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An Attachment Theoretical Framework for Understanding Personality Disorders: Developmental, Neuroscience, and Psychotherapeutic Considerations

Kenneth N. Levy

Department of Psychology, The Pennsylvania State University,
Department of Psychiatry, Joan and Sanford I. Weill Medical
College of Cornell University, USA

Benjamin N. Johnson, J. Wesley Scala, Christina M. Temes, Tracy L. Clouthier

Department of Psychology, Pennsylvania State University, USA

Abstract

In this paper we propose that John Bowlby's attachment theory provides a theoretically coherent, empirically based, and clinically useful model for understanding personality pathology. This theoretical framework brings parsimony and breadth to the conceptualization of the etiology, maintenance, and treatment of personality disorders (PDs). Attachment theory can explain both the intrapersonal and interpersonal difficulties common in those with PDs and is consistent with findings from studies across multiple domains of knowledge, including evolutionary biology, ethology/comparative psychology, developmental psychology, experimental social-personality psychology, and neuroscience.

PDs are characterized by significant interpersonal challenges. Recently, these challenges have been hypothesized to stem from underlying maladaptive attachment schemas. Our goal is to outline and elaborate on attachment theory as a foundation for the etiology and pathology of PDs and to highlight the implications of this theory for treatment. We begin with a brief review of attachment, describing its conceptualization and assessment in both children and adults in order to examine PD development. This theoretical foundation is supported by a body of empirical research, from which we present findings from neurobiological and developmental literatures linking attachment and PDs. We then examine the role of attachment in the psychotherapy process and in treatment outcome. Further, we outline research reporting changes in attachment patterns as a result of treatment. Finally, we summarize the implications of attachment theory for understanding PDs and present possible directions for future research.

Keywords: attachment theory, developmental psychopathology, personality disorder, psychopathology, psychotherapy, neuroscience

✉ Kenneth N. Levy, Department of Psychology, Pennsylvania State University, University Park, PA 16802, USA. E-mail: *klevy@psu.edu*

Introduction

Attachment theory focuses on the affective bond that emerges between child and caregiver. Bowlby posited that this bond is at the core of identity formation, self-regulation, and interpersonal attitudes and behaviors (Bowlby, 1973, 1977). Attachment behavior is based on what Bowlby termed *internal working models*, which arise from early infant-caregiver interactions. These internal models are complex mental schemas of oneself and others that provide expectations and guidance in interpersonal interactions and facilitate emotional appraisals of others' intentions and attitudes. An infant who is nurtured and supported by a caregiver will develop models of others as trustworthy and helpful, protecting the infant from danger by seeking security from a caregiving guardian. Such a working model allows the infant to develop a healthy, realistic, and coherent sense of self (Fonagy, 1999), which is adaptive throughout an individual's life. *Mentalization*, the capacity to conceptualize the mental states of oneself and others, is posited to develop out of healthy infant attachment and has been theorized to be a core feature of interpersonal functioning and personality development (Fonagy & Target, 2000).

Attachment Theory Across the Lifespan

Normative development consists of a secure style of infant attachment to caregivers. Although roughly 70% of children exhibit a secure attachment pattern (Ainsworth, Blehar, Waters, & Wall, 1978), Bowlby suggested that other modes of attachment exist. Security of attachment is expressed in two ways: Infants with a caregiver who meets their biological and psychological needs turn to their caregiver during stressful periods as a safe haven, while otherwise using the caregiver as a secure base from which to explore their surroundings. However, if the infant's needs are not met by a caregiver then attachment security is impaired. These infants have difficulties seeking support from caregivers when distressed and find it hard to explore during stress-free times. Thus, attachment behavior regarding the caregiver as a safe haven and a secure base reveals underlying differences in the infant-caregiver bond.

Based on Bowlby's conceptualization of attachment differences, Ainsworth and colleagues' (1978) seminal study using the *Strange Situation* identified three key attachment patterns: secure, anxious-ambivalent, and avoidant. Securely attached children seek closeness to their mother, indicate distress at separation, and show moderate interest in a stranger. Anxious-ambivalent children exhibit heightened distress at separation, are difficult to comfort upon the mother's return, and demand constant attention from and closeness to their mother. Avoidant children do not appear distressed by maternal separation, may ignore their mother when she returns, and treat their mother and a stranger similarly. Main and Solomon (1986, 1990) describe a fourth attachment style, disorganized-disoriented,

characterized by the infant's confused and disoriented behaviors in the mother's presence, suggesting a temporary "collapse" of a behavioral strategy. Consistent with Bowlby's theory, these patterns of attachment have been directly linked to differences in caregiver warmth and support (Van IJzendoorn, 1995).

