the expected directions were found between RF capacity and overall borderline features as well as specific features including identity problems, negative relationships, and self-harm. Interestingly, these were the

three borderline features found to correlate strongly with the SCID-II criteria of BPD (Jacobo et al., 2007). As one would expect, identity problems and self-harm are indicative of an inability to reflect on one's internal states and understanding themselves without relying on primitive defense mechanisms (Slade, 2005). To the person with low RF, others' behaviors seem unpredictable and their intentions are unclear. Thus, the negative correlation between RF and negative relationships is understandable.

PAI-BOR and Disorganized Attachment Representations

Based on previous research, individuals with BPD are likely to be categorized as unresolved on the AAI with respect to loss or trauma (Bakermans-Kranenburg & van IJzendoorn, 2009; Barone, 2003; van IJzendoorn & Bakermans-Kranenburg, 1996). The results of this study showed an overrepresentation of unresolved status for both mothers diagnosed with BPD and mothers who were not. With no differentiation between groups, we were interested in investigating possible relationships between unresolved attachment and features of BPD across groups. Indeed, unresolved attachment was significantly correlated with a major borderline feature: self-harm.

For individuals with unresolved attachment representations, experiences of loss or abuse have not yet been fully worked through. This lack of resolution leaves them vulnerable to disorganization and deterioration in terms of cognition, affects, and behaviors when memories of the trauma or loss are evoked. Given the high concordance rate of BPD and the experience of severe trauma (Paris, 1994), it is no surprise that individuals with BPD are likely to be unresolved with respect to trauma (Fonagy et al., 1996). The finding in this study that unresolved status is correlated with self-harm is consistent with these findings.

Strengths and Limitations

The study extended developmental research on adolescent offspring of mothers with BPD by examining characteristics of attachment representations and reflective capacity that may be specific to these adolescents as a result of being parented by a mother with BPD. In addition, attachment distributions of at-risk (low SES) adolescents added to the limited research on the attachment classifications of this group. Furthermore, supplemental analyses utilizing a continuous measure of borderline features demonstrated the possible prevalence of BPD symptomology in a low SES rural Appalachian community and the strong connection between the presence of hallmark features of BPD and poor reflective functioning.

Limitations of the current study include the fact that borderline features in participants in the comparison group were not controlled for through the recruitment procedures or statistically. It would be better to have a comparison group of mothers without pathology, but this was difficult because of the need to match groups on socioeconomic status.

Implications for Future Research

Future research should examine the efficacy of using a combination of categorical and continuous measures of borderline pathology in order to diagnose BPD in participants most accurately. Interestingly, a dimensional approach to diagnosing personality disorders will be added to the next edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-VI) on a trial basis (Skodol & Bender, 2009). In addition, this could also inform BPD diagnosis in clinical practice. Further research on

the effects of low SES on adolescent attachment is also needed. Particularly, it will be important to understand specific pathways toward insecure attachment attributed to specific attachment-related stressors accompanied with low SES in order to inform future interventions.

CHAPTER 5

Conclusion

This study investigated how attachment representations and the capacity for reflective functioning in mothers and their adolescent offspring are influenced by the presence of maternal borderline personality disorder. Our results demonstrate that while mothers with BPD and their adolescents were the only participants with preoccupied attachments, it cannot be said that this is related to a maternal BPD diagnosis per se. Rather, across groups the majority of the sample reported the presence of significant borderline features. In addition, the majority of the sample was found to be insecurely attached with low reflective functioning. While these findings make it difficult to tease out the role diagnosed BPD in mothers plays in the development of attachment representations and reflective function in their adolescent offspring, it does illuminate the possible developmental risk factors for the development of borderline symptomology in mothers and their adolescents that accompanies low socioeconomic status. In addition, it points to the need to assess borderline pathology multi-modally and to take precautions with measurement such as test-retest reliability.

Our study has important clinical implications with respect to the diagnosis and treatment of borderline pathology. Adults and adolescents may report the significant presence of symptoms of borderline pathology without actually meeting the diagnostic criteria for borderline personality disorder per se. While the clinician should further investigate these reported symptoms and the degree to which they are characterological, a formal diagnosis of BPD may not be appropriate as the presence of borderline features

does not imply the presence a formal personality disorder. Still, it is clear that the presence of borderline pathology is related to an inability to reflect on one's own and others' behaviors in terms of thoughts, beliefs, and feelings. Treatment of borderline pathology should include a focus on fostering a greater capacity for reflective functioning for adolescents and their mothers in order to reduce the presence of self-harm, identity disturbance, and negative relationships with others: all borderline features associated with low RF.