Bowlby theorized that internal working models become components of individuals' personality structure, remaining relatively stable over time. Longitudinal research has confirmed Bowlby's hypothesis, showing significant consistency in attachment patterns across the lifespan, such that childhood attachment predicts adult social attitudes and behaviors (Fraley, 2002; Grossmann, Grossmann, & Waters, 2005). Given the stability of internal working models, insecure infant attachment may become maladaptive in adulthood if it impairs the ability to connect emotionally with others who could provide support. Fortunately, as Fraley (2002) suggests, later relationships can alter underlying models, correcting for maladaptive views of self and others and leading to healthier interpersonal interactions.

Adult Attachment

Developmental and social psychological domains of research present ways of measuring attachment styles in adulthood. The developmental tradition utilizes the *Adult Attachment Interview* (AAI; George, Kaplan, & Main, 1985) for the evaluation of attachment patterns. During the AAI, individuals describe childhood experiences with caregivers. This narrative is then examined in order to understand how one's past experiences have influenced adult personality and attitudes towards oneself and others. Adult attachment patterns are categorized according to the AAI as secure, preoccupied, dismissing, and unresolved/disorganized attachment, similar to the four styles identified in infants. Secure individuals deem attachment relationships as positive and beneficial and exhibit an ability to deal effectively with potentially distressing feelings about the past and future. Preoccupied adults appear overwhelmed by anxiety and negative affect surrounding close relationships. Those categorized as dismissing tend to distance themselves from attachment figures, apparently defending against painful emotions aroused by attachment relationships. Unresolved/disorganized individuals display working models that appear incoherent, suggesting confused or contradictory attitudes towards others.

As opposed to interview-based assessment, the social psychological tradition generally utilizes self-report questionnaires to measure adults' current attitudes towards and common behaviors regarding significant others. These measures generate scores on two core dimensions−anxiety and avoidance−creating four classifications similar to those identified by the AAI (Bartholomew & Horowitz, 1991): secure (low anxiety and low avoidance), preoccupied (high anxiety and low

avoidance), dismissing-avoidant (low anxiety and high avoidance) and fearful (high anxiety and high avoidance). Although the attachment categories defined by self-report measures show poor consistency with those designated by the AAI (Crowell, Fraley, & Shaver, 1999), the dimensions of anxiety and avoidance correlate well between assessment techniques (Shaver, Belsky, & Brennan, 2000).

These two research traditions present complementary views of attachment security and insecurity. We will therefore draw from both domains in our review of the empirical literature. Regardless of how it is measured, insecure attachment is associated with distress, impaired interpersonal functioning, and psychopathology (Crowell et al., 1999; Mikulincer & Shaver, 2007). Bowlby (1977) theorized that attachment insecurity was central to the development of personality pathology. This may be because attachment anxiety leads to debilitating worry in close relationships and an inability to self-regulate intense negative affect, while avoidance potentially contributes to distrust in relationships and distancing behaviors, resulting in affective suppression. Such intrapsychic and interpersonal problems are consistent with the disturbances seen in PDs.

An Attachment Theoretical View of Personality Disorders

Bowlby (1973) believed that "many forms of emotional distress and personality disturbance" (p. 201) derived from insecure attachment. He furthermore linked specific PDs to styles of insecurity, suggesting that anxious attachment led to "dependent and hysterical personalities" (1973, p. 124) and that avoidant attachment may emerge as "psychopathic personalities" (1973, p. 14) or narcissistic PD (NPD). Levy and Blatt (1999; Blatt & Levy, 2003) have expanded on Bowlby's hypotheses, suggesting that more or less adaptive forms of attachment, comprised of working models of varying levels of differentiation, exist within both dismissing and preoccupied attachment patterns. Building on the social psychological convention of placing attachment anxiety and avoidance on a continuum, Levy and Blatt assign levels of adaptiveness to different stages of psychological development. They propose that individuals ranging from those without PDs at one end of the spectrum to those with borderline PD (BPD) at the other can be categorized by a preoccupied attachment style. Histrionic PD (HPD) and dependent PD (DPD) lie between these two extremes at different levels of adaptiveness. Likewise, dismissing attachment includes individuals without PDs (high adaptiveness), with obsessive-compulsive PD (OCPD) or avoidant PD (AVPD; moderate adaptiveness), and with antisocial PD (ASPD) or BPD (low adaptiveness).

Research on Attachment and Personality Disorders

We now review the empirical literature supporting the attachment theoretical framework underlying PDs. First, we examine studies of clinical samples that reveal associations between attachment and PDs, as well as research on physiological and neuropsychological substrates of PDs and attachment styles. We then discuss developmental psychopathology research that addresses attachment and PD development and conclude by summarizing the psychotherapy literature focused on attachment processes in PD treatment.

Empirical Associations Between Attachment and Personality Disorders

Many empirical studies have supported the theoretical link between attachment insecurity and personality pathology (Levy, 2005). The field has largely focused on insecure attachment and BPD, as well as ASPD and AVPD to a lesser extent, although there has recently been some increased interest in attachment and NPD (Diamond et al., 2014). Studies relating attachment and PDs have generally compared aspects of self-reported adult romantic attachment to self-reported PD symptoms (see Barone, 2003; Levy et al., 2006; Rosenstein & Horowitz, 1996 for exceptions). The literature overwhelmingly suggests that attachment insecurity is highly associated with personality pathology, although the relationships between specific categories of attachment and PDs are less clear. Both self-report and interview studies have revealed connections between preoccupied attachment and HPD, DPD, and AVPD, between dismissing attachment and paranoid PD (PPD), NPD, ASPD, and schizoid PD, and between fearful attachment and schizotypal PD (STPD), PPD, AVPD, BPD, OCPD, and NPD (Levy, 2005). Although most studies have focused on BPD, with little attention paid to other PDs, the findings of associations between insecure attachment and BPD may be relevant for other PDs, guiding future research.

A host of studies has discovered links between anxious attachment and BPD (see Levy, 2005 for a review). However, the relationship between attachment avoidance and BPD is less consistent, and some studies have found no association between these constructs (e.g., Meyer, Pilkonis, & Beevers, 2004). Other research has shown a connection between high attachment avoidance and BPD symptomatology only when attachment anxiety is high as well (Levy, Meehan, Weber, Reynoso, & Clarkin, 2005), suggesting that fearful attachment may contribute to BPD. Further research has hypothesized that the influence of attachment on BPD is mediated by several psychological variables, including aggression, impulsivity, and trait negative affect (Scott, Levy, & Pincus, 2009), as well as rejection sensitivity and negative views of self (Boldero et al., 2009). Irritability, anger, and interpersonal difficulties appear to mediate the association between preoccupied attachment and BPD (Critchfield, Levy, Clarkin, & Kernberg,

2008; Morse et al., 2009), while avoidance is mediated by self-harm (Critchfield et al., 2008). Finally, reactive aggression partially explains the connection between fearful attachment and BPD (Critchfield et al., 2008).

Taken collectively, these findings suggest that attachment styles may contribute significantly to the development of BPD and that insecurity is mediated by a series of psychological variables. Thus, early attachment behaviors appear to underlie personality traits in adulthood, including the maladaptive characteristics of PDs. For example, overly dependent or avoidant children may develop a negative self-concept or distrust of others as adults. Such working models can be seen in adults with BPD who often experience intense feelings of worthlessness and rejection sensitivity.

Psychophysiological Correlates of Attachment and Personality Disorders

Consistent with Bowlby's conceptualization of attachment as a biologically influenced behavioral system, one specific line of research has sought to understand the physiological correlates of attachment using measures of electrodermal activity (EDA) and heart rate. Sroufe and Waters' (1977) early research in this vein found differential heart rate changes between secure and insecure infants in the Strange Situation: Secure children displayed an increase in heart rate during the separation phase but quickly returned to baseline after the reunion phase, whereas the heart rate of avoidantly attached children showed continued elevation even after reunion. This study was the first to suggest that avoidant attachment, while apparently characterized by calm and indifference (e.g., an infant choosing to engage with toys over interacting with a caregiver), may in fact be a defense against internal distress and serve to downregulate negative affect, albeit ineffectively.

Recent studies have replicated these findings in adults using the AAI. Avoidant attachment is associated with increased EDA during queries about potential abandonment or rejection in past close relationships (Dozier & Kobak, 1992). These data suggest that dismissing adults, similar to avoidant children in the Strange Situation, may have difficulties downregulating intense negative emotion related to significant others, despite reporting disinterest. Several studies have elaborated on these findings, reporting increased EDA response to attachment-related stressors in dismissing individuals, a response that is not found in preoccupied adults (e.g., Diamond, Hicks, & Otter-Henderson, 2006). Although patterns of physiological activity differentiate anxious and avoidant adults, evidence suggests that both groups' self-reported reactivity does not coincide with their physiological reactivity (Diamond et al., 2006), indicating that defensive strategies utilized by insecure individuals to regulate behavioral responses may be ineffective in decreasing physiological arousal.