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Appendix

Table 1. Adolescent age and demographic differences between BPD and comparison groups

Variable	Total sample *N* = 39 *M* (*SD*)	BPD *n* = 20 *M* (*SD*)	Comparisons *n* = 19 *M* (*SD*)	*t*
Adolescent age (years)	15.69 (1.32)	15.29 (1.17)	16.11 (1.37)	2.01
Family Yearly Income ($)	27,845 (22,161)	21,187 (12,057)	34,853 (27,968)	1.96
				χ^2
Adolescent Gender (girls)	44%	35%	53%	1.23
Adolescent Minority Ethnic Background	8%	0%	16%	3.42
Mother as Single Parent	41%	40%	42%	0.02

Table 2. Mother coherence, reflective functioning, and attachment classification differences between BPD and comparison groups

Variable	Whole sample $N = 34$	BPD $n = 18$	Comparisons $n = 16$	$\chi^2(df)$
				Two-group
Secure vs. Insecure Attachment (secure)	29%	17%	44%	2.99 (1)
				Four-group
Dismissive	20%	17%	25%	5.52 (3)
Preoccupied	6%	11%	0%	
Unresolved/ Cannot Classify	50%	61%	38%	
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*t*
Coherence of transcript	3.90 (1.80)	3.53 (1.60)	4.31(1.96)	1.28
Reflective Function	2.53 (1.46)	2.06 (0.94)	3.06 (1.77)	2.04

Table 3. Adolescent coherence, reflective functioning, and attachment classification differences between BPD and comparison groups

Variable	Whole sample *N* = 39	BPD *n* = 20	Comparisons *n* = 19	$\chi^2(df)$
				Two-group
Secure vs. Insecure Attachment (secure)	21%	10%	32%	2.78 (1)
				Four-group
Dismissive	66%	70%	63%	7.04 (3)
Preoccupied	8%	15%	0%	
Unresolved/ Cannot Classify	8%	10%	5%	
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*t*
Coherence of transcript	3.28 (1.57)	3.00 (1.26)	3.58 (1.83)	1.16
Reflective Function	1.59 (1.12)	1.55 (0.94)	1.63 (1.30)	0.23

Table 4. Inter-correlations among AAI and PAI-BOR variables in the whole sample of mothers, N = 34.

	1.	2.	3.	4.	5.	6.	7.	8.
1. Secure AAI	--							
2. AAI narrative coherence	.80**	--						
3. Reflective Function	.48**	.75**	--					
4. Affect Instability	-.15	-.20	-.30	--				
5. Identity Problems	-.23	-.19	-.47**	.64**	--			
6. Negative Relationships	-.10	-.16	-.40*	.47**	.62**	--		
7. Self-Harm	-.26	-.16	-.42*	.50**	.77**	.59**	--	
8. Total Borderline Features	-.23	-.21	-.48**	.76**	.93**	.78**	.87**	--
9. Unresolved/CC AAI	--	--	--	.24	.30	.30	.44**	.39**

Table 5. Inter-correlations among AAI and PAI-BOR variables in the whole sample of adolescents, N = 39.

	1.	2.	3.	4.	5.	6.	7.	8.
1. Secure AAI	--							
2. AAI narrative coherence	.85**	--						
3. Reflective Function	.65**	.63**	--					
4. Affect Instability	.09	.12	.16	--				
5. Identity Problems	-.06	-.08	.03	.38*	--			
6. Negative Relationships	.28	.38*	.36*	.44**	.17	--		
7. Self-Harm	-.03	-.11	-.09	.60**	.54**	.33*	--	
8. Total Borderline Features	.08	.08	.13	.78**	.73**	.62**	.84**	--

VITA

Katie Lauren Fitzpatrick was born in Fort Lauderdale, FL on September 28, 1980. She was raised in Boca Raton, FL and then Lake Toxaway, NC. She graduated from Brevard High School in 1999. From there she went to the University of North Carolina at Chapel Hill and earned a B.A. in psychology in 2003. Katie went on to earn a M.A. in clinical psychology with a specialization in children and adolescents from East Carolina University in 2005. She is currently pursuing her doctorate in clinical psychology from the University of Tennessee, Knoxville. Katie will earn her Ph.D. in December 2010 upon the completion of a year-long internship at the Albany Psychology Consortium.