Little research has tested specific differences in physiological reactivity to attachment cues among individuals with PDs. One study found that high levels of life stress and high symptom load moderate the relationship between attachment avoidance and vagal withdrawal, predicting larger withdrawal suggestive of impaired self-regulation (Ehrenthal, Irgang, & Schauenburg, in press). These findings imply an interaction between attachment insecurity and the increased negative life events and symptom complexity common in those who develop personality pathology (Daley, Hammen, Davila, & Burge, 1998; Zanarini et al., 1998). Attachment insecurity may therefore explain the maladaptive emotion regulation processes associated with PDs.

Oxytocin, Attachment, and PDs

The pituitary neuropeptide oxytocin has been shown in both human and animal research to be an important factor underlying affiliative behavior and the formation of attachment bonds (Heinrichs & Domes, 2008). Oxytocin administered intranasally has been shown to increase accuracy of emotion recognition in face stimuli (Domes, Heinrichs, Michel, Berger, & Herpertz, 2007). Additionally, oxytocin tends to increase ratings of attractiveness and trustworthiness of faces (Theodoridou, Rowe, Penton-Voak, & Rogers, 2009) as well as heighten levels of trust in a social trust game (Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005). Furthermore, among individuals who are insecurely attached but healthy, oxytocin may facilitate secure attachment attitudes and inhibit insecure attachment (Buchheim et al., 2009).

However, in the presence of psychopathology, the findings above become muddled. Research on the effects of oxytocin in those with BPD has not found the same positive effects. Instead, oxytocin may actually have the opposite effect in individuals with BPD, decreasing feelings of cooperation and trust (Bartz et al., 2010). One explanation is that oxytocin may function differently on the biological level between those with BPD and healthy individuals. However, this explanation is unlikely; evidence suggests that oxytocin's effect on the hypothalamic-pituitary-adrenal axis (a system largely responsible for mood regulation and stress reactivity) is similar in individuals with BPD and healthy controls (Simeon et al., 2011). The attachment theoretical literature suggests a more likely explanation: Healthy individuals and individuals with BPD respond differently to the emotional response caused by oxytocin. Typically, oxytocin may produce feelings of closeness and intimacy that are experienced as positive and conducive to healthy, close, beneficial relationships involving trust and cooperation. However, those with BPD may associate the same feelings of closeness with danger, fear, anxiety, and increased vulnerability, resulting in decreased trust and potential interpersonal challenges.

Neuroscience Research

Beyond physiological research, functional magnetic resonance imaging (fMRI) provides another level of analysis at which we can examine attachment processes and the development of personality pathology. Although the bulk of fMRI research again focuses on BPD, some studies have recruited samples with NPD and STPD. We begin with a review of fMRI research relevant to attachment in healthy individuals, followed by neuroscience research in BPD, concluding with a brief mention of findings and implications for other PDs.

Attachment & fMRI in Healthy Populations

Imaging studies of healthy adults have identified key differences in brain activation associated with different styles of attachment. Canterberry and Gillath (2013) found that, when primed with words related to attachment security, such as "support", anxiously attached individuals exhibited greater brain activity in areas associated with the experience and regulation of emotions (e.g., posterior cingulate cortex, inferior parietal lobule) than when presented with insecure words like "loss". These activation patterns imply that preoccupied adults react to stimuli associated with security with heightened emotional sensitivity, while simultaneously experiencing difficulties downregulating such intense affect. Among avoidantly attached individuals, secure primes lead to increased activation in the amygdala and insula, areas associated with processing salient or aversive emotional stimuli. Additionally, activation increased in brain regions associated with memory (e.g., parahippocampal gyrus), suggesting repeated memory retrieval attempts due to difficulties with accessing secure attachment schemas. Taken collectively, these findings suggest that not only do insecurely attached individuals exhibit behavioral dysregulation, but they also reveal exaggerated neural responses to emotional cues and difficulties with emotion regulation on the anatomical level.

Neuroscientific research has also found differences in brain activation patterns specifically associated with the interpersonal difficulties experienced by individuals with insecure attachment. Specifically, differences in attachment styles have been shown in response to emotionally salient social cues, such as facial expressions. One study found anxious attachment to be associated with hyperactivity in the amygdala to images of angry facial expressions, suggesting extreme sensitivity to cues of social punishment, while avoidance was associated with hypoactivity in the ventral tegmentum and striatal areas in response to images of smiling, indicative of a blunted response to social reward (Vrtička, Andersson, Grandjean, Sander, & Vuilleumier, 2008). These findings are consistent with theoretical assertions of differences in attachment attitudes as well as behavioral observations of attachment-related differences in individuals' response to socially salient cues, in which anxiously attached adults show heightened reactivity to emotionally relevant social cues (Dozier & Kobak, 1992; Mikulincer & Shaver, 2007; Rom &

Mikulincer, 2003; Van Emmichoven, Van IJzendoorn, De Ruiter, & Brosschot, 2003), whereas avoidant individuals tend to downplay the importance of emotionally salient information (Dozier & Kobak, 1992). In addition, some evidence suggests that avoidantly attached individuals' tendency to downregulate responses to emotional stimuli, or purposefully distance themselves, may help to regulate intense negative affect in social situations (Koenigsberg et al., 2010). Taken together, these findings suggest that avoidantly and anxiously attached adults may employ different behavioral (and underlying neurological) strategies to regulate similar negative reactions to interpersonal encounters.

Attachment & fMRI in BPD

The ability to mentalize, which is often disrupted in individuals with BPD, has recently begun to be studied through the lens of fMRI. Fonagy and Bateman (2008) suggest that failure to adequately mentalize leads to the interpersonal challenges associated with BPD. These authors hypothesize that childhood traumas and the inhospitable early environment commonly experienced by those with BPD lead to insecure attachment formation, which in turn contributes to adult problems with identity formation and emotion regulation difficulties (Fonagy, Luyten, & Strathearn, 2011). They posit that early intense affect in this trajectory disrupts the normal development of the ability to mentalize, thus impairing intrapsychic and interpersonal functioning in individuals with BPD.

This theory is supported by fMRI studies of emotional arousal and stress regulation (Heinrichs & Domes, 2008). Fonagy and colleagues (2011) suggest that cortical brain regions responsible for executive function and inhibition underlie mentalization processes and that intense negative emotions shift cortical activity to subcortical areas related to automatic responding. Evidence indicates that affective suppression is associated with reduced frontal lobe activity in areas associated with successful emotion regulation (e.g., orbitofrontal cortex) and increased activity in subcortical regions implicated in memory and emotion (e.g., hippocampus, dorsal anterior cingulate cortex; Gillath, Bunge, Shaver, Wendelken, & Mikulincer, 2005). As the physiological literature we have reviewed earlier suggests that those with personality pathology tend to utilize ineffective emotion regulation strategies such as suppression in the context of negative affect, when coupled with imaging studies of changes in activation patterns, this may explain decreased capacity to mentalize in these individuals.

In BPD specifically, increased negative affect leads to decreased prefrontal activation and increased amygdala activity compared to healthy controls (Silbersweig et al., 2007). Several studies have replicated these results, finding hyperactivity in subcortical "nonmentalizing" brain regions, including the amygdala, in individuals with BPD compared to controls (Hazlett et al., 2012; New, Perez-Rodriquez, & Ripoll, 2012). Thus, the attachment insecurity common

in BPD and other PDs may lead to ineffectual emotion regulation of negative affect, decreasing the ability to self-regulate and increasing autonomic emotional responding, impairing the ability to conceptualize mental states and generate healthy interactions with others.

Implications for Other Personality Disorders

There are limited findings showing direct neurofunctional links between attachment processes and PDs other than BPD. Some research has examined attachment constructs in NPD. Both functional and structural abnormalities have been discovered in brain regions implicated in the capacity to empathize in narcissistic individuals. NPD is associated with smaller gray matter volumes in the left anterior insula, as well as rostral and medial cingulate and dorsolateral and medial prefrontal cortices, areas relevant for experiencing empathy (Schulze et al., 2013). Furthermore, symptoms of narcissism are negatively correlated with activity in the right anterior insula during an empathy induction task, again suggesting deficiencies in empathic ability in adults with NPD (Fan et al., 2011). As empathy is often essential in the maintenance of successful interpersonal relationships, these findings may signify underlying maladaptive attachment schemas in patients with NPD.

One recent study reported differential amygdala activity between patients with BPD and those with STPD, such that schizotypy was associated with a faster return to baseline activity following emotionally valenced images, although the two groups showed similar responses to neutral stimuli (Hazlett et al., 2012). These findings may point to the emotional hypersensitivity in BPD compared to STPD, which is instead characterized by flattened affect, thought disturbance, and problems with reality testing. Taken together, these studies highlight underlying differences between PDs in internal working models associated with the processing of interpersonally relevant cues.

Developmental Psychopathology and PDs

A large body of developmental psychopathology research has attempted to delineate the etiology of pathological personality characteristics. Most of these studies have again focused on BPD, or components of BPD, evaluating the interaction between dispositional factors, such as genetics and temperament, and early attachment experiences as an influence on PD development. Some have examined predictors of PD symptoms in "at-risk" children of personality-disordered parents.

Genetic studies of a polymorphism in the serotonin transporter gene (5-HTTLPR) in both non-clinical and clinical samples have found differences in the

ability to self-regulate linked to a short allele (either homozygous or heterozygous) in this gene. One study determined that the short 5-HTTLPR allele interacted with infant attachment security to predict later behavioral regulation capacity (Kochanska, Philibert, & Barry, 2009). This study was adapted by Zimmerman, Mohr, and Spangler (2009) who found that securely attached adolescents with the same short allele exhibited successful autonomy and regulation of aggression. These findings suggest that secure attachment is responsible for the expression of genes associated with self-regulation. Thus, attachment security may be a protective factor for those with a genetic predisposition for regulatory problems; likewise, insecure attachment may interact with genetic risk factors to predict later dysregulation. Given differential levels of adaptiveness along the continuum of attachment insecurity (Blatt & Levy, 2003; Levy & Blatt, 1999), underlying genetic risk factors may explain why some individuals with attachment insecurity develop personality pathology and others appear resilient to disruptions in personality development.

Developmental psychopathology research has also devoted much attention to the interaction between attachment schemas and certain childhood traits in predicting borderline symptomatology. Infant temperament and various interpersonal variables were predictive of later BPD symptoms in a longitudinal study of infants followed to adulthood (Carlson, Egeland, & Sroufe, 2009). In particular, disorganized infant attachment (18 months), maltreatment (12-18 months), maternal hostility and boundary confusion (18-42 months), family disruption related to the father's presence (12-64 months), and overall family stress (3-42 months) were predictive of later BPD symptoms. Extended maternal separations before 5-years-old, as well as child abuse, temperamental variables assessed in middle-school, and attachment attitudes in early adolescence, are associated with BPD development in adolescence (Crawford et al., 2006). While the effect of maternal separations was partially mediated by temperament in middle school, the remaining constructs appear to be independent predictors of BPD symptomatology. Additionally, adolescent disturbance in emotional and behavioral regulation, attention, relationship functioning, and self-representation are also predictive of adult borderline symptoms (Carlson et al., 2009). The etiology of personality pathology is therefore marked at various developmental stages, from birth to adolescence, by several psychological and psychosocial risk factors.

Preoccupied attachment in particular has been linked to symptoms of BPD in developmental psychopathology research. Anxious attachment in early adolescence predicts risky sexual behavior and aggression (features of BPD) throughout adolescence, as well as increased growth rates in these behaviors (Kobak, Zajac, & Smith, 2009). Furthermore, negative affect and trait impulsivity have been shown to fully mediate the association between early preoccupied attachment and BPD symptoms in adulthood (Scott et al., 2009). Together, these findings suggest that

the combination of childhood attachment anxiety and temperament may contribute to the development of BPD.

In an attempt to better understand the transmission of personality pathology, another line of developmental psychopathology research has concentrated on the children of parents diagnosed with PDs. Studies have found that the interactions between parents with PDs and their children are often atypical and disturbed and are likely to result in insecure attachment in their offspring, an early predictor of later behavioral and emotional dysregulation. The Still-Face paradigm (Gusella, Muir, & Tronick, 1988) has been used to study emotionally salient behaviors of infants of mothers with BPD. This task consists of three two-minute episodes: *normal play*, consisting of normal parent-child interaction, *disengagement*, in which the mother adopts a neutral face and does not interact with the infant, and *reunion*, wherein the mother resumes normal play with her child. Research using this paradigm has shown that mothers with BPD were more likely than healthy mothers to act insensitively, vacillating between intrusive and disengaged behaviors during normal play (Crandell, Patrick, & Hobson, 2003). In turn, their infants tended to appear dazed during the disengagement period, avoiding eye contact with the mother. Furthermore, these infants reacted with lowered affect and continued disinterest upon reunion. At a 10-month follow-up, 80% of the at-risk infants showed signs of attachment disorganization, exhibiting frightened and disoriented behavior, suggesting that early abnormal parent-child interactions may have influenced the development of attachment insecurity (Hobson, Patrick, Crandell, Garcia-Perez, & Lee, 2005; Newman, Stevenson, Bergman, & Boyce, 2007).

A recent study by Macfie and Swan (2009) discovered that at-risk children of mothers with BPD reported more negative parent-child relationship expectations and fears of abandonment than children of healthy mothers. At-risk children also revealed increased emotion regulation difficulties than healthy controls, including intrusion of traumatic material, difficulties with reality testing, and lower narrative coherence when describing relationships. Such findings further emphasize the influence of the child-caregiver relationship on insecure attachment formation and the later development of personality pathology.

Psychotherapy Research

Bowlby conceptualized attachment theory as having relevance for psychotherapy, envisioning the therapist as providing a patient with "a secure base from which to explore both himself and also his relations with all those with whom he has made or might make, an affectional bond" (Bowlby, 1977, p. 421). In the role of attachment figure, the therapist can help the patient to explore important past and present relationships and understand how they might be contributing to current internal working models and intrapsychic and interpersonal challenges. Through

such introspection, patients are able to alter internal working models and develop healthier conceptualizations of themselves and others.

Bowlby's conjectures are consistent with many current schools of psychotherapeutic thought. Empirically-based treatments for PDs often draw directly or indirectly on the premises and implications of attachment theory. Furthermore, attachment constructs have relevance not only for the formulation and implementation of PD treatments but also for understanding therapy process and outcome for individuals with personality pathology.

Attachment-Focused Psychotherapy for PDs

As the bulk of research on personality pathology has focused on BPD, most attachment-based treatments are designed for BPD symptomatology. Mentalization-based treatment (MBT; Fonagy & Bateman, 2008), for example, an empirically supported treatment for BPD, draws explicitly on the tenets of attachment theory. The primary goal of MBT is to improve mentalization capacity in order to revert the deleterious effects of attachment insecurity on personality development. Studies have demonstrated the efficacy of MBT for symptoms of BPD including suicidality, parasuicidality, social dysfunction, and depressivity. Randomized controlled trials (RCTs) of MBT have found it to be superior to both treatment as usual and structured clinical management (focused on increasing problem-solving skills) in the treatment of BPD in both day hospitalization and outpatient samples. The effects of MBT have also been shown to be long-lasting, with continued symptom reduction through long-term follow-up (see Fonagy & Bateman, 2008, for a review).

Kernberg's transference-focused psychotherapy (TFP; Clarkin, Yeomans, & Kernberg, 2006) is another empirically supported treatment for BPD that is influenced by attachment theory, although not as directly as MBT. Kernberg theorizes that poor reality testing and identity diffusion (unintegrated and undifferentiated representations of self and other) characterize borderline pathology. Kernberg theorizes that early attachment insecurity is a developmental precursor of representation and identity formation difficulties in BPD. TFP focuses on the transference between client and therapist as revealing intrapsychic and interpersonal problems, providing patients' with a secure base from which they may work to enhance the coherence and integration of representations of themselves and others. Several RCTs of TFP have shown its efficacy for a range of symptoms of BPD, including suicidality, impulsivity, aggression, and anger (e.g., Clarkin, Levy, Lenzenweger, & Kernberg, 2007; Doering et al., 2010).

Attachment and the Process and Outcome of Psychotherapy for PDs

Beyond contributing to the theoretical foundation of several psychotherapies for PDs, attachment is also influential in the process and outcome of PD treatment.

Unsurprisingly, attachment security has been shown to predict positive treatment response for those with personality pathology (Meyer, Pilkonis, Proietti, Heape, & Egan, 2001; Strauss, Mestel, & Kirchmann, 2011). Nevertheless, given that the predominance of individuals with PDs experience attachment insecurity, it is important to understand how different attachment patterns predict differential treatment response in order to effectively predict outcome and tailor interventions to the needs of individual clients.

Clinical and theoretical writers suggest that anxiously attached individuals with PDs may present as highly engaged and interested in pursuing treatment (Levy & Blatt, 1999). These theoretical assertions are supported by empirical studies indicating that attachment anxiety in personality-disordered individuals predicts the likelihood of seeking treatment for emotional distress, as well as reporting of such distress in therapy (Hoermann, Clarkin, Hull, & Fertuck, 2004; Vogel & Wei, 2005). However, while preoccupied individuals may be more likely than others to seek care and disclose distress, they do not show greater treatment compliance as might be expected (Riggs, Jacobvitz, & Hazen, 2002). Additionally, attachment anxiety is negatively associated with response to treatment even within attachment categories defined by high anxiety (i.e., preoccupied, fearful; Fonagy et al., 1996; Strauss et al., 2006).

By contrast, attachment avoidance is associated with decreased frequency of medical attention-seeking and lower levels of reported distress (Vogel & Wei, 2005). Dismissing individuals also show treatment noncompliance beyond those in other attachment classifications, including preoccupied attachment, as well as more negative ratings of the therapeutic alliance (Mallinckrodt, Porter, & Kivlighan, 2005). Interestingly, however, dismissing attachment early in treatment has been found to better predict positive treatment response than anxious attachment in a non-personality-disordered clinical sample (Fonagy et al., 1996). If these findings are replicated in individuals with PDs, they will provide important implications for understanding treatment trajectories for individuals with different attachment patterns.

Changes in Attachment Through Psychotherapy

Promising findings regarding the ability to alter insecure internal working models come from recent studies examining changes in attachment through PD treatment. Levy and colleagues (2006) examined shifts in attachment status in 90 patients with BPD who were randomized to one year of TFP, dialectical behavior therapy, or a modified psychodynamic supportive psychotherapy. Of the 21 insecurely attached individuals who received TFP, six (28.6%) were reclassified as securely attached at the end of treatment, a change not observed in the other treatment conditions. This finding was replicated in another recent RCT of TFP (Buchheim, Hörz, Rentrop, Doering, & Fischer-Kern, 2012), providing further

support for the idea that treatment focused on the transference between the client and the therapist may be able to modify and improve underlying maladaptive attachment schemas associated with personality pathology.

Change in attachment styles has also been examined in women with BPD, AVPD, or both, who received short-term inpatient treatment. Strauss and colleagues (2011) found that while patients in all three conditions improved on measures of general and PD symptoms, there was no increase in attachment security observed in any group. In light of previous research (Buchheim et al., 2012; Levy et al., 2006), several explanations for these findings are possible: The emphasis of TFP on the transference in therapy may be key to improvements in attachment; attachment shifts may only occur during long-term therapeutic interventions; samples of individuals receiving inpatient care may include selection biases or other characteristic differences that confound the positive effects seen in outpatient psychotherapy on attachment styles. While PD treatment with TFP suggests the ability to impact insecure attachment, research must further elucidate what types of treatment are capable of effecting attachment change and which PDs are conducive to such change.

Summary and Conclusion

Attachment theory provides an integrative, cogent, and empirically based framework for conceptualizing personality pathology that has both parsimony and breadth. Attachment theory is consistent with research from a breadth of scientific domains, including ethology, evolutionary biology, cognitive, developmental, and social psychology, and neuroscience (Fonagy et al., 2011; Levy, Beeney, & Temes, 2011). Within the realm of clinical psychology, attachment constructs are not only consistent with but provide important theoretical implications for the cognitive (McBride & Atkinson, 2009), behavioral (Sterkenburg, Janssen, & Schuengel, 2008), psychodynamic (Eagle & Wolitzky, 2009), and interpersonal traditions (Klerman, Weissman, Rounsaville, & Chevron, 1984). Given the importance of early attachment schemas in the development of psychopathology, the range of clinical orientations each incorporate components of attachment theory into conceptualizations of treatment (Eagle, 2006). Furthermore, the theoretical and empirical literatures have begun to outline developmental and etiological markers that may differentiate healthy from pathological personality trajectories. This scientific corpus may prove invaluable in understanding and eventually preventing the development of PDs, a worthwhile goal given the enormous human and public health cost of these disorders. Although much further research is needed, especially regarding the development and treatment of PDs other than BPD, attachment theory offers a valuable and promising approach for clinicians and researchers alike.

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Apego como marco teórico para entender los trastornos de personalidad: Consideraciones psicoterapéuticas, neurocientíficas y de desarrollo

Resumen

En este trabajo proponemos que la teoría de apego de John Bowlby ofrece un modelo teoréticamente coherente, empíricamente basado y clínicamente útil para entender la patología de personalidad. Este marco teorético trae parquedad y anchura a la conceptualización de la etiología, mantenimiento y tratamiento de trastornos de personalidad. La teoría de apego puede explicar las dificultades tanto intrapersonales como interpersonales comunes a las personas con trastornos de personalidad y es consistente con los descubrimientos de estudios de varios dominios del saber, incluyendo biología evolutiva, etiología/psicología comparada, psicología de desarrollo, psicología de personalidad y psicología social-personalidad experimental, y neurociencia.

Trastornos de personalidad son caracterizados por los retos interpersonales significativos. Últimamente, se han hecho hipótesis que estos retos son el resultado de esquemas de apego mal adaptivos. Nuestro objetivo es explicar y elaborar la teoría de apego como la base para la etiología y patología de trastornos de personalidad y acentuar las implicaciones de esta teoría para el tratamiento. Empezamos con un pequeño análisis del apego, describiendo sus conceptualizaciones y evaluación tanto en niños como adultos para examinar el desarrollo de trastornos de personalidad. Este fundamento teórico está apoyado por la investigación empírica, de la que presentamos resultados de la literatura neurobiológica y de desarrollo relacionados con el apego y los trastornos de personalidad. Luego investigamos el papel que tiene el apego en los procesos de psicoterapia y en los resultados del tratamiento. Finalmente, resumimos las implicaciones de la teoría de apego para entender trastornos de personalidad y presentamos unas posibles direcciones para las futuras investigaciones.

Palabras claves: teoría de apego, psicopatología de desarrollo, trastorno de personalidad, psicopatología, psicoterapia, neurociencia

